MANUAL ON MANAGEMENT OF TEACHING, PROVINCIAL, BASE AND SPECIAL HOSPITALS

MINISTRY OF HEALTH, HIGHWAYS AND SOCIAL SERVICES

SRI LANKA .

1995

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FOREWORD

The Manuals on management of different aspects of Health services were originally published in the early nineteen fifties. Since then the services have undergone radical changes and advanced in keeping with changing needs & progress worldwide. Similar advances have also been seen in the field of Health services management. It was therefore necessary to revise the Manuals to help manage services in keeping with these advances. Since the bulk of resources are invested in the curative services, it was felt that the exercise should focus on hospital management. The management problems encountered in different categories of institutions vary to an appreciable extent. It was therefore decided to bring out seperate Manuals for diferent categories of institutions. The venture started with the manual on management of Central Dispensaries & Maternity Homes. Next was the one on Rural Hospitals, Peipheral Units & District Hospitals.

The currant Manual is the third in this series and concentrates on the secondary & Tertiary care institutions. The Secondary care facilities are Base hospitals while the provincial & Teaching hospitals constitute the Tertiary system. Together, these two categories catered to 51.6 % of inpatients in 1993. They also treated 25.9% of the total outpatients in the same year. Overcrowding due to the lack of a referral systems is the main problem in these institutions. The National quality assuarance programme has been introduced to some of these, and needs to be extended to the rest. These institutions will play the lead role in the National back referral systems, which has been initiated but needs consolidation. They also have a pivotal role to play in Medical education, both under graduate and post graduate, and the basic training of all other categories of medical manpower. Their role in continuing education of all categories cannot be overstressed. Scarce resources invested in these institutions need to be optimally utilised and unit costing will be introduced into the system to help achieve this objective. The work in this regard has infact just commenced. It is thus obvious that the management of these important institutions need strengthening. It is with this goal in mind that the manual has been prepared.

The methodology for development of the manual consisted of development of chapters by experts, based on "author's briefs" and finalising of the chapters at a national consultative meeting of these experts. All chapters were then edited by the National consultants for technical content and also by a professional editor. I am indebted to all these resource persons for their valuable input.

I sincerely hope that the different levels of management of these institutions will study the manual and use it as a guide to the day to day management as well as planned development of the institutions.

Dr. Reggie Perera

June 1995

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LIST OF ABBREVIATIONS

ARV	Anti Rabies Vaccine
AO	Administration Officer
BHT	Bed Head Ticket
CNO	Chief Nursing Officer
CSSD	Central Sterile Supplics Department
CP	Central Pharmacy
CCS	Central Cleaning Services
CPR	Cardio Pulmonary Resuscitation
DMO	District Medical Officer
ENT	Ear Nose Throat
HHE	Hospital Health Education
HHEU	Hospital Health Education Unit
ICU	Intensive Care Unit
MLT	Medical Laboratary Technologst
MICU	Medical Intensive Care Unit
MO	Medical Officer
MS	Medical Superintendent
OPD	Out Patient's Department
PH	Provincial Hospital
PBU	Premature Baby Unit
PDHS	Provincial Director of Health Services
PMR	Post Mortem Report
PSC	Public Service Commission
PHI	Public Health Inspector
RDHS	Regional Director of Health Services
SICU	Surgical Intensive Care Unit
TCE	Tetra Chlor Ethylene

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CLINICAL SERVICES

CHAPTER 1

FUNCTIONS AND THE ROLE OF SECONDARY AND TERTIARY CARE INSTITUTIONS IN THE REFERRAL SYSTEM

1. INTRODUCTION

Even in a well gradcd system of health care where the primary, secondary and tertiary systems are well defined, in practice the boundaries separating the three areas overlap, more so in the areas of secondary care and tertiary care. Functionally secondary care institutions should deal with sickness and ill health which cannot be managed safely and effectively at the primary care level, and which therefore need a degree of expertise in the diagnosis, investigation, and management, not available at the primary care level, but not of sufficient degree of severity to warrant highly specialized care found at the tertiary level and at other specialized hospitals dealing with specific disease entities.

By convention in this country secondary care institutions are Base hospitals offering as a rule only the basic specialities of medicine, surgery, obstetrics and gynaecology, paediatrics and which have laboratory facilities sufficiently developed to fulfil their role as service organizations at that level. A few secondary care institutions may offer one or two sub-specialities such as Ophthalmology and Eye/ E.N.T. only as visiting consultations weekly.

Tertiary care hospitals are of three types - the provincial hospitals, the teaching hospitals and special hospitals. While the provincial hospitals deal with tertiary care, the teaching hospitals function in addition as University linked hospitals, engaged in the training and the turnout of high level medical manpower at undergraduate and postgraduate levels (the equivalent of the so called apical hospitals). They are engaged in organised research in clinical and allied ficlds, carried out by academic staff and non - "academic" clinical consultants. They, by their very nature of work, are engaged in enlarging the frontiers of knowledge, and such institutions are better equipped with levels of technology, and sophistication well beyond the scope and facilitics in "non teaching" tertiary care institutions.

By convention in Sri Lanka teaching hospitals are defined as institutions affiliated to University Medical Schools, and engaged in the training and turnout of medical graduates. The fact that some tertiary care hospitals are also the centres of teaching, training and the turnout of nurses and other para-medical staff does not however qualify them perse to be labelled as Teaching Hospitals. Secondary care institutions while dealing with clinical training of interns are not engaged in the training of undergraduates or nurses or middle level technical staff.

While it is difficult to lay down across the broad functions of all the three levels under study in this chapter due to overlap, tertiary care institutions in the country, by convention and long practice, continue to function as primary, secondary and tertiary care institutions. This is not unrelatcd to, and is perpetuated by the absence of a precise definition of the scope and limitations and the nature of the work of the two areas. The consequent burden of work, results in the insidious lowering of the quality of care in order to accommodate all levels of health care within its confines. This, truly is a reflection of the non-implementation of a strict referral system in an otherwise theoretically well graded health care delivery system. With its socio-political overtones, the strict implementation of the referral system by the stroke of a pen, is impracticable, and would be socially unacceptable.

But a start has to be made somewhere or the spectre of over occupation in the centre and under utilization in the periphery will result in a health care system which will gradually alienate itself from grassroots level, and make the dream of appropriate health care for a large segment of the population at the appropriate levels, unattainable. This in turn would result in the quality of care at the centre to deteriorate.

2.0 THE OBJECTIVES OF SECONDARY & TERTIARY CARE INSTITUTIONS

2.1 General Objectives

Secondary and tertiary care institutions are links in the referral chain charged with the responsibility of making available to the public, at levels appropriate to the degree of development and sophistication of the institution, specialised medical and nursing care consistent with thc needs of the public and also their expectations, and those of the Ministry of Health, the overall provider of such care. They should primarily aim at maintaining the continuity of care from the first point of entry in to the health services up to the highest available level of care, as thc needs of the case may requirc. Secondary care could also be viewed as a link between primary care and tertiary care in the referral chain

2.2 Specific Objectives

1. To ensure that providers of health care offer to the public at the secondary and tertiary levels, the highest quality of care consistent with the degree of specialisation at such levels.

2. To enable those in charge of institutions to have specific goals and plan for the attainment of the required expertise defined for each such level.

3. To work towards the achievement of the plan for health for all by the year 2000 by improving and upgrading the quality of care at secondary and tertiary levels, within the framework of the overall health policy plan.

4. To facilitatc application for specific budgetary allocations to ensure continuity of care and the quality of care expected at the two levels.

5. To educate the public directly and indirectly on the expected functions of each of the two levels in the referrel chain, and influence their thinking and expectations in consonance with the standards that should be expected at such levels.

6. To provide facilities and expert personnel for continued education of all grades of staff.

03. FUNCTIONS OF THE SECONDARY & TERTIARY CARE INSTITUTIONS

The hospitals' primary function is the care of the sick. However, the great and rapid strides in preventive and social medicine and its practical application to entire populations, the growing awareness of the thin line of distinction between health and disease, the important relationship between social and material environment and its effects on health and well being of populations, have resulted in a changed role of the hospital. Its function therefore is not only one of a restorative nature but also as a centre for a holistic approach to the problems connected with health. As such the function of a secondary and tertiary care hospital should be (1)

a) Restorative

1. Diagnostic - Outpatient, Inpatient Services
2. Therapeutic - Treatment & cure - complete with palliative, medical & surgical procedures
3. Rehabilitative - Restore normal or near normal health & functions.
4. Reactive - To sudden emergencies & accidents and disasters natural or man - made

b) Preventive

1. Control of communicable diseases by (a) notification and offering advice on the determinants and their control, by (b) specific immunizations like HBV, ARV etc.
2. Management of normal pregnancy and child birth, and supervision of the healthy development of the child.
3. Limiting prolonged illness and invalidism
4. Education in health preservation
5. Industrial and occupational health

c) **Educational** - Training of :

1. Undergraduate and postgraduate medical personnel, specialists etc. at Teaching hospital level.

2. Nurses and Midwives at Provincial, Teaching & Special hospitals.

3. Para -medical & M. L. TT staff at Provincial, Teaching & Special hospitals.

4. Training of Trainers at all levels.

d) **Research**

1. Clinical and Therapeutic control trials etc. at Teaching hospitals and Provincial hospitals.

2. Operational research in health services administration at all levels.

3. Evalution of health facilities & services, for optimal and maximal cost benefits/ cost efficiency.

4. Prediction of long - term trends in morbidity patterns and adaptation of services to meet the changes

4. STRUCTURE AND ORGANISATION OF SECONDARY & TERTIARY CARE INSTITUTIONS

(Vide table 1&2) pages 25 & 26

a) Secondary Care Institution

i. Structure & Organisation

In the past the largest among the D. H. H. functioned as secondary care institutions. All such institutions which were strategically well placed in the chain of health care institutions were upgraded to base hospitals. Base hospitals alone now constitute the second level of care, the D. H. H. forming the highest level of primary care.

Base hospitals - 27 in number - strategically located at the centre of the somewhat concentrically placed primary care feeder institutions have a combined bed strength of 7456. The average should be around 300 beds and range from 200 -400 beds. They should all have facilities for the practice of the basic specialities of Medicine, Surgery Obs., Gynae and Paediatrics, with perhaps visiting consultations in E. N. T. and Ophthalmology on a weekly or biweekly basis, and have laboratory facilities sufficiently developed to service the level of care relevant to the specialities offered. They do not undertake, nor have provision for, the training and turnout of nurses or M. L. TT grades. However the training of medical interns is an essential part of their function, and facilities should therefore be available for such needs. It should have sufficient beds set aside for the basic speciality units found in such hospitals. Since the bed strength in hospitals is fixed any change should be in consultation with, and with the knowledge of the Ministry of Health. Changes even in the interdisciplinary bed allocations should be with central authority.

ii) Administration & Staff

The Administrative head of a base hospital should be a senior D. M. O. engaged in purely administrative functions and not engaged in direct clinical duties, unlike the D. M. OO of D. HH. He should bc involved with the day to day running of the institution, planning for it's growth and development and with improving the quality of care within the institutions. He should actively direct, and appear to direct , the functional organisation of the institution, its daily administration and establish a level of discipline in accordance with the expectations of the Ministry of Health. For this purpose he should have working directly under him at least one A. O. with multiple functions, who would handle accounts, payments, establishment matters, administration, personnel , stores and supplies etc. He should therefore have a minimum of 10-15 clerks working under his direct administrative control and that of the D. M. O. (the usual ratio is one A. O. to 20 clerks) and in charge of the different subjects under administration, establishment, stores, supplies, transport etc. Medical certificates, Medical Boards, diets, laundry, maintenance etc. are some such areas, of importance. A Matron functions as C. N. O. with at least 6-8 sisters and a staff nurse bed ratio of 1:5 . B. HH should therefore have between 60 - 80 nurses per institution and at least 20 more for every theatre in use.

One overseer for 60 labourers is the normal rule. 2-3 overseers with 100 labourers is about the requirement for base hospitals. Actual cadre provision for most categories is being worked out and what exists so far is on a "rule of thumb" basis.

iii) Ancillary facilities

X' ray and laboratory staff should be available to service the basic specialities with adequate provision for all staff by way of changing rooms, dining rooms, rest rooms. They should undertake only limited investigations for which facilities are available both for inpatients and for a limited outpatient service by way of outpatient investigations. Investigations of a very specialised nature should be referred to the nearest provincial or teaching hospitals through the relevant clinics, and dates and bookings obtained therein.

iv) Outpatients Department

This forms an essential facility at this level of care, and normally houses the general OPD, the admission centre, specialists clinics, and the treatment centre for outpatients. It is an important outreach of the institution for ambulatory patients, and its orderly and purposeful organization can perceptibly reduce the admissions to the hospital. The senior most MO/OPD should be in -charge of the roster and administration of the general OPD. The roster should be drawn up for each month and sent to the Head of the institution for approval. No arbitrary changes should be made in the roster without the approval of the Head of the institution or at least the Medical Officer in chargc. The specialist clinics too are generally held at the Outpatients section and dates and times of the clinics should be drawn up and revised every now and then, to provide for changes of consultants etc. The list should be circulated to the feeder institutions. Special emphasis should be placed on an adequately provided, located and staffed pharmacy to meet the needs of General Outpatients Department and of the specialist clinics. A Sister in charge of the Outpatients nursing and minor grades would be a useful addition to the Outpatients department.

v) Management Committee

Management Committee with the D. M. O. as Chairman, or even a senior Consultant in some instances, should be encouraged as it broad bases the decision making process. Such committees for general management, on drug utilization, and the very important, housing sub committee with trade union representa-

tion , should help and guide the top level administrators of the hospitals. This encourages participation by all in thc management process and ensures relative industrial peace in the institution.

(b) Tertiary Care Institution

i. Structure & Organisation (Vide table 1) page 25

Tertiary Care Institutions can bc further subdivided into three groups, the provincial Hospitals, the Teaching Hospitals and the Special Hospitals. There are seven Provincial Hospitals with an average bed strength of 700 and a range between 600 and 800. The teaching hospitals are of two types : the general hospitals eight in number are multi-disciplinary, while threc are single specialty hospitals.The general hospitals (teaching) have an average bed strength of 1100 and a range between 950-2500. The single specialty hospitals have an average of 350 beds with a range from 300-400.

The special hospitals though not falling into the group of teaching hospitals, deal with special disease entities mainly Psychiatry, Cancer, Leprosy, Tuberculosis and also Dental services. There are 17 such hospitals with an avcrage bed strcngth of 250 and a range from 150-400. they undertake teaching of students as short term appointments, but not as a full-time undertaking. Tertiary Care Institutions form the more specialised hospitals in the Health Care Systems with increasing levels of complexity in terms of buildings and their physical layout, in the technical specialization and sophistication they offer, in the staffing, financing etc. as we pass from provincial through teaching hospitals to special hospitals. They all by and large, form the core of the tertiary care facility while the teaching hospitals and somc of the special hospitals may be regarded as the sub apical referral hospitals, and thc Colombo Gencral Hospital the apical referral hospital, thereforc the final referral hospital for all the tertiary care hospitals of the country including the other teaching hospitals, and somc special hospitals.

In terms of buildings too the teaching hospitals with well defind areas, could be recognized , which are set aside for the basic specialities, the sub specialities, the investigation arms, and also for the administration and management functions. Quarters of a better quality with the ability to house a large variety of hospital staff should be available thcir availability improving as we move from provincial to teaching hospitals. Kandy and Colombo being the oldest, have a

distinct advantage in the availbility of quality facilities for medical and nursing care, for house keeping functions, in staffing and quarters for the various grades of personnel etc.

ii. Administration & Staff (vide table 11) para 2

The Administrative head of the provincial hospital is the Medical Superintendent, while in the teaching hospital a Director is in-charge. The latter is usually a more senior and an experienced administrator usually with post graduate qualifications in public health and /or administration.

In the provincial circuit, senior AO's with previous experience in administration at D. H. H. and Base Hospitals function as the senior administrative officer working directly under the M. S. He should be responsible for the implementation of all aspects of administration and the house keeping activities, and should coordinate all the management and the financial functions including stores, supplies, payments, cleaning, laundry services, building maintenance, food supplies etc. In the teaching hospitals, however a separate accountant/ or accountants should be in-charge of financial control, stores and supplies, salaries etc. while two or three administrative officers work directly under the Director of the hospital in the areas of administration, establishment, other payments etc. and such sub sections should be headed by senior clerks under whom several clerks function as subject clerks, each maintaining 250-300 files. There should be a well defined division of responsibilities with an appropriate level of delegation of powers and authority as we go up the scale for P.HH to T.HH and special hospitals. The responsibility however rests with the Director or the medical superintendent only. Therefore active awareness of and participation in all the administrative processes directly, or more often indirectly, should be the aim of a wise and prudent head of the institution.

ii. Nursing Administration

In both provincial and teaching hospitals a senior Matron should function as the C. N. O. with usually one Asst. Matron in the case of P. HH and several matrons in T.HH, to assist the C. N. O. in nursing administration. Clinical nursing and management of wards is directly done by the sister, or in-charge nurses, normally one per ward in P. HH and one sister, per ward in the T. HH. Staff Nurses in wards are in the ratio of one nurse to five beds. In Intensive Care Units,

the ratio should be normally one nurse per bed per shift plus 2 for offs etc. On an average estimate it works out to 5 nurses per bed, very much so if they are beds with ventilators and vital monitors. The two largest teaching hospitals have in addtion E.T. UU as part of the O.P.D. and this should deal with all immediate interventions and treatment at the point of entry viz, Cardiac arrests, asthmatics, poisoning, drowning , status asthmaticus and epilepticus etc. before transfer to the respective I. C. U. through the wards. These therefore should have specially trained nurses in adequate numbers for a continuous 24 hour daily service.

iii) Clinical areas - Inpatient Services

Each speciality should have a consultant as the clinical head of the unit/ ward with a team of medical officers ranging from senior registrar, registrars and interns in T. HH to S. H. OO and interns in P. HH. In all hospitals there are two interns per unit of the major specialities and 3 to 4 in the professional units, where there is added staff strength by way of Lecturers and senior lecturers engaged in clinical and academic work and reserch as well as teaching. Housing for residents and on call officers is an important facility which ensures prompt availability of residents 24 hours of the day and should form an important part in the planning and development of a hospital. A Housing Sub Committee should be an important adjunct to the hospital director's administration and with adequate T.UU representatation in such sub committees the directors would be relieved of a tremendously difficult and unpopular function.

The investigation arm is the most important facility servicing the specialities and sub specialities and is made up of the radiology department and the laboratory services respectively. These two together form the main stay on which the efficient and effective, functioning of the hospital clinical services depend. Unfortunately these are two areas which are not only constantly running into problems, in terms of staff, regularity of supplies, and equipment, but also constitute a major drain on the hospital resources. They all have senior consultants assisted by one, two, three or more consultants in the case of T. HH. Their facilities extend to both the inpatient and outpatient departments and therefore undertake a tremendous work - load in all hospitals both P. HH & T. HH. Annual review and upgrading of facilities in radiology and laboratory services should be an important function of the head of the institution working in close liaison with the unit heads. With the M. R. I. opting out as a supplier of chemicals and reagents, the M. S. D. finds itself ill-equipped and inexperienced in handling what

has been the preserve of the M. R. I. for over half a century . This, therefore, casts an additional burden of responsibility on the head of the institution where, reagent packs are bought under a local purchase scheme. He should exercise strict surveillance on such purchases. The M. S. D. should take over this responsibility to ease the burden of responsibility from the head of the institution.

iv. Clinical areas - Outpatient services

In both P.HH & T. HH. the outpatient department services constitute an important function of the hospital. It functions as the G/OPD, the admission centre, and the centre for followup specialist clinics, and together service a large clientele, ranging anywhere between 1500-2000/day in P. HH. and about 3500-4000 per day in T. HH. It is often termed the window to the hospital. Basically this area functions as the meeting place for primary, secondary, tertiary care clients, many of whom would have bypassed the primary and secondary care institutes at the lower levels. It should have a M. O. I. C. a Sister and nursing officers and senior clerk/clerks.

v. Clinical areas - Sub specialities

In the tertiary care institutions we meet with more and more finer sub - specialities and super specilities as we go up the scale from provincial to T. HH. Provincial hospitals and T. HH. all should have the standard sub - specialities of E. N. T. Ophthalmology, Orthopaedics, Rheumatology and Rehabilitation. Anesthesiology is well established and reasonably well staffed with consultant staff. In all units S. H. OO or/Senior registrars operate. In the teaching hospitals of Colombo/ Kandy / Peradeniya and Karapitiya, PGIM trainees reinforce the service sector whilst working as postgraduates under traning on rotation through prescribed subspecialities. The two larger teaching hospitals of Colombo and Kandy have other super specialities in addition, viz Cardiology, Neurology, Neurosurgery, Cardio thoracic surgery and also Oncology on a clinic visit basis. These function optimally at T. H. Colombo which acts as the apical referrral centre to the rest of T. HH. including Kandy. Only, Teaching Hospital Colombo has a separate well established and very well equipped Accident & Trauma centre, although a few other hospitals have such centres in a rudimentary state of development. They all transfer cases to Colombo for specialised intervention whenever necessary, normally by prior arrangement with Colombo.

vi. Clinical Services - Critical Care

Many tertiary care hospitals have critical care units though in the P. HH, they are still in a very rudimentary stage of development. They should aim at providing such care as a planned and coordinated service adequately staffed and with a minimum of equipment for monitoring. The bed requirement for I. C. UU. is worked out on the formula set out below.(Vide page 28 - appendix 4) Nursing skills are most important in such units and training of staff for a period of six months in an established and experienced unit is an absolute necessity. Training of staff in such areas as in blood gas analyses, electrolyte analyses, setting up of monitors, the care of the ventilated patient and the other specialised intervention strategies met with in C.C.U.U., S.I.C.UU., R.UU, M.I.C.UU, D.UU, N.I.C.UU, and N.S.I.C.UU are basics in the larger Teaching Hospitals. It should be the aim of Directors of Teaching Hospitals to gradually establish such areas of critical care, in a well planned, organised and systematic manner, to know the working & problems of such areas and be fairly confident and competent in discussing the organization by reading round the subject. The request for the establishment of special respiratory care centres though much lobbied for, should be viewed with caution in a health set up where the referral system is not well established and adhered to as, unplanned referrals to I.C.UU in the bigger hospitals is the order of the day, throwing out of gear the relatively well organised and efficiently run I. C. UU in such hospitals. Curiously this situation is met with more during week-ends and on the eve of public holidays. A respiratory care centre would attract too many referrals of even simple respiratory management cases from the periphery.

5. CENTRAL SUPPLIES

The central supply services originated in hospitals due to three main reason (a) the need to standardise the varying and sometimes conflicting demands from the various specialised clinical departments. (b) to reduce the cost of such operations by centralising the services and thereby standardising training methods, equipment and techniques, associated with a central supply system (c) as a spin off of centralised administration within the hospital with a view to coordinating the ever increasing specialization of hospital activities.

In its broadest sense central supplies system within a hospital could cover-

a) Central sterile supplies department
b) Central Laundry
c) Central Stores
d) Central Pharmacy

e) Central Kitchen (food supply)

f) Central surface cleaning services

When one thinks of central supplies all the above areas could be regarded as constituting central supplies of which the C. S. S. D. takes pride of place. All hospitals from Base to Teaching and the special hospitals should have all or some of these areas developed but to varying degrees of specialization .

They all have common objectives, techniques, methods and some of the equipment, as basic requirements for the establishment of such services. Sophistication in methods, techniques, requirements and therefore of the equipment, increases as we go up the scale from base to apical hospitals. It is only a few teaching hospitals and special hospitals that have central cleaning services.All these areas should be supervised by experienced professionals/ T.OO of that field, with a trained staff working under them. In the casc of a C. S. S. D. an experienced and a senior nurse should be the leader of the team as it deals with medical and surgical supplies in use, their collection, cleaning, packeting and reprocessing in a form ready for reuse. It services material form all the clinical departments for cleaning and sterilisation, (and ensure their continued use). The single primary requirement of the C. S. S. D. is to ensure perfect sterility of equipment, dressing, and material cycled through it by various clinical and laboratory departments.

(a) Central Sterile Supplies Department

Almost all C. S. S. D. even those in a rudimentary stage of development should have an area set aside for receipt of used material, and an area for the issue of sterilised material ready for use. It should aim at pooled supplies, where on receipt of a certain number of used items an equal number of sterilized items are issued. What really obtains in most institutions is the receipt and issue to a particular clinical department its own items cleaned and sterilised, and not issues from a centralised unit divisive. The aim should be a poolcd supply; but for this a larger stock of the various items should be available at the C. S. S. D. over and above the total of the separate clinical inventories in the institution. A protocol for the working of the CSSD should be drawn up and the cycle of receipt and issues carried out under strict surveillance; the surveillance extending up to the point of use of the sterilised material. The exact-work out of the protocol is beyond the scope of this article but should be in accordance with internationally accepted and laid down procedures. Packeting though expensive is the accepted method for theatre instruments and requires a reservoir of items in surgical theatres.

(b) The Central Laundry System

This operates only in a few hospitals but its working should be closely allied to the working of the CSSD except that asepsis is not enforced in laundering. Some hospital items are sent from that laundry to the CSSD when strict asepsis is required. viz. theatre linen. The hand washing by "laundry man" is still very much in use in even the larger provincial hospitals, where linen is washed, pressed and supplied on a piece basis on a contract system . Infective materials are disinfected and then washed separately. Central laundering is reliable, effective, efficient but expensive. It should be the ultimate aim in all teaching hospitals and special hospitals to set up a central laundry system because of its efficiency and the quality of its output.

(c) Central Stores

These should be available at all levels and should be directly under the Administrative Officer with a senior stores clerk or store keeper in-charge. Consumables, hardware, furniture, linen, uniforms, utensils, cutlery and crockery are some of the items handled by this section. Here too rules of purchase and issue should be strictly followed as laid down by the department and master inventories maintained of all non consumable items. This is a favorite area of inspection by audits and should therefore be closely supervised to prevent shortages, pilferage and substitution.

