# KARNATAKA HEALTH SYSTEMS DEVELOPMENT PROJECT

LIB 6.7

# REFERRAL SYSTEM MANUAL

## TUMKUR DISTRICT

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# PREFACE

Health service in Karnataka is being delivered at three levels - Primary, Secondary and Tertiary. But access to health facilities and effective quality care in these facilities has been a dire need which has not been addressed for a long time. An effective mechanism which affords accessibility to the entire population as well as quality care at each level of health facility is lacking. The result is that the bulk of the health facilities like PHCs / PHUs at primary level are underutilized with the population depending on the more credible secondary and tertiary level health facilities such as district hospitals for all their health needs. The levels of health care are working independent of one another with no linkage between them.

One of the major objectives of the KHSDP Project is to build an effective referral mechanism which removes these anamolies and establishes an appropriate and well-linked multi-tier health care delivery system with improved service quality, access and effectiveness. Such a referral mechanism needs adequately spaced, well equipped health facilities manned ably by well-qualified and trained staff. All these needs are being addressed under the project.

This Referral System Manual has been developed to provide a strategy for implementation of a credible referral and linkage mechanism involving all health facilities from PHCs to tertiary hospitals. The Referral System envisaged in this manual emphasizes the quality service rendered by PHCs and First Referral units so that the patients develop confidence in these lower level health facilities. The Referral guidelines and protocols discussed here should be clearly understood by all doctors and nurses and followed meticulously at all times. Consistency is the catch word for a successful referral system.

This is a relatively new concept and needs good publicity not only among health professionals but also among the community members. Coordination and support between health facilities of different levels is essential to ensure an effective implementation of the Referral System.

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# REFERRAL SYSTEM

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Karnataka Health system and services has evolved over years from an amalgamation of the different geographical areas and their services. The state has 70% population living in rural areas. Only one-third of the rural areas are well connected by fair weather roads. About 40% of the population is below poverty line. Although the average literacy rate of the state is 67%, some districts of northern Karnataka have as low a literacy rate as 50%. The state has four administrative divisions and 27 districts.

The health care delivery system of the state consists of three tiers - Primary, Secondary and Tertiary. The lowest tier of Primary Health Care comprising 1357 Primary Health Centres (PHCs) and 621 Primary Health Units (PHUs), offers basic curative and preventive services in health as well as some promotive services in Maternal & Child Health and Family Welfare areas and implement all national and locally introduced health programmes.

Secondary level health delivery is implemented through hospitals. with bed strength varying from 30 to 800, such as Community Health Centres (CHCs) with 30 beds, Taluka level hospitals with 50 - 100 beds and Sub-district and District Hospitals with 250 - 800 beds. The 186 CHCs in the state are designed to be the First Referred Units (FRUs) offering curative services including minor operations and implement national programmes in health and family welfare. There are 45 taluka level hospitals with bed strength 50 - 100 where advanced curative services in the four major specialities of medicine, surgery, obstetrics and gynaecology and paediatrics along with dental services are offered. The sub-district and district hospitals which have all the specialities and improved diagnostic laboratory facilities are expected to provide high level inpatient and outpatient care.

## PRESENT SITUATION :

In such a multi-tier health care system, health facilities at lower echelons are expected to hold and manage all patients needing basic curative and preventive services and refer only those with more complex problems to appropriate higher health facilities.. In Karnataka, this referral system is not functioning effectively. Out-patients in secondary and tertiary level hospitals are over burdened with patients suffering from simple ailments who could have been managed at a

lower level health facility which remains under-utilised. Such patients make up one third of the out-patient in these hospitals. The reasons for this are:-

1. Self referrals by patients to higher level hospitals
2. Lack of confidence in lower level facilities due to perceived low quality of care.
3. Lack of proper linkage between different levels of health care.
4. Absence of guidelines or procedures that govern health facilities at different levels in a referral chain.
5. Non-availability of written conventions guiding what conditions should be treated where and when.
6. No triage or prioritisation of referred patients in health institutions.
7. Lack of basic space, equipment and staff facilities at lower level facilities, and mismatch in the availability of different specialists in lower tier hospitals.
8. There is duplication of investigations and treatment due to absence of an ideal referral system.

**Need and Objectives of the Referral System :**

There is, thus a need to develop a well functioning referral system through which patients with complex health problems are identified in a timely and systematic manner and examined, investigated and / or treated promptly at an appropriate health care facility.

**Main Objectives :**

1. Increasing community accessibility to the primary care level which provides bulk of preventive care services as well as the first contact for treating common diseases.
2. Developing a linkage through a referral system between different tiers of the health delivery system.
3. Ensuring that each successive level provide technically more complex services, and the higher tier provides technical leadership and support to the lower levels.

**Detailed Objectives :**

Every health facility in the state will achieve the following objectives when a referral system under this project is implemented:-

1. Timely identification and triage of different categories of patients for referral.

2. Referring only needy patients to higher facilities of management through a credible referral protocol.
3. Ensuring that the community develops confidence in the facilities at all levels.
4. Creating awareness in health workers and the community about the service availability.
5. Appraising the patients about the incentives for participating in the referral system.

Such a system ensures that the community develops confidence in the quality of care provided and patients understand that they will be referred according to their health needs. A credible referral system will minimise by-passing of lower level of health facilities. The requirements of such a referral system are as follows:-

1. Clearly defined services at primary, secondary and tertiary levels.
2. Quality service at each level which promotes confidence among patients.
3. Confidence in patients and community that they will be properly referred and promptly transferred to higher facilities as needed.
4. Awareness in the community as to types of services available at each level of care.
5. Procedures to be implemented to ensure that patients do not by-pass lower level facilities.

Under the project, the referral system will be developed and strengthened through a number of activities :

1. Renovating and upgrading hospital buildings to provide adequate space for services.
2. Provisioning equipment and support service at each level of health facility.
3. Upgrading and updating clinical skills of medical and paramedical staff through in service training programmes.
4. Providing ambulances for transporting all referred patients and,
5. Installing communication network through phone, fax and/or radio.

Some of the activities are already being implemented in a number of secondary level hospitals under the project. These hospitals will serve as focal referral points for the primary health care level. The project would also ensure that proper linkage is established between the primary and secondary level facilities so that most of the patients coming to first referral units have been seen at PHCs.

**Strengthening Measures :**

A number of measures would be implemented to strengthen the referral system :

1. Introducing the use of Referral and Feedback cards.
2. Implementing Referral Guidelines.
3. Establishing an incentive system.
4. Establishing linkages and communication between FRUs, PHCs through regular training and out-reach visits.
5. Developing intensive Information, Education and Communication (IEC) strategies for both health service providers and community.
6. Bringing referral system under the perview of District Level Health System Committees.

## PREPARATION FOR IMPLEMENTATION OF REFERRAL SYSTEM :

A good preparation to ensure that all pre-requisites for strengthening the referral system are met, is necessary for a successful implementation. The preparation will include the following aspects:-

**1. Referral cum Feedback card (which will be referred to as Referral Card only in the text further) :**

New Referral cum Feedback card will be introduced. Once a decision is made to refer a patient to a higher facility, a referral card for the patient is initiated by the medical officer referring the patient. The referral card provides the patient direct access to the Referral Hospital. This pink referred card contains:

a. General information about the patient - name, age, sex, address etc..
b. Medical information such as clinical findings and diagnosis, investigations done, treatment given and condition of the patient at the time of referral, and
c. Purpose of referral. The referred patient gains direct access to the department to which he has been referred in the Referral Hospital without following the general queue. Referral Hospitals may provide a special counter to receive referred patients to avoid delays. Under 'yellow card scheme', an annual health check scheme for SC/ST population in the state, these referral cards and special dispensations are already available.

Once the patient has been managed at the Referral Hospital, he will be given the same Referral card which includes general information about the patient, final diagnosis, procedures and treatment given, investigations done and follow-up advice.. Specimens of the card are given in annexure. All health facilities from PHCs / PHUs to district hospitals will make available the Referral card.

**2. Referral Guidelines :**

In order to ensure that an effective and acceptable Referral System is implemented, this manual of Referral Guidelines that will specify procedures will be issued to all health facilities. It includes (a) Administrative guidelines and (b) Referral protocols. Every health unit in the state is expected to strictly follow these guidelines and protocols all the time.