(d) Central Pharmacy

In smaller hospitals there is one central pharmacy for out and in patients whereas in the provincial hospitals and teaching hospitals separate C. P. and / stores exist for the OPD and one for inpatients. They should be in the charge of the senior most pharmacists who should be responsible for issues, receipts, checking and certification of receipts of drugs, dressings, surgical equipment, preparation of annual estimates and should also function as a team member of the consultant committee in the preparation of hospital requirements and preparation of the estimate books. He should be specifically allocated this responsibility in addition to other functions as local purchases of drugs, test checks of subsections under his/her charge on a regular basis, to prevent shortages and frauds. It should be his/her responsibility for the safe and proper storage of drugs, anticipation of expiry dates and action pursued for early disposal , maintenance of drug books and registers and regular balancing of such books. He should also be in-charge of the roster of pharmacists both indoor and the outpatients respectively.

(e) Central Kitchen

This opcrates in all hospitals by the direct provision of cooked meals by the hospital and supply of raw provisions to the kitchen through contractors. Kitchen supervisors, and dietitians operate in the bigger hospital food supply service. Sampling of food supplied to the patients should be done regularly by the Head of the institution and an inspection book should be maintained. The supply of diets to patients, cxtras, special diets, supplements etc. are well defined and these should be followed by the kitchen staff. An A.O. should be in overall charge in the largcr hospitals, and be responsible to the head of the institution. All supplements have to be approved by the Head of the institution. Contract for supply of dry provisions should be by annual tender system as the Marketing Department has withdrawn from this activity.

(f) Central Cleaning Services (House Keeping Services)

This is one area which has not kept pace with modern advances in house keeping in the hospital system.

In most hospitals cleaning of wards, floors, toilets, drains and public areas is done by untrained hospital labourers under the supervision of the overseers and an A. O. Thcre has however been in the larger hospitals, more recently a gradual introduction of C. C. S. through private contract. This system is more beneficial when introduced for the upkeep of new buildings. Little benefit could be expected and seen from such schemes in old buildings. It has however been worked out that C.C.S. on contract is cheaper in the long run and more efficient and the results clearly visible. There should however be strict supervision whatever the system in use in the hospital. The A.O.and the head of the institution should carry out inspections, both by day and by night of the premises, the wards, toilets and public areas on a regular basis interspersed with surprise inspections at least thrice a week.

6.0 ROLE OF HOSPITALS IN EDUCATION AND RESEARCH

6.1. A Global View

The axiom that a profession will be practised no better than it is taught is never more true than in the practice of medicine in all its diverse aspects. From the era of apprenticeship as the main mode of training under the preceptorial system in which the trainer worked under the tutelage of an established physician, to the stage of a truly graded curriculum build-up and its development, to the breaking up into components of preclinical and clinical training, education in health sciences has undergone rapid and revolutionary development. This rapid expansion though not as pronounced in the basic medical sciences has been phenomenal in the clinical and para-clinical fields.

The importance of strengthening the pre-clinical and clinical components of training and the rigid apprenticeship, followed by regular inservice training, reinforced by regular clinical conferences, mortality conferences,grand rounds and medical audit, all are consistent with the modern approach to strengthening the health services. More than even physical structures, reinforcing of the acquired skills and practices and refinement of the conceptual perceptions and precepts are most important in improving not only the skills of the staff but also the quality of work in the institute, and the esteem with which the public holds the institution.

6.2 Country Position

While basic education in the health sciences in Sri Lanka has been well established for medical and nursing students with successive intakes and passing out of batches, well planned courses of study, regular examinations and continuous assessment, it is not the case in many of the other fields in the health sciences. The resultant shortage of staff from M.L.T. Grades to trained attendants and labourers seems to be a perennial problem. Sporadic intakes, un-coordinated and irregular training programmes, have caused a crisis in adequacy of the technical and minor grades of the hospitals. Projection of manpower needs of the middle level and minor staff grades should run parallel to the development and growth of health care institutions and should be anticipated and provided for.

The role of secondary and tertiary care institutions under these circumstances, takes on an added meaning. The concentration of all these programmes

in onc institutc or perhaps two is possibly thc cause of the shortage.This is particularly true in the training of M.L.T. staff, with the concentration of all programmes in General Hospital Colombo. While advances and refinements and teaching methods, have undergone diverse, improvements and revolutionary changes, the hospitals with their concentration of experienced professionals in "medicine" and "nursing" - terms used in their broadest sense- together with the Faculties of Medicine of the Universities with their selected body of clinical specialists working in hospitals, are known for their skills in teaching and research as well. They constitute a large body of men and women ably suited to guide the professional future of medical, nursing and technical students in the field of health care and research. and to contribute to the growth and development of the respective fields. The hospitals therefore constitute a large reservoir of skilled teachers and trainers and researchers of experience with advanced facilities and teaching aids, to impart knowledge to a rapidly expanding student body in all the fields of the health sciences.

The whole hospital constitutes a teaching arca rich in tcaching material and potential. The education of medical and nursing students has a history of rapid evolution to their present level of development and need no further elaboration.What remains to be done is to probe how best to improve the teaching facilities and accommodation to meet the challenge of increasing numbers staking their future in the health industry, and see how best curriculum development could keep pace with the rapid advances in almost all fields of the health sciences.

Various grades of medical, nursing and para medical manpower training are undertaken. The base hospital should undertake the training of the highest level of community health workers along with the D. H. H. Some of the provincial hospitals and the teaching hospitals have the staff but should be provided with facilites to train M. L. TT.

Resource personnel arc available and such institutions should be upgraded as resources centres for continuing education of such categorics of staff. The Colombo General Hospital has schools for training of, radiographcrs, ECG Technicians, Physiotherapists, M.L.TT & Pharmacists. It is important at least two other institutes Kandy and Galle should develop these training programmes, as the shortages of staff in all these categories are acutely felt in all the hospitals central and peripheral . The problem is further compounded by the long duration of some training programmes. National Institute of Health Sciences Kalutara

should be further developed in this respect to include training M. L. TT. (middle level technical grades).

6.3 Role of Medical Administrator in Medical Education

Good hospitals have always taken an active and important part in Medical Education although quantitive and qualitative diversity continues to exist from country to country and within a country from institution to institution and in different medical schools. Thus there are hospitals operating as great centres of medical learning while at the same time we have hospitals from which medical education is excluded, while possessing all the potential in the form of resource personnel, but lacking only in facilities to fulfill this role.While all hospitals cannot aspire to be teaching hospitals they could be incorporated as satellites to the teaching hospitals. Certainly more hospitals could be involved in practical training of the health sciences to other grades of staff other than doctors and nurses. What then is the role of the hospitals administrator in medical education ? There are four major areas in which his knowledge and awareness should be developed.

(1) He should have a grasp of trends in medical education as currently conceived by academic medical teachers and university administrators. He should be aware of major issues but not an expert in such matters.

(2) Be aware of the facilities needed for training in health sciences in medical schools and hospitals.

(3) Be able to appreciate the value and the meaning of an educational environment.

(4) Reorientate and adapt the institution its staff and facilities to fulfill the activities and goals in medical educationa (Benjamin Wells - "Medical Edcation" Chap. 44 modern Concepts of Hospital Administration" Owen and Eisleben. (with apologies for modifications to suit local situations)

6.4 What Needs to be Done

Incorporated in the hospital objectives in all secondary and tertiary care hospitals should be a teaching component as one of its important functions. It is only by introducing this component to institutions will they be sufficiently en-

couraged and motivated to undertake actively, teaching as part of the normal function of all hospitals. They should undertake not only inservice training of all grades of staff but undertake training of fresh intakes in selected fields and within its competence.

7. ROLE OF SECONDARY & TERTIARY CARE INSTITUTIONS IN THE REFERRAL CHAIN

7 (a) Factors affecting the referral system

The distribution of medical care institutions is so advantageously placed in this country, that a well coordinated referral system should theoretically be easy to operate. The factor militating against such an implementation is mainly the result of tertiary care hospitals gaining ascendancy in the public esteem by offering all three levels of care. The public in their turn, having experienced the delays in referrals from the periphery to the centre, would preferentially patronize institutions where such referrals could be within the institution itself. In practice this is what obtains . This has resulted in the weaning away of patients from appropriate levels of care and a concentration of a mixture of patients in the centre, both "appropriate" and "inappropriate". A change in this practice is desirable if health planning is to have meaningful results and the network of health care institutions appropriately and adequately patronized. One other equally important factor is the lack of precise definition of work that should be undertaken at Tertiary care level and at apical levels from that at secondary and primary care level. It is easy to identify referrals needing tertiary care. However, it becomes more diffuse at the level of secondary care while primary care can again be well defined and appropriately catered for.

7 (b) Referrals to Institutions

At present a system of forward referrals is in practice at all levels in the form of transfers from lesser specialised to more specialised institutions. It should be the responsibility of the transferring authority to ensure that transfers are for appropriate specialised care or for specialist opinion not available at a lower level rather than for the absence of consultants or lack of necessary supplies of essential items.

Back referrals are less satisfactorily established and the reasons are very often the absence of secretarial assistance both in the wards and at clinics, which are so heavily patronized that any extra work in the form of notes for back referrals throws an extra burden on consultants and staff. Hence the necessity for secretarial assistance. This assistance has been sought for by consultants at tertiary care level. It should be looked into and the administration should provide for adequate secretarial assistance, typing facilities, stationary etc. to ensure the practice of back referrals both at secondary and tertiary levels of care.

7 (c) Referrals to Clinics

Referrals are also made to specialist clinics from more peripheral institutions and these are customarily promptly referred back with the opinion sought . Here too secretarial assistance would enhance the build up of an efficient back referral system. This would also help to reduce the numbers transferred from peripheral to central institutions for "specialised" care when specialised opinion is freely and easily obtained from the centre. This applies in particular to the "super" specialities which are found only in a few hospitals.

7 (d) Referrals to I. C. UU

Referrals to I. C. UU from one institution to another should always be in consultation with the consultant in-charge of the I. C. U. in the "Transferred" hospital or the Director or M. S. of the hospital. The practice of transferring cases for ventilation or ICN management without ascertaining the availability of a bed would put the life of the patient transferred in jeopardy. It should be the responsibility of the consultants and the Head of the institution to ensure this requirement is adhered to without exception. Too often patients transferred for assisted ventilation have to be manually ventilated with oxygen and Ambu bag. This activity could as well be done in the local hospital without having to further risk the life of the patient by transfer on the "Ambu", only to continue manually assisted ventilation at the other end.

8. THE ROLE OF SECONDARY AND TERTIARY CARE INSTITUTIONS IN HEALTH SYSTEM RESEARCH

Secondary and Tertiary care institutions are involved in a very large number of complicated activities involving the use of men, material and methods, in such numbers & quantities as to incur heavy expenditure of resources and time. Several administrative practices have become so much a part of the normal working of health institutions that their effectiveness in the light of recent developments have not been probed or challenged. Health Systems research, or what was formerly known as administrative research activities in hospitals and other health fields, where the aim is to evolve newer methods and approaches based on factual and verifiable data obtained by well designed and planned studies and enquiry into such areas as facilities, staffing, services etc. The specific objective is to minimize expenditure on time and of finances and maximise the return for resourcers utilised, and ensure a progressive evolution of the institutional care facility in the health services.

Secondary and Tertiary care institutions have a rich potential for research on such new approaches and refinements of existing hospital practices, that the intelligent and conscientious research oriented hospital administrator need not be frustrated any longer in the maintenance of unsatisfactory routines, but set out in the light of his frindings, to blaze new trails and enlarge the frontiers of knowledge in the areas of hospital and health administration.One could anticipate much wider grounds and opportunities for research than even in the clinical fields.

The use of critical path analyses in the running of outpatients departments, operating theatres, laboratories etc. are some of the existing areas coming within operational research.

The best way to encourage meaningful research is for the authorities to expeditiously implement the findings of such studies which they find beneficial to the running of institutions, and to discourage esoteric and meaningless research which is of no benefit to the institutions or to the health system, except to add to the list of publications of the researcher.

Research undertakings into the running of health services could further be encouraged by adequate funding, and a system of rewards-financial or promotional - for publications which have an impact on the advancement and development of health care institutions.

Much of health systems research requires no elaborate facilities but a purposeful and tenacious pursuit of facts and figures generally over long periods of time, and the results made statistically acceptable. The involvement of academic staff in such studies would be beneficial in the design and planning, and the statistical analysis of results, as they are heavily involved in research, and well versed in medical studies and methodology of such studies. The use to both the researcher and the students, saves on cost and manpower needed for such studies, with the additional benefit of the services of an intelligent research assistant who has some interest in the subject. Their role should be prominently acknowledged in the publication.

Appendix 1

Table 1

Secondary and Tertiary Care Hospitals
Number of Bed Strength

Type of Institution	No.	Average No. of Beds	Range
1) B. H. H.	22	300	200 - 400
2) P. H. H.	07	700	600 - 800
3) T. H. H. a) General Hospital (Teaching) (Multidiscipline)	08	1100	950 - 2500
b) Special Hospital (Teaching) (Single Discipline)	03	350	300 - 400
4) Special Hospitals (Single Speciality)	17	250	150 - 400

Table 2

Appendix 2

Administration Organization

SECONDARY & TERTIARY CARE INSTITUTION

Type of Institution	Administrative Head of Institution	General Administrative Assistants	Nursing Administration	Ward Administration & Clinical Nursing/ Theatres	Labour Administration
Base Hospital	District Medical Officer	Administrative Officer	Matron (Nursing Officer Special Grade)	Sister Nurse i/c	Administrative Officer & Overseer
P. H. H.	Medical Superintendent	Administrative Officer Chief Clerk	Matron (N. O. Sp. Gr) Asst. Matron	Sister Nurse i/c	Administrative Officer & Overseer
T. H. H.	Director	Accountant Administrative Officers Chief Clerk	Chief Nursing Officer & Matrons (N. O. Sp. Gr.)	Sister/ Nurse i/c Theatre Matron	Administrative Officer & Overseer
Special Hospitals	Director/ Superintendent	Accountant Administrative Officers Chief Clerk	Matron N. O. Sp. Gr.	Sister	Administrative Officer & Overseer

Appendix 3

Table 3

SPECIALITIES AND UNIT STRENGTH IN SECONDARY & TERTIARY CARE INSTITUTE

Speciality	Number of Units in -			
	Base Hospital	Provin-cial Hospital	General Hospital (Teaching)	Special Hospital (Teaching)
01. General Medicine	1	2	4-7	-
02. General Surgery	1	2	4-7	-
03. Obstetrics & Gynaecology	1	2	2-3	4-5
04. Paediatrics	1	1-2	2	6
05. Radiology	1	1-2	1-4	2
06. Anesthesiology	1	1-2	2-4	2
07. E. N. T.	0-1	1	1-3	-
08. Ophthalmology	0-1	1	1-2	5
09. Dental Surgery	1	1-2	2-3	-
10. Physical Medicine	-	1	1-2	-
11. Psychiatry	-	1	1-3	-
12. Dermatology	-	0-1	1-2	-
13. Neurology	-	-	1-2	-
14. Cardiology	-	-		
15. Neuro- surgery	-	-		
16. Cardio-thoracic Surgery	-	-	3	-
17. Genito Urinary Surgery	-	-	1-2	-
18. Plastic Surgery	-	-	1-2	
19. Oncology	-	Visiting	Visiting	4-6
20. Transplant Surgery	-	-	One	Units

A General Formula, for calculating the number of beds required for a unit, is as follows :

A) Determine the number of patients discharged from the hospital in the previous years of such patients that required close care.

B) Multiply this number by average stay anticipated in the unit

C) Divide this product by 365 giving the daily bed requirement for ICU patients.

D) Multiply this Quotient by two. This latter step is essential because out of a high Percentage of patients admitted to the unit, the admission diagnosis is not always confirmed.

For example - if in the previous year 200 patients were discharged with the diagnosis of acute Myocardial infractions, the bed capacity for the proposed unit could be calculated in the following manner.

(200 x 5) / 365 = 2.7 x 2 = 5.4 beds

Thus, a 5-6 bed unit should be planned.

"The Manual of Nursing in the Surgical Intensive Care Unit"
General Hospital, Colombo -

Weeratunga R. D. M. S. - Nursing Officer
Surgical Intensive Care Unit
General Hospital, Colombo.

CHAPTER 2

MANAGEMENT OF OUTPATIENT DEPARTMENT

INTRODUCTION

O. P. D. in a Hospital is one of the most important sections, as more patients use its facilities, compared to inpatients.

The O. P. D. should not be considered as an agency separate from the hospital.

If this department is housed in a separate building away from the main body of the hospital there is no community feeling and no unity of effort. In order to function properly the outpatient department must take its place with other departments of the hospital in all considerations of hospital organization - policy, facilities, financing patient-care, teaching and research.

The activities of the O. P. D. will influence those of all other departments of the hospital, and the activities of all other departments of the hospital, will produce an effect on those of the outpatient department. Physical integration of the department within the main structure of the hospital, correlated staffing at all levels and correlated policies will best accomplish this goal.

Location

The location of the O.P.D. should be whithin the main premises of the hospital and should be readily accessible to the public.

The department should also be adjacent to the emergency service and admitting office. It is economic in terms of space to arrange physical proximity of the emergency and O. P. D. so that during periods of anticipated non use the outpatient.department facilities can be used for emergencies. Outpatient department functions traditionally in the normal working hours of the day while emergency rooms are usually open for a 24 hour period and may be particularly busy during evening hours. Thus the outpatient department's space can be utilized for emergency medical care.

It is also efficient to have the O. P. D. close to the X' Ray laboratory, Pharmacy and Physical medicine departments.

A most important consideration in the physical arrangement is to allow free flow of patients in and out, preferably through one particular area. This is more important than the establishment of large waiting areas. The arrangement should discourage waiting, eating and social gatherings and should discourage entering the wards. A circular arrangement of halls or longitudinal arrangement with entrance at one end exit at the other serves this purpose.

FACILITIES

Information

At the entrance to the O. P. D. there should be a facility for providing information and directions. There should be a desk or counter and a courteous receptionst is needed for this task.

Diagnositc Facilities

Consideration should also be given to providing facilities for obtaining electro-cardiographs.

X'Ray

Outpatient department patients frequently require diagnositc X'Rays and such facilities should be available close to the O. P. D.

Laboratory

It is convenient for a laboratory for routine work to be established in the O.P.D. Urinalysis and complete blood count should be available. A technician should be available for receiving spccimens. This relieves congestion within the area while the patient is waiting for a specimen to be obtained. The work of the laboratory should be arranged so that the results of investigation are given wiithout delay.

Pharmacy / Dispensary

A dispensing unit should be set up in the outpatient department for the purpose of dispensing and filing prescriptions. The O. P. D. dispensary is open for issuing drugs from 8.00 a.m. to 5.00 p.m. uninterrupted. Depending upon O.P.D. attendance there should be sufficient number of dispensing counters. A separate counter for hospital staff is appreciated.

The Pharmacist in-charge,other Pharmacists, Dispensers and Minor Staff attached to the dispensary, should ensure that the dispensary is kept clean and tidy.

Only the staff attached to the dispensary should be allowed inside.

Information regarding use of drugs (how and when) have to be clearly explained to the patient by the pharmacists at the time of issuing drugs. This will ensure correct use of medicine.

Dressing Room

The dressing room, should be under the supervison of a Nursing Officer. The services of two trained persons should be made available.

Injection Room

A separate room, equipped with facilities viz : sterilizers, trolley, syringes, emergency tray etc. to administer injections should be available. An adequate number of Nursing personnel should be available to work in the injection room.

Consultation / Rooms.

There should be adequate number of rooms or cubicles for MOO's to examine the patients.

BP apparatus, torch, clinical thermometer, tongue depressor etc.should be supplied.

Rubber stamps such as, "HO to see stat, "Wheel Chair", Inform police etc. should be provided to the medical officers.

Re-Hydration Room

A separate room with at least two beds and two cots; should be available as a Re-hydration room for diarrhoea patients, as 90% ofthe diarrhoea patients can be sent home after 4-6 hours of immediate treatment and advice.

Ticket Issuing Counter

The services of a minimum of two courteous persons for this task are necessary. This section should be provided with the following;

i) A long counter / desk (for issue of tickets and maintaining records)
ii) Cupboards and racks to store printed forms tickets etc.
iii) Rubber stamp with the name of the Institution
iv) Stamp, pad & ink.

- A numbering machine and ink.
- O. P. D. tickets B. H. TT. and check tickets.
- Two high stools.
- A bottle of gum
- A Register to maintain statistics of patients.
- (1st visits and subsequent visits)
- A wall clock.

Working Hours

O. P. D. should function from 8.00 a.m.to 4.00 p.m. except on Sundays and public holidays.

At other times it is open for admissions and emergencies only.

Admission Procedure

The admitting department should be located as close as posible to the patient's entrance and to the services he will utilize before being sent to ward. The medical evalution is an important function of admitting of patients who come to the hospital seeking admission without previous diagnosis by a physician. A house telephone will be necessary for communications with other departments.

Privacy is an important requirement in the admitting department. No one likes to divulge information of a personal and confidential nature, but to have to do so in a place where every word can be overheard is most undesirable.

Sufficient number of personnel should be deployed to transport patients by trolly, stretcher when necessary.

> Under no circumstances should patients be examined and admitted in duty rooms

ORGANISATION OF AN EMERGENCY TREATMENT UNIT, RESOURCES REQUIRED, MANAGEMENT OF THE UNIT, TYPES OF PATIENT TO BE MANAGED IN THE UNIT

In order to provide an efficient, prompt and quick service, it would be better to have a separate section in the outpatient department, under the supervision of V. P., O. P. D. to attend to emergencies. This service should be provided 24 hours of the day.

STAFFING

Medical Officers

4 Medical Officers, 1 M. O. for a shift.

These M. OO. should be given 2-3 month training in a Cardiology unit, MICU, and SICU, respectively. V. P., O.P.D. should supervise these medical officers.

Nursing Officers

3 Nurses per bed.

Adequate number of Labourers.

Equipment

Beds	-	2
Cardiac Monitors	-	2
Defebrillators	-	2
Nebulizers	-	2
E. C. G. Monitors	-	2
Infusion Pump	-	
Glucometer	-	
Piped Oxygen		
BP Apparatus		
Saline Stands		
Medicine Trolley		
Injection Trolley		
Dressing Trolley		
Resuscitation Set		
I. V. Fluids		
Emergency Tray		
Necessary Drugs		

The patients who are fit to go, may be sent home, aftcr treatment. Those who need further treatment, should be sent to the respective wards. This system would reduce over crowding in a Hospital.

TYPE OF PATIENTS TO BE MANAGED IN THE UNIT

For Example

Section 1

Cardiovascular Emergencies

Eg : Acute myocardial infarction
Cardiac arrest
Cordiogenic shock
Hypertensive emergencies

Section 11

Respiratory Emergencies
eg : Respiratory Failure
Status Asthmaticus
Epistaxis

Section 111

Neurological Emergencies
eg : Unconscious Patient
Status Epilepticus
Stroke

Section IV

Endocrine and Metabolic Emergencies
eg : Diabetes Melitus
Hypoglycaemic Coma
Thyrotoxic Crisis

Section V

Acute Poisoning
eg : Poisoning, by agrochemicals
Poisoning by Corrosives
Ethyl Alcohol
Methyl Alcohol

Section VI

Snakc bite

Section V11

Injuries due to Physical Agent

eg . Electric shock , Drowning

CLINICS IN SECONDARY / TERTIARY CARE INSTITUTIONS

Objective

To provide efficient and effective health service to patients who need specialized care.

Methodology

Appointments should be given for patients to see the consultant. Transport facilities should be provided for disabled.

Reception / Registration

A place must also be provided for the reception and registration of patients. The functions of information, reception and registration can be combined in one facility. Two desks or counters will he necessary. One for the registration of new patient and other for the issue of clinic cards for the old patients.

Each patient registered in a particular clinic should have a clinic record sheet in a particular colour. Once a patient is registerd the clinic registration number should be entered in a check ticket in similar colour and given to the patients with clear instructions that it should be brought at the next visit.

As soon as the patient is registered, he should be directd to his particular clinic. A clinic area should be served by a nurse or other personnel to receive the patient.

RECORDS

Registration of all patients whether inpatient or outpatient should preferably be controlled or under the supervision of the Medical Records department.

The first sheet of the record should be typewritten or otherwise printed and should contain the usual identifying information common to all hospital records.

A unit record system combining both the inpatient record and the continuous clinic record is helpful for review by the physician seeing the patient and lends emphasis to the concept of continuing paticnt care . The patient should not carry his own record. There should be efficient messenger service to allow the record to be sent from the record room or registration area to the clinic where the paient will be seen. The record should be handled by hospital personnel only.

There should be ample space for recording the medical data. It is helpful if the form sheet is used to record diagnosis, immunizations, drug idiosyncrases and other important data.

At each visit a note should be entered on the chart by the physician seeing the patient. The medical note should record the medical facts,, any treatment given in the O. P. D. the medication ordered for the patient to take home and the time and date of next visit . If a special diagnostic procedure is ordered eg. X'Ray this should be recorded.

Medical Screening

The clinic section is the ideal location for medical screening units. A microfilm room and screening laboratory can be located close to the point of registration so that new patients on their first visits and old patients at stated intervals can receive the advantages of screening for chronic diseases. Tuberculosis, other pulmonary conditions and cardiovascular diseases are revealed in the X-Ray film. A urine specimen may be examined for bile, albumin, sugar and blood. Physical measurements, such as height, weight temperature, pulse, respiration and blood pressure may also be noted in this unit.

Minor Operations Theatre

The type of minor operation to be done in the clinic should be determined and set down. This is particularly true for the surgical clinics. Drainage of abscesses, biopsy, removal of cyst and minor plastic procedures can ususally be done. Procedures requiring other than local anesthetic should not be done here.

Supporting Services

Supporting services such as laboratory X'ray, other diagnostic facilities, Dietetic or nutrition advisory services, pharmacy should be available close to the clinics.

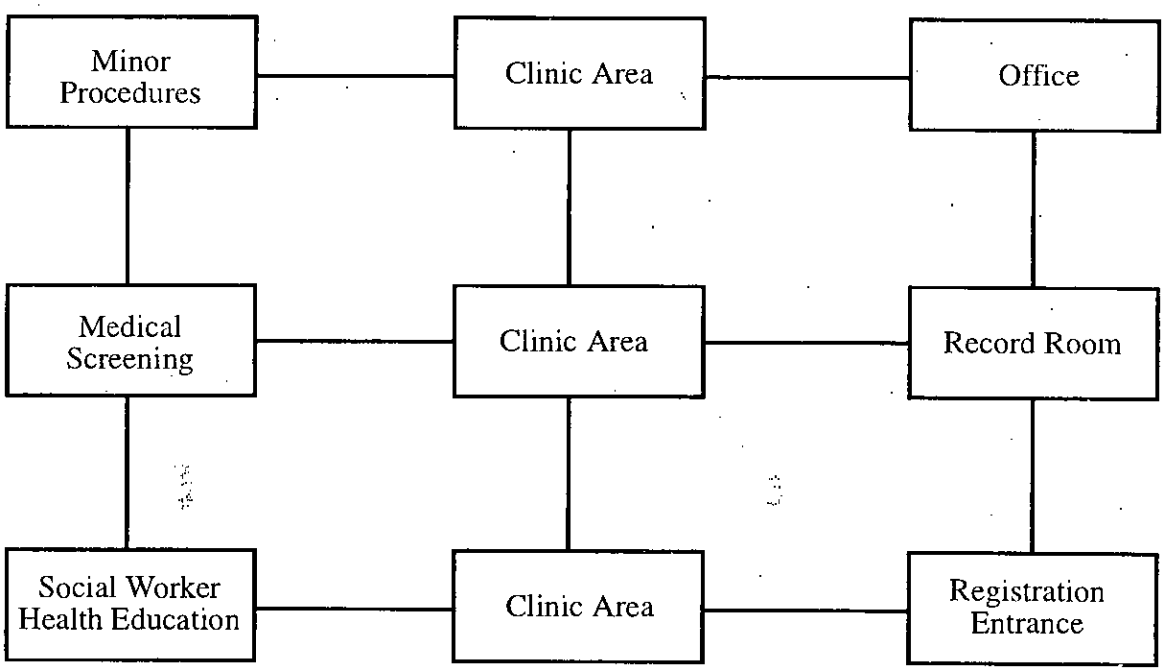
Social Services

Awarcness of social factors is a part of modern medical care. To assist in the managemcnt of the clinic-patient a social worker or social service department is needed.

The social worker can determine the existence of significant social problems related to the patient's illness. The social worker can assist in guiding patients in complicated family situations. When hospitalisation is recommended to the patient. the social worker could follow up the progress.

People who are alone often require special help. Financial support, referral to social and welfare agencies in the community and job referrals are all matters that can be handled by qualified social workers.

BASIC LAYOUT OF CLINIC DEPARTMENT



ORGANISATION OF ACCIDENT SERVICE IN A SECONDARY / TERTIARY CARE

INSTITUTION

Best designed on an open plan system with swift and easy access. Generously supplied with all its needs-Communication facilities, transport facilities and equipment . It should have the following.

1. Reception Area

Personnel - Admitting Officer (non Medical)

TRIAGE NURSE - To identify patient categories.

Eg . Shock following multiple injuries,

Trolley patient	-	Unable to walk but conscious,
Minor injuries	-	Lacerations, minor fractures
Other	-	Only require first aid/advise
Labourers	-	To move patients
EQUIPMENT	-	Trolleys, Wheel Chairs

2. Resuscitation Area

Resuscitation Area Separate area for treatment of emergencies.

Personal
Medical Officer,
Anaesthetist H. O.,
Nurses,
Minor Staff.

Equipment Anaesthetic machine with all accessories, Monitoring equipment
eg: ECG Monitor, Portable X'ray machine or easy access to X-ray plant.

3. M. O. O. / Nurses Station

Ideally both situated at the same site,, thus, allowing patients to be promptly seen by all M. O. O. and Nurscs - no delay in communication between all staff.

4. Examination Rooms/ Cubicles

Area for M.O.O. to examine patients and treatment of accident victims.

Equipment - Examination bed ; B. P. apparatus, and other necessary equipment.

Personnel - One Nurse & Minor staff to assit M. O.

Other Equipment in the Accident Service

Annexure is attached

5. X-ray Department

Ideally there should be separate X-ray department attached to the Accident Service.

Personnel - Radiographer, Dark room assistants and minor staff.
Ideally X-ray department should have a sepearate reception unit which will minimise delays of radiography for urgent cases.

Equipment- Ceiling mounted tubes; orbix special skull work.
One portable unit
(for I. C. U. / Wards/ plaster room)

6. Plaster Room - Equipment

Plaster - All size 2" x 8"

Plaster Equipment - Cutters, Spreaders, Scissors

Plaster Table - Hip spica table

Personnel - Plaster Technician - specially trained plaster nurse, and minor staff.

Other Equipment in the Accident Service

1. Wheel chairs
2. Trolleys
3. Portable X'ray Unit
4. O_2 Cylinder
5. Drugs - pain Killer
6. Antibiotics
7. Tetanus toxoid
8. I. V. fluids
9. Splints
10. Cannulae
11. Bottles for blood analysis
12. Suture Materials
13. Sterile pre-packed packets for suture of wounds

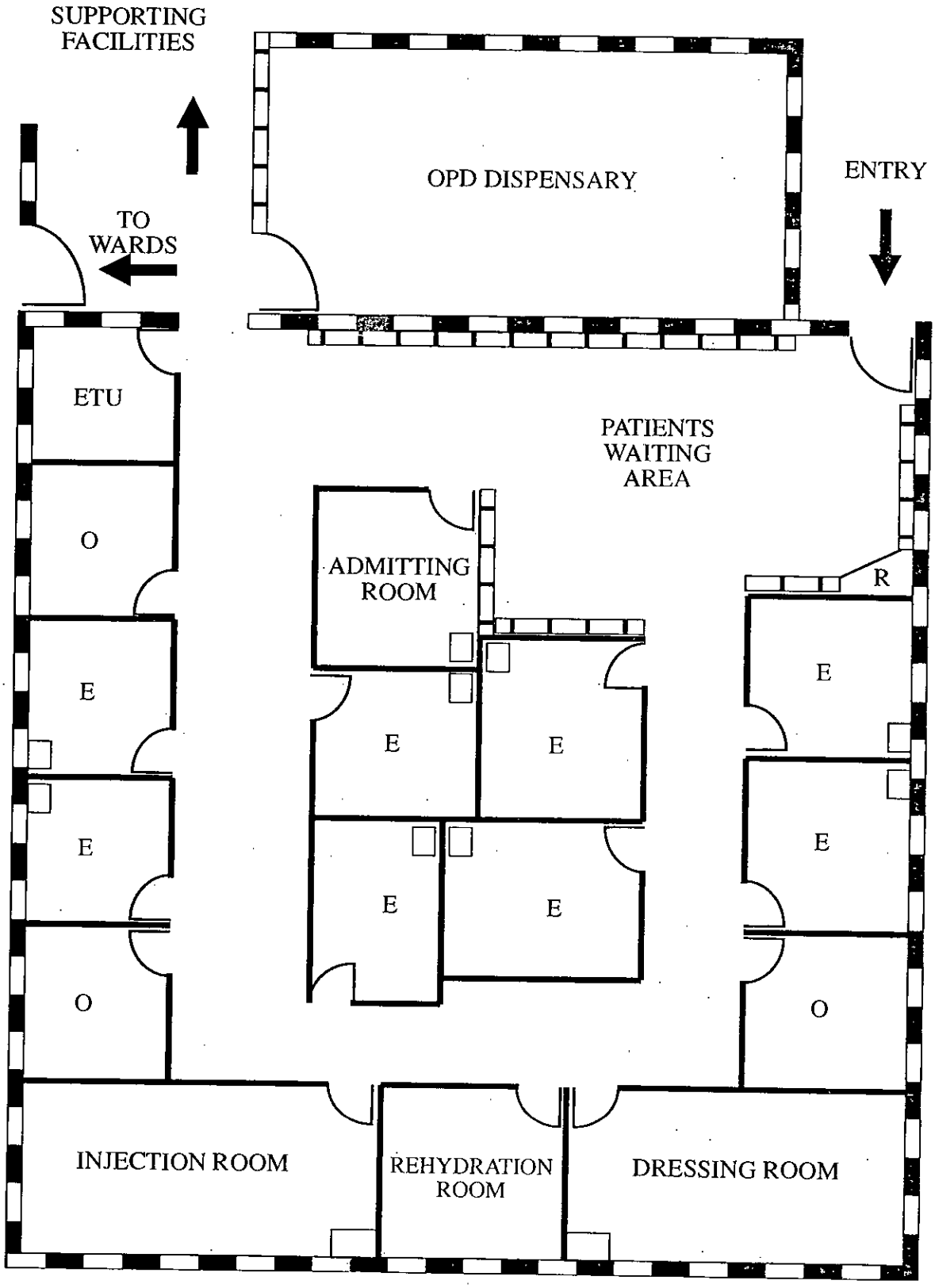
Reception Desk / Information Desk

Communication gap can cause lot of damage : consequently the image of the hospital can be affected unless information sought by the next of kin is correctly disseminated. They have a right to know the condition of patient. For this end the information desk method has proved very effective. As such the management has to identify the most sensitive and priority wards/ units and deploy suitable personnel to give the relevant information. Intensive care unit, accident service, maternity wards, children's wards and surgical wards can be considered as unit, where such public relations desk/counter may be maintained. A senior nursing personnel can be provided with a suitable chair and table in the unit. A notice board may be displayed. This involves no additional expense as the duty hours of the nursing personnel falls within the visiting hours when members of public visit patients. Courtesy and correct information solve a lot of unpresentable ill effects.

Sign Posts

Sign posts to guide patients to various facilities describing services, where necessary, should be prominently displayed. Arrow indicating directions to wards, clinics, path-labs, Radiology department etc. may be exhibitcd at suitable places.

BASIC LAYOUT OF AN OUT PATIENTS DEPARTMENT



E - Examination Room

O - Office

R - Reception

ETU - Emergency Treatment Unit

CHAPTER 3

WARD MANAGEMENT

1. Introduction

Successful management of a ward is based on good assessment, organisation, implementation, evaluation and leadership which are its essential factors. As various groups of people are involved, good cooperation and coordination are needed . Major aim in nursing services is to provide quality care to the patient, family and community.

2. Objectives

a) Alleviate suffering socially, physically and mentally of a sick person and bring back to health, and where complete care is not possible, rehabilitation leading to good productivity.

b) Health education for prevention of disease and improve home care.

c) Maintain hight standards of discipline to provide health and pleasant environment.

d) Provide a field for teaching and research.

3.

Ward sister or the senior nurse who handles the ward inventory and who is responsible for the entire patient care of her unit/ward is the key leader in ward management. Her prime aim is to diagnose nursing needs, make plans to meet them and delegate authority with responsibility. Staff development is also one of her responsibilities.Ward management will be discussed under following three sub headings.

a) General principles of management which affect patient care;
b) Patient care management;
c) Staff development.

a) GENERAL PRINCIPAL OF MANAGEMENT WHICH AFFECT PATIENT CARE

There are many points of management which influence direct service to patients, the indirect activities which contribute to their welfare and that of personnal management as it affects patient care at unit level involving the following;

a) Identification of activities to be performed eg. medical, surgical, intensive care etc, activities differ.

b) Plan programme for the day.

c) Beginning the day on time.

d) Prevention of interruptions.

e) Well - organised routines and procedures

f) Clearly defined job descriptions.

g) Adequate equipment in working order, accessibility

h) Suitable environment.

i) Well organised time - work schedule.

j) Clear - cut doctors' orders

k) Explicit nursing orders and plans for patient care.

l) Reports and accurate records.

n) Good teaching plan, supervision and evalution.

Sister is the key person who maintains harmonious relationships with co-workers as the leader. She establishes the standards for nursing and maintains good relationships within the group and outside. She should be friendly, helpful and understanding. All workers should work without tension. Her team includes medical staff, nursing staff, minor staff and supportive staff. She should adhere to the departmental regulations and the orders of the head of the institution. She prepares a clean, safe comfortable unit with pleasant environment with adequate ventilation and light. She should be thoroughly familiar with all the activities which must be performed in the care of the patient. Those which oecur regularly can be planned and fitted into her programme. Diets are served at a fairly definite time. Patients go to the operating room and return to the ward between certain hours. In general the doetors are in the ward at about the same time eaeh day. Knowing the schedule the sister is able to plan the programmc. She should be familiar with hospital and unit polieies and patient eare activities.

4. a) Planning the programme for the day

To prevent loss of time, eaeh day's work should be planned in advance and proper assignments made. Staff members should be eneouraged to read and plan their work for the next day before leaving the ward. The day then begins with each individual knowing what she is to do. Adjustments however may be made due to the changes that oceurred over - night - such as admissions, diseharges, new treatments ete. For this the sister in - charge has to come a few minutes before others. This gives time to note ehanges in plans, so minimizing delays. Night nurse must prepare a list of patients who are to leave the ward for various tests or treatmcnts, operation, fasting patients, nasal feeds and those who need full sponge baths and patients awaiting discharge. Sister will attend to this and will inform staff. Day work should start after finishing the night work. If there is night work remaining the sister will divide them among the staff and see that these are finished before starting day work. Here, staff eooperation is essential and the sister has to balanee the work for the day.

4.b) Beginning the day in time

Good management is greatly facilitated by starting the day's work promptly. Every nurse should be in the ward at the time assigned. The night nurse whether or not her work is completed, should be prepared to give the night report at the designated time.

4. c) Preventing

Since time is wasted in going from one activity to another, good management requires avoidance of interruptions. Whenever emergencies arise, (new patients may come) one nurse must be assigned to care for the new patients. The sister may be helped by a ward clerk who will answer telephone calls etc. She should finish one activity before starting another. She should make ward rounds with consultant, in her absence nurse may be sent. It is her responsibility to write reports, read progress notes, check medicine etc without interruption. she should be accessible and thoughtful of staff. A private office to be maintaind for planning time and assignments.

4. d) Routines and Procedures

Routines and specific procedures are essential for an efficiently run organisation. Patient - care management is no exception. When a system is devcloped for day to day tasks, time is saved for unusual occurrences. A definite system of giving over patients, specific systems for assigning new patients, a carefully worked out procedure for admitting patients, sending patients to operating theatre and taking over of patients from theatre, transferring paticnts from intensive care units, these daily activities are carried out regardless of emergencies which may arise. A systematised schedule will work whether or not the sister in - charge is present. Time is saved and accuracy will result if routines are laid out in detail and placed in a "Policy Book" Likewise a nursing procedure book to be kept in ward for referrence. A check list for those who are going for operation is time saving and perfect.

Check list (pre - and post - operation)

Sister's routines should tally with the established practices of the hospitals - i.e. visiting hours, meal hours, admission and discharging procedures, handling of valuables etc. Therefore she should follow the pattern of the hospital.

4. e) Job descriptions

Functions to be performed by the holder of the job, his obligations and person or persons to whom he is responsible should be clearly set down in a job description. The sister should be familiar with the job description of the staff. It must be clear that ward sister is responsible for the care of all the patients. She should be informed of a ehange in nursing method, of the condition, or giving a report, when students go off duty. It is not enough that students go off duty. It is not enough that students report to the instructor.

4. f) Adequate Equipment

Any job is made easier by having well constructed tools suited for the work to be done. Tools need to be easily accessible, clean and in working order. Sister is responsible for supplying the tools. Efficiency depends upon having enough of the right kind, at the right time, in the right place. Carefully thought out standards for supplies and equipment are necessary in ordering. When supply is low, it should be reported. When out of order, it has to be repaired as soon as possible.

4. g) A suitable environment

Rest is very important to a patient to return to health. A quiet atmosphere and fresh air be provided. Privaey has to be looked into - provide pleasing colours, comfort and personnel adds to the efficiency and morale. Cleanliness and orderliness of the ward and surroundings to be maintained.

4. h) Time Planning (well organised time - work schedule)

Objectives - 1. Staff the ward adequately for quality nursing care for 24 hours
11. To provide best possible experiences for the staff.
111. To eomply with good personal practices and maintain morale.

Ward Sister is responsible for making the best use of the available staff. Two principle activities are involved here. a) the distribution of nurses' time throughout the week (b) the distribution within the 24 hours period.

a) Distribution of time throughout the week.

Sufficient staff is provied by the administration. Planning must take into aceount

the nursing load each hour of the day, all days of the week. Time is arranged as equitably as possible to meet the demands of each period - evenings, weekends to be considered.

Points to be considered in the planning of good nursing care.

a) Depending on the number of patients, at least two staff nurses are on duty during the day period.-U 7-1,1-7, 7-7. This is essential to cover meal hours.

b) A day together between their days off is planned for the ward sister and the nurse who is to relieve her. This provides for adequate reporting.

c) The ward sister is rarely off duty on Monday, which is a heavy day and the experiences of the weekend have to be known.

d) Day off before and after night is given so that nurse may have proper rest.

- weekly time sheet -

II. To Provide best possible experience for staff members

There is close relationship between time planning and assignment planning. Continous experience with thc same patient is needed to be conversant with patient care. If interrupted or time planned for 2 or 3 days consecutive work, the worker does not gain good experience. In an active ward the turnover of patients is very rapid. The new nurse learns very little in caring for a group of patients unfamiliar to her, unless she spends 4 or 5 days at a stretch. This is important to remember in planning.

III. To comply with good personal practices and maintain morale.Unlike industrial concerns the patient care centres have to work on wcekends and public holidays. Staff has to be on duty seven days and seven nights a week. Staff also has the right to have their days off and leave, to their wish, to plan for their family and personal affairs.

A rotation schedule is one method of meeting this need and maintain morale. It contributes to a more satisfied staff, because the members can plan ahead to meet their personal needs. The scheduled days off should not be changed without the ward sister's knowledge. Absence may be covered by overtime duty.

This schedule is made to cover 4 or 5 weeks. Here the night duty, evening duty, morning duty days off and leave are arranged. It should be flexible. Staff members' requests must be considerd not forgetting the patient care.

A rotation schedule is thus a morale builder and tends to stabilize the staff. There need to be a constant number of staff in the unit.

4. i)

Doctor's orders, reports and records of various kinds are essential for quality care to the patient. Some of them have legal and scientific value. Doctor's orders are written to protect himself, the patient, the hospital and especially the nurse. Orders should be well written, provide no chances of misinterpretation and are accompanied by his signature. The order sheet also indicates discontinuance of orders. Doctor's orders should be handled promptly and efficiently. The nurse is obligated to understand fully the purpose of the doctors orders, to carry out the order safely, effectively and report and record its results. Any inability to comply with, should be informed promptly to the consultant. Sister should control the practice of verbal order over the telephone, except in an emergency, in which case doctor should document it on his next visit to the ward.

4. j)

Reports are of prime importance to effective patient care, to good administration of the ward, and to well functioning of the hospital. Sister is responsible to maintain ward reports of patients and also reports about ward to the matron. Reporting within the ward goes on all the time to keep the staff informed. Formal reports occur when responsibility is transferred from one individual to another or a group. The charge nurse gives the report to the incoming staff. The assistant nurse receives a report when charge nurse goes on leave. Oral reports are given to the matron when she does rounds. Day, evening and night reports are written and handed over to the matron. All reports should be accurate, clear, complete and should bear the signature of the Sister in charge. They need to be written on time.

4. k) **Records**

Records may have historical significance and they may provide legal evidence or data for research. There should be a specific use of records to sister. The patient's bed head ticket is the most important hospital record. The ward sister has 4 direct responsibilities in relation to this document.

1) She must see its content protected and safeguarded from loss.

2) She is responsible that due care has been taken to safeguard the patient from injury. A complete note on admission will protect hospital in accusation of negligence. Well written daily observation will help consultant in diagnosis and in understanding his patient. They are just important to the nurse in making observations and in diagnosing her patient's needs.

3) Records are important to the sister to show that the doctor's orders are carried out. It is a protection for the nurse and hospital. Record keeping is different from ward to ward, according to the work they handle.

4) In education of her staff the writing of valuable nurse's notes the use of docter's progress record, the physical findings and lab reports to understand their patient and plan their care are very important.

B. PATIENT CARE MANAGEMENT

Patient and the family have a right to expect that the nurse knows most of the things that a patient should have for his happiness and well being and that she will find these which he feels are important to him.

Admission to a hospital ward is a new experience to a patient and the family. They are excited and anxious even when the patient is not serious. Everything should be done for the patient's comfort and show that he is wanted. He is accepted regardless of his economic status, his colour, education or condition. He anticipates that treatment and nursing care will be effective and safe without unnecessary discomfort.

Diagnosing the nursing need

Nurse should act quickly and consciously in making a diagnosis. In making a nursing diagnosis the Sister in-charge plays a key role in giving confidence to the patient so that he explains to her all that he needs. She gathers all these by observing, listening, thinking, reasoning and also by sympathizing with him. The sister helps in the diagnostic process primarily through her leadership. There is complexity of needs of patients, such as needs of the actually ill, convalesence and mild illness; who has lost his sight; who has a problem in communication; who is

weak and debilitated as a result of chronic disease; who has permanent dysfunction of his muscle or joint who is disoriented or confused; who is going home from hospital. Sister develops a plan of care considering above and delegates work with responsibility.

Planning patient care

Following the assessment of patient-needs a plan is made for his care by the Sister i.e. the plan is started on the patient's admission and is continuously revised as his condition changes. The patient as soon as he is able, should be encouraged to participate in his own care as a step towards self dependance.

The plan for the patient care is based on objectives which should be formulated in simple clear terms. Objectives are related to comfort, therapeutic and rehabilitative measures; protective and preventive measures, support and teaching-in all of which the nurse carries important responsibility. The plan should be transmitted accurately by a written order. A brief portrait together with nursing orders and clarification of doctor's orders is necessary for those who stay for short period. Critically ill patients will have a portrait of the patient, his needs and problems, the plan for his care including approach, a teaching plan, nursing orders and clarification of doctors orders. This can be adjusted for the situation.The sister's responsibility for nursing care plans is primarily one of leadership in helping the staff to see their value, making it possible for nurses to know patients through long term assignments, and arranging for joint planning when it is thought this will benefit the patient.

Designating patient care responsibility

Sister cannot handle this alone. So in the ward / clinics there are professional nurses both graduated (staff nurse) and student nurses, attendants, student attendants, labourers, permanent and causal . There are wide variations in education, experience and personality. The sister or one who acts for sister should be familiar with these differences and also their job descriptions. A professional nurse who has been in the ward could handle a patient without help . Those who need help should be given patient care under observation by sister. Actually ill patients are assigned to the staff nurse and less qualified ones to care for uncomplicated or less ill individuals.

Assignment are made on the basis of the patient's needs and the competency of the staff members to meet them. Several other considerations to keep in mind are namely - the best time for the offering of care which should be given by a staff nurse; the amount of supervision available for less able staff members; the needs of all patients which are to be assigned to one staff member; the geographic proximity of patients to be cared for by one person; the needs of all patients on the ward in relation to the 'ideal' persons to care for them; the importance of continuity in care. The team method is the best known way to maintain continuous care of the patient. In this a group of staff members with professional nurse as leader works together in a cooperative, coordinated way to provide individualized care for a group of patients. In the team method the sister assigns members and patients to the team. The team leader assigns team members to individual patients. The team leader through the team - conferences sees that members are kept informed about the patients. Together they study patients' needs and develops nursing care plans. The patient is familiar with all team members, and knows he 'belongs' However he still feels that one member is responsible for him and the team leader is overseeing his welfare.

Sister's role in team nursing is to guide the team leader, participate in team - conferences and to attend to the details of administration. She retains the overall supervision of patient care.

Values of team nursing are many for both patient and staff . This method can succeed if plans for instituting are carefully laid and team leader is a good nurse, well prepared for her responsibilities.

Supervision and Evalution of care

The sister is the supervisor of patient care in her unit There are 3 points which delineate supervisory process. They are :-

1. Assessing the sitution to determine the patient's condition and the effects of nursing and medical care.
2. Evaluting the overall quality of care given, to determine changes which might improve it.
3. Planning, putting into operation and evaluting improved methods.

Another outcome of supervision is the development of staff in incresing effectiveness for the improvement of patient care.

Inservice Education

Sister is responsible to teach the staff while at work by a planned programme. This is done according to the levels of learning. The ultimate aim of it is the improvement of patient care. This objective is achieved only through measures which will strengthen weak backgrounds of present personnel, orient new staff, and keep all members abreast of change. Immediate purpose of staff education is to help each individual develop to her highest potential. Such programmes are more acceptable if emphasis is placed on improving patient care rather than that of personal growth of staff members.

Practices of Sister which affect personal growth

1. Leadership of the sister which sets high standards of patients-care.

2. Her attitude towards-patients, visitors, clerks, minor employees, doctors, administrators has a direct influence on the staff.

3. Creation of social environment that encourages learning.

4. Appreciation and recognition of their efforts and good work.

5. Efficiency in managing the ward will encourage learning in which reports are complete, orders, accurately and promptly transcribed, equipment and supplies available and in good order goes to keep tension at a minimum. Frustration will inhibit learning and efficiency.

6. Utilization of learning opportunities - in daily rounds :-

   eg. Diagnostic findings and their significance, the rationale of new therapy etc.Sister's recognition of these will increase the learning of staff in two ways.

   I) Staff gains new knowledge.

   II) The interest is stimulated by sister taking time to keep them informed.

7. When sister involves all members of staff in participation in good patient care - this leads to growth of participants.

8. Sister encourages staff to learn by problem solving; experimentation and evaluation.

9. Utilization of staff patients to teach other individuals will sharpen their efficiency.

10. Orientation of the individuals to the ward by sister.

11. Guided experience of the staff to increase efficiency in patient care competency and to keep abreast of changes in medical and therapeutic practice.

PRE OPERATIVE CHECK LIST

Patient's Name : ..... B H T No: .....
Room No : ..... Age : .....
Surgeon : ..... Anaesthetist .....