**a) Administrative guidelines :**

Under the project, directives providing guidelines will be issued for all health institutions covered by the project. These guidelines may be grouped as follows :

**i) Administrative guidelines for the Referring Health Facility :**

- Patients will be referred to the nearest, higher, properly equipped referral unit as provided in the Referral flow chart of this Manual.
- Patients will be referred from the lower health facility to the designated referral hospital strictly following the Zonal system in the Referral flow chart.
- A critically ill patient will be referred to the appropriate higher health facility for admission without any delay but only after s/he is stabilized with appropriate care and treatment.
- Before referring any patient, the referring medical officer will ensure:
  - That the Referral Card is duly filled and signed with the Feedback portion / component attached for Reverse Referral.
  - The patient's details are filled in the IP/OP Referral Register maintained to facilitate monitoring.
  - The patient is informed as to his destination and purpose of Referral.
- The referring medical officer and/or the staff nurse I/C will ensure that adequate supply of needy drugs are available for the referred patient both before referral and

enroute to the Referred Hospital. A trained nurse shall always accompany critically ill patient who is being referred.

- **Transport** : The Referring Hospital will provide suitable transport to the referred patient to reach the higher hospital using the following guidelines :
  - The ambulance transferring the referred patient shall have necessary patient care equipment such as oxygen cylinder, resuscitation kits, I.V. fluids and emergency life saving medicines.
  - In the event ambulance is not available the Referring hospital may hire a suitable private transport to refer the patient.
  - Very poor critically ill and poor patients will always be provided with transport free of cost. The discretion whether to charge or not rests with the referring Medical Officer.
  - Other referred patients will pay a stipulated fee which is equivalent to the actual cost of fuel used by the transport.
  - Payment will be collected by a designated person of the referring hospital who will issue a receipt to the patient or attendant accompanying the patient. The amount thus collected will be deposited into the hospital user charge account.
  - If the ambulance transports the referred patient, beyond the Referral hospital to the next higher hospital, on the advice of the medical officer receiving the patient, the driver of the ambulance will be authorised to collect money and issue receipt.

**ii) Administrative guidelines for the Referral Hospital :**

- The Referral Hospital will promptly receive the referred patient without any delay and guide him/her to appropriate consultation / investigation / treatment area.
- The Referred patient need not follow the queue at the OPD nor does he need to procure any outpatient ticket or slip. He will produce the referral card to the receiving staff.
- The appropriate specialist/medical officer/technician/nurse will attend to the referred patient promptly without any delay.
- Critically ill referred patients will be given top priority and admitted and managed diligently. Women and children should be given immediate attention and

managed, as their conditions often deteriorate following prolonged travel that the referral entails.

- Referred patients managed as an out-patient only, will be referred back to the Referring Institution along with the duly filled feedback card for follow up preferably on the same day.
- A Referal Register may be kept at an accessible Referral Counter.
- It is the responsibility of the Administrative medical officer of the Referral Hospital to provide diet for the referred patient - when admitted. Dormitory accommodation for Attendants to be made by Medical Officer, if feasible.
- Where fax/telephone facilities are available, the Administrative medical officer of the Referring Institution will communicate advance information about the patient being referred, especially in emergencies to the Referral Hospital to alert them to receive the patient. The communication may be used both ways to convey information.
- Every health facility in the Referred chain shall fix operational hours during which all patient care services are rendered, particularly hours for specialist consultation, investigations like X-ray, laboratory tests and visiting hours for attendants. These hours should not only be prominently displayed at the Reception of the Hospital but also be communicated in writing to all the Referring units in the Referral Zone
- All Referral health facilities shall develop procedures for handling referred emergency patients through 24 hours and fix rolls for staff.
- All health facilities from CHCs to District Hospitals will have a Referral Task Force with the Administrative head of the institution as Chairman. CHCs will include the Administrative Medical Officers of all PHCs in their Referral Task Force.
- The Referral Health Facilities from CHCs to District Hospitals will receive patients referred from non-governmental health institutions including private clinics present in their Zonal areas of referral and manage them as per the same guidelines given above.

ಮುಂದಿನ ದಿನಗಳಲ್ಲಿ / FOLLOW UP

ಮುಂದಿನ ದಿನಗಳಲ್ಲಿ / FOLLOW UP



ಕರ್ನಾಟಕ ಸರ್ಕಾರ
ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಇಲಾಖೆ
ಬೇರೆ ಆಸ್ಪತ್ರೆಗಳಿಗೆ ರೋಗಿಗಳನ್ನು ಕಳುಹಿಸಿದಾಗ ನೀಡುವ

# ಉಲ್ಲೇಖನ ಪತ್ರ
# REFERRAL CARD

ಆಸ್ಪತ್ರೆ / Referring Hospital :

______________________________

ಉಲ್ಲೇಖಿಸಲಾಗಿದ್ದ ಆಸ್ಪತ್ರೆ ಹೆಸರು / Name of Referred hospital :

______________________________

ರೋಗಿಯ ಹೆಸರು / Patient's Name :

______________________________

ತಂದೆ / ಗಂಡನ ಹೆಸರು / Father / Husband's Name :

______________________________

ವಯಸ್ಸು / Age : ಲಿಂಗ / Sex : ______________

ವಿಳಾಸ / Address :
ಮನೆ ಸಂಖ್ಯೆ / House No. : ______________

______________________________

ಗ್ರಾಮ / Village : ______________

ತಾಲ್ಲೂಕು / Taluk : ______________

ಜಿಲ್ಲೆ / District : ______________

ref-crd-ka

## ಕಾರ್ಯನಂತರದ ಮಾಹಿತಿ

## FEEDBACK INFORMATION

ರೋಗದ ತಾತ್ಕಾಲಿಕ ತೀರ್ಮಾನ
(Examination findings & Provisional Diagnosis)

ಉಲ್ಲೇಖನದ ಉದ್ದೇಶ
(Purpose of Referral)

ಪರೀಕ್ಷೆಗಳ ವಿವರಗಳು
(Investigations done / reports)

ರೋಗಿಗೆ ಸ್ಥಿರೀಕರಣ ಚಿಕಿತ್ಸೆ ಮಾಡಿದ ವಿವರಗಳು
Treatment given for stabilizing patient

ವೇಳೆ / Time :
ದಿನಾಂಕ / Date :

ಕಳುಹಿಸುತ್ತಿರುವ ವೈದ್ಯರ ಸಹಿ
(Signature)

ಉಲ್ಲೇಖಿಸುತ್ತಿರುವ ಆಸ್ಪತ್ರೆಯವರು ತುಂಬಬೇಕಾದ ವಿವರ
I. To be filled by Referral Unit

ರೋಗಿಯ ಬಂದ ದಿನಾಂಕ ಮತ್ತು ಸಮಯ
Date & Time of receiving patients

ವೈದ್ಯರು / ಉಲ್ಲೇಖಿಸುವ ವಿಭಾಗ
Doctor / Dept. to whom referred

ಸಹಿ / Signature

ಉಲ್ಲೇಖಿತ ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ಚಿಕಿತ್ಸೆ ಮಾಡುತ್ತಿರುವ ವೈದ್ಯರು ಬಿಡುಗಡೆ ಮಾಡುವ ಸಮಯದಲ್ಲಿ ತುಂಬಬೇಕಾದ ವಿವರ
II. (to be filled by attending Doctor, referral unit at time of Discharge)

1. ರೋಗಿಯ ಸ್ಥಿತಿ / Condition of Patient

2. ಸಲಹೆ ಮಾಡಿರುವ ಬಗ್ಗೆ / Investigations done

3. ಸಲಹೆ ಮಾಡಿದ ಚಿಕಿತ್ಸೆ / Treatment Advised

4. ಮತ್ತೆ ಬರಬೇಕಾದ ದಿನಾಂಕ / Date of Review

ದಿನಾಂಕ / Date :
ಸಹಿ / Signature :

ಮುಂದಿನ ದಿನಗಳಲ್ಲಿ / FOLLOW UP

**b. Referral Protocols :**

Referral protocols are written conventions as to what clinical entities should be treated where and when. The whole referral exercise depends on how meticulously these protocols are observed in all the three tier health facilities. These protocols will specify:

1. Types of conditions that should be referred for investigation and/or treatment to higher health facilities. A working group consisting of specialists in various specialities of medical care has prepared a clinical management protocol which provides guidelines and standards of management and procedures for stabilisation for common conditions by doctors with basic medical qualification who work without supervision in Primary Health Centres/Units and Community Health Centres. These protocols are given in annexure -
2. When and how to refer : Procedures that should be followed before referring a patient to a higher health facility are essential and sufficient information should accompany the patient who is being referred. A referral card has been developed for this purpose.
3. Advising the patient and his attendants before referral on :
   a) Purpose and benefits of referral
   b) Location and time and mode of reaching the Referral Hospital
   c) Precautions / preparations prior to transfer and
   d) Likely events at the Referral Hospital
4. Emergency protocol services. Guide lines for Immunisation, management and referral.