PRE OPERATIVE

A) <u>To be completed by the Ward Medical Officer</u>

<u>Pre-operative assessment</u> <u>Date & time</u>

1. GC 4. R S
2. Head & Neck 5. Abdomen
3. CVS 6. Limbs

Signature of Medical Officer

B) To be completed by the Ward Nurse

Date and Time

Resp	Pulse	B	Temp

	Yes	No.	N/A
01. Consent Taken			
02. Identity band attached			
03. Make -up nail polish removed.			
04. Jewellery removed & secured			
05. Dentures removed.			
06. Contact lenses removed.			
07. Patient fasting.			
08. Mouth care given			
09. Bladder emptied.			
10. Enema given.			
11. Urine test done & recorded			
12. Blood suger test done & recorded.			
13. Weight recorded.			
14. Blood reserved (CBB/Other)			
15. Catheter inserted.			
16. Gown, Cap & Leggings worn			
17. Pre-medication given.			
18. I. V. in situ			
19. N. G. tube in situ			
20. Any known allergies			
21. B. H. T. Completed with all reports			
22. Any special comments by Nursing Officer			

Signature of Ward Nurse

CHAPTER 4

LABOUR ROOM MANAGEMENT

1. INTRODUCTION

The labour room in any hospital should be as clean as the operating theatre. Unlike any other ward, specialised Unit, clinic, O.P.D. where the patient comes with some ailment for treatment, in the case of confinement it is treated as a physiological process for any fertile female. The labour room should provide quality care to the mother and the new born and should be regarded as an intensive care unit for the mother and the baby.

The delivery room should be clean and warm for the birth of the baby. Privacy for the mother must be ensured.

In order to provide quality care to the mother and the baby, proper mangement tcchniques, methods and procedures, should be adopted.

Gcnerally labour room should be a part of the maternity ward or an independent unit in close proximitly to the maternity ward. Labour room should be fully equipped with all facilities including stand by generator for power supply.

Safety of the mother and the baby depends on the efficient management of labour.

2. Objectives of the Labour Room Management

01) Provide the mother with healthy and pleasant environment in the labour room;

02) Assessment of the new born immediately after delivery;

03) Prevent complications;

04) To support the mother mentally and physically;

05) To maintain high standard of care;

06) To reduce infection;

07) Ensure asepsis in the labour room;

08) To impart knowledge and skills to the staff;

09) To provide necessary equipment for delivery;

10) To reduce neonatal and maternal mortality.

Admission procedures to labour room

Mother is sent to labour room at the end of 1st stage. The labour room in charge receives the mother by checking BHT and puts her to correct delivery bed.

Check F. H. S., pulse, respiration, BP, bleeding PV, abdomen, bladder, IV drip and enter necessary records in the B. H. T. and the labour room admission register and prepare mother for safe delivery. Any abnormal labour should be brought to the notice of the doctor.

3. CARE OF MOTHER IN LABOUR

The mother should not be left alone. Provide the mother with a relaxed, friendly atmosphere.

3.1 Posture

Should be allowed to lie on her side, as in this position placental perfusion is improved.

3.2 Nutrition

A record is kept of all oral and intravenous fluids given. As far as possible mother is not given anything orally.

3.3 Care of bladder

Encourage to empty bladder every 2 hours as it causes discomfort and also delays progress. If the mother in labour is unable to empty her bladder it will be necessary to catheterise her.

3.4 General Comfort and hygiene

i) Bath or wash at the onset of labour.

ii) Frequent sponging of the face, neck is most refreshing.

iii) The hair should be combed away from the face and neck.

iv) Vulval washes when necessary to keep mother comfortable, as well as reduce the risk of infection.

v) Correct washing of hands before attending on the mother,will help prevent infection of the genital tract.

vi) Once the membranes have ruptured sterile vulval pads should then be worn and changed frequently.

vii) Careful aseptic techniques must be carried out when making examination per vagina and at the time of delivery.

3. 5 Evalution of mother on admission to the labour room.

Monitoring of mother during and after labour

Observations

Observations to assess the maternal and foetal condition and progress in labour are carried out regularly and recorded on a partogram, a special chart where all observations examinations and drugs administered in labour are recorded.

3.6 Maternal Conditions

1) Sign of labour - show and rupture of the membrane. On vaginal examination the cervix will be dilated.

2) Temperature four hourly

3) Pulse quarter hourly as labour progresses

4) Blood pressure - as labour progresses it is usually recorded hourly. If blood pressure is very high or low half hourly.

5) Intake, Output - All intake and output should be recorded on the partogram.

6) Urine tested for albumin and suger in pre-eclampsia and diabetic mothers.

3.7 Contractions

The strenght, frequency and duration of uterine contractions are assessed and recorded every 15 minites. They provide valuable information about the progress of labour. Contractions are assessed by placing the hand lightly over the fundus of the uterus.

3.8 Loss per vagina

The time at which the membrane rupture should be recorded and the liquor amni observed to note whether it is stained with meconium - usually a sign of foetal distress. The show and any blceding per vagina should also be observed.

3. 9 Foetal heart monitoring

Observations to assess the foetal well being are carefully made throughout labour. F. H. S. may be monitored every 15 minutes recorded with a foetal stethoscope or a C. T. G.

The normal foetal heart rate is between 120-160 per minute

The foetal heart changes can be detected by listening before during and after a contraction with a foetal stethoscope. Tachycardia occurs when there is oxygen deprivation because the heart beats faster in an attempt to maintain oxygenation of the tissues. Foetal tachycardia may also be associated with maternal pyrexia or ketosis.

Bradycardia is a foetal heart rate of less than 120 per minute. It may follow tachycardia and is more serious sign of hypoxia since it indicates that the heart muscle is suffering from oxygen deprivation.

3.10 Assessment of Progress

Done by careful abdominal palpation and on examination per vaginum. An abdominal examination is first made to determine the lie, presentation, position and whether the foetal head is engaged.

Examination per vaginum

Indications : Vaginal examination during labour is made to

i) Confirm the onset of labour on admission;
ii) Assess progress in labor;
iii) Confirm presentation.

3.11 Method

The midwife should explain to the mother the nature of the examination, she is about to perform. The mother's bladder should be empty and the vulval area washed to minimise the risk of sepsis.

This examination is an aseptic procedure and therefore wash hands and put on sterile gloves and wear a gown and cap.

3.12 Preparation for Delivery

The delivery room should be clean and warm. Privacy for the mother. A sterile delivery trolley is prepared including sterile gown and gloves for the mid-wife who is to deliver the baby.

i) Local anesthetic, syringe and needles

ii) Syntocinon 6 units drawn up in a syringe in readiness for active management of the third stage of labour. A warm cot is prepared for the baby and the resuscitation equipment is checked.

3.13 Conduct of Dilivery

i) Establish a good relationship with mother
ii) Keep her informed about progress
iii) Give reassurance and encouragement
iv) Put leggings to both legs of the mother.

The midwife washes her hands and puts on a sterile gown and gloves in preparation for the delivery.

Before the birth takes place the vulva should again be washed with an antiseptic such as hibitane lotion (1:2000 solution) or savlon 1:30, sterile towels cover the delivery area and a sterile pad covers the anus to reduce the infection.

The delivery should be allowed to proceed slowly and steadily.
Episiotomy is necessary to prevent a severe perineal laceration.

3.14 Care of mother after delivery

The anterior shoulder is delivered the mother is given an intra-muscular injection of syntomatrine 2 ml (6 units).

The midwife carefully observes the mother's general condition and any blood loss per vaginum. The following sings indicate the separation and descent of the placenta.

Sign of separation - Bleeding

Sign of descent of cord

Uterus smaller and rounder and fundus rises as the placenta moves down and the mobile cord lengthens.

3.15 After expulsion of placenta.

i) Make sure that the uterus is well contracted and blood loss per vaginum is not excessive.

ii) The perineum vulva and vagina must be inspected in a good light in case there are any lacerations.

iii) Call a Doctor to repair an episiotomy or any laceration immediately.

iv) The vulva and perineum are gently cleaned with warm antiseptic lotion, a sterile pad is applied.

v) If placenta is not expelled inform Doctor after half an hour. If bleeding occurs inform Doctor immediately.

vi) Observations

Bleeding PV) Pulse, Respiration) Condition of uterus) Temperature) Blood pressure)	1/4 hourly to be checked and recorded.

Placenta and membrane to be examined by Doctor.

4. Evaluation and Care of the New Born

Immediate care of the new born includes

i) Gentleness and prevention of infection

ii) Establishment maintenance of respiration

iii) Care of Umbilical cord

iv) Care of eyes

v) Stabilization of the temperature

vi) Identification of infant

vii) Maintaining a record of observations.

ASSESSMENT OF THE BABY'S CONDITION AT BIRTH - APGAR SCORE

	Sign	O Point	1 Point	2 Point
A	Skin	Cyansis Pallor	Periph Cyanosis	Pink
P	Muscle Tone	Flaccid	Move Libs	Good
G	Resp Effort	None	Gasps	Good
A	Heart Rate	None	< 100	> 100
R	Response to Stimulus	None	Slight	Good

Score above 7 - Good
Score 6 or less - Perinatal Asphyxia
Score 3 or less - need resuscitation

Within sixty seconds after infant body has been completely born five objective signs should be evaluated.

4.1 Establishment and Maintenance of Respiration

Any infant who does not breathe within sixty seconds after birth is in danger of Asphyxia. Hence the need for close observation of the infant and to have everything in readiness for resuscitation.

1) All mucus, blood and meconium must be sucked out before the baby has a chance to inhale them.
This may be done by a mechanical sucker or syringe as soon as head comes out.

ii) Care of eyes
The eyes may be cleaned with sterile cotton wool to remove any infective secretion such as the gonococcus.

4.2 Care of Umbilical Cord.

Two clamps are used to compress the cord. They are placed about 2 inches from Abdomen.

If possible this is not done until the cord has stopped pulsating and after the cord has been clamped a ligature is tied about 2 inches from the Abdominal wall and the cord is cut . After removal of the clamp the cord should be turned back on itself and tied a second time with the same ligature.

Extreme care must be taken that the cord does not become contaminated.

4.3 Stabilization of the Temperature of the Infant

The temperature of the new born usually drops immediately after birth, and returns to normal in eight hours.

The temperature in the delivery room is lower than that in utero. To raise the body temperature to normal the infant should be wrapped in a warm sterile cotton flannel blanket immediately after birth.

4.4 Identification of the infant

Before cutting the cord all infants must be identified in some manner before they are removed from the delivery table or bed. Identification numbers for both the infant and the mother placed above their wrists, while she is still on the delivery table or bed. The mother should be shown the identification wrist tape and the sex.

4.5 Cleaning of the Baby

After delivery the baby is cleaned of any blood or meconium by gentle wiping with swabs soaked in sterile water and then dressed in a gown and napkin and placed in a cot. (Vernix should be cleaned after 8 hours)

4.6 Breast Feeding

The infant should be put to the breast as soon as possible after birth. He should be carefully observed during this feed for evidence of inhalation or difficulty in swallowing.

4.7 Examination of the new born

Weight	- The average weight at birth 3 kg
Length	- The average length at birth 50-52 CM.
The head	- The average circumference is 34 CM
Sex	-
Anus	- Spina bifida
The eyes	- Small subconjunctival haemorrhages bright red in colour.
The mouth	- Should be inspected for cleft palate tongue tie. cleft lip is readily seen.

The mouth may be drawn to one side due to facial paralysis. Excessive frothy mucus suggest an oesophageal atresia.

The arm and hands - moving freely and if no fracture, dislocation or paralysis may be suspected.

The cord should be examined for oozing.

5. Resuscitation of the Asphyxiated Baby

Causes of Asphyxia at Birth

i) Thick meconium in the upper air passages

ii) Prolonged labour with the membranes ruptured and infected liquor

iii) Gestation < 36 weeks

iv) Insrumental or surgical deliveries

v) Malpresentation

vi) Twins and higher multiples

vii) Foetal distress

viii) Rhesus incompatibility

ix) Drugs depressing the C. N. S.

x) Trauma

xi) Prematurity

Resuscitation procedure is usually carried out in the following order (Paediatric House Officer must be present)

1) Clear the pharynx mouth and nostrils by suction (use soft rubber catheters) Negative pressure of the suction apparatus 50 mmHg each suction should be done only for 10-15 seconds.

2) Infant should be received in to a sterile towel which lies over warm non woolen blanket.

3) He should be placed with his head at a lower level than his feet on resuscitation table until suction completed. Then prop up to assist breathing.

4) If the infant has not started to gasp within one minute oxygen may be given with the mask and the Ambu bag or the paediatric breathing circuit. Ambu ventilation should be done with three fingers. The pressure should not exceed 30 cm H_20 for a neonate. When 2 fingers used - pressure is about 10 cm H_20. When 3 fingers used - pressure is about 20-25 cm H_2O.

5) Baby who has been depressed by drugs such as Pethidine given to mother shortly before delivery. Naloxone 0.01mg. can be given to the umbilical vein. If no response repeat after 15-30 minutes.

6) If an infant has not established adequate respiration within 3 minutes of complete delivery and earlier if the heart rate is below 100/min, the most effective technique is the passage of an endotracheal tube using an infant laryngoscope. Contents are sucked out aseptically through the tube and oxygen may be given via Ambu Bag or the paediatric breathing ciruit

The first sign of recovery is strengthening of the heart followed by attempts at respiration and improved colour. Once baby is breathing spontaneously it should be considered whether it requires transfer to a special nursery.

Other Measures - Cardiac massage if the heart rate falls below 80. Acidosis should be corrected by bicarbonate with 5 ml. of 10 % Dextrose via Uumbilical vein.
Drugs - Here is little place for drugs in resuscitation.

6. Registration of Birth

Birth registration is done in labour room Birth Register by Nursing Officer in charge immediately after baby is born.
Particulars stated as follows

01. DATE
SERIAL NO.

02. EXPECTED DATE OF DELIVERY

03. BED HEAD TICKET NO.

04. DISC NO (IDENTIFICATION NUMBER

05. SEX

06. WEIGHT

07. POSITION

08. DATE AND TIME OF BIRTH

09. RACE AND RELIGION

10. NAME AND ADDRESS OF MOTHER

11. AGE OF MOTHER

12. WHETHER MARRIED

13. PLACE OF MARRIAGE

14. PARA

15. BLOOD PRESSURE

16. EPIS

17. P. P. H.

18. SYNTOCINON DOSE IF GIVEN

19. NAME AND ADDRESS OF FATHER
OCCUPATION : RACE : RELIGION :

20. H. O > ON DUTY

21. N/S OR NI /C ON DUTY

22. DELIVERED BY

23. SIGNATURE.

After registration birth chit is issued on Health 552.
When Health 552 is submitted to Birth Registrar of the Hospital he will issue registration B/F 2 ST 2 E 6/77

Then mother or father can register the birth in the hospital.
Birth registration number should be entered in Bed head ticket before discharging the mother and baby from the hospital.

7. Disposal of Products of Conception

Careless or wrong handling of waste can be dangerous for the patient and other hospital workers, or it may spread diseases within or outside the hospital. This is possible via vectors like insects, birds, rats etc.

Instructions have to be given on how to deal with different types of waste and how to make special guidelines for labour rooms concerning waste disposal.

Disposal of sharps

Needles must be disposed of in puncture resistant containers made of metal, plastic or heavy cardboard and burnt or incinerated.

The methods for disposal of waste-

i) incineration
ii) burning in a safe area
iii) rinse in to drain pipes
iv) inactivate them with other chemicals

8. Management of All Deliveries - Universal Precautions

Minimize personal contact with blood

01) Full length - Long sleeved labour room gown

02) Plastic Aprons

03) Foot Wear (boots)

04) Spectacles

05) Gloves (elbow length gloves for manual removal of placenta)

06) Early de - contamination of all blood spills (heavy duty gloves, plastic aprons, boots rubber squeegees, dust pan, fresh sodium - hypochloride)

07) Special sharps containers

08) Suction - by Electrical suckers (no-mouth operated suction)

09) Cord blood - needles and syringes may be used

10) Examination of placenta - Gown and mask, gloves may be used.

8.1 Care of HIV positive mother in labour (Universal Precaution)

i) Single Room
ii) Only very essential equipment (Disposable)
iii) Disposable rubber aprons, gown, spectacles cap mask boots
iv) Placenta - double bagged and incinerated
v) Disposal - special container
vi) Used Linen - T. C. L. 10%, over night

(T.C.L. powder 7gms. for 1 ltr. of water)

Handwashing is the single most important procedure for the prevention of hospital acquired infection.

8.2 Universal Precautions

1. Personal hygiene
2. Hand washing
   Immediately after contact with body fluids.
   After prolonged contact with a patient
   After handling linen contaminated with body fluids
3. Cleaning spills
   Always wear gloves to clean the spills use 10% T C L or Lysol, Use common disinfectant (Bleach)
   Use heavy gloves and boots when cleaning toilets, drains and soiled linen
5. Wear a mask and eyeglasses or goggles when splashes of blood or other body fluids are expected. This may occur assisting in a birth.
6. Needle stick and other sharp injuries should always be handled with extreme care.
7. Nurses should always - if they have open wounds on hands and arms be covered with water proof dressing.

9. Infection Control

1. Foot wear at entrance
2. Gown ; disposable mask, plastic aprons and caps at entrance to labour room.
3. Trolley changing
4. Packet systems (Auto claving)
5. Culture swabs from the staff once in 3 months.

6. Less personnel
7. Hand washing
8. Disposable syringes and cannula

10. Daily Cleaning

i) Remove used items eg. suction bottles basin tray wash with disinfectant.
ii) Wipe furniture with damp cloth and dry them .
iii) Wipe lower part of the walls with wet cloth and dry with a dry cloth.
v) Wipe the doors with a wet cloth
vi) Wash beds with soap and water
vii) Wash mackintosh with soap and water
viii) Cleaning spills - drains soiled linen toilet10 %.T. C. L., can be used.
ix) Mopping to be done twice a day

10.1 Weekly Cleaning

All the instruments syringes thoroughly clean once a week. Beds and trolleys thoroughly washed once a week. Mattresses to sun once a week and when necessary.

Common disinfectants - Bleach, Teepol, Lysol

11. Staff Norms

Labour Room - Midwifery trained nurses 1 for 4 beds
Midwife 1 for 10 deliveries
workers female (sanitary) 01 | each
Workers female ordinary 01 for | unit

MINIMUM STAFF NEEDED FOR LABOUR ROOM WITH 7 BEDS

SHIFT	NURSING SISTER	NURSES	MIDWIVES	WORKERS
7.00 am - 3.00 pm	01	02	04	02
1.00 pm - 7.00 pm		02	03	02
7.00 pm - 7.00 am		02	03	02

12. Duties of the staff

12.1 Nursing Officer (Special Grade)

i) Allocate staff according to the needs.

ii) Shall report to Director and the Hospital Administrator on current staffing and future staffing and problems

iii) Maintain and update procedure manuals

iv) Evalution of equipment and supplies

v) Shall attend labour room staff conference

vi) Shall organise inservice training

vii) Shall counsel staff on professional and personal problems

viii) Evalution

12.2 Nursing Officer Gr. 1(sister)

i. Shall manage labour room according to laid down instructions

ii. Shall be responsible for drugs and inventories

iii. Supervision and training of the staff, including pupil nurses/pupil midwives

iv. Shall organize conference with the staff and any other duties assigned from time to time.

12.3 Nursing Officer Gr.11

i. They shall provide nursing care for mothers and babies-Emotional support to mothers.

ii. Observation and assessment of mothers and babies and reporting their conditions to the medical staff.

iii. Conduct deliveries

iv. Shall carry out the duties of charge nurse in her absence

v. They shall report to the Sister and complain defects in drug supplies or equipment.

vi. Maintaining Birth registers and other registers including collection and recording of data.

vii. They shall participate in regular meeting of labour room staff

viii. They shall partcipate in teaching programmes and all other duties of a Staff Nurse.

12.4 Hospital Midwives

1) Prepare Expectant mothers for delivery.

2) Take normal deliveries.

3) Bring to the notices of Matron or Nurse in charge and in their absence the doctor in-charge any abnormalities of the mother or mothers in labour.

4) Bathe the babies and attend to their requirements.

5) Any abnormalities with regard to the baby must be brought to the notices of the Matron or Nurse or in their absence the Doctor in-charge.

6) Attend on all - delivered mothers, such as swabbing sponging feeding etc.

7) Keep the labour room and ward clean and tidy.

8) To be responsible for the linen, surgical instruments and other equipment in the labour room and maternity ward along with the attendants in these sections.

9) Accompany maternity cases
   a) In ambulance when transferred to another hospital or Institution
   b) From Labour Room to other units such as X' Rays etc.

10) Attend to Dressings, pads, etc, for labour Room and Units.

11) Summon promptly the Matron, Nurse or Medical Officers in the case of excessive blceding or any other complications before and after delivery.

12) a) Health educcation of mothers regarding ante-natal and post natal care, feeding care, and care of babies etc.

b) Assist in supervision of occupational therapy for expectant mothers.

c) Establish good relationship with expectant mothers on admission to the Unit.

13) Whilist on duty she shall be in uniform supplied by the Department of Health.

14) Any other duties expected for Midwife eg. medication, temperature, diets, urine testing.

12.5 Ordinary Labourer

i) They shall sweep, mop, wash and clean the labour room
ii) They shall bring stores (Drugs, 0_2 etc)
iii) Transport mothers and babies with midwives to post natal ward and for investigation.
iv) Washing of gloves.

12.6 Sanitary Labourer

i). They shall wash and clean toilets regularly.

ii) Wash and clean all equipment bed pans, pails and trays regularly.

iii) They shall sce that all dust bins and soiled dressing are removed and replaced after cleaning.

iv) Wash and clean all drains and clean the garden.

v) They shall immediately report to the sister any defects or losses in the toilet.

vi) They shall wash and dry soiled linen in labour room and any other duties.

13. Role of the Infection Control Nurse in the Labour Room (Maternity Section)

1 Surveillance of hospital acquired infections. Develop a practical system of monitoring recording reporting and evaluating hospital associated infection.

2 Daily follow up new infection.

3 Follow up of bacteriological samples taken from patients

4. Training of personal in infection control
   a) Minor staff in the labour room and other wards
   b) Nursing staff in the labour room and other wards
   c) Conducting awareness programmes to patients and visitors in maternity section

5. Development, supervision and implementation of infection control policies in the maternity section.

   The purpose of this work is to see that all patient care practices are done properly and that the principles of infection control are taken into account

   Written infection control procedures for the maternity section.

   Regularly supervise if the required aseptic procedure and policies are followed

6. Attend to Staff Welfare

   All cases of accidental exposure, sharp injuries should be reported to rel evant authorities for suitable follow up.

   Organise hepatitis 'B' vaccination to matcrnity section staff.

14. Emergency Cupboards Trays and Equipments

14.1 P. P. H. Tray

ERGOMETRIN	05
SYNTOCINON	25
NORMAL SALINE	02
GELAFUNDIN	02
5% DEXTROSE	02
I V CANULA 16 G-18 G	02
I V SETS	02
D. T. FORMS	
STERILE SYRINGES & NEEDLES	

14.2 CAESAREAN EMERGENCY TRAY

FLAGYL	1 BOTTLE
NORMAL SALINE	1 PINT
IV CANULA (16 G - 18 G)	01
1 V SET	02
FOLEYS CATHETER	01
AMPICILLIN	02 VIALS
D. T. FORMS	
EMERGENCY OPERATION LIST	
STERILE CHECK CLOTH AND JACKET	

14.3 Delivery Set (20 Packets)

KIDNEY TRAYS	02
ARTERY FORCEPS	02
SCISSORS MAYOS	01
SCISSORS UMBILICAL	01
G. S. TOWELS	02
CORD THREAD	02
PADS	02
GAUZE SWABS AND COTTON SWABS	

14. 4 Suture Set (15 Packets)

KIDNEY TRAY	01
G. S. TOWEL	01
NEEDLES CUTTING	02
NEEDLES ROUND BODY	02
NEEDLE HOLDER	01
CATCH FORCEPS	01
GAUZE SWABS	05
SCISSOR	01

7 Beds Labour Room must have above mentioned packets per day.
Autoclaved and readily available.
Electric suckers 07 for 7 beds.
Baby Room - Suckers 02

14.5 Forceps Delivery Set

KIDNEY TRAYS	02
ARTERY FORCEPS	04
GREEN ARMITAGE	03
FORCEPS SPONGE HOLDING	02
FORCEPS WRIGLEY'S	02
KIELLAND'S FORCEPS	02
NEEDLE HOLDER	02
SCISSORS	03
CATCH FORCEPS	01
FORCEPS CURETTAGE	01
SUCKER TUBE	02
G. S. TOWELS	05
GALLIPOLE	01
STERILE GLOVES PAIRS	03

GAUZE SWABS COTTON SWABS AND PADS
AUTO CLAVE AND READY FOR USE.

14.6 Baby Cleaning Tray

SURGICAL SPIRIT
STERILE SWABS, GAUZE CORD THREAD

GLASS ROD TO CHECK ANUS
MEASURING TAPE
CATHETERS SIZE 5.8 = 2
(Infant weighing machine should be available)

14.7 Emergency Tray - Drugs
(Paediatric)

ADRENALINE 1/1000	2 vials
ATROPINE	10 vials
XYLOCANE	3 vials
NAH CO 3 SODIUM BICARBONATE 7.5%	5 vials
50% DEXTROSE	5 vials
25% DEXTROSE	5 vials
10% DEXTROSE	5 vials
FRUSEMIDE	10 vials
AMINOPHYLLIN	5 vials
DIAZEPAM	5 vials
DEXAMETHAZONE	5 vials
HYDROCORTISONE	15 vials
DISTILLED WATER	20 vials
1/5 N. SALINE	5 vials
SCALP VEIN SET	5
CANNULAE - 25g	
DISPOSABLE SYRINGES	
(50 cc, 20 cc, 10 cc, 2cc)	
IV SET	3 set
FILES	2

14.8 Pacdiatric Resuscitation Tray

BABY LARYNGOSCOPE	01
AMBU BAG (PAEDIATRIC)	01
FACE MASK (PAEDIATRIC)	01
INTRODUCER (STYLET)	01
SUCTION CETHETER (SIZE -)	04
LIGNOCAINE JELLY	01
BABY AIR WAY	02

BANDAGES OR LEUCO PLASTER
TORCH
GLOVE PAIR
02 CYLINDER WITH FLOW METER
PAEDIATRIC ANESTHETIC SET (JACKSON MODIFICATION OF AYRE'S T PIECE)

* T PIECE
* GREEN TUBE @ CONNECTON FOR OXYGEN
* CATHETER MOUNT
* BREATHING BAG (OPEN ENDED)
* ANGLE PIECE
* PAEDIATRIC FACE MASK

14.9 EMERGENCY TRAY (ADULT)

HYDROCORTISONE	20
AMINOPHYLLINE	10
BRICANYL	05
ARAMIN	05
PROMETHAZINE	10
FRUSEMIDE	20
DIAZEPAM	05
XYLOCAINE	05
VERAPAMIL	05
PROCANAMIDE	05
MORPHINE	03
PETHIDINE	03
VIT K	03
ERGOMETRINE	05
CYNTOCINON	20
NALOXONE	05
SODIUM BICARBONATE	06
50% DEXTROSE	10
ATROPINE	10
ADRENALINE 1/1000	03
25% DEXTROSE	10
IV SET	05
IV CANULA	04

N. SALINE	05
CALCIUM GLUCONATE	05
DOPAMINE	02
5% DEXTROSE	05
GELAFUNDIN	05
MANNITOL	03
HARTMANNS SOLUTION	05
DARROWS	05
CUT DOWN SET	01
DIGOXIN	01
PROPANOLOL	01
STERILE SYRINGES	

14.10 RESUSCITATION TRAY (ADULTS)

LALRYNGOSCOPE WITH ADULT CURVED BLADE	
ENDOTRACHEAL TUBES WITH CUFF (7mm, 7.5mm, 8mm, 8.5mm)	
INTRODUCER (STYLET)	01
10 cc DISPOSABLE SYRINGE	01
LIGNOCANE JELLY	01
BANDAGES	02
MAGILL FORCEPS	01
AIR WAYS (SIZE 2,3,4,)	04
AMBU BAG @ FACE MASK	01
SOURCE OF OXYGEN	
TORCH	
GLOVE PAIR	
SUCTION CATHETERS	05

15. Management of Linen

15.1 Linen

Adequate Linen - Bed sheets pillow cases, G. S. Towels, Draw sheets, Baby gowns, Surgeon gown, Mackintosh, Diapers Baby Blanket, Check cloths and staff gown Mask, caps, towels, Mattress covers, cots, covers and mosquito nets.

15.2 Laundry

Linen should be washed with detergent and water, never put them down on the floor (10% T. C. L.) Daily dhoby must be available.

15.3 Care of Baby Room

1. Baby cots, walls, weighing machine clean with soap and water.
2. Equipment such as cleaning trays ambu bag, rectal thermometer, suckers should be cleaned after use.
3. All the linen used for baby must be sterile

16. Information Desk

Great anxiety is caused by lack of information to the mother and the family. Therefore it is necessary to have an information desk near every labour room with qualified Nursing Officer or a Midwife when patient is in labour room provide adequate information to her husband or relatives.

17. Maternity Statistics

Returns - Monthly return to be sent to record room

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Fourth Edition
Miller R. Callander

POST DELIVERY OBSERVATION CHART

TIME	PULSE	BP	UTERINE RETRACTION	BLEEDING /CLOTHS	PACKS/ SWABS	REMARKS

CHAPTER 5

OPERATING THEATRE MANAGEMENT

Introduction

Operating theatre complex is an important and specialized area in hospital services with many a problem in personnel, supply and regulations. Success of the operations and the protection of patients' lives depend on the efficient management of the operating theatres.

In institutions where routine and emergency surgery is carried out by different surgical specialities it is prudent to have the operating department as an independent building or located in the ground floor or first floor of a multistoried building away from the general rush area like clinics, OPD and centralized with ICU, CSSD and labour rooms.

All operating theatres should be located in one place in the hospital. A section of the operating theatre suites may be separated for emergencies, casualties, septic surgery, obstetrics, endoscopies, orthopaedics, ENT and eye, neurosurgery and general surgery. The total number of suites required will depend on the number of surgical beds, emerging admission pattern and the population served.

Objective of Management

* To Provide maximum patient care;
* To maintain safe, environmental condition for patient and staff.

Construction and Planning

The following aspects must be considered.

- Location
- Size
- Walls
- Floor
- Air conditioning and ventilation
- Light system
- Water supply
- Waste disposal area (washing)
- Scrubbing area
- Anaesthetic area
- Sterile storage
- Store rooms
- Equipment room
- Changing rooms
- Tea room
- Seminar room
- Receiving area
- Recovery area
- Piped medical gases and piped vacuum area.

Location

- First floor or ground floor.
- Away from the general rush area eg. clinic, OPD.
- Centralization of CSSD, ICU and LR

Size

- Depends on bed capacity of the surgical section and type of the operations
- Operating room should not be too small or too large.
  Ideal size is 20 x 18 feet.

Walls

- Completely tiled up to ceiling level. Tiles should be soft shade of light blue, green or grey.

Floor

- Terrazzo composition.
  Grounded as a precaution against explosion

Air conditioning and ventilation.

To main constant humidity and temperature. Ideal temperature is 20^0C - 24^0C and humidity 45 % -55%.

- Pressurized from sterile area to clean area to dirty area.
- No suction effect from dirty area to clean area.
- Should have 18-20 air change per hour to maintain heat balance and reduce bacterial contamination.
- Anaesthetic gases and suction cxhaust are vested out through separate exhaust channels.
- The preparation room and sterile storage should have similar ventilation as main operating room.
- Portable room coolers and ceiling fans are not satisfactory.
- Window type air conditioners may be used but must be located at least one meter above the floor or one meter below the roof. The filters should be efficient and periodically changed.
- Regular maintenance should be done.
  If ventilation system is poor and contaminated air is inducted theatre infection rate will go high.
- Comfortable climate ensure work efficiency.

Light System

- Solid rounded field of light.
- Minimum amount of heat.
- Absence of strong shadows.
- Easy to clean and adjustable.
- Stand by generator for power failure.

Water Supply

Adequate water pressure. The sterilizers need an adequate water head. Most sterilizers need water pressure of about 30 ft.

Waste disposal area

Sterile store room

- Away from waste disposal area
- Should be air conditioned
- Free from contamination / dust
- Easy washable floors and walls
- Stainless steel racks for easy cleaning
- Stainless steel trolleys
- Stainless steel cupboards

Recovery area

- Seperate trolleys with rubber mattress.
- Piped oxygen outlets and humidifiers with flow meter.
- Prepared intubation tray.
- O_2 mask catheters and ambubag.
- Wall vacuum facilities or suction machine.

Piped bio medical gases

- Should have adequate cylinders of O_2., NO_2 and compressed air.
- Cylinder bank should be located outside of the theatre.
- Audio visual alarm system to be fixed on the clean corridor of the theatre.
- Should have seperate emergency line for each gas.
- Automatic change over system is recommended. (Manual changing is not satisfactory)

The operating theatre has five distinct zones for work, materials and personnel movement.

1. Protective Zone

Consists of the

- Changing rooms for all staff with conveniences.
- Transfer bays for packets, materials and equipment
- Duty rooms

- Store rooms
- Seminar room

2. Clean Zone

Connects internally the protective zone and operating suites and in addition has :

- Scrubbing area
- Anaesthetic room
- Rest rooms
- Clean corridor
- Store rooms

3. Sterile Zone

Consists of the

- Main operating area
- Sterile bay and sterile storage area

4. Reception and recovery zone

Consists of the

- Patients receiving area (Trolley changing area)
- Post operative area

5. Disposal Zone

Washing area.

Staffing Pattern and Norms

- O. T. Superintendent or special grade nursing officer for all the theatres.
- Nursing Sister for one theatre suite.
- 30 nurses for two wing theatre
- 16 ordinary labourers for 24 hours.
- 04 sanitary labourers for 24 hours.
- E.C.G. technicians for cardiac theatre
- 02 theatre technicans for all the theatres for repairs and maintenance work.
- One Seamstress for each theatre suit.
  (sewing of various type of theater linen and gauze towels mending of theatre linen)

Importance of cleanliness and Aseptic techniques

Theatre nursing staff is responsible for proper cleaning of the theatre and maintaining of aseptic technique for prevention and control of infection.

Cleanliness is essential in the theatre, but cleaning policies should be realistic and not established by tradition.

Daily routine cleaning

1. The theatre should be cleaned at least one hour before the operating list commences.
2. All flat surfaces, over head lights and furniture should be damp dusted using accepted detergent.
3. Floor must be cleaned whenever they are dirty.

- Mild detergent can be used for floor cleaning. eg. 1:30 Savlon;
- Use squeegees for mopping and drying;
- Ideally floor should be cleaned by a machine which scrubs and suction-dries.
- Separate squeegees should be used for seperate areas in the theatre.

Cleaning between cases

Only areas which have become contaminated during the previous surgery should be cleaned.

Daily cleaning at the end of the day

The routine for daily cleaning is the same as that carried out before a list, but attention should also be paid to walls, and the floor. Soiled areas should be cleaned with mild detergent and subsequently dried.

Weeky cleaning

All furniture equipment and movable items should be removed from the theatre and the floor and walls should be washed using a detergent. Air condition grills should be cleaned before washing the theatre. Ceiling should be washed once in 3 months.

Preparation for an infected case

1. Preparation is the same as for other cases.
2. Only absolutely essential equipment, instrument and personnel should be in the theatre.

Surgery on HIV and Hepatitis B Positive Patients

1. Universal precautions should be taken.
2. Double gloves and protective eye shields should be used by the surgical team.
3. Yellow polythene bags to be used for clinical waste disposal. All such waste should be soaked in 10% sodium hypochlorite before disposal.
4. 2% glutaraldehyde should be used to sterilize heat sensitive items.

Cleaning after infected surgery

Instruments and linen contaminated with pus should be put in 1:40 lysol solution for 2 hours and washed with soap and water before autoclaving and laundering. Yellow polythene bags should be used for the disposal of clinical waste. Floor and walls should be washed with detergent and later dried.

After surgery on a gas gangrene or tetanus patient the theatre floor should be washed once with 1% Formaldehyde and water and 3 to 4 times with a detergent or soap and water. The floor must then be dried.

Maintenance of sterility in the theatre

1. No one should be allowed into the theatre without changing into theatre clothes including sterile caps, masks and gown.

2. Outside trolleys should not be allowed in the theatre area.

3. Standard packeting system should be encouraged. This improves sterility and avoids waste. The shelf life of a packet is only 10 days and thus all packets should be dated. Samples from every batch sterilized should be tested for sterility even though heat indicators may be available.

4. Nasal and throat swabs must be taken from all thetre staff including surgeons once in every 3 months and appropriately treated.

Sterilization procedures

1. High pressure sterilizing is the recommended method for theatre instruments, linen and dressings (134 ^{0}C 30 mts and 15 lbs of sq ft pressure.

2. Cold sterilization
   Test sensitive articles such as endoscopes should be sterilized by cold sterilization method.
   2% glutaraldehyde for 30 mts and wash with sterile water.

3. Boiling.
   100^{0}C for 30 mts is not recommended for theatre use,

4. Ethylene oxide sterilization could be used for heat sensitive articles and rubber goods. Ethylene oxide is highly poisonous and unaccepted sterilization cupboard must be used.

5. Dry heat sterilization Hot air oven 160^0 C for 2 hours. Glass ware can be sterilized.

Control of Infection

Infection continues to be the greatest hazard of surgery. The knowledge and skill of the surgical team will not produce the desired results unless every effort is made to avoid infection of the patient.

Strict aseptic discipline must be applied at all times. All those who use the theatre must cooperate in the application of recognised procedures and it is the responsibility of theatre managers to ensure that these procedures are followed.

There are many factors which affect the rate of infection.

a. The type of surgery performed
b. The skill of the surgeon.
c. Cause for surgery and age.

d. The length of stay in hospital
e. Duration of surgery
f. Skin preparation and draping procedure
g. Asepsis of the theatre.
h. Aseptic discipline of the theatre staff
i. Sterilization methods adopted and effectivity.

Functions and Responsibility of Staff

Medical Staff

- Routine list should be sent to theatre previous day.
- Emergency list could be sent to theater 1/2 hour before commencement of operation.
- Surgery should be started at scheduled time.
- Should maintain theatre policies, procedures and methods
- Aseptic technique should be monitored properly
- Maintain good interpersonal relationship with other staff.
- Teaching of staff.
- Proper documentation

Nursing Staff

- Receiving of patients
- Care of patients
- Assisting the surgeon and anaesthetist team.
- Circulating of sterile instruments, linen, suture materials and necessary items for surgery.
- Supervision of sterilizing procedures
- Proper cleaning.
- Maintain asepsis
- Inventory control
- Ordering and inventorizing of drugs and other valuable surgical items.
- Maintaining adequate supplies
- Accounts for gauze swabs, gauze towels and needles after each case.
- Maintain proper documentation and statistics
- Care of specimen and reports
- Good relationship within all the staff
- Preparation of duty list for nurses and minor staff.

- Responsible for infection control
- Directing, guiding and coordination of subordinate
- Inservice and orientation programme for new nurses, student nurses and minor staff.
- Preparation of annual indents.

Technical Staff

- Proper maintenance of theatre equipment.
- Helping the surgical team.

Minor Staff

- Responsible for cleaning
- Transportation of patients.
- Care of specimen and reports.
- Helping the nursing staff when necessary

CHAPTER 6

DENTAL SERVICES

6.1 Introduction

Dental care is provided through the OPD and Specialist Dental Clinics of Tertiary Care Hospitals. Basic & advanced curative procedures related to oral and Dental diseases are provided in Base, General & Teaching Hospitals. Indoor care is also available for complicated cases.

6.2 OBJECTIVE

To provide total Dental care,(Preventive and curative) to the public who call for treatment and are referred from other Institutions.

6.3 LOCATION

Dental clinics are sited in the O. P. Ds of secondary and tertiary care hospitals and are separated into Dental O. P. D. clinics & Consultant Clinics.

6.4 STAFF

The maximum cadre of Dental Surgeons for the OPD Clinic of a Base Hospital is two and for a Provincial / Teaching Hospital is four. In addition a relief Dental surgeon may be based in these hospitals to cover the area/district. The senior Dental Surgeon should be designated Officer in-charge and be responsible

for the smooth and efficient functioning of the clinic. His duties are listed in Circular 4075 of 15.03.94 (MAE /5/92)

A Specialist Clinic will also be situated in these Hospitals and they will be conducted by a Consultant Dental and Maxillo Facial Surgeon. He will be assisted by a SHO and a House Officer.

The support staff in a dental clinic should be either a Nursing Officer or Attendant or Labourer who is trained on the Job. General circular 1757 of 23.09.81 states that this person would remain in the clinic for a minimum period of 2 years. The support staff should be appointed at the rate of one per functional chair and unit. The Consultant should have a Nursing Officer to assist him.

6.5 EQUIPMENT

Each Dental Surgeon should have a functional Chair and Unit to work on. The Dental Surgeon will be responsible for the maintenance and care of Dental equipment. Primary maintenance care of the Dental equipment must be carried out by the Dental Surgeon. Major repairs to be reported to the B.E.S.

New equipment required for the clinic should be indented through the Director/Deputy Provincial Director or the correct line of command. The Dental Surgeon in charge should advice the Director of any equipment deficiencies in the clinic and follow up matters until the equipment is ordered brought to the clinic. Guidelines for ordering equipment appear in General Circular 1726 of 16.01.91. (MF/4/911). No equipment is available Ex-stock.

6.6 DUTIES

The Dental Surgeons come under the direct supervision of the Head of the Institution and overall supervision of the Regional Dental Surgeon. The duty list of a Dental Surgron is in para 7.15.

The Dental Surgeon will be on call to treat emergency cases at all times.

A Dental Surgeon should work full time i. e. 8.00 a. m. to 12 noon & 2.00 p. m. to 4 p. m. which means that each officer must have a Dental Chair and Unit. The Director must be informed about the movements of the Dental Surgeon during duty hours.

6.7 LEAVE

Leave taken by the Dental Surgeon has to be approved by the Director in advance. Relief arrangements should be made prior to availing of leave . Two Officers should not be given leave or short leave at the same time.
Work on public holidays should be approved only if there is a sufficient work-load. A minimum of 15 appointments for conservation should be given for a morning session of a public Holiday.

6.8 TREATMENT

The Dental Surgeon should provide treatment on demand as well as comprehensive care to the patients. All patients attending the clinic should be seen by the Dental Surgeon although a fixed number of 40 extractions per day has been stipulated.Saturday mornings are exclusively for children. However this does not preclude adults being treated if time permits. No patients should be referred to the School Dental Therapists.

6. 9 RANGE OF SERVICES PROVIDED

6.9.1. Dental OPD

Extractions, Conservation (Fillings), Scaling & Polishings, Minor Oral Surgery (eg. removal of impacted teeth, incisions, apicoectomies), Root canal treatment.
Extractions and temporary fillings are generally done in the mornings. If the surgical work finishes before noon, the Officer must engage himself in Health Education activities in the OPD and wards of the Hospital.

Appointments for conservation are given for the afternoons. A minimum of 10 appointments should be given per Dental Surgeon and the waiting list should not exceed two weeks.

If there are no patients in the clinic, the Dental Surgeon should keep himself gainfully occupied by getting patient from the wards and providing them with comprehensive treatment. Comprehensive treatment is providing complete, full mouth dental care to a patient.

6.9.2. CONSULTANT CLINICS

The Consultant D/S is in charge of the clinical aspects of the entire Dental Unit. He will attend to all complications, major oral surgery and any other operative procedure that cannot be undertaken by the Grade Dental Surgeons. he will operate on 2 days of the week at a minimum and as and when casualty lists occur. He should be given adequate ward and other facilities as other surgeons in the Hospital. He should be available for emergencies at all times of the day.

6.10 SERVICE PROCEDURES

Persons attending the clinic for Consultations or Treatment are required to obtain a number in the mornings. Urgent procedures such as extractions and deep fillings are attended to in the mornings and appointments for conservation given for the afternoons. However this does not preclude an extraction being performed in the afternoons. The Dental Surgeon must be available to provide treatment of any kind during his duty hours.

The hours of work must be displayed very prominently outside the clinic for the information of the public. (General Circular 1122 of 10th September 1980)

6.11 QUALITY OF CARE

1. Patient Care : Education and motivation to better Dental Health must be incorporated into the treatment regime. Quality of care in each and every treatment procedure should be emphasised. The patients should be educated and informed of the needs for treatment. The Dental Surgeons should not be satisfied by providing only the treatment on demand.

2. Instrument Care : Instruments must be carefully maintained and properly sterillized in accordance with State regulations. Extreme caution must be given to the proper sterilising of Dental Instruments. The Dental Surgeons should supervise the sterilising procedure and maintain absolute cleanliness in the clinic.

3. Environmental Care : The environment of the Dental clinic should be conducive to clean and desirable treatment.

6.12 RECORD KEEPING

1. TREATMENT CARD

The patient's history, a charting of the mouth and the treatment given is recorded on this and filed for future reference. This is maintained by the Dental Surgeon.

2. PATIENTS' REGISTER

The Number, Name and Treatment given to a patient is systematically recorded in this book.

3. MONTHLY RECORD SHEET H 1201

Daily entries should be made in Form H 1201 in Triplicate. An Instruction Manual has been developed to assist Officers to the Medical Statistician & Regional Dental Surgeon, before the 5th of the following month. The third copy is to be retained in the clinic. These orders came into effect with General Circular 1735 of 24.12.91 (MAE/57/91)

6.13 QUARTERS

Dental Surgeons are entitled to Government quarters after the needs of the Medical Officers on call have been met (Circular Letter 1341 of 07.06.1979).

6.14 DUTIES OF DENTAL SURGEONS APPOINTED TO GOVERNMENT HOSPITALS

Dental Surgeons work under the Administrative control of the M. O. I. C. of the Medical Institution.

Duty Hours : Week days and Saturdays
Morning : 08.00 a.m. - 12.00 Noon
Afternoon : 02.00 p.m. - 04.00 p.m.
Sundays : 08.00 a.m. - 10.30 a.m.
Public Holidays -
08.00-a.m. -12.00 Noon
(if necessary to be decided with the Head of the Institution).

- A notice indicating the Duty Hours should be prominently displayed for the information of the public.
- Outside normal hours of duty, he shall be on call to attend to emergency cases, day and night.

- He shall practise all aspects of Dental Surgery.

- A Diary - H. 136 in which the time of arrival and departure is written daily should be maintained. It should be submitted to the M. O. I. C. weekly. A similar Diary should be maintained at Visiting Stations.

- He should maintain a record of the work done in a Register set apart for the purpose. Morning and afternoon work should be shown seperately.

- The A. M. P. / Pharmacist or whoever is responsible for the surgical stores, shall order, receive, maintain and supply adequate stocks of dental materials, drugs and equipment for the Dental Clinic, under the supervision of the Dental Surgeon in-charge of the Dental Clinic. Once they are issued to the Dental Clinic, the Dental Surgeon in-charge shall be responsible for them and shall see that they are maintained in a satisfactory condition.

- The Dental Surgeon shall issue Medical Certificates in the field of dentistry whenever necessary according to the Rules laid down on the issue of Medical Certificates.

CHAPTER 7

THE PREMATURE BABY UNIT

The Premature Baby Unit

Secondry and Tertiary care hospitals should have a premature baby unit (P.B.U.) within easy access to the labour room and the Operating Theatre.

The following are normally admitted to the P.B.U. to reduce Neo Natal Mortality and Morbidity.

a) Low Birth Weight Babies i.e. New Borns below 2500 gram i.e. Pre term babies - Born before the end of 37 weeks. Small for dates babies.
b) Babies born to high risk pregnancy mother eg. P.E.T., Diabetic, Rh negative.
c) Babies below Apgar 5
d) Babies with major congenital deformities.
e) Babies with liquor stained meconium at birth.
f) Ill babies
g) Babies with birth injuries
h) Babies with respiratory difficulty.

STAFF NORMS

a) Paediatrician
b) Paediactric S. H.O. - H. O. according to bed strength and needs.
c) Sister-in-charge
d) Nurses according to bed strength (05 nurses to 01 Bed)

e) Female Attendants

f) Female Labourers

g) Sanitary Labourers

h) Ordinary Labourers

The staff who work in this unit is responsible for the maintenance of the highest test standards of medical and nursing care necessary for survival and well being of the new born infants.

Nursing Personnel and their duties

Sister or Senior Nurse in charge

a) Assigning duties to nursing staff

b) Taking measures to ennsure that the quality of nursing care remains high by being the leader of a dedicated team.

c) Planning of daily routine and emergency care procedures and making the staff aware of same by providing written instructions and supervision of all procedures.

d) Organizing staff conference and inservice education programmes.

e) Review of Policies and Procedures and updating them with the cooperation of the medical staff.

f) To prepare programme to regularly check staff to eliminate cross infection in the unit.

g) Maintain all necessary records.

In organizing a PBU the following areas should be identified.

1. Main P. B. care ward. Sufficient space is required to prevent overcrowding and to allow free movement of staff and equipment including x-ray machine and circulators.

The ward should be divided into :-

1. Sick baby area / room

2. Well baby area / room

The well baby area could again be divided

a) To accomodate very premature babies who need incubators / Ventilators.

b) To accomodate others who need only Cots.

2. Changing area

3. Scrub area

4. Stores

5. Soiled utensils and linen area.

Care should be taken to prevent contamination from other areas of the hospitals.

The nursery should be well lit for easy spotting of jaundice and cyanosis.

Walls and Ceiling should be of a light colour and should be washable.

Plate glass windows will help the nursing staff to observe the patients.

The humidity of the nursery should be between 55% and 65% and the temperature between 77% and 90%.

The folowing precautions should be adopted to maintain asepsis.

a) No one should be allowed to enter the PBU except those assigned to it.

b) Minimal handling prevents infection. Thus nursing care should be planned around feeding time.

c) All procedures should be carried out aseptically. Facilities must be avail able for easy hand washing, easy access to sterile item and proper disposal of soiled item.

The PBU must be regularly cleaned. Walls, ceilings fans and windows must be regularly cleaned or washed.

Furniture, shelves and equipment must be wiped daily with a damp cloth and using a disinfectant solution at least once a week.

Curtains and screens must be changed frequently.
Oxygen Cylinders should be carbolized before use.

Prophylactic Maintenance of Equipment.

a) All equipment should be disinfected before use. The manufacturers instructions should be followed carefully.

b) All incubators/ cots must be disinfected once a week and after each infant

c) Thermometre jars, Cotton ball jars, lifting forceps and receptacles should be sterilized by autoclaving.

d) Neutralizers aid tubing, humidifying bottles and tubing should be disinfected every night and between use.

- The manufacturer's instructions must be followed carefully as to which ventilators should be open and which should be closed. This is especially important when giving oxygen.
- When performing a procedure, other means to keep the infant warm and to provide oxygen must be used (i.e. by using a heat lamp and giving oxygen by mask).
- Procedures and treatments must be planned to be done at one time to avoid constant opening of the incubator.
- Careful monitoring of the temperature of the infant must be maintained at all times, to prevent a sub - normal drop in temperature or overheating.

The following records should be maintained.

a.) Weight - on admission and every 3rd day.
b.) Temperature
c.) Urine - Character and amount
d.) Stools - Frequency Consistency
e.) Oedema of face, abdomen, legs
f.) Colour cyanosis, Jaundice etc.
g.) Respiration
h.) Apnoea attacks
i.) Feeding, Intake volume etc.
j.) Treatment
h.) Lab Reports
l.) Abnormal Signs

Duties of the Nurse

1. To ensure that the vital functions of the body like respiration, and temperature are maintained.
2. To ensure proper and adequate feeding.
3. To prevent infection to ensure that asepsis is maintained eg. proper hand washing, use of sterile gowns, correct disposal of soiled articles, controlled movement of staff and visitors etc.
4. Proper identification of the baby on admission, transfer or discharge.
5. To obtain the consent of the mother or guardian for surgery before being sent to the O.T. or transfer to another institution.
6. To carry out treatment as instructed by the medical staff.
7. To take over and hand over at the start and end of the duty shift.

Prevention of Contamination

Infection is a dangerous and common complication and is preventable. Infection is spread from baby to baby, from the hands and clothing of the staff, from contaminated equipment and improper prevention of feeds.

Using correct procedures and proper handling of the baby by the nursing staff could prevent an appreciable amount of infection. Strict aseptic techniques are required during the administration of parenteral fluids, medication, surgical procedures and feeding.