## Organisation

### State Level :

The Director of Health & Family Welfare Services will be the state nodal officer for implementing, monitoring and supervising the Referral System in the state under KHSDP. He will be assisted by a Additional Director (Medical) from the Project. The Project will provide the pre-requisites for the referral system like infrastructure, equipment, transport and communication facilities.

**District Level :**

**a) Referral Sub-Committee :**

At district level, the District Health Committee will constitute a Referral Subcommittee for the purpose of steering the implementation of Referral System in the district. The District Surgeon who will be the Chairman of this Committee has the overall responsibility of ensuring an effective Referral System in the district. The Committee consists of :

| | |
|---|---|
| District Surgeon | - Chairman |
| Lay Secretary of the District Hospital | - Member Secretary |
| District Health & Family Welfare Officer | - Member |
| Nursing Superintendent of District Hospital | - Member |
| Medical Superintendents of Sub-district Hospitals | - Members |
| Administrative Taluka Medical Officers | - Members |
| Administrators of Tertiary Referral Hospitals (Both government and non-government) | - Members |

This subcommittee which meets once a month has the following responsibilities :

1. Operationalisation of the Referral System in the district by identifying Referral Zones and chains, introducing necessary guidelines and training the staff.
2. Monitoring the implementation of the Referral System by assessing data from referral registers, reviewing feed back from primary level institutions and community.
3. Mobilising transport for referral needs by ensuring availability of a functional ambulance and/or by collaborating with NGOs or other Government agencies.
4. Coordinating technical support for lower level health facilities.
5. Making necessary budgetory provisions for necessary material support such as fuel for transport, training, IEC, referral cards, communication channels etc...
6. Training all health staff on Referral System as per guidelines issued.
7. Developing suitable IEC program to disseminate information on Referral System.

## Taluka Level :

At the level of talukas, all health facilities which form the first level referral chain, viz., the Taluka level hospitals, the CHCs and PHCs/PHUs will form a Referral Subcommittee which will have the following constitution :

1. The Administrative Medical Officer of the Taluka Hospital : Chairman
2. Administrative Medical Officers of all CHCs : Members
3. Administrative Medical Officers of all PHCs/PHUs : Members
4. Medical Superintendent of all Private Health Facilities
5. One representative Private Practitioner

The Taluka Referral Subcommittee meets once a month and discusses implementation of referral system at PHC/PHU, CHC and taluka hospital level. The subcommittee is responsible for the following :

1. Implementation, monitoring and servicing of Referral System.
2. Technical support to primary and first referral units from Taluka Hospitals.
3. Training of health personnel at lower level institution.
4. IEC strategies at community level.

## Incentives for Referred Patients :

Referral System is a new concept and needs a lot of motivational effort to operate effectively and consistently. Besides creating awareness about the benefits of the system in the patients, efforts are necessary to encourage them to follow proper referral procedures by providing incentives which may be listed as under :

1. At the Referral Hospital, referred patients,
   a) can report directly to the referred unit/department without going through the out patient queue and other formalities.
   b) don't have to make separate outpatient slips. The referral cards serve as outpatient slips.
2. The Referral Hospital will provide food for the referred patient who may be managed inpatients only.
3. The Referring Hospital will provide an ambulance or any other suitable transport to the referred patient who will pay only the actual cost of fuel used in the transfer.

**Technical Support to Primary Level :**

Success of the referral system much depends on the linkage established between primary health care facilities, FRUs, CHCs and Taluka Hospitals on the one hand and the Sub-district / District Hospitals on the other. In each Referral Zone, a sub-district / district hospital will be assigned to provide technical support to all the lower level health facilities in the Zone by :

1. Their consultants/specialists accepting wider role to strengthen Primary care programmes like safe motherhood, child survival, FP, immunisation, nutrition, disease surveillance etc,.
2. Coordinating by providing periodic consultant services, on-the-job training and inservice training to staff at PHCs and CHCs.
3. Training of doctors and other paramedics through
   i) Out reach visits to PHCs and CHCs by specialists from sub-district and district hospitals to
      a) provide on the spot consultation for selected cases and
      b) to enhance skills in selected treatment techniques by demonstration.

   ii) Providing clinical attachments for PHC and CHC and Taluka Hospital staff for training in special clinical skills with emphasis on management of emergencies including trauma care.
   iii) Periodic clinical meetings at PHCs & CHCs and taluka hospitals to discuss problems in clinical management.
   iv) Provision of updates and other medical literature to staff at lower levels.
   v) disseminating clinical protocol manuals to PHCs & CHCs and briefing the staff on its use.

The District Surgeon who will coordinate all activities on technical support will make necessary arrangements such as providing transport, stationary, teaching aids etc., to the consultants after obtaining approval from the Referral Subcommittee.

The strategies for referral system including the details of the technical support plans, will be included in the teaching syllabus in State Training Institutes by the Directorate of Health & Family Welfare Services.

## Information, Education and Communication (IEC)

Referral system is an IEC - intensive scheme. Wide Dissemination of information on referral system to different target groups is the key to its success. The target groups are :

a) the health care providers at primary and first referral levels viz., the health workers of PHCs, CHCs and Taluka level hospitals, who are actively concerned with referrals.

b) Government workers at grass root levels eg: anganwadis, M.S.S., school teachers, who can disseminate information regarding availability of different health care types and facilities at different levels and are considered as opinion leaders.

c) Patients who use the health facilites (priority target), as their first hand experience carries weight.

d) Private Health facilities, practitioners and NGOs who also refer patients and therefore should be aware of the available facilities in referral hospitals.

e) The SC/ST population in rural areas who are beneficiaries of referral under Yellow Card scheme, should be aware of the improved primary health care services available to them.

The strategy of IEC for Referral System focuses on dissemination of information regarding service availability in all levels of health care in Karnataka. The various media that will be adopted are :-

1. Health workers in health institution who produce vast impact on patients by the way they handle them, will be used as educators by providing training on communication & education and visitor handling .
2. Door to Door Campaign or interpersonal communication has been the IEC strategy in yellow card Scheme. The same suits well for enhancing community awareness on Referral System. Junior and Senior Health Assistants, Block health educators & grass root level workers will be trained to do these campaigns.
3. Pamphlets and good sign posting within hospitals and maps showing referral chains will provide information about services, hours of working etc..

The District Health Education Officer will be responsible for implementing an effective IEC Campaign on Referral System.

**Training :**

Training the hospital personnel is an essential prerequisite for the successful and sustained implementation of Referral System in health care settings. Proper training alters mindset and makes operationalisation a lot easier. Creating referral awareness, motivating and educating hospital workers is the first step.

**Goals of Training Programme are :**

1. Defining the problem in general and in particular reference to the hospital referral system.
2. Bringing out effective referral chain.
3. Obtaining feed back and support by active participation.
4. Initiating co-ordination between various staff.
5. Establishing the organizational role of each health unit.

The medical officer is responsible for the training, dissemination of information & education of all workers. The target group for training should be broad & should include both the hospital and extra-hospital personnel who directly or indirectly use the health facility.

| | |
|---|---|
| 1. Hospital | - Doctors nurses & para medicals. |
| 2. Non-Hospital staff | - General workers |
| 3. Patients and visitors. | |
| 4. Socially active groups | - eg : women groups, NGOs. |
| 5. Administrators of key institutions, Heads of schools. | - eg : Zilla/Taluka parishat members |

**Trainer :**

Trainer is the Medical Officer of health care who is already trained at district/state level and will be equipped with information on referral system through a manual prepared for the purpose.

**Activities :**

The training methodology may be divided into the following segments :

1. Teaching.
2. Discussion.
3. Feedback.

Teaching and discussion will be parts of the initial training activity. Feedback from personnel should be a continuous process, which helps monitoring and evaluation of the Referral System in course of time.