The environment of the PBU must be kept hygienicaly clean.

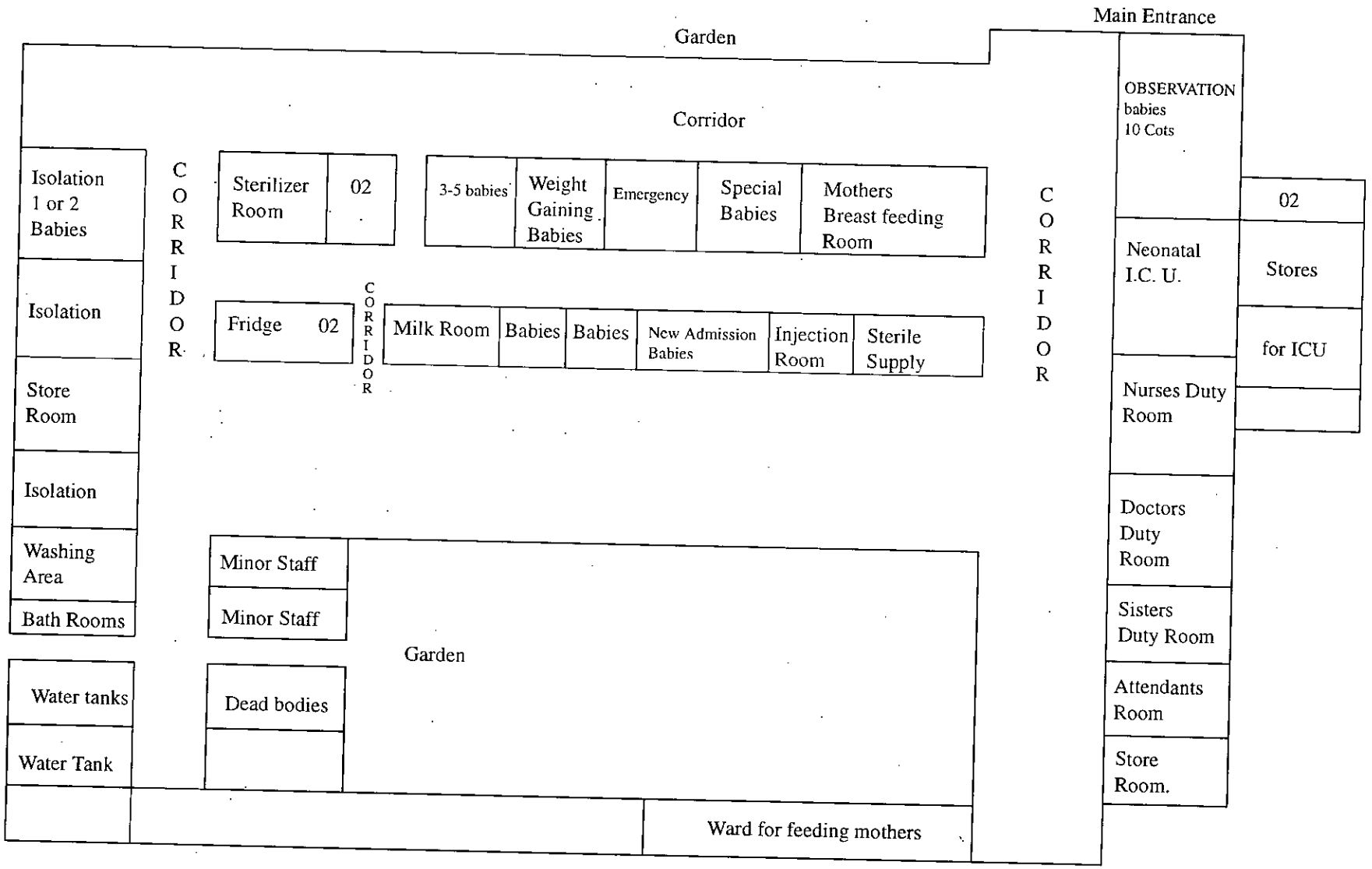
Management of Incubators

Incubators will provide the maximum benefit if properly handled and maintained. Incubators must be disinfected once a week and after each use. The alarm system must be checked daily and before use.

Information Desk

An information desk staffed by a nurse or a mid wife should be sited in a prominent place at the entrance to the PBU.

PLAN FOR P. B. U.


Main Entrance
Garden
Corridor
OBSERVATION babies 10 Cots
Isolation 1 or 2 Babies
CORRIDOR
Sterilizer Room
02
3-5 babies
Weight Gaining Babies
Emergency
Special Babies
Mothers Breast feeding Room
CORRIDOR
02
Neonatal I.C. U.
Stores
for ICU
Isolation
Fridge 02
CORRIDOR
Milk Room
Babies
Babies
New Admission Babies
Injection Room
Sterile Supply
Store Room
Nurses Duty Room
Isolation
Doctors Duty Room
Washing Area
Minor Staff
Minor Staff
Bath Rooms
Garden
Sisters Duty Room
Water tanks
Dead bodies
Attendants Room
Water Tank
Store Room.
Ward for feeding mothers

CHAPTER 8

MANAGEMENT OF INTENSIVE CARE UNITS

AIM

The aim is to centralise and optimise equipment, staffing and facilities for the care of critically ill patients who require high tech monitoring and modulation of vital organ function and life support. The immediate objective is to preserve life and prevent reverse or minimise damage to vital organs, by optimising oxygen delivery to tissues until the underlying disease resolves. Although expensive, the cost-benefit is high as I.C.U.s concentrate technology and staff in one place eliminating the need for duplication in all wards and hospitals. Also, males and femals, adults and children may be managed together in one unit.

PHILOSOPHY : "HI-TECH & HIGH-TOUCH"

There is increasing concern that technological advancement has caused a reduction in "patient contact" compassion, and care. Physicians should temper therapeutic zeal with attention to humanitarian principles and remember to treat the whole patient rather than normalising values. Monitoring is never an end in itself and clinical examination should remain the first line of diagnosis. The one-to-one CARE is the key factor in improving outcomes.

ORGANISATION

The setting up of I.C.U.s should be with due consideration to cost-benefit and risk benifit ratios. Every hospital does not need an I. C. U. and Regional Units are best

for Sri Lanka. To avoid units being set up haphazardly, requests for new units should be supported by numbers of patients who were transferred or died due to the lack of an I.C.U.

Intensive Care Units with hi-tech monitoring and multi-organ life support are mandatory in all teaching and provincial hospitals.

High Dependancy Units are strongly advocated for Base Hospitals, with facilities for adequate monitoring and short term life support such as ventilation for 48 hours. patients needing long term critical care should be transferred to a Regional ICU.

AMBULANCE TRANSPORT

The very sick can be moved safely over long distances if properly prepared and accompanied by trained personnel in ambulances with portable equipment for monitoring and resuscitation.

DESIGN

The I. C. U. should be away from general traffic, sited close to the operating theatre, C.S.S.D. and radiology department, freely accessible, with large doors and corridors and a glass window to view the outside world.
All surfaces should be easy to clean.
Air conditioning to 24 degrees C with "natural day light"

BEDS

The optimum is 4-8 beds, or 1% of acute beds in the hospital. One bed should be for emergency admission, cardiac arrest etc. One isolation cubicle for infective or immunocompromised patients.

Each bed should have a minimum space of 18 sqm, 8 electric sockets (one 15 amp), piped oxygen, air suction and wash basin.

ROOMS

Medical Officer's Room, Nurses' Room, Store Room, Clean Utility Room, Dirty Utility Room with direct access to exterior.
Two Toilets & Bed pan washing area.
Ideally, Relatives waiting room, Office Library & Laboratory.

STAFFING

All staff should be highly motivated and preferably self-selected.

CONSULTANT

Duties :

* Administration & policy implementation.
* Continuity of patient care, liaison & communication.
* Teaching, supervision, and maintenance of staff morale.
* Procuring & maintenance of equipment. * Audit, and establishment of policy & protocols.

Anaesthetists are ideally suited due to their expertise in emergency care and technical skills, and habitual daily practice of directing their total attention on patients in a critical state, unconscious and paralysed, needing continuous monitoring and modulation in the presence of stress, pain and haemorrhage.

However, clinical responsibility should be shared with other specialists and terms of reference well defined with joint ward rounds to maintain good relationships and communication.

MEDICAL OFFICERS

4 per unit, physically present throughout the day, each rostered for not more than 12 hours at a stretch. Plan of management and controversial therapy should be meticulously discussed at the bedside when changing shifts.

NURSING STAFF

Sister in charge, and one nurse per patient on all shifts.
Nurses play a major role and should be self selected, motivated and well trained. Treatment goals should be discussed with them.

DUTIES

Assisting medical officers.
Observation and clinical assessment of patients.
Charting of vital signs and electronic monitoring.
Maintenance of registers of admissions, discharges, deaths, etc.
Maintenance of charts : fluid balance, drug therapy, etc. Special nursing care of unconscious and critically ill patients.
Sterilisation and Infection control.
Major resuscitative procedures : CPR, IV access, 02 therapy, etc. Communication with and emotional support of patient and relatives.

PHYSIOTHERAPIST

Physiotherapy is required several times a day during which preoxygenation and pain relief must be ensured.

DOMESTIC STAFF

Should also be motivated to work as part of the team.

MONITORING

Routine : Pluse, B. P. Respiration, Urine, Temperature, ECG.
When necessary : Blood chemistry, renal, liver functions, etc.
When indicated : Invasive monitoring, radiology, special tests. Consider patient safety, cost-benefit & legal liability.
Repeated, as absolute values are less important than trends.

EQUIPMENT

Simple, robust, reliable, cheap, standardised. Wall mounted. Regular servicing, maintenance and calibration are essential.

Equipment per Unit :
Defibrillator (ideally 2), Nebuliser, Glucometer, Wright's Respirometer and Spot lamp.

Equipment per Bed : E. C. G. monitor, Oxygen Analyser, Pulse Oximeter & Capnometer, Electronic thermometery, Sphygmomanometer, Suction, Syringe Pump, Ventilator & Humidifier.

Special Equipment in Regional I. C. U. : Blood gas and serum electrolyte analyser with good maintenance service.

LABORATORY FACILITIES

24 hours lab. facilities essential for urgent investigations

ADMISSION & DISCHARGE POLICY

The policy and protocal regarding admissions and discharges should be clearly defined and displayed in the Unit.

The Consultant in Charge is responsible for all decisions regarding admissions and discharges, and should always be contacted before a critically ill patient is refused admission.

Disputes may be avoided by adhering to strict policy.

* Elective admissions : eg. after major surgery The request should be made in writing as early as possible in a register maintained in the unit.

* Urgent admissions : eg . acute system failure
  Consultant to Consultant discussion is essential before admission.

* Emergency admission : eg . eclampsia
  Although ideally a bed should be reserved for emergency admission, rushing a critically ill patient to the unit without warning is discouraged. Life saving measures should first be initiated wherever possible, and the Consultants informed immediately.

* Transferred patients : Patients may be transferred direct to the Unit from other institutions but only after prior consulation.

* Chronological age or malignancy alone is no barrier, but it is important to define exact therapeutic goals and predict outcomes.

* No patient who is critically ill should be discharged to make room for another.

ADMISSION CRITERIA

* Critically ill, and at high risk of dying from a potentially reversible cause with a high chance of recovery.
  eg. Guillen Barre syndrome, Poisoning.
* For vital system support. eg. Respiratory or Renal failure.
* At risk of lethal complications. eg. Eclampsia.
* Needing continuous monitoring and supervision.
  eg. heart disease.
* For specialised techniques eg. Dialysis.
* For specialised nursing eg. complicated tracheostomy, coma.

EXCLUSION CRITERIA

* Unkind, to cause prolongation of death, (as opposed to life).
* Unsafe, due to high risk of nosocomial infections.
* Unnecessary, when routine ward care is adequate.
* Unsuccessful outcomes in irreversible illnesses.
* Unwise to admit the terminally ill.
* Uneconomical, wrongful diversion of limited resources.

COMMON CATEGORIES OF PATIENTS ADMITTED TO I. C. U.

* Post CPR, Trauma, Shock, Haemorrhage, Septicaemia.
* Post-operative monitoring, pain relief, & fluid balance
* Respiratory, Cardio - vascular, Renal & Hepatic failure
* Ventilatory Failure : Polyneuritis, Tetanus, Poisoning.
* Obstetrics : Eclampsia & Haemorrhage.
* Paediatrics : Croup, Epiglottitis, Bronchiolitis, Asthma.
* Endocrine disorders : Diabetes, etc.

MULTIPLE TRAUMA DISASTER TRIAGE PRIORITIZATION.

1. Life threatening but saveable.
2. Serious injury but stable.
3. Non- walking wounded.
4. Walking wounded.
5. Life - threatening, unsaveable.
6. Dead.

HAZARDS OF ICU

* Invasive therapy
* Equipment failure
* Noso-comial infections
* Drug complications
* Psychological stress
* Reduced immunocompetence.
* Deep venous thrombosis.

REDUCTION OF PSYCHOLOGICAL STRESS

* Maintain diurnal rhythm by reducing lights, feeding, noise and disturbance at night.
* Sedation and pain relief for paralysed, ventilated patients.
* Elevate mood by encouraging visitors, mirror, reading matter.
* Ensure communication with bell pencil, paper.
* Ensure orientation with calender, clock, conversation.
* Prevent peptic ulcers with antacids and enteral feeding.

STRESS ULCER PROPHYLAXSIS

20% ICU patients develop ulcers, and 5% have severe bleeding. As stress ulcers appear almost immediately due to mucosal ischaemia in a critical illness, therapy, is to prevent bleeding.

1. Enterel feeding is the best protection.
   Test feed 50-100ml over 30 min. via 20FG N-G tube.
   If less than half is retained after 30min. feed enterally.
   If intubated add methylene blue to check for aspiration.

2. Sucralfate if gastric emptying is inadequate.
   1g in 15ml water tds.

3. H2 blockers & antacids if gastric emptying is absent.
   Ranitidine 0.5 mg / kg & cimetidine 300mg slow IV & infusion.
   (Disadvantage : Removes acid defence against bacteria.)

4. Avoid NSAIDS, steroids, chemotherapy.

PREVENTION OF NOSOCOMIAL INFECTIONS

Room ventilation with good air flow pattern.

Visitors should remove street shoes and wear overcoat.

Mopping floor thrice a day & washing walls weekly.

Hand washing and drying before & after each patient contact.

In high risk cases, wash with ethanol.

Disposable gloves caps, masks, gowns, for aseptic procedures. Culture of sputum, urine, catheter tip, etc. twice a week daily inspection of puncture sites.

Avoid canulae in lower limbs. Iodine anti-septic for cannulae.

Change infusion sets & peripheral lines every 48 hours, and arterial cannulae every 96 hours.

Change tracheal tubes weekly.

Tracheostomy preferable for long term ventilation.

Use of 1 ventilator / patient & change of tubing after 48 hours.

Use of bacterial filters & disposable equipment.

All contaminated dressings should be changed immediately.

Isolation plastic aprons & barrier nursing for infected patients.

ANTIBIOTIC THERAPY

Strict antibiotic policy is important as prophylactic antibiotics for over 24 hours encourage resistant strains and is wasteful.

Common Gram - ves & aerobes and few anaerobes : Cephalosporins Anaerobes : Metronidazole.

PROTOCOL FOR ADVANCED CARDIO-PULMONARY-CEREBRAL RESUSCITATION

(NEW GUIDELINES)

Rapid defibrillation is the major determinant of survival.

* Shock 200J/ Shock 300J/ Shock 360J one after the other.
* Adrenaline 1mg (1:10, 000, 10ml IV or 20ml via ETT)
* Shock 360J
* Lignocaine 100mg IV or 200mg via ETT
* Shock 360J again & repeat sequence
* Atropine 1mg IV or 2mg via ETT repeated, for sinus bradycardia

For IV injections central lines are preferable.

If peripheral line, follow up with 20ml Saline & elevate limb.

Catheter passed beyond tip of tracheal tube is an effective route for adrenaline, atropine and lignocaine in 10ml N. Saline.

stop chest compressions while spraying the drug down the catheter and give several quick insufflations to aerosolize.

* Sodium bicarbonatc is detrimental except in.
  pre-existing severe metabolic acidosis or hyperkalaemia Tricyclic or phenobar bital overdose.
  Protracted arrest with severe acidosis pH < 7

* Calcium is detrimental except in :
  Calcium channel blocker toxicity
  Hypocalcaemia or hyperkalaemia
  Electro-mechanical dissociation

Arrhythmias	:	Verapamil 2.5mg IV/2 mins.
Refractory VF/VT	:	Bretylium Magnesium.
Cerebral oedema	:	Dexamethasone, mannitol, frusemide, IPPV.

DIAGNOSIS OF BRAIN DEATH

Brain Death is the complete and irreversible cessation of all brain functions including the cerebrum and brain stem.

The diagnosis is necessary for the following reasons :

* Intensivists can withdraw extraordinary means of life support.
* Patients can be spared a protracted death.
* Relatives can be relieved of stress, false, hopes and expense.
* Public funds and I. C. U. resources can be made available to others.
* Transplant organs can be made available in good condition.

As diagnosis of Brain Death is new in Sri Lanka it must be appreciated that it would cause severe distress to relations. A sympathetic doctor should take time to explain the process, and support them through the emotional crisis.

Diagnosis must confirm :

* Apnoea
* Areflexia
* Absent cerebral blood flow.

DIFFERENCIATING BRAIN STEM DEATH & CORTICAL DEATH

In Brain stem Death, all brain stem reflexes and respiration are absent and asystole usually occurs within a week, which allowed physians in the past to "ventilate to asystole" In Cortical Death, brain stem reflexes and respiration are present, and the patient may live in a vegetative state for years.

PRECONDITIONS FOR DIAGNOSING BRAIN DEATH

1. COMA

The patient must be in a deep coma where the probable cause is known and the following causes are excluded :

* Drugs or toxins, (toxicology screen or wait 3 days)
* Hypothermia (33 degrees)
* Severe hypotension * Severe hypo or hyperglycaemia.
* Metabolic endocrine, acid base or electrolyte imbalance.

2. VENTILATOR DEPENDANCE

Exclude respiratory depressant drugs and relaxants.

TIME OF TEST

* Pre-conditions must be fulfilled.
* 4-8 hours after head injury.
* 1-2 days after a hypoxic episode.
* 3-4 days after drug intoxication.

REPEAT TEST IN 3-24 HOURS.

MEDICAL OFFICER PERFORMING TEST

Consultant in charge or Assistant 5 years after registration.
Consultant neurologist only if primary diagnosis is in doubt.

TESTS TO CONFIRM BRAIN STEM DEATH

1. Absence of response to deep pain
2. Absence of pupillary reaction to light (right & left)
3. Absence of corneal reflex (use firm pressure)
4. Absence of vestibulo-ocular reflex (no eye movement during or after slow injection of 20ml ice cold water into each ear.)
5. Absence of occulo-cephalic reflex (doll's head movement)
6. Absence of gag reflex (suction tube down trachea)
7. Absence of tachycardia after atropine 1mg IV
8. Apnoea test.

APNOEA TEST

Ventilate with 100% O_2 for 10 min. to maintain PO_2 above 100mm.
Ventilate with 5% co 2 in O_2 for 5 min. to obtain PCO_2 of 40 mm.
Disconnect ventilator for 10min. to obtain PCO_2 of 70mm.
Administer 6L O_2 through catheter in ETT throughout.
Watch for the slightest sign of respiration.

* If respiration is PRESENT, the patient is not brain dead, RECONNECT to ventilator.
* If respiration is ABSENT, but $PO_2 < 60$, or arrhythmias occur, RECONNECT to ventilator and repeat with better oxygenation.
* If respiration is ABSENT, and no transplant is planned, DIAGNOSE braindeath, inform relatives, and RECONNECT to ventilator for organ preservation.
* If respiration is ABSENT, and no transplant is planned DISCONNECT ventilator.

PITFALLS & SAFEGAURDS

* Always test each side separately
* Look for cataracts, ear wax, neurological disease
* Remember there may be more than one cause for the coma eg. drug overdose and injury.
* Spinal reflex movements are compatible with brain stem death
* Decerebrate rigidity is incompatible with brain stem death
* Seizures are incompatible with brain stem death

CARDIOGENIC SHOCK

Consultant Physician to be in charge.

Oxygenation	:	3l/min 02 via face mask or nasal prongs
Pain relief	:	Morphine IV. Entonox.
Anti-Thrombotic	:	Aspirin 150mg oral stat Streptokinase within 6 hours
Coronary dilators	:	GTN, Isosorbide dinitrate Nitroderm
Ventricular Tachy	:	Lignocaine 100mg IV & 1-4mg/hour Synchronized DC Shock.
Supra Vent. Tachy.	:	DC shock Verapamil 5-10mg., Digitalization.
Sinus Bradycardia	:	Atropine & Isoprenaline
Heart Failure	:	Decrease venous pressure to prevent oedema. Increase forward flow for optimum oxygenation. CVP & Fluid challenge. Inodilators & vasodilators. Frusemide, Opiates, Inotropes, Anti-arrhythmics. IPPV and PEEP.

RESPIRATORY FAILURE

CLINICAL EXAMINATION

Rate, pattern, tidal volume, dyssynchrony, accessory muscles. Tachypnoea is often the earliest sign.

Upper airway obstruction	: nasal flaring, stridor, no air flow,
Inspiratory stridor	: extrathoracic obstruction
Expiratory stridor	: intrathoracic obstruction
Wheezing	: proximal or peripheral airways narrowing
Rales	: cardiac or respiratory dysfunction
MONITORING	: SPO_2, Tidal Volume, Peak Flow, X-ray, Blood gases.

OXYGEN DELIVERY SYSTEMS

TYPE	FLOW L/MIN	FIO2	COMMENT
Nasal canula	2	0.25	Comfortable
	3	0.3	Ideal if MV is normal
	4	0.35	High MV air dilutes 02
	5	0.4	High MV air dilutes 02
Simple mask	8-15	0.4 - 0.6	
Venturi mask	4-12	0.28 - 0.5	No change with MV

INDICATIONS FOR VENTILATION

When in doubt - Ventilate! Get control of airway & ventilation.

Mode	:	Assist/ Control/ Itermittent Mandatory Ventilation
Volume	:	10ml/ Kg
Rate	:	12/min. (adults)
F IO2	:	Minimum required to maintain Sp02 > 90%
		Needs 20 min to reach new steady state.

Monitor Peak Airway Pressure

Increased Peak Pressure :

1. Increased Airway Resistance : obstruction, secretions, spasm.
2. Decreased Compliance : Pneumothorax, atalectasis, Pulmonary oedema, chest constructions, intra-abdominal pressure.

Decreased Peak Pressure :

1. Air leak in tubes or cuff or disconnection.
2. Hyperventilation with patient's efforts.

INDICATIONS FOR TRACHEAL SUCTION :

* Audible or visible secretions
* Increase of peak inspiratory pressure
* Removal of mucous plug, F.B. etc.
* Check ETT for kinks, obstruction, herniation.
* Avoid acute hypoxia during suction
* Catheter must always be less than half the diameter of tube.

ACUTE RESPIRATORY FAILURE - ARDS

Goals :

1. Improve airflow
2. Maintain tissue oxygenation SPO_2 > 90%
   Dobutamine 5 - 15 mcg/ kg/ min
   (Dopamine may increase PCWP & vasodilators increase shunt)
   (Steroids predispose to infection & increased blood viscosity)
3. Avoid O_2 toxicity
   If FIO_2 0.6 does not maintain SPO > 90%, apply PEEP

ACUTE RESPIRATORY FAILURE (Pneumonary oedema, COAD)

Goals :

1. Improve airflow
   Bronchodilators & steroids valuable in asthmatics
   Aminophyline maybe risky and benefits are unproven.

2. Improve balance between gas exchange and metabolism
   Relaxants, sedation, hypnotics.
   Diazepam : cumulative and causes phlebitis.
   Midazolam : quicker, shorter acting.

Auscultatory sounds do not correlate with airway obstruction.
Airflow sounds in ventilator tubing may cause interference.
PEER best indicator with spontaneous ventilation.
PIFR best with IPPV.

ANAPHYLACTIC SHOCK

Clinical diagnosis : Sudden severe CVS collapse due to vasodilatation and increased capillary permeability often with accompanying laryngeal oedema, bronchospasm & angio-oedema.

Treatment : Adrenaline 5ml 1:10,000 IV.
Colloid infusions.
Oxygen.
Aminophyline, hydrocortisone & diphenhydramine.

HYPOVOLAEMIC SHOCK

Goal : Maximise O_2 delivery & blood volume : 02, Fluids, Inotropes.
Aim for Hct of 30-35%, Hb of 8-9g/d1 and albumin of 2.5g/d1.

Maintain colloid oncotic pressure : 1 colloid for 3 crystalloids
Fluid challenge of 200ml crystalloid in 10 minites & assess CVP and urine output trends.

Fluid therapy :
Estimated loss x blood volume (males 70ml & females 60ml/kg)

Clinical signs	Loss
Orthostatic tachycardia 20/min	15%
Orthostatic hypotension 15 mm	20%
Supine hypotension & oliguria	30%
Organ failure	40%

N. B.

* Tachycardia maybe blunted and hypotension exaggerated by old age, diabetes, drugs etc.
* Volume loading gives better oxygen delivery than packed cells.
* In mild hypovolaemia, infuse crystalloids to replace the e. c. f. Give thricc the volume deficit as only 30% remains intravascular.
* In severe hypovolaemia, infuse equal volume of colloids.
* In severe shock group specific blood maybe transfused safely without D. T. Dilute packed cells with Saline for faster flow.
* Wide bore (14-16G) short peripheral catheters give best flows.
* Monitor hourly urine output & maintain at >0.5ml / kg/hr.

Drugs

Dopamine : 200mg in 5ml vial. 400 microgm / ml infusion
2-5 microgm / kg/min to increase urine output
5-15 microgm/kg/min for inotropic support
15-25 microgm/kg/min for vasoconstriction.

Dobutamine : "Pure" cardiac inotrope. Less tachycardia.
250 mg in 20ml. 1mg /ml infusion
2.5 -10 microgm/kg/min.

Adrenaline : 2-30 microgm /min

SEPTIC SHOCK

Remove infective focus	:	F. B. Catheters, grafts, pus,etc.
Maximise O_2 delivery	:	IPPV, Inotropes, Blood, Fluids.
Metabolic support	:	Glucose, Insulin, Electrolytes, TPN.
Renal support	:	Mannitol, Frusemide, Dopamine, Dialysis.
Correct coagulopathy	:	FFP, Plateletes, Cryo, Anti-thrombin.
Other therapy	:	Immunomodulators, Chlorpromazine, PSIs.

Clinical evalution :

Fever (if hypothermic, poor prognosis)
WBC usually increased (if decreased, poor prognosis)
Tachypnoea & tachycardia
Organ dysfunction (mental state ARDS, oliguria, jaundice)

Goal : To prevent multi-organ failure, not identify infection.
Improve haemodynamics and oxygenation to supranormal levels to match hypermetabolism of sepsis.

Therapy : Fluid loading with colloids.
Vasoconstrictors judiciously.
Dobutamine &dopaminc.
Glucose (50% 1g/kg), Insulin (1.5u/kg) & KCI 10mm.
Eradicate infection.
Haemodialysis for renal failure although it is often part of the multi-organ failure leading to death.

ACUTE RENAL FAILURE (<400ML/24HRS)

PRE-RENAL : Urine Na < 20 mmol/1. Improve C. O.
RENAL : Treat cause, sepsis, toxins, drugs, etc.
Urine & plasma iso-osmolar. proteinuria.
Urinc Na > 30-50 mmol 1/1 & K < 10mmo 1/1.
POST-RENAL Relieve obstruction

Management :

* Check for catheter obstruction.
* Ensure adequate intravascular volume (CVP 12 mm)
* Fluid challenge : 100ml 20% mannitol (response in 2hr)
Osmotic challenge : 100ml 20% mannitol (response in 2hr)
Diuretic challenge : Frusemide 100ml 20% mannitol (response in 1hr)
* If BP is normal : Dobutamine 10-20 mugm/kg/hr.
If BP is low : Dopamine 5-15 mugm /kg/hr.
(Early therapy converts oliguric to non-oliguric failure)
* Omit all nephrotoxic drugs, renal excreted drugs & allergens.
Replace aminoglycosides with aztreonam.
cimetidine with sucralfate.
frusemide with bumetamide.
NSAIDS & penicillins with alternatives.
* Treat dangerous hyperkalemia with :
Dextrose 50ml 50% & Soluble Insulin 10 units.
NaHCO3, CaCl 10% 10ml, Dialysis

STRESS ULCER PROPHYLAXSIS

As stress ulcers appear almost immediately after critical illness due to mucosal ischaemia, therapy is to prevent bleeding.
(20% ICU patients devclop ulcers, and 5% have severe bleeding)

1. Enterel feeding is the best protection.
   Test feed 50-100ml over 30 min. via 20FG N-G tube.
   If less than half is retrieved after 30min. feed enterally.
   If intubated, add methylene blue to check for aspiration.
2. Sucralfate, if gastric emptying is inadequate
   1g in 15ml water tds. (cheap & non toxic)
3. Antacids : Sodium citrate 30ml every 2 hours.
4. H_2 blockers if very poor emptying.
   Maintain PH of gastric fluid > 4.
   Ranitidine 50mg & cimetidine 300mg slow IV & infusion.
   (Disadvantage : Removes acid defense against bacteria & makes mucosa more sensitive to residual acid.)
5. avoid NSAIDS , Steroids, chemotherapy,

COMMON PROBLEMS

CPR, Trauma, Head injury, Shock, Septicaemia.
Post-operative monitoring, pain relief & fluid balance.
Respiratory, Cardio-vascular, Renal & Hepatic failure.
Prolonged ventilation : Polyneuritis, Tetanus, Poisoning.
Obstetrics : PET & PPH.
Paediatrics : Croup, Epiglottitis, Bronchiolitis,Asthma.
Diabetcs, metabolic & endocrine disorders.

MANAGEMENT GUIDELINES

CARDIAC ARREST
ADVANCED CARDIO-PULMONARY-CEREBRAL RESUSCITATION

Rapid defibrillation is the major determinant of survival.

* Shock 200J / Shock 300J / Shock 360J
* Adrenaline 1mg (1:10,000, 10ml IV or 20ml via ETT)
  * Shock 360J
  * Lignocaine 100mg IV or 200mg via ETT.
  * Shock 360J again & repeat above sequence.
  * Atropine 1mg IV or 2mg via ETT repeated, for sinus bradycardia.

For IV injections central lines are preferable.

Peripheral line : Give 20ml N.Saline bolus & elevate limb.

Catheter passed beyond tip of ETT is an effective route for Adrenaline, Atropine, Lignocaine diluted in 10ml N. Saline.

Stop chest compressions while spraying the drug down thc catheter and give several quick insufflations to aerosolize.

Sodium bicarbonate is contraindicated except in :

* Pre-existing severe metabolic acidosis or hyperkalaemia
* Tricyclic or phenobarbital overdose.
* Protracted arrest with severe acidosis pH < 7

Calcium is detrimental except in :

* Calcium channel blocker toxicity.
* Hypocalcaemia or hyperkalaemia

For Arrhythmias : Verapamil 2.5 mg IV/2 mins. Maximum 20mg.

Refractory VF/VT : Bretylium, Magnesium.

CARDIOGENIC SHOCK (Acute myocardial infarction & failure)

Oxygen via face mask / nasal prongs

Pain relief : Morphine IV. Entonox.

Anti-Thrombotic :	Aspirin 150mg oral stat
	Streptokinase within 6 hours
Coronary dilators :	GTN, Isosorbide dinitrate, Nitroderm
V.T. :	Lignocaine 100mg IV & 1-4mg /hour
	Synchronized DC shock
S.V. T. :	DC shock. Verapamil 5-10mg., Digitalization.
Bradycardia :	Atropine & Isoprenaline

Heart Failure :	Decrease venous pressure to prevent oedema.
	Increase forward flow for optimum oxygenation.
	CVP & Fluid challenge. Inodilators & vasodilators.
	Frusemide, Opiates, Inotropes, Anti-arrhythmics.
	IPPV and PEEP.

HYPOVOLAEMIC SHOCK

Goal : Maximise O_2 delivery & blood volume : O_2, Fluids, Inotropes.
Aim for Hct of 30-35%

Maintain colloid oncotic pressure : 1 colloid for 3 crystalloids Fluid challenge of 200ml crystalloid in 10 minutes & assess CVP and urine output trends.

Fluid therapy :

Estimated loss x blood volume (males 70ml females 60ml/kg)

Clinical signs	Loss
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N.B.

* Tachycardia maybe blunted and hypotension exaggerated by old age, diabetes , etc.
* Volume loading gives better oxygen delivery than packed cells.
* In mild hypovolaemia , infuse crystalloids to replace the e.c.f. Give thrice the volume deficit as only 30% remains intravascular.
* In severe hypovolaemia, infuse equal volume of colloids.
* In severe shock group specific blood maybe transfused safely without D.T. Dilute packed cells with Saline for faster flow.
* Wide bore (14-16G) short peripheral catheters give best flows.
* Monitor hourly urine output & maintain at >0.5ml /kg/hr.

Drugs

Dopamine	:	200 mg in 5ml vital . 400 microgm/ml infusion
		2-5 microgm/kg/min to increase urine output.
		5-15 microgm/kg/min (beta 1&2) for inotropic support
		15-25 microgm/kg/min (alpha) for vasoconstriction.
Dobutamine	:	"Pure" cardiac inotrope.
		250mg in 20ml . 1mg/ml infusion.
		2.5-10 microgm/kg/min.
Adrenaline	:	2-30 microgm/min.

ANAPHYLACTIC SHOCK

Clinical diagnosis : Sudden severe CVS collapse due to vasodilatation and increased capillary permeability.

Laryngeal oedema, bronchospasam & angio-oedema.

Treatment : Adrenaline 5ml 1:10,000 IV & colloids.

Aminophyline, hydrocortisone & diphenhydramine may help.

SEPTIC SHOCK

Clinical diagnosis :

Fever (if hypothermic, poor prognosis)

WBC increased (if decreased, poor prognosis)

Tachypnoea & tachycardia

Organ dysfunction (mental state, ARDS, oliguria, jaundice)

Goal : To prevent multi - organ failure, not identify infection.
Improve haemodynamics to supranormal levels to match.
hypermetabolism of sepsis.

Eradicate Infection : F.B. Catheters, grafts gut pus,

Maximise 02 delivery : IPPV Blood, Colloids, Inotropes.

Inotropic support : Dopamine & Dobutamine.

Metabolc syupport : Glucose (50% 1g/kg)

Insulin (1.5u/kg),

KCL 10mm,TPN.

Renal support : Mannitol, Frusemide, Dopamine.
Haemodialysis, for renal failure although it is part of the multi -organ failure leading to death.

Unresponsive hypotension : Vasonstrictors

Correct coagulation defects : FFP, Platelets, Cryo, Anti-thrombin.

Avoid stress ulceration : Ranitidine 50mg slow IV bd.
Sodium citrate 30ml/2hr
Sucralfate 1g in 15ml tds.

CHAPTER 9

PAYING WARDS MANAGEMENT

Some of the larger state hospitals in the island have a separate building or a secluded part of a building set apart for patients who can afford to pay for the services provided by the hospital.

Introduction

The payment will be according to the rates decided by the authority. They get better physical facilities than the non-paying patients in the same hospital and have the advantage of been able to select, the consultant of his or her own choice. These facilities may vary according to the class of the paying ward. These wards are classified as,

i. Super class eg. Merchants ward in colombo General Hospital,
   Villas as in Mental Hospital Angoda.
ii. Class I paying wards.
iii. Class II paying wards.

1 Super Class

These rooms have an extra bed for the visitor. Room could be larger and may be air conditioned.

11 Class 1

Separate rooms but with one bed for the patient; and with suitable furniture and attached toilets.

111 class 11

These paying wards have two or more patients in one room with common toilets.

Objectives

1. To provide better physical facilities for the patients who are willing to pay for them.

FURNITURE AND OTHER UTENSILS REQUIRED FOR ONE PATIENT GENERAL PRINCIPLES

The type and quality of the furniture and other necessary equipment depend on the class of paying ward. First class and special class paying wards should be given better quality furniture and utensils. Proper maintenance of furniture and other equipments is very important. Broken utensils and furniture should not be used.

Furniture used in a single accommodation room

01.	Bed iron large Small bed for a visitor if possible	01
02.	Almirah	01
03.	Toilet Table	01
04.	Teapoy	01
05.	Screen Large	01
06.	Towel Racks	01
07.	Chair G. O. H.	01
08.	Chair Verandah	02
09.	Table ordinary	01
10.	Table small for meals	01
11.	Over bed tables	01
12.	Racks for suit cases	01
13.	Basket for waste papers	01
14.	Rug coir or Rubber	01
15.	Bed side lockers	01

Linen

01. Bed covers	01
02. Bed sheets large 90x72	02
03. Draw Sheets	01
04. Draw Mackintosh	01
05. Pillows	05
06. Pillow cases	05
07. Mattress	02
08. Covers for mattress	02
09. Teapoy covers	01
10. Table cloth	01
11. Toilet Runner	01
12. Towels Bath	01
13. Towels Face	01
14. Serviette	01
15. Mosquito Nets	02
16. Bath Mats	01

Crockery & Cutlery

01. Tea pot
02. Cups & Saucers
03. Trays serving
04. Food cover plastic
05. Cruet set
06. Tumbler glass
07. Container for drinking water
08. Table Spoon
09. Tea spoon
10. Table Knife
11. Butter Knife
12. Fork
13. Containers for sugar & Milk Powder
14. Cups - dessert
15. Rice plates
16. Soup plates
17. Curry dishes small

18. Racks for Bread
19. Trays large
20. Food cover
21. Covers for trays

Toilet Facilities

Separate attached bath-rooms and toilet facilities for each room are important.
Cold water or Hot water should be provided.

Separate cleaning utensils for each rooms are preferred.

Bed pan wash and geyser if possible.

i.	Bed pan s/s	01
ii.	Triangular Tray	01
iii.	Sputum mug enamelled/ss	01
iv.	Bowls	01
v.	Pails enamelled /ss	01
vi.	Urinals /ss	01
vii.	Toilet paper to be supplied	

Other Utensils

i.	Medicine glass	01
ii.	Thermometer in a holder	01
iii.	Flower vase	01

Staffing Patterns

01. Nursing care by the Nurses and trained attendants
To meet this objective adequate number of nurses and attendants and labourer should be allocated.
Decision regarding requirements should be taken by the Director /in consultation with Nursing Officers Special Grade.

02. Special attendants could be allowed with the permission of the hospital authority. Relatives should not be utilized as helpers for nursing care duties.

ADMISSION PROCEDURE

ADMISSION OF A PATIENT (DIRECT)

1. Patient has to obtain a letter from the Consultant of his choice.

2. Patient should register his name in the waiting list in the hospital office by depositing Rs. 15/-

3. Patient / relative should be informed by telegram or telephone when there is a vacancy. Confirmatiom should be obtained whether the message has reached the correct person.

4. If there is no response within 48 hours the next in the waiting list should be contacted.

ADMISSIONS FROM NON - PAYING WARDS

a) Needs to write on the B.H.T. by the Specialist ; to hospital authority to permit paying ward facilities.

b) Priority could be give to those who are requesting from a non-paying ward.

ADMISSION TO THE WARD.

i. Separate Bed Head Ticket Number should be issued. Separate design is ideal.

ii. Confirm whether the consultant has given his consent to admit to a paying ward.

iii. Obtain receipt from the patient, concerning payment. Vide general circular No. 1815 of 10.02.1994.

iv. Hand over 2 visitors passes sanctioned by the nursing officer special grade.

v. Usual admission procedure has to be carried out

vi. Accompany the patient from nurses station to the allocated room.

vii. Introduce the procedures which have to be followed by the patients and their relatives while patient is hospitalized.

viii. Hand over all utensils and other inventory items which are used in the room and request the patient / Guardian to sign the book.

ix. Inform patient guardian that he is responsible for the loss of property in his room.

x. Patients should be advised not to keep valuables with them. Smoking, liquor narcotics are not allowed in the rooms.

GENERAL RULES FOR THE PATIENTS AND THEIR VISITOR

1. Patients are required to stay inside their allocated room without going into others' rooms in other areas of the hospital.

2. Paying patients are not allowed to go out of the hospital without approval from their particular consultant and the Hospital Director/ M.S. 2 hrs short leave is permitted with approval from the hospital authority.
   No patient is allowed to stay out over night. Those who obtain special permission, are required to report back before 8.00 p.m.

VISITORS

3. All visitors to the paying patients should adhere to the usual visiting hours of the hospital.

4. Visiting should be restricted to visiting hours. Husband or wife or bystander of the patient is allowed to stay with the patient. Children are permitted to have, either the mother or father.

5. Rooms should not be lockcd from the inside for any reason. Door should be kept open during day time, but may be closed without locking at night.

ELECTRICAL APPLIANCES

No private electrical items are allowed to be used inside the rooms-Specially electric hot plates and kettles. Radio or Television set may be allowed after obtaining permission from the hospital authorities . Must ensure that other patients and staff are not disturbed.

SPECIAL ATTENDANTS

Special attendants who are authorized by the hospital are permitted to attend on these patients. Hospital employees are not allowed as special attendants.

VISITORS' PASSES AND CAR PASSES

1. 2 Visitors passes are issued after admission to the ward. One visitor could stay with the patient.

2. Extra passes could be issucd to visitors for urgent and important reasons.

3. One car pass could be given to bring the car inside the hospital premises during visiting hours. Vehicles are not permitted to be kept overnight.

SURGERY

1. Normal routine preparations should be followed.

2. Complete physical examinations and relcvant investigations have to be noted and carried out before surgery.

3. Consent should be obtained.

4. Paying ward patients may oe permitted to wear their own clothing preferably white to go for surgery

5. Nurse has to accompany the patient to and from the operation theatre.

6. Medical officer should categorisc the surgery and this should be entered in the B.H.T for costing purposes.

WARD ROUNDS AND OTHER RESPONSIBILITIES OF THE NURSING STAFF

1. Maintain good interpersonal relations with the patients and their visitors.

2. Main responsiblilities and duties are same as in any other ward, except on admissions, discharges and deaths.

3. Nurses should do ward rounds and give over patient by patient to the nurse of the next shift.

4. Nursing officer special grade is responsible to pay visits to these patients daily.

5. Any change in the condition of the patient should be informed to the nursing officer Special grade.

6. All new admissions and deaths should be brought to the notice of the nursing officer special grade.

7. Night supervisor should visit these patients daily, and report to the N.O.S.G. regarding their condition.

8. Nursing staff shall take adequate precautions to prevent accidents and cross infection of these patients.

9. Patients should not continue any drug without particular medical advice.

10. Nurses shall permit these patients to wear their own clothes in the ward

DIETS

Diets are ordered according to the medical advice.

Cost of the diet. Menu is decided by the hospital authority within the amounts charged from them. Cost of the diets will vary according to the patients.but if the patient wishes to have some extras that could be allowed within the cost. Meals will be served at the usual times of the hospital and individually in seperate trays. No cooking is allowed in the rooms.

If possible, separate kitchen with trained cooks should be organised or a scparate section of the common kitchen for preparation of meals for P.W. patients. Variety of meals should be served. If a patient is admitted before 11.00 a.m. he is entitled to have meals from evening tea.

Patients admitted after 11.00 a.m. are entitled to meals after 2.00 p.m. the following day.

If any patient is scheduled for discharge at 11.00 a.m. he is entitled for meals till evening tea of the same day. Patients who are discharged at 5p.m. are entitled for meals till evening tea of the following day since they are charged for the following day too.

SPECIAL INVESTIGATION

1. Scanning and other special investigations should be done in the same hospital if they are available. Patients are permitted to get investigations done outside with the permission of the hospital authorities.
2. Consultant shall order the investigation.
3. Rates for investigations must be obtained and the charges paid. Receipt should be produced from the place where investigations are done.
4. If the patient wishes that investigations be done out side all the arrangements have to be made by the patients/ relatives.

Communication System

1. All patients must be provided with call bells.

2. Patients should have facilities for telephone calls.

3. V.I.P. P. Should have Direct Line Telephone facilities; if possible

4. A communication desk with a senior nurse should be made available near the nurses, station. This nurse should be provided with sufficient booklets giving relevant information for the use of patients.

5. A visitors book for comments by patients/relatives should be made available to them when requested and on leaving.

CLEANING

1. Separate cleaning service is idcal if possible

2. Clean the toilets 4 times daily
   Morning at 6.30 a.m.
   Afternoon at 2.00 p.m.
   Evening at 5.30 p.m.
   Night at 8.00 p.m.
   If possible use deodorants.

3. Sweep the floor of the ward 3 times daily morning afternoon and night.

4. Mop rooms twice daily. (Morning and Afternoon)

5. Clean the other places of the room eg. doors & windows daily.

6. Polishing should be done weekly and all the rooms should be polished after discharge or death of a patient.

7. All the utensils should be cleaned once, daily.

8. Crockery and cutlery should be cleaned after every use. Placed in boiling water before use.

9. All the furniture should be polished once a year, along with the white washing of the ward.

10. Brass should be polished once a week.

11. Dusting of furniture, door, windows and beds should be done daily.

12. Universal Precaution and specil cleaning methods for patients with infectious diseases should be used.

13. The pantry should be cleaned daily.

DISCHARGE FROM THE HOSPITAL

1. Consultant should write in the BHT date & time of intended discharge i.e. 11.00 a.m. and 5.00 p.m.

2. Patients should be given sufficient time to have the payment ready on discharge . Time of discharge of the patient should be entered in the BHT by the nurse.

3. Reports of all the investigation should be attached to the B.H.T.

4. All private x'rays and investigation reports should be handed over to the patients /relations.

5. All operations performed on the patients should be categorized according to the classifications done by the Ministry of Health, Circular No. 1815 on 10.02.94.

6. All investigations, special tests and operations should be entered separately in the BHT for purpose of billing.

7. BHTT transferred with the patient from the non-paying wards should be sent back to that particular ward.

8. The BHT should be sent to the hospital for office billing and from there it will be sent to the Record room.

DEATHS

1. The medical officer should be summoned immediately to certify death.

2. Nursing Officer on duty is responsible for the preparation of the body before removal to the mortuary.

3. The BHT should be prepared in the same way as in a discharge.

4. The Death Certificate should be handed over only after the bills are settled.

5. Patients who are not Citizens of Sri Lanka
   1. These patients are charged accoding to Circular No.1815 of 10. 02. 94

CHAPTER 10

MANAGEMENT OF NURSING CARE SERVICES

1. INTRODUCTION

"Health" is a generally accepted right .Well-being is the norm towards which all health personal direct their efforts.

- One of the primary functions of the nursing and medical professions is to help individuals, families and groups reach the highest level of well being.
- A person's perception of health is based on a complex inter-relationship among the physiological, emotional, social, intellectual, cultural and developmental components of the self.
- Distribution of wealth, quality of life, level of poverty and level of education are essential determinants of health.

2. OBJECTIVES OF MANAGEMENTS OF NURSING CARE

To provide the best prompt curative nursing care to the sick as close as possible to their home.

To promote health, to prevent illness, to restore health, to alleviate suffering are the fundamental objectives.

Staff development to give quality nursing care to patients.

To practice nursing in accordance with standards of the profession.

Fulfil the professional promises made to the public.

To increase the knowledge of public by educating them while they are in the hospital to prevent diseases.

Participate in and promote the growth of the nursing care services rendered to the public.

Assist in the promotive, preventive curative and rehabilitatire services pertaining to the patient, family and community.

The health maintenance of health attainment stage in which the principles of healthy living (Physical and Mental) and the fundamentals of good hygiene and good nutrition are taught and practiced.

The increased risk stage, in which preventive measures are taken to protect those who are exposed to any sort of increased health risk.

The rehabilitation stage, in which disability is prevented or if this is not possible the patient is helped to use his entire remaining potential. If there is no hope for rehabilitation, and death is inevitable, this stage provides the opportunity to prevent unnecessary deterioration and to assist the patient in those activities that contribute to a peaceful death. And to do this in such a way as to help him gain independence as rapidly as possible.

a) The components of Basic Nursing Care

1. Helping patient with respiration
2. Helping patient with eating and drinking
3. Helping patient with elimination
4. Helping patient to maintain, desirable posture in walking sitting and lying and to move from one position to another
5. Helping patient to rest and to sleep

6. Helping patient with selecting of clothing with dressing and undressing

7. Helping patient to maintain body tempetature within normal range.

8. Helping patient to keep body clean and well groomed

9. Helping patient to avoid dangers in the environment and protecting others from any potential dangers from the patient such as infection or violence.

10. Helping patient to communicate with others to express his needs and feelings.

11. Helping patient to practise his religion or to conform to his concepts of right and wrong.

12. Helping patient with work or productive occupation

13. Helping patient with provision for recreational activities

14. Helping patient to learn

b) Who is a Nurse

A Nurse is a person who has completed a program of basic nursing education and is qualified and authorised in his /her country to practice nursing. Basic education is a formally rccognized program of study which provides a broad and sound foundation for the practice of nursing and of post basic education which develop specific competence. Nursing is concerned with caring of people throughout the span of life, and at all points on the continuance between sickness and health.

Nursing is a profession in its own right. As such it has the right and responsibility to govern it's own practice and professional affairs, and accepts a commitment to society in accordance with professional ethics.

c) Who is a Patient

1. The patient is the most important person in the hospital
2. The patient is not depending on us. we depend on him.
3. The patient is not an obstruction to our work. He is the object of our work.
4. The patient is not an outsider to our day-to-day work. He is our work.
5. The patient is an individual and not just an entry in our register.
6. He is a very busy person and is weighted with feelings and doubts.
7. The patient has the "RIGHT" of all, rather than a privilege

d) Ethics in relation to the Nurse Motives for nursing

1. To have joy in caring for sick people
2. To be a means of exercising authority
3. To satisfy a desire for orderliness
4. To show our knowledge
5. To wear an attractive uniform
6. To satisfy the desire to make ourselves attractive to other
7. To fulfil a wish to become a professional person.

e) Ethics in relation to the patient

The International Code of Nursing Ethics

Nurses provide health services to the individual the family and the community and coordinate their services with those of related groups.

The nurse while providing care promotes an environment in which the values customs and spiritual beliefs of the individual are respected.

The nurse uses judgement in relation to individual competence when accepting and delagating responsibilities.

The nurse shares with other citizens the responsibility for initiating and supporting action to meet the health and social needs of the public.

The nurse is active in developing a core of professional knowledge .
A nurse acting through a professional organization, participates in establishing equitable, social and economic working condition in nursing.

3. STAFF NORMS FOR DIFFERENT UNITS/SHIFTS

Managing a Ward

Standards of wards are different. It is the duty of the ward sister or the In charge nurse to organize the ward activities properly which can give patient care smoothly and run the ward in a peaceful manner

a) Organization of a Ward in relation to the care of the patient

"The patient comes first" the unit should be organised to the patients' feeling of security and comfort when nurse serves the patients.

What is organization

This depends on,

- The atmosphere in the ward. It should be quiet, efficient and happy.

- The respect with which he is treated as an individual with a name (never as the bed number or disease) whose personal needs should be considered at all times.

- The care, gentleness and efficiency with which his treatment is given.

If these needs are attended

The patient will have confidence and trust and will respond more effectively to treatment.

b) Recognition of client factors influencing Nursing care

a) Hierarchy of needs - Needs to survive physiological needs for such things as air, food water.

b) Need for safety and comfort, physical and psychological security.

c) Interpersonal needs social needs for love, acceptance status and recognition

d) Organizing the human resources

Ex. Nurses, attendants and other staff should be organized to give patient care in a team method

e) Organization of patient care assignments

i. Patient assignments (Patient centered method)
ii. Job assignments
iii. Group assignments (Team Method)

Patient Assignment

One nurse is totally responsible for certain patients(for very ill)their treatment and nursing care.

Ex : Giving care to an unconscious patient 4 hourly and giving Nasal feeds 4 hourly.

Job Assignment

One or two nurses carrying out routine work for the whole or part of the ward, giving medicine, injections and dressing of wounds etc. Carrying out all routine duties for the allocated group of patients. This method is useful and economical for convalescent patients. Better nursing care willl be provided to the individual patient.