## TRAINING PROGRAMME

| Groups | Participants | Training Institution | Duration | Trainer |
|---|---|---|---|---|
| 1 | 1. Jr Health Assts. of subcentres<br>2. Nursing Personnel of PHCs & CHCs<br>3. BHE and other paramedics | CHC Level | One day | Senior Staff Nurse T.H. |
| 2 | 1. Medical Officers of PHCs & PHU<br>2. Medical Officers of CHCs | CHC Level | One day | Administrative Medical Officer TH |
| 3 | General workers of PHCs, PHUs & CHCs | CHC Level | One day | Senior Staff Nurse TH |
| 4 | 1. Nursing personnel of T.H., Sub-district Hospital & D.H. and medical social workers.<br>2. Paramedical & Administrative Staff | District Hospital | One day | Nursing Superintendent DH |
| 5 | 1. Medical Officers of T.H., S.D.H., D.H., DHO & District Medical Officers. | District Hospital | One day | District Surgeon |
| 6 | 1. Patients in wards<br>2. Visitors | | One day | Nurse I/C of ward/PHC, BHE |
| 7 | 1. Anganawadi workers<br>2. Other NGOs | | One day | Junior Health Assistants |

## Training Activity for Group 1 & 4

| Lesson Nos. | Outline Syllabus | Outcome of Training | Training tools |
|---|---|---|---|
| 1 | Existing Health System in Karnataka - Primary, Secondary, Tertiary Health care - Facilities and utilisation at Primary Level - Existing Referral Pattern | 1. Health care is delivered at three levels in the state<br>2. Under utilisation of primary level services and overburdening of hospital outpatients<br>3. Realise need for an effective Referral system | 1. Organisational chart of three tier system |
| 2 | New Referral System - Needs and objectives - Referral System under KHSDP - Referral Guidelines - Referral Protocol - Referral Procedures - Outline of organisation | 1. Understand objective of new referral system<br>2. Know referral guidelines and procedures and organisation of referral system | Hand outs on<br>1. Referral guidelines<br>2. Referral procedures<br>3. Organisational chart of Referral System |
| 3 | Role of Nursing in management of referred patients - Prioritization of patients - Stabilising Emergency Patients - Handling visitors - Documentation of Referrals | 1. Clearly understand their role in managing referred patients<br>2. Be able to prioritise patients, stabilise emergency patients<br>3. Understanding filling up referral registers and reports | Hand outs on<br>1. Referral Protocols<br>2. Emergency management of patients<br>Specimen of<br>1. Referral Cards<br>2. Referral Registers |
| 4 | Role of Nurses in dissemination of information - Confidence building | 1. Understand that community should know where, what facilities exist<br>2. Understand that patients should know advantages of referral system | 1. List of facilities / services available at PHC / CHC etc.. |
| 5 | Discussion | | |

Each Lesson is for a duration of 1 hour.

## 5. Information, Education & Communication :

Being an IEC - intensive scheme, Referral System requires good input for IEC activities. Activities such as preparing audiovisual aids for health workers, pamphlets, signposts & maps in health facilities, conducting street dramas etc., will need funds. Rupees 1.0 Million has been estimated as the annual requirement.

The total budget requirements for implementing the Referral System in the state is estimated to be Rs. 5.2 Million for the year 1998 - 99.

# SERVICE MATRIX

## CONDITIONS AND PROCEDURES : MEDICAL

| Condition / Procedure | Secondary Level Hospitals | | | | | |
|---|---|---|---|---|---|---|
| | PHC | Community Hospital 30Beds | Community Hospital 50Beds | Sub-district Hospital 100 Beds | District Hospital >250 Beds | Tertiary Hospital |
| **Respiratory System** | | | | | | |
| Upper Respiratory Infection | Manage & Treat | Manage & Treat | Manage & Treat | Manage & Treat | Manage & Treat | |
| Lower Respiratory Infection | Treat Bronchitis & Pneumonia | Treat Bronchitis & Pneumonia | Treat Bronchitis & Pneumonia | Treat referred severe cases | Treat referred severe cases | |
| Asthma | Asses, initiate treatment and refer if necessary | Manage mild cases symptho-matically. Refer severe cases | Manage mild cases symptho-matically. Refer severe cases | Investigate & treat severe cases | Investigate & treat severe cases | |
| Tuberculosis * | Manage as per protocol for natural programme | Manage as per protocol for natural programme | Manage as per protocol for natural programme | Manage as per protocol for natural programme | Manage as per protocol for natural programme | |
| COPD | Supportive & symptomatic treatment then refer | Supportive & symptomatic treatment then refer | Supportive & symptomatic treatment then refer | Investigate, manage & follow-up | Investigate, manage & follow-up | |
| **Pediatrics** | | | | | | |
| ARI | Treat | Treat | Treat | Treat | Treat | |
| LRI<br>Febrile convulsion | | Mild: symptomatic treatment refer if no improvement | Mild: symptomatic treatment refer if no improvement | Investigate & Manage | Investigate & Manage | |
| Childhood Asthma & Allergic Bronchitis | Manage if no respiratory distress | Without respiratory distress: manage | Without respiratory distress: manage | Without respiratory distress: manage | Without respiratory distress: manage | |
| Tuberculosis * | Manage as per protocol | Manage as per protocol | Manage as per protocol | Manage as per protocol | Manage as per protocol | |

* This comes under National TB Control Programme (NTCP).

| Condition / Procedure | Secondary Level Hospitals | | | | | |
|---|---|---|---|---|---|---|
| Procedures | PHC | Community Hospital 30Beds | Community Hospital 50Beds | Sub-district Hospital 100 Beds | District Hospital >250 Beds | Tertiary hospital |
| a) Pleural Aspiration<br>b) Pericardial Tap<br>c) Foreign Body removal<br>d) Lumbar puncture | Refer | Do<br>No<br>Do simple cases<br>Do | Do<br>No<br>Do simple cases<br>Do | Do<br>Do<br>Do simple cases<br>Do | Do<br>Do<br>Do<br>Do | Refer |
| Malignancy | Refer | Symptomatic treatment & refer | Symptomatic treatment & refer | Symptomatic treatment & refer | Symptomatic treatment & refer | Investigate and manage |
| Rheumatic Fever* | Treat | Treat | Treat | Treat | Treat | Treat |
| Essential Hypertension | Initiate treatment & refer | Treat | Treat | Treat | Treat | |
| Malignant Hypertension | Initiate treatment & refer | Investigate & manage | Manage | Refer | Manage & refer if necessary | Manage |
| Stable/Unstable/Post MI Angina | Diagnose, initiate treatment stabilise & refer → | → | Stabilise and refer | → | Manage, refer if necessary | Manage |
| Acute MI | Diagnose & refer → | → | Manage, refer if further investigations necessary | → | Manage, refer if necessary | |
| Rheumatic Heart Disease with Pregnancy | Diagnose & refer → | → | Manage, refer if necessary | → | Manage | |
| Congenital Heart Disease | Diagnose & refer → | → | → | → | Investigate & manage, refer if specialised treatment necessary | Manage |
| CCF | Diagnose initiate treatment, stabilise & refer → | → | Manage, refer if necessary | → | Manage | |
| Pericordial Tapping | No | No | No | No | Do | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Convulsion including Epilepsy | Initiate treatment & refer for investigations | Treat &manage | Treat &manage | Treat &manage | Treat &manage | |
| Coma | Supportive treatment & refer | → | → | → | Investigate & manage treatment and manage. If no improvement refer to tertiary level | Manage |
| Encephalitis # | Diagnose treat and refer to DH | Diagnose treat and refer to DH | Diagnose treat and refer to DH | Diagnose treat and refer to DH | Manage | |
| Meningitis | Diagnose, initiate treat refer to SDH | → | → | Treat & Manage | | |

* Refer Rheumatic Heart Diseases to Tertiary level
+ If not treatable refer to Tertiary level
# Notifiable disease

| Condition/Procedure | Secondary Level Hospitals | | | | | |
|---|---|---|---|---|---|---|
| | PHC | Community Hospital 30Beds | Community Hospital 50Beds | Sub-district Hospital 100 Beds | District Hospital >250 Beds | Tertiary Hospital |
| Head Injuries | Manage as per emergency conditions protocol | Manage as per emergency conditions protocol | Manage as per emergency conditions protocol | Manage as per emergency conditions protocol | Manage as per emergency conditions protocol | |
| C.V.Accidents | Symptomatic treatment, stabilise and refer | Symptomatic treatment, stabilise and Refer | Symptomatic treatment, stabilise and Refer | Symptomatic treatment, stabilise and Refer | Investigate & manage | |
| Psychosis @ | Diagnose & Refer | Manage & Refer if necessary | Manage & Refer if necessary | Manage & Refer if necessary | Manage & Refer | |
| Neurosis | Diagnose & Refer | Manage & Refer if necessary | Manage & Refer if necessary | Manage & Refer if necessary | Manage & Refer | |
| Mental Retardation | Diagnose & Refer | Manage & Refer if necessary | Manage & Refer if necessary | Manage & Refer if necessary | Manage & Refer | |
| Drug Abuse & Alcoholism | Diagnose & Refer | → | Treat & Refer for de-addiction if necessary | → | → | Manage |
| Organic Brain Syndrome | | Treat | Treat | Treat | Treat | |
| | | | | | | |

| Skin Diseases | | | | | | |
|---|---|---|---|---|---|---|
| Leprosy # | Diagnose &Follow National Programme Protocol | Diagnose &Follow National Programme Protocol | Diagnose &Follow National Programme Protocol | Diagnose &Follow National Programme Protocol | Diagnose &Follow National Programme Protocol | Diagnose &Follow National Programme Protocol |
| Pemphigus | Diagnose / Suspect Refer | Diagnose / Suspect Refer → | Diagnose / Suspect Refer → | Diagnose / Suspect Refer → | Manage | |
| Skin Allergy | | Treat | Treat | Treat | Treat | |
| Sarcoidosis | Diagnose / Suspect Refer | Diagnose / Suspect Refer → | Diagnose / Suspect Refer → | Diagnose / Suspect Refer → | Manage | |
| Psoriasis | Diagnose & Refer | Diagnose & Refer → | Treat,if Complicated Refer to Dermatologist | → | Treat | |
| Neoplasm | | Refer | Refer | Refer | Investigate & treat | |
| STD | Pri.Syphilis:Diagnose & Treat. Secondary & Tertiary: Refer | Pri.Syphilis:Diagnose & Treat. Secondary & Tertiary: Refer → | Pri.Syphilis:Diagnose & Treat. Secondary & Tertiary: Refer → | Investigate & Treat | | |
| Gastrointestinal Bleeding | Diagnosis, Manage Stabilise. Refer to DH for Investigation | Diagnosis, Manage Stabilise. Refer to DH for Investigation → | Diagnosis, Manage Stabilise. Refer to DH for Investigation → | Diagnostic investigation & treatment Refer if necessary | Manage | |

| G.E & Dysentery | Manage & Refer if necessary | Treat & manage | | Treat & manage | Treat & manage | |
|---|---|---|---|---|---|---|
| Hepatitis | Uncomplicated : Manage Complicated (Deep Jaundice, Haemorrhages, Altered Sensorium) Refer | Uncomplicated : Manage Complicated (Deep Jaundice, Haemorrhages, Altered Sensorium): Refer | Uncomplicated : Manage Complicated (Deep Jaundice, Haemorrhages, Altered Sensorium): Refer | Manage | | |
| Hepatic Coma | Diagnose, Supportive treatment & Refer | Diagnose, Supportive treatment & Refer | Diagnose, Supportive treatment & Refer | Investigate & Treat | | |
| Amoebiasis | Intestinal & Hepatic: Manage Complicated(Abscess, Ulcer) Refer | Intestinal & Hepatic: Manage Complicated(Abscess, Ulcer) Refer | Intestinal & Hepatic: Manage Complicated(Abscess, Ulcer) Refer | Intestinal & Hepatic: Manage Complicated(Abscess, Ulcer) Refer | Manage | |
| Cholysysticis | Symptomatic treatment & Refer | Symptomatic treatment & refer | Symptomatic treatment & refer | Manage. If needs Surgery, Refer | Manage | |
| Pancreatitis | Diagnose & Refer | Symptomatic treatment & refer | Symptomatic treatment & Refer | Symptomatic treatment & Refer | Investigate & Manage | |
| Abdominal Tapping | Yes | Yes | Yes | Yes | Yes | |
| Liver Biopsy | No | No | No | No | Yes | |

@ If not under control with conventional psychiatric drugs refer for EEG.

# Refer to Tertiary level for reconstructive surgery. National Leprosy Control Programme (NLCP)

| Condition/Procedure | Secondary Level Hospitals | | | | | |
|---|---|---|---|---|---|---|
| | PHC | Community Hospital 30Beds | Community Hospital 50Beds | Sub-district Hospital 100 Beds | District Hospital >250 Beds | Tertiary Hospital |
| Fiberoptic Endoscopy | No | No | No | Yes | Must | |
| UTI | Diagnose & Treat. If Refractory/Recurrent, Refer | Diagnose & Treat. If Refractory/Recurrent, Refer | Diagnose & Treat. If Refractory/Recurrent, Refer | Investigate & Manage | | |
| Acute Nephritis | Diagnose & Refer | Diagnose & Refer | Uncomplicated: Treat Complicated (Nephrotic Syndrome, Fulminant Type, Renal Failure): Refer | Uncomplicated: Treat Complicated (Nephrotic Syndrome, Fulminant Type, Renal Failure): Refer | Manage | |
| Nephrotic Syndrome | Diagnose & Refer | Diagnose & Refer | Manage | | | |
| Renal Failure | Diagnose & Refer | Initiate Treatment, Stabilise & Refer | Initiate Treatment, Stabilise & Refer | Initiate Treatment, Stabilise & Refer | Manage | |
| Anaemia | Moderate(>6gms) Uncomplicated: Manage Severe(<6gms)&Com-plicated(Cardiac Failure): Refer | Moderate(>6gms) Uncomplicated: Manage Severe(<6gms)&Com-plicated(Cardiac Failure): Refer | Moderate(>6gms) Uncomplicated: Manage Severe(<6gms)&Com-plicated(Cardiac Failure): Refer | Manage | | |
| Leukaemia | Suspect, Refer | Suspect, Refer | Suspect, Refer | Investigate, Diagnose & Refer | Investigate, Diagnose & Refer | Manage |

| | | | | | | |
|---|---|---|---|---|---|---|
| Thalassemia | Suspect, Refer | Suspect, Refer | Suspect, Refer | Investigate, Diagnose & Refer | Investigate, Diagnose & Refer | Manage |
| **Procedures** | | | | | | |
| Bone marrow Aspiration | No | No | No | No | Yes | |
| Diabetes | Suspect & Refer | Manage Complicated (Nephropathy, Retinopathy, Arteriosclerosis): Refer | Manage Complicated (Nephropathy, Retinopathy, Arteriosclerosis): Refer | Manage Complicated (Nephropathy, Retinopathy, Arteriosclerosis): Refer | Manage | |
| **Neonatal** | | | | | | |
| Premature Baby (>2Kgs) | Refer | Manage. Complicated (ABO incompatibility, ARI, etc..): Refer | Manage. Complicated (ABO incompatibility, ARI, etc..): Refer | Manage. Complicated (ABO incompatibility, ARI, etc..): Refer | Manage | |
| < 2 Kg | Refer | Refer | Refer | Manage | Manage | |
| Jaundice within 24 Hrs. | Physiological: Treat Complicated (Kernicturus) : Refer | Physiological: Treat Complicated (Kernicturus) : Refer | Physiological: Treat Complicated (Kernicturus) : Refer | Physiological: Treat Complicated (Kernicturus) : Refer | Manage | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Convulsion | | Initiate treatment and refer if not controlled | | Diagnose & treat | | |
| Poisoning | | Treat | | Treat | Treat | |
| Physiotherapy treatment | | No | No | Treat | Treat | |