Factors depending on this

1. The size of the ward

2. Type of ward (Ex. Cubicle, four or six beds)

3. Heavy medical surgical or gynaecological

4. General layout of the unit

5. Location of the equipment

6. Available number of personnel (trained and knowledgeable)

c. Create a suitable environment

- Provision of a safe atmosphere, fresh air, light, cleanliness, noise free, air control.(Prevent source of infection)

- Attention must be given to provide pleasing color effects as well as comfort and convenience in furnishing

- Provide an environment which is safe and comfortable for its workers which will promote efficiency and morale.

d. Supply adequate equipment

- Equipments need to be easily accessible, clean and in working condition

- The efficiency of the organization depends upon having adequate of the "right kind at the right time" in a right place

- Carefully thought out standards of supplies and adequate equipment are a necessity in ordering.

- A system for reporting when supply is low or equipment is out of order to all the members of the staff.

e. Ward Routine

- Suggested sample of ward routine for 24 hrs.

a) Ward must never be unattended always nurses should be with the patients in the wards/units.

b) Before and after procedures every patient should be left comfortable and the sur roundings tidy.

Example :- Morning Routine 7 a.m. - 1 p.m.

- Day nurses report on duty and take over the ward / unit from the night nurse after doing a ward round. After handing over the patients and sub inventory items to the day nurses, night nurse can go off duty.

- Sister in charge allocates patients' care and other routine work to nurses and other staff.

- Serving breakfast, giving medicine, getting the ward swept by the auxiliary staff.

- Doctors ward rounds, sister or nurse in charge doing the toilet round and getting organized for patient care.

- To see to the supplies in the ward and arrangements should be made for the after noon shift nurses.

Afternoon and evening Routine : 1 p.m - 7 p.m.

- Afternoon duty nurses report on duty and take over the ward from the morning shift nursing staff.

- The allocated work should be performed, evening care, medicine, injections at scheduled times.

- Patients who have had operations should be under continuous observations and made comfortable.

Night nurses Routine : 7 p.m. - 7 a.m.

- Night nurses report on duty and take over the ward from afternoon duty nurses.

- Reading the day report and treatment carried out as prescribed .

- Giving the orders to the attendants to see to the patients' urinals and bed pans and see to the sanitary cleanliness by the conservancy labourers.

- Drinks to the patients who need a cup of tea.

- Care to very ill patients and sedatives according to the doctors' prescriptions and other routine work by the nurses.

- Lights off after 9.30 p.m. (inside the ward)

- Ward rounds with the night sister (information should be given regarding the very ill patients and also if there is any problem)

- Night reports and prepare for early morning routine

- If possible two hours rest to be taken by each nurse in turn between the hours of 12.00 midnight to 5 a.m.

- 5 a.m. lights on and the morning temperature to be taken. Care should be given to very ill patients. Further care and treatment may be needed for some patients. Collect specimens, prepare for special tests and surgical preparations. Completion of all intake and output charts. Tidy the ward to hand over at 7 a.m.

f. Technical Supervision

The quality of the nursing care given to the patients in the wards and units depends mainly on the technical supervision by the sister or the charge nurse. Daily ward rounds in each shift with the nurses to take over and hand over in each shift. (when sister is not there the senior staff nurse should perform)

Ensure that the cleanliness of the unit is maintained and nursing care is given to the patients as per standards laid down.

To have a check list of technical matters to supervise during the ward round.

Examples :-

Whether foetal heart sounds are regularly monitored during labour, monitoring the mother in the post partum period, maintenance of sterilization, charts, maintenance of records, of health educatoin, nurses notes of giving injections and medicine.

g. Personnel Management

Includes induction training of nurses and minor staff

- Assignments
- Personal Policies
- Reports, Confidential and anecdotal
- Guidance and counselling of nurses and other personnel
- Regular staff conferences with the head of the unit (all other categories of the workers in the unit should be included)

h. Role of Ward Sister in quality assurance of Patient Care

a) Health education and community education for patients and visitors who come to the unit.
(for this purpose a staff nurse to be in charge of the unit and keep health education records)

b) Provision of safe water to patients and staff.

c) Control of communicable diseases (Notification book).

d) Sanitation - Cleanliness and refuse disposal.

e) Maternal care.

i) Haemoglobin Percentage and urine.

ii) Natal and post natal care.

iii) Asepsis of labour room.

f. Efficiency of sterilization of instruments

Sterilization Charts

g. Family Planning

- Availability of I.U.D. insertion facilities
- Availability of contraceptives

h. Nutrition

- in patient diet according to the diseases

i. Immunization

a) B.C.G. to new born
b) Maintain the cold chain
c) Availability of vaccines

j. Nursing Care

- Day and Night report in the ward and mid night report with the daily statistics.
- Drug administration records
- Nurses notes

k. Prevent Cross infection

l. Laundry Services
Changing patients, bed linen according to the availability

m. Oral rehydration therapy in each unit
(Medical and children's wards)

n. Courtesy to patients and relations

RELATIONSHIP - SISTER AND NURSING STAFF REGARDING NURSING CARE.

1. Discuss issues regarding patient care before implementing.

2. Listen to complaints brought by patients, discuss and solve problems without delay.

3. Indulge in constructive criticism and not destructive criticism.

4. Recognise work done by your staff and praise when necessary and counsel staff if on the wrong path.

5. Give opportunities for staff development.

6. Regular staff discussions and conferences.

7. Frequent continuous supervision of staff performance.

4) LEADERSHIP BY THE MATRON AND THE WARD SISTERS IN ADMINISTRATION, MANAGEMENT AND SUPERVISION

1. What is leadership :

It is a process of influencing the action of an individual or group towards specific goals in a particular situation.

Nursing Leadership

It is the ability to use the process of life to facilitate the movement of a person, a group, a family or a community towards establishing and attaining a goal pertaining to health.

2. Purposes of Leadership

- To lead a group in the right direction
- To keep the group moving constantly forward

3. How can leadership be effective to patient care

By maintaining the spirit of cooperation and enthusiasm of subordinates based on good human relationship.

a) Interpersonal influence depends on a knowledge of human behaviour and sensitivity to others in feelings values and problems.

b) Being well trained

c) Being skilled worker

d) Working in an organization efficiently

e) Being able to meet the goals

f) Improving one's job performance and of others as well.

g) Communication is an essential component of leadership (written, verbal, non-verbal, formal or informal)

h) Power is a leader's source of influence

i) May be professional or positional

j) Leadership process requires the use of actions associated with problem-solving, decision-making, relating, influencing and facilitating.

k) Need for change should be understood by those effecting the change, as well as those affected by the change.

l) Effective use of leadership is conducive to accomplish the goals of the group.

m) An evaluation process is necessary if the results of efforts to attain the goals are to be interpreted accurately.

n) Goals should be short term and long term. Evalution process influences its success.

4) Types of Leadership

- Autocratic
- Democratic
- Laissez faire

Autocratic : Leader does not seek input from the group but sets the goals plans, makes the decisions and evaluates the action taken.

Democratic : Leader seeks input from the group and responsibilities for action taken are shared between the leader and the group.

Laissez Faire : Input and the control of the group is minimal permitting each individual to set independent.

5) For successful leadership following ideas are considered :

Be courteous to every one. Courtesy is merely doing the kind thing in a kind manner.

Have the courage of convictions. Be sure you are right and then stick to it.

Learn to take criticism. Realize that criticism is directed towards the job and not towards you as an individual.

Forget disappointments. They belong to yesterday, you belong to tomorrow.
Do not discuss ward activities or office matters outside office, this can be fatal to your job and very damaging to your employer.

Be enthusiastic - Be friendly; to have friends (have one) never nag or gossip.

Be fair. Give to each his or her due.
Be clean mentally, physically and spiritually.

Have energy - Have a sense of security in your work. It is the first and most important step to success.

Be generous. Generous with your time, generous with your praise.

Be healthy, physically and mentally.

Be honest with yourself and your employers in thought and in deed

Be a good listener. Listen carefully and attentively

Be sentiment out of your office time

Keep your home worries and troubles to yourself

Do not agitate -Admit you are wrong if you are and do not make the same mistakes again.

What is Administration

Administration means to care for or to look after other people to help manage their affairs.

What is Management

It is the art or a process a manager takes to get things done through the people.

L.D. White definess management as " The Direction, coodination and control of many persons to achieve some purpose or objectives"

Principles of Management

a) Identify the people of organization.

b) Continuing service.

c) Make a good plan.

d) Make long and short term objectives.

e) Understanding and acceptance of objectives.

f) Maintain interpersonal relationship.

g) Concentrate on individual improvement

h) Provide opportunity for self development

i) Maintain reward and punishment

j) Provide job satisfaction

6) Matron and Sisters as leaders for effective patient care management

a) Definite plans must be formulated according to objectives, policies standards and work procedure

Caring for the patient	Achievement of the Aim of the Organization	Interpersonal Relationship
- Continuous Nursing Care - Evalution of the Care - Planning and Directing the care		Coordination Supervision

b) All personnal and their activities must be systematically arranged so that responsibility and the authority for specific and well defined duties can be delegated.

- The hospital organizational charts
- Written policies
- Lines of Communication
- An adequate number of qualified personnel
- Use of each persons capabilities effectively
- Interpersonal relationship to coordinate the activities

- Best results to be achieved with minimum resources regarding time, effort supplies and equipments.

- Adequate reports and appropriate record keeping

c) Must have an adequate number of qualified personnel

- Qualification of each employee

- Demands of the job

- Importance of the Job

- Inservice education

d) Administration (Matron & Sisters) must use each person's capabilities effectively.

- Principles of administration

- Tools of administration

- Job satisfaction

- Right person in the right place, at the right time

e) Cooperation with various Departments is essential to coordinate the activities of various Departments and personnel. It is done by

- Working together harmoniously

- Making full use of the facilities

- Maintaining the spirit of team nursing

- Smooth functioning of a nursing unit

- Clear understanding among the personnel and extending help to each other

g) Best results must be obtained with minimum resources by better utilization of the time, efforts, supplies and equipment.

h) Maintenance of adequate reports and recorded

- Documents of activities of the Personnel
- Progress of organization
- Progress of work
- Standard of nursing care
- These reports and records help to evaluate the programme of the organization.

7. Matrons and Sister Leadership in Supervision

Introduction

Supervision is a part of teaching, learning process. It involves advising helping inspiring, Leading and Liberating.

It is also one of the important tools of administration to ensure the successful comple tion of the work done. Supervision is not simply carried out for inspection and criticism.

Purposes of Supervision :

1) To improve the quality of work to the highest possible standard.

2) To enhance qualitative growth personally and professionally.

3) To ensure meeting the goals of an organization.

4) To ensure successful completion of work.

Principles of Supervision :

1) Good supervision is focussed on improvement of the work rather than on upgrading the worker.

2) Good supervision is based on the needs of individuals which has been cooperatively determined.

3) It is cooperatively planned objectives, methods of supervision and criteria for judging success in the attainment of goals that are jointly established.

4) Techniques carried out in good supervision are democratic in nature.

5) It should be a helping process to stimulate the staff to continue self improvement.

6) Respect the individuality of the staff member.

7) Help to create a social, psychological and physical atmosphere in which the individual is free to function at her own top level

Functions of a Supervisor

a) Plan

b) Observe

c) Care

d) Evaluate

a) Planning Function

It has 7 guideline words

- Why are we doing this ?
- What are we going to do ?
- Who will do it ?
- Which things do you need ?
- How will you do ?
- When will you do ?
- Where will it be done ?

b) Observing

Supervising needs "Eyes in the back of the head"

c) Caring

Supervising is a helping process

- Ensuring is a helping process
- Pleasant working conditions
- Adequate facilities
- Smooth running work programme

d) Evaluting Functions :

A supervisor should not only observe the functioning of a programme he /she should attempt to evalute its effectiveness in the context in which it is working

Qualities of a good Supervisor

- Sincere
- Honest
- Communicative
- Supportive
- Knowledgeable
- Considerate
- Motivated

How to supervise :

Situations - Wards
- Clinics
- Field
- Staff Conferences.

Aspects of Supervision

Substantive : Concerned with activities ; work done

Techinical : Method of work

Line : Direct and Commanding type

Functional : Staff functions by subjective, specialists

Methods

- Achievements of target
- Use of work plans
- Reporting systems
- Supportive Guidance and advise
- Improving efficiency and effectiveness

See that rules and regulations are observed

The problems the supervisor faces could be described as :
"The dilemma of a supervisor"

How can I be

- Aggresive but not offensive
- Supportive but not tolerate inadequacy
- Keep things moving but not boss
- Ensure improvement but not use force

- Challenge but not threaten

- Have many creative ideas but not have all the answers

- All these but not to be "Unpopular"

Characteristics of the Nursing Officer Special Grade (Matron)

- Matron or N.O. special grade implements and administrates all nursing staff ensuring that high standards of professional conduct and safe standards of nursing care are maintained .

- Her duties require independent judgement

- Decisions based on experience and knowledge

- Understanding of good practical knowledge of the nursing team when giving care

- Planning and implementing good nursing practices by holding regular staff meetings and discussions.

- Skill in effectively coordinating the work of others and maintain good working relationships with associates and subordinates

N.O Special Grade is responsible for :

1) Planning administrative regulations given by the Department to maintain efficient nursing service.

2) Developing policies in the institution for nursing service.

3) Assisting the Director /DMO in administrative duties.

4) Attending meetings with nursing and auxiliary staff regarding patient care and staff developments.

5) According to the needs of the wards units advising on the purchase of equipments used for nursing services.

6) Supervising the maintenance of drug registers and sub inventory records maintained by nursing staff.

7) Maintaining the attendance registers and leave registers in the office

8) Investigating complaints and taking action if necessary

9) Coordination of nursing services with other aspects of institutional requirements

10) Establishing satisfactory methods of communication, promoting and maintaining good inter personal relationship with all grades of staff

11) Attending regular ward rounds including visit to clinics other Departments and special visits to very ill patients.

12) Inform the Medical Director? DMO of all the activities and problems relating to the nursing care

13) Supervision of adequate supplies for carrying out nursing service

14) Maintaining ward procedures according to the standards

15) Delegating responsibilities and authority to nursing sisters

16) Director guidance and supervision of the ward sisters in the efficient running of the wards.

17) Encourage the sisters to assess the effectiveness of their own work and to develop their own capabilities in ward management

18) Helping the sisters to develop the team spirit, both within the group of nursing personnel and other Department workers in the institution.

Towards : Nursing Staff :

- To promote safe standards of nursing care.

- Supervision of the work of all nursing staff related to nursing care.

- Receiving reports from both the day and night staff on patients care and progress.

Auxiliary Staff

- Supervising the auxiliary staff related to nursing care procedures and cleanliness of the ward/unit/institution

- Regular contacting the auxiliary staff for teaching and encouraging them to follow safe practices and for obtaining their cooperation in the delivery of good patient care.

- Supervision of the whole hospital and its compound with a view to providing a clean safe environment in which patients can be cared for

- To help them to understand the importance of their role of conduct regarding the patients care in the ward/unit.

As a Matron she is responsible for the following as well :

- Health education

- Inservice education for the staff

- Recording and reporting

- Maintenance work (ex. equipments and instruments)

- Organizing the hospital staff in cleaning, incinerating, waste disposal and water supply.

- Social work (to establish good relationship with the medical staff and outsiders to obtain their cooperation in the efficient and effective care towards the patients

Responsibilities of a ward sister :

Functions :

- Incharge of a ward or group of wards

- Responsible for the standard of nursing care of the patients.

- Supervision of the nursing and auxiliary staff assigned to the ward.

- Responsible for the maintenance of the cleanliness of the ward and surroundings and maintenance of linen, equipment in her charge.

- Serves as a primary resource in nursing services practices to all other hospital staff.

- Promoting health education as an integral part of nursing care.

Characteristic of Ward Sister

- The Ward Sister implements, manages and supervises

- High standard of professional conduct and promotes safe standards of nursing care through other members of the nursing team

- Duties require independent judgement and decisions based on experience, knowledge of hospital team work and standard practice of good nursing care through working in the wards.

- Assist the ward nurses in planning and implementing good nursing practices

- Demonstrates knowledge and application of theories and principles related to safe and effective nursing care

- Skills in effective coordinating of the work of others

- Maintaining good relationships with nursing staff in the unit and others and subordinates.

Management and Administration by Ward Sister

1) Planning daily work with nursing staff and assigning duties to nursing and auxiliary staff on day and night duty. Arranging duty hours of staff.

2) Writing of nursing orders and reports, giving and receiving reports, reporting the daily census, safe keeping of patients records while they are in hospital.

3) Maintaining cleanliness of the ward and surroundings, furniture and equipments, responsibility for the general environment ventilation, lighting, noise, odours, prevention of cross infeetion and regular disinfection.

4) Maintaining adequate linen and other supplies requisitioning stores and repairs and replacements as necessary. Ensuring economy and care in use of equipment and supplies.

5) Keeping drugs in her custody and maintaining the records.

6) Checking all equipment periodically to see that it is in good order.

7) Daily checking on availability and condition of emergency equipment and supplies.

8) Maintain inventories, reporting breakage and losses.

9) Supervising nursing routine of admission and discharges of patients, ensuring that discharge tickets are given and instructions for further attendance to clinical or further care are given.

10) Ensuring that relatives of very ill patients are arranged to stay with the patients when necessary.

11) Arranging for patients property in safe custody and on discharge it is handed over or on the death.

12) Accompanying Senior medical staff on their rounds bringing to their attention points of importance about the patients.

13) Arranging the doctors to get assistance when required.

14) Accompany the NO special grade and Director/ DMO on ward rounds reporting to them the important incidents.

15) Investigating complaints by patients or other staff promptly and taking action according to rules.

16) Reporting absence and sickness of staff.

17) Informing immediately of any emergencies or accidents in the ward to Director/ DMO and Nursing Officer special grade.

18) Inservice education to staff in the unit and unit conferences with the medical and nursing staff and others.

Ward Sister as a Supervisor to

a) Nursing staff in the unit

* For providing direct guidance and supervision of the staff nurses in the efficient running of the ward and carrying out nursing routines, bearing in mind the individual needs of patients.

* Delegating responsibility and authority to the staff nurse

* Encouraging staff nurses to assess the effectiveness of their own work and develop further their own potential for giving good nursing care.

* Helping staff nurses to develop a team spirit with their colleagues, Medical staff and other staff in the unit.

Ward Sister should be helpful in :

- Health education

- Inservice education, orientation of new staff, skill training to teach new techniques

- Participating in training student nurses, attendance, auxiliary staff

- For directly guiding and supervising the provision of a clean safe environment in which patients can be cared for.

5. IMPORTANCE OF REGULAR CONFERENCES WITH STAFF BY MATRONS

Definition

"Conferences" means having communication ; as conferences or meetings and committees are to give information and getting opinions from others at times it is beneficial to have conferences.

Purposes of Conferences

- To give information
- To obtain information
- To bring together the knowledge and experience of people with expertise, to solve problems
- To develop cooperation between people with different views and influence attitudes.
- To allow the participants to ease their grievances
- To make decisions within the authority
- To come to a conclusion

Advantages of Conferences

- The members have opportunity to discuss and contribute their ideas to a common goal.
- More experience and knowledge can be brought together.
- With the same amount of time more information can be gathered.
- Profitable outcome of ideas.
- Proposed new solutions to problems.
- Job satisfaction.
- Self esteem is motivated by making a worthwhile contribution to the organization.
- Possible eause of trouble can be avoided.
- Flow of communication downward and upward is improved.

Disadvantage of Conferences

- Delay can occur in three ways

1) Decision taking may be unduly postponed

2) Delay in calling a meeting. Difficult to get down the people at short notice

3) Irrelevant discussions delay decision-making

Size of meeting :- More effective in smaller groups

Types of meeting

- Executive Meetings
- Decision making meetings
- Discussion and advice
- Problem solving Conference
- Information giving conference

Monthly and weekly conferences are arranged.

6. INFORMATION DESKS DURING VISITING HOURS.

This is very important in all hospitals, wards/units and Outpatient Department.

Objectives :

1) To alleviate fears of the patients and visitors;

2) To guide the patients and visitors coming to hospitals

3) To have good relationship and understanding about the institution;

4) To educate the ignorance;

5) To help the disabled patients and to take prompt action in an emergency situation.

In each unit during the visiting hours one nurse can be seated near a table. The information can be given by keeping a visual aid with simple lettering in all the languages : "Counselling Nurse"

7. IMPORTANCE OF HAVING NURSING CARE PROCEDURE MANUALS

The policies and procedure manual are the most effective management tools. It provides the idea of comprehensive framework of nursing and gives direction to achieve the objectives.

Can be used as

- An instrument for orientating new staff.
- Reference when unexpected problems arise.
- Foundations on which administrative procedures are developed.
- Basis of discussions when needed.
- Boundaries within which the hospital can work and convey its beliefs
- Lay out guidelines to the nursing staff doing management and nursing care
- Standards could be maintained

Biliography

1) Mathew Arline incharge of the ward second edition 1989 Billings of worcester.

2) Mrs.Kamala Tuladhard, Mrs. Bishnu Rai, Leadership and Management for nurses 1st edition 1990, Health learning materials centre report.

3) Tattersall E.F. Nursing Management in practice. 1st Edition 1984 British.

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Mosbys comprehensive review of 14th edition 1993.

CHAPTER 11

DISASTER PREPAREDNESS AND MANAGEMENT

01. INTRODUCTION

Civil distrurbances, communal clashes and terrorist attacks have become a major problem for the Health Care Institutions in Sri Lanka during the last decade.

Mass casualties following acts of violence have conferred a new means to surgical casualty services of Sri Lanka . And also mass transport by surface and air, construction of high rise buildings may result in accidents which can cause a sudden influx of a large number of seriously injured persons to nearby hospitals.

Therefore the large Health Institutions should be organised with staff and equipment to cope with these casualties.

Arrival of a large number of casualties within a short space of time and the presence of a large number of unwanted sightseers and media personnel may complicate the proceedings considerably.

Therefore the full implications of a major disaster need to be considered in order to avoid confusion on such occasions.

2) OBJECTIVES

In a major disaster a large number of casualties arrive within a short period of time with little or no warning. The main objective of disaster preparedness is to avoid chaos developing on such occasions.

3) DISASTER PREPAREDNESS PLAN

A hospital cannot possibly organise itself to receive the victims of a major disaster without detailed planning beforehand. The planning is incorporated into a document known as "Major Disaster plan" or "Major Accident plan"

This contains the details of all activities that everyone associated with the plan will have to carry out. It is unrealistic to expect individual members of staff to be familiar with the entire plan. Therefore the plan should be summarized in individual documents known as "Action Cards"

4. INTERPRETATION

As far as the hospital is concerned a major disaster is any event that results in live casualties in such a number that call for extraordinary measures to be taken for their reception and treatment.

General Hospital Colombo considers it as a Major Disaster, a situation where more than 30 persons have been seriously injured simultaneously as estimated by a reliable informant.

5. INITIATION OF THE PROCEDURE

Notification of a major disaster generally comes from the police. Declaration of a major disaster causes considerable disruption of normal activities of a hospital and therefore it must be justified. Such a declaration can be made only by the Head of the Institution or his deputy and in the absence of both of them it should be a Senior member of the staff, a Consultant Surgeon.

He should immediately contact

a. The Telephone exchnge

b. The Command Staff

c. Police

d. Transport Section

e. Voluntary Organizations

The telephone exchange should carry out the Disaster plan as per action card provided.

The Command Staff consists of :

a. Director

b. Consultant Surgeon

c. Consultant Anaesthetist

d. Consultant Orthopaedic Surgeon

e. Matron

f. AO /Clerk

g. Overseer

Each of the above mentioned officers should be responsible for alerting their teams/assistants.

The Disaster Team should consist of the following officials

a. Consultant General Surgeons

b. Consultant Orthopaedic Surgeons

c. Consultant Anaesthetists

d. Resident Surgeons

e. Anaesthetists

f. Medical Officers

g. Matrons

h. Nurses

i. Radiographers

j. Pharmacists

k. Clerks

l. Overseers

Every members of the team will be expected to suspend whatever each would be doing appointing a Deputy to take over if this is possible and proceed to the Accident Department /OPD without delay and carry out instructions listed in the Action Card.

The following are alerted

1. Consultant Neuro Surgeons

2. Consultant Cardio thoracic Surgeon

3. Consultant ENT surgeon

4. Consultant Eye surgeon

5. Consultant Radiologist

6. Consultant Physician

06. Action to be taken while awating for the casualties

Director/Deputy/Consultant Surgeon will be responsible to carry out the following.

6.1 Organize Medical staff as they arrive .This is important as staff normally arrive in excessive numbers and may cause considerable confusion.

6.2 To distribute Arm Bands (DISASTER TEAM) among the members of staff who are directly involved with the activities of the Disaster plan.

6.3 Clearing the Surgical wards -All cold cases to be discharged as far as possible.

6.4 Clearing the OPD as quickly as possible.

6.5 Consider stopping routine admissions.

6.6 Alert the theatres and CSSD

6.7 Provide additional beds in Genaral wards to accommodate casualties.

6.8 To alert Blood Bank

6.9 To deploy patient stretcher trolleys

6.10 Medical Supplies

Ideally the following items must be kept in a separate store room in OPD area (Disaster store room). If this is not possible a disaster cupboard should be kept in the OPD and the key must be kept with the Sister /Nurse in charge at all times. A duplicate key must be kept with the Director of hospital.

These items are usually non-perishable items. They should be used ONLY in the case of a Major Disaster.

a. Serally numberd Plastic Folders

b. Action cards

c. **Arm bands (DISASTER TEAM)**

d. **Transfusion fluids**

Normal saline

5% Dextrose

Hartmanns Solution

Haemacel

Dextran

e. **Giving apparatus**

Giving sets

Venflon cannulae - various sizes

f. **Disposable Syringes**

2ml

5ml

10ml

20ml

50ml

g. **Oxygen cylinders with apparatus for administration**

h. **Essential drugs**

Morphine

Pethidine

Sodium Bicabonote -etc.

i. **Dressings**

Cotton wool

Gauze

Lint

Cotton bandages

Crepe bandages

j. **Splints**