## CONDITIONS AND PROCEDURES : SURGICAL

| Abscess including breast & perianal | Manage | Manage | Manage | Manage | Manage | |
|---|---|---|---|---|---|---|
| Wound Debridement | Simple wounds : Manage<br>Major / Compound wounds : Refer | Simple wounds : Manage<br>Major / Compound wounds : Refer | Simple wounds : Manage<br>Major / Compound wounds : Refer | Manage | Manage | |
| Trauma Needing Life Support | Resuscitate, Stabilise & Refer | Resuciate, Stabilise & Refer | Resuciate, Stabilise & Refer | Investigate & manage, if needed Refer | Investigate & Manage | |
| Musculo Skeletal Injuries | Simple sprains, strains & contusions : Manage<br>Complicated (Haematomos, Muscle tears, fractures) : Refer | Simple sprains, strains & contusions : Manage<br>Complicated (Haematomos, Muscle tears, fractures) : Refer | Manage<br>If necessary refer | Manage<br>If necessary refer | Manage<br>If necessary refer | Manage |
| Abdominal Injuries : Penetrating, Internal bleeding, with shock (Emergencies) | Stabilize & Refer | Stabilize & Refer | Stabilize & Refer | Stabilise & Refer | Manage | |
| Abdominal Surgeries (Planned) | No | No | No | Yes | Yes | |
| Appendectomy | No | No | No | Yes | Yes | |
| Haemorrhoids | Uncomplicated : Manage<br>Complicated (Refractory, needs surgical intervention) : Refer | Uncomplicated : Manage<br>Complicated (Refractory, needs surgical intervention) : Refer | Uncomplicated : Manage<br>Complicated (Refractory, needs surgical intervention) : Refer | Manage | Manage | |
| Anal Fissure | Uncomplicated : Manage<br>Complicated (needing surgery) : Refer | Uncomplicated : Manage<br>Complicated (needing surgery) : Refer | Uncomplicated : Manage<br>Complicated (needing surgery) : Refer | Manage | Manage | |

| Condition/Procedure | Secondary Level Hospitals | | | | | |
|---|---|---|---|---|---|---|
| | PHC | Community Hospital 30Beds | Community Hospital 50Beds | Sub-district Hospital 100 Beds | District Hospital >250 Beds | Tertiary Hospital |
| **Surgery** | | | | | | |
| Acute Retention of Urine | Catheterise & refer | Catheterise & refer | Catheterise & refer | Manage | Manage | |
| Circumcision | Yes | Yes | Yes | Yes | Yes | |
| Hydrocele | Refer | Refer | Yes | Yes | Yes | |
| Herneorrhaphy | Refer | Refer | Yes | Yes | Yes | |
| Urethral Dilatation | | Refer | Yes | Yes | Yes | |
| Rupture of Bladder & Urethra | | Refer | Refer | Refer | Manage | |
| Major Urological Procedures | | Refer | Refer | Refer | Refer | Manage |
| Fracture Spine | | Stabilize & refer | Stabilize & refer | Manage | Manage | |
| **Optholomology** | | | | | | |
| Eye * @ | Removal of foreign bodies | Removal of foreign bodies | Removal of foreign bodies | Management of corneal aberration, ulcer & cataract | Management of corneal aberration, ulcer & cataract + Glaucoma surgery | |
| **Dental** | Conservative dentistry, extraction, others refer | Conservative dentistry, tooth extraction, alltypes of fillings | Conservative dentistry, tooth extraction, alltypes of fillings | Conservative dentistry, tooth extraction, alltypes of fillings | All types of extractions, impactions & Jaw fractures | |
| **Gastro Enterology**: Endoscopy | | Refer | Refer | Sigmoidoscopy | Oesophago-gastroscopy, colonoscopy | |

| Condition/Procedure | Secondary Level Hospitals | | | | | |
|---|---|---|---|---|---|---|
| | PHC | Community Hospital 30Beds | Community Hospital 50Beds | Sub-district Hospital 100 Beds | District Hospital >250 Beds | Tertiary Hospital |
| **Thoracic** | | | | | | |
| Acute Empyaema | | Manage by ICD | Manage by ICD | Manage by ICD | Manage by ICD | |
| Chronic Empyaema | | Refer | Refer | Refer | Rib resection & drainage. Refer for decartication & resection | |
| Foreign Bodies in the Oesophasgus and Tracho Bronchial Tree $ | | Refer | Refer | Refer | Manage, refer if necessary | |
| **Thoracic** | | | | | | |
| Simple fracture ribs | Manage | Manage | Manage | Manage | Manage | |
| Intercostal under-water seal drainage | | Yes * | Yes * | Yes * | Yes* | |
| Flail chest | Refer | Resuciate & refer | Resuciate & refer | Resuciate & refer | Manage with ventilatory support | |
| Mediastinal injury | Refer | Resuciate & refer | Resuciate & refer | Resuciate & refer | Manage, refer if needs Thoractomy | |

* Covered under NPCB

@ Corneal grafting, retinal diseases, vitreous surgery, intraocular foreign bodies: refer to Tertiary

| **ENT** | | | | | | |
|---|---|---|---|---|---|---|
| Foreign bodies in nose & ears | | Nose: remove Ear:refer | Nose &Ear: remove | Manage if ENT specialist available | Manage | |
| Epistaxis | Yes | Manage | Manage | Manage | Manage | |
| Tracheostomy | Yes | Yes | Yes | Yes | Yes | |
| Peritonsilar abscess | | Refer | Manage | Manage | Manage | |
| Tonsillectomy | | Refer | Refer | Manage | Manage | |
| Mastoid Abscess | | Refer | Refer | Manage if ENT specialist available | Manage | |
| **OBG** | | | | | | |
| High Risk Pregnancies including APH, PET, Eclempsia | Refer | Early diagnosis & refer | Refer if necessary | Investigate & manage if possible | Manage | |

| General Obstetric Procedures | | | | | | |
|---|---|---|---|---|---|---|
| Tear & Episiotomies | Repair | Repair | Repair | Repair | Repair | |
| Craniatomy (Dead foetus, Hydrocephalus) | Yes | Yes | Yes | Yes | Yes | |
| Low Forceps Delivery | Tes | Yes | Yes | Yes | Yes | |
| Vaccum Extraction | Refer | Yes | Yes | Yes | Yes | |
| Breach Deliveries | Refer | Refer | Refer if complicated | Manage | Manage | |
| Manual Removal of Placenta | Refer | Refer | Manage if Anaesthetist available | Manage | Manage | |
| Inversion of the Uterus | Refer | Refer | Refer | Refer if complicated | Manage | |

- If trained in thoraci surgery for one or two months # Refer all major Thoracic procedures to tertiary level $ refer to tertiary level @ Refer to tertiary level for CT Scan & advanced management.

| Condition/Procedure | Secondary Level Hospitals | | | | | |
|---|---|---|---|---|---|---|
| | PHC | Community Hospital 30Beds | Community Hospital 50Beds | Sub-district Hospital 100 Beds | District Hospital >250 Beds | Tertiary Hospital |
| **OBG** | | | | | | |
| Rupture of Uterus | Refer | Refer | Refer | Manage | Manage | |
| Threatened/or Incomplete Abortion | Refer | Conservative D & C | Conservative D & C | Conservative D & C | Conservative D & C | |
| Ruptured Ectopic Pregnancy | Refer | Stabilize & Refer | Stabilize & Refer | Laparotomy | Laparotomy | |
| Female Sterilization, IUD * | Yes. Arrange special programmes | Yes. Arrange special programmes | Yes. Arrange special programmes | Yes. Arrange special programmes | Yes. Arrange special programmes | |
| Vasectomy, Laproscopic Sterilization * | Yes. Arrange special programmes | Yes. Arrange special programmes | Yes. Arrange special programmes | Yes. Arrange special programmes | Yes. Arrange special programmes | |
| Manstrual Irregularities | Refer | Refer | Diagnosis & Management | Diagnosis & Management | Diagnosis & Management | |
| Infertility | Refer | Refer | Refer | Diagnosis & Management | Diagnosis & Management | |
| Planned Surgery for Prolapsed UT, DUB etc. | Refer | Refer | Refer | Manage | Manage | |
| Cervical Erosion | Refer | Refer | PAP Smear Biopsy | PAP Smear Biopsy | PAP Smear Biopsy &manage | |

| | PHC | Community Hospital 30Beds | Community Hospital 50Beds | Sub-district Hospital 100 Beds | District Hospital >250 Beds | |
|---|---|---|---|---|---|---|
| Malignancies Refer to Tertiary level for Surgery & Radio Therapy | Refer | Refer | Refer | Diagnosis & refer | Diagnosis, manage & refer | |
| Colposcopy & Hystoscopy | Refer | Refer | Refer | Refer | Manage, if possible | |
| Reconstructive Surgery | Refer | Refer | Refer | Refer | Manage, if possible | |

* Covered under IPP, CSSN Programme and also MCH & FW Programmes

## ANAESTHESIOLOGY

| | | | | | | |
|---|---|---|---|---|---|---|
| | LA | LA | Care of airway equipment Management of general & G A regional or S A if anaesthesia possible | Management of general & regional anaesthesia | Management of general & regional anaesthesia | |

# EMERGENCY
# HEALTH
# CARE

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# OBSTETRIC EMERGENCIES

## IDENTIFICATION, MANAGEMENT AND REFERRAL

**INTRODUCTION :**

In Obstetrics there is an extensive list of potential sudden and unexpected situations which demand prompt action. Non Obstetricians callously characterise obstetrics as 'hours of boredom punctuated by moments of terror'. However, jokingly this has been stated, as Obstetricians we always dread there moments of terror.

In modern Obstetrics, except for a few situations viz., amniotic fluid embolism, we can forearm ourselves by anticipating there complications by early identification of certain warning signals in each and every catastrophe.

Most of the emergencies can be prevented in a PHC set up by early reference of patients with the high risk factors during the antenatal period to a major institution.

However, certain emergencies arise even in a low risk pregnancy. The PHC obstetricians should be competent enough to identify and manage these emergencies to prevent fatal sequelae.

A Partogram has been inserted under this topic for the use of all categories of hospitals to record the details of Management of Labour of every delivery conducted. This helps to review the outcome and assess the quality and reasons for any mishaps in the procedures besides helping post-graduate and research studies.

## PARTOGRAM

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time (In hrs.) | | | | | | | | | | | | | | | | | | | | | | | | | |

190
180
170
160
150
140
130
120
110
100
90
80
70

Fetal Heart Rate (1/2 Hrly)

| Cervix | Descent |
|---|---|
| 10 | -3 |
| 9 | -2 |
| 8 | |
| 7 | -1 |
| 6 | |
| 5 | 0 |
| 4 | +1 |
| 3 | |
| 2 | +2 |
| 1 | |
| 0 | +3 |

Position
Effacement

R L R L R L R L R L R L

Contractions

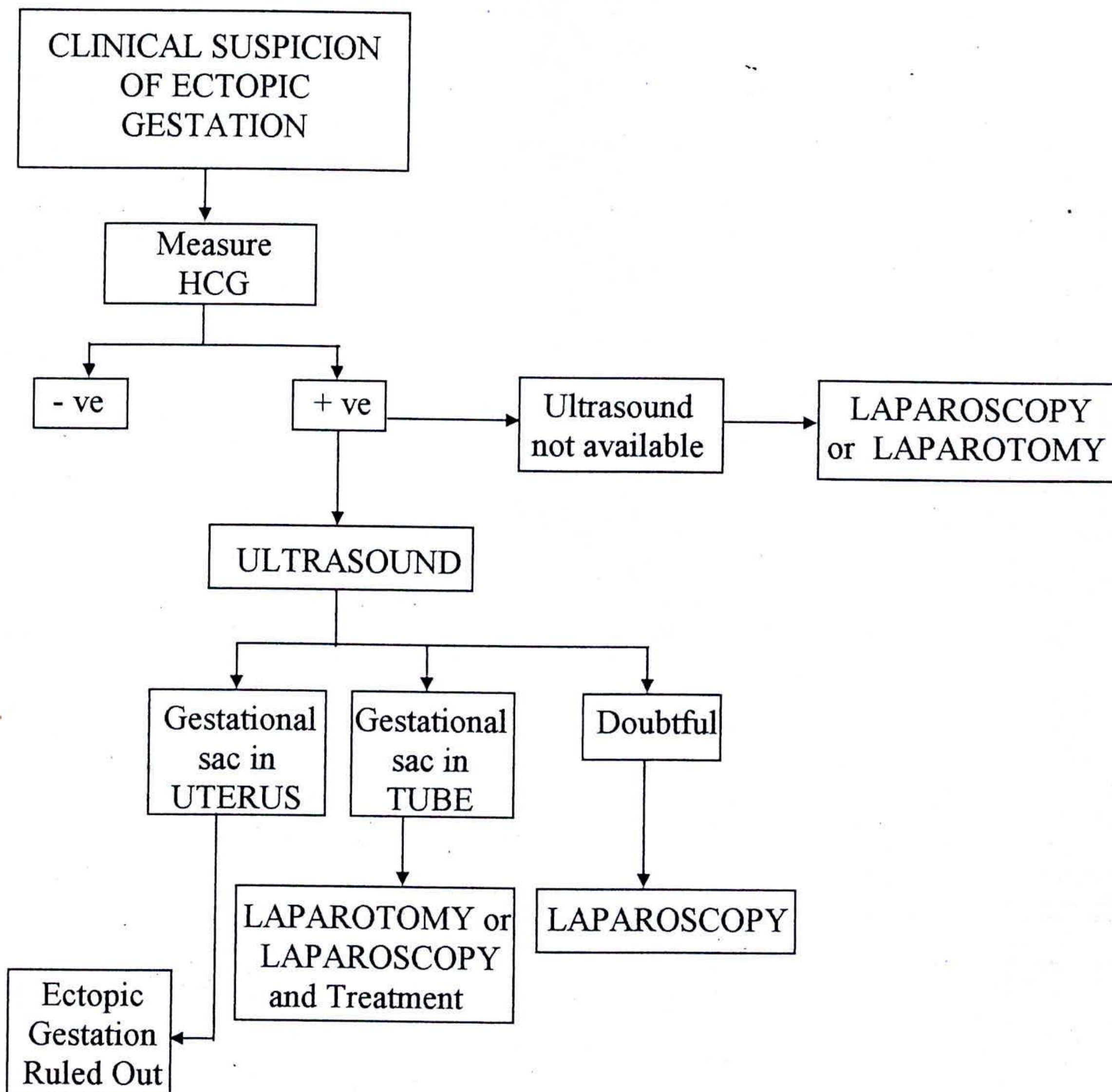
One in
Strength
Duration

Syntocinon Drip - Drops / Min.

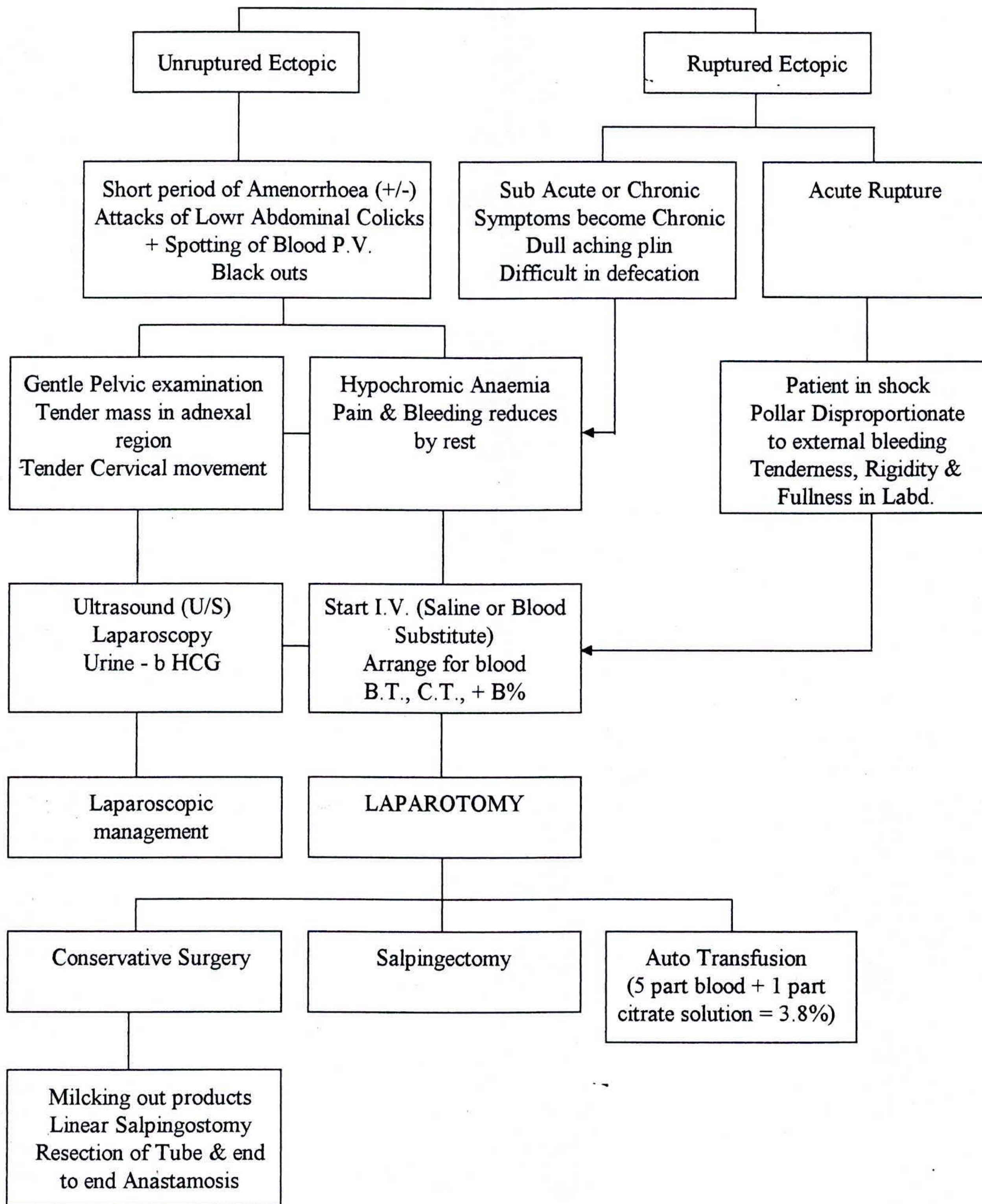
Pulse
Bp

Other Drugs : →

# ECTOPIC PREGNANCY



# PROTOCOL FOR MANAGEMENT OF ECTOPIC PREGNANCY



# ANTEPARTUM HAEMORRHAGE

## PLACENTAL ABRUPTION (ACCIDENTAL HAEMORRHAGE)

**Identification :**

Painful bleeding per vaginum, sudden pain with sensation of fetal movements clinical picture may be out of proportion to the amount of blood lost and patient may be in a state of shock. If early treatment is not instituted the patient may succumb to shock, coagülation failure and renal failure.

**Placenta Praevia :**

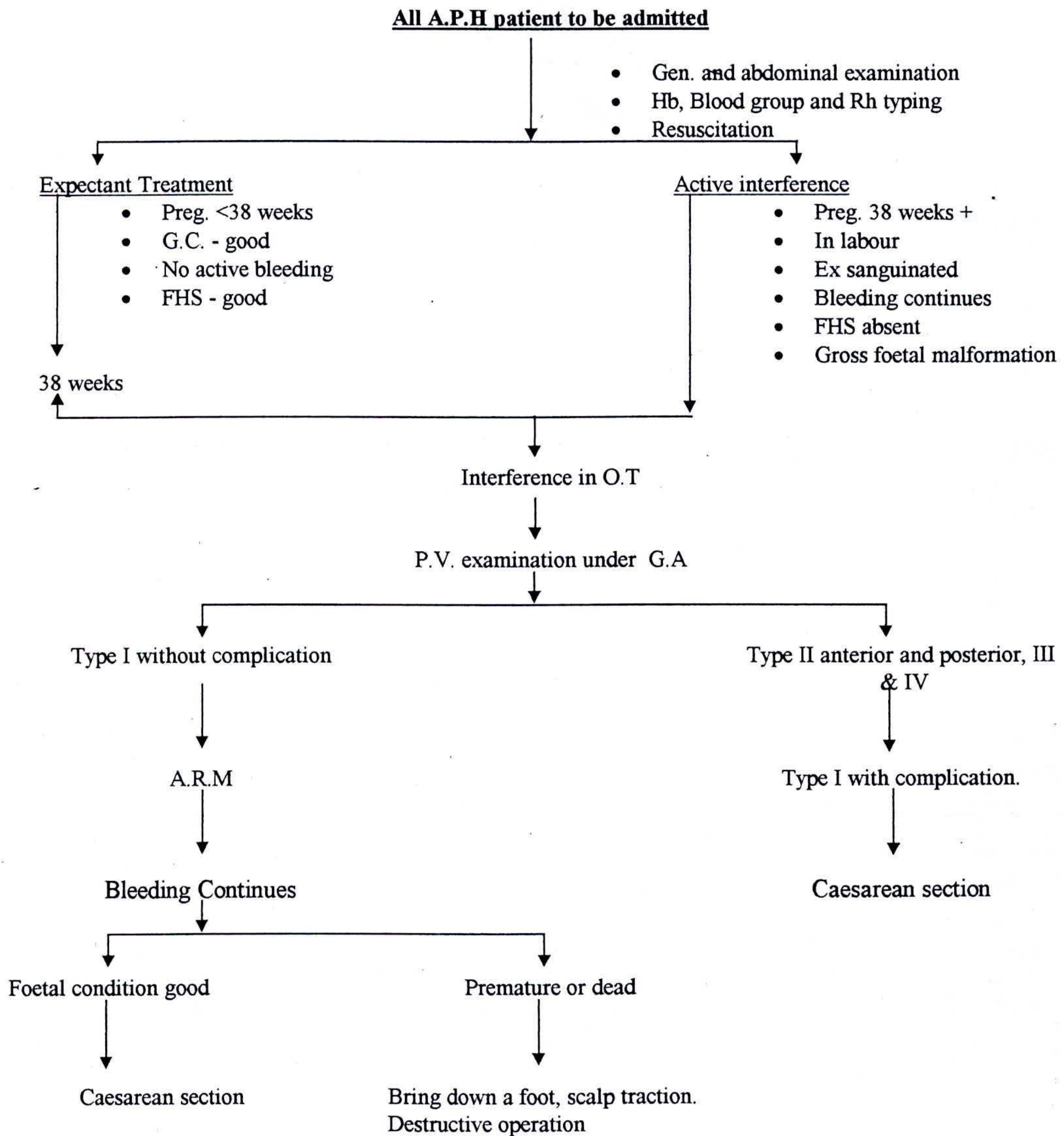
Painless bleeding per vaginum after 24 weeks and before delivery of the foetus.

**Identification :**

By ultrasound depending on condition of mother and foetus, expectant time of management. No vaginal examination in outpatient or labour room.

Preferable to terminate at 38 weeks by LSCS in II, III & IV degrees.

# ANTEPARTUM HAEMORRHAGE



## ECLAMPSIA

Identification by first occurrence of convulsions with hypertension and proteinum in a pregnant patient.

It has been proved beyond doubt that the Magnesium sulphate regime is superior to other modalities of treatment. Initial 4G loading dose (diluted and later drip at rate of 1G/hr would be ideal.

Prompt delivery should be done. Strict monitoring of fluid balance, urine output (30ml/hr) patella reflex and respiratory rate are mandatory.

1. Admit & Resuscitate
2. Confirm diagnosis
    - Pregnancy
    - Convulsions
    - No h/o epilepsy
    - Blood pressure (>140 / 90)
3. Position - head end - Low and to one side.
4. Airway (Keep pharyngeal)
5. Oxygen, suction
6. CPR if necessary
7. Start IV line - (21 G) - Draw blood for investigation and start 10% dextrose drip.
8. Loading Dose I V Magnesium sulphate (4G + )
9. When Patient has been stabilised - clinical Obst. exam and ultrasound examinations to assess foetal condition and maturity.
10. Monitor urine output — Indwelling foley's catheter.

    Respiration — Urine for proteins

    Patellar jerk
11. Refer to district Hospital when stable.

## MAGNESIUM SULPHATE PROTOCOL

1. Intravenous

    Loading Dose - 4G I V in 15 mins. (25% or 50%) - Vol. 20 ML

2. Intra-muscular

    - 5 G deep I M gluteal (Large bore needle)
    - Alternatively : I V as above and
    - I V 5 G Mg $SO_4$ is 500 ml Ringer
    - Lactate at the rate of 1 G per hour.

3. Maintenance dose

    - 5G/4 hrs. I.M. or infusion

4. I V fluids 1.5 litre / 24 hrs.

    - R-Lactate

5. Monitor

| | |
|---|---|
| • Urine Output | - 30ml per hour |
| • Respirate | - 18/mt |
| • Patellar | - Brisk jerk |
| • P-Jerk strict | - I/O Cart |

6. Terminate pregnancy -

    - Vaginal delivery
    - (CIF criteria satisfied - Bishop's score >6)
    - Caesarean section for all other conditions.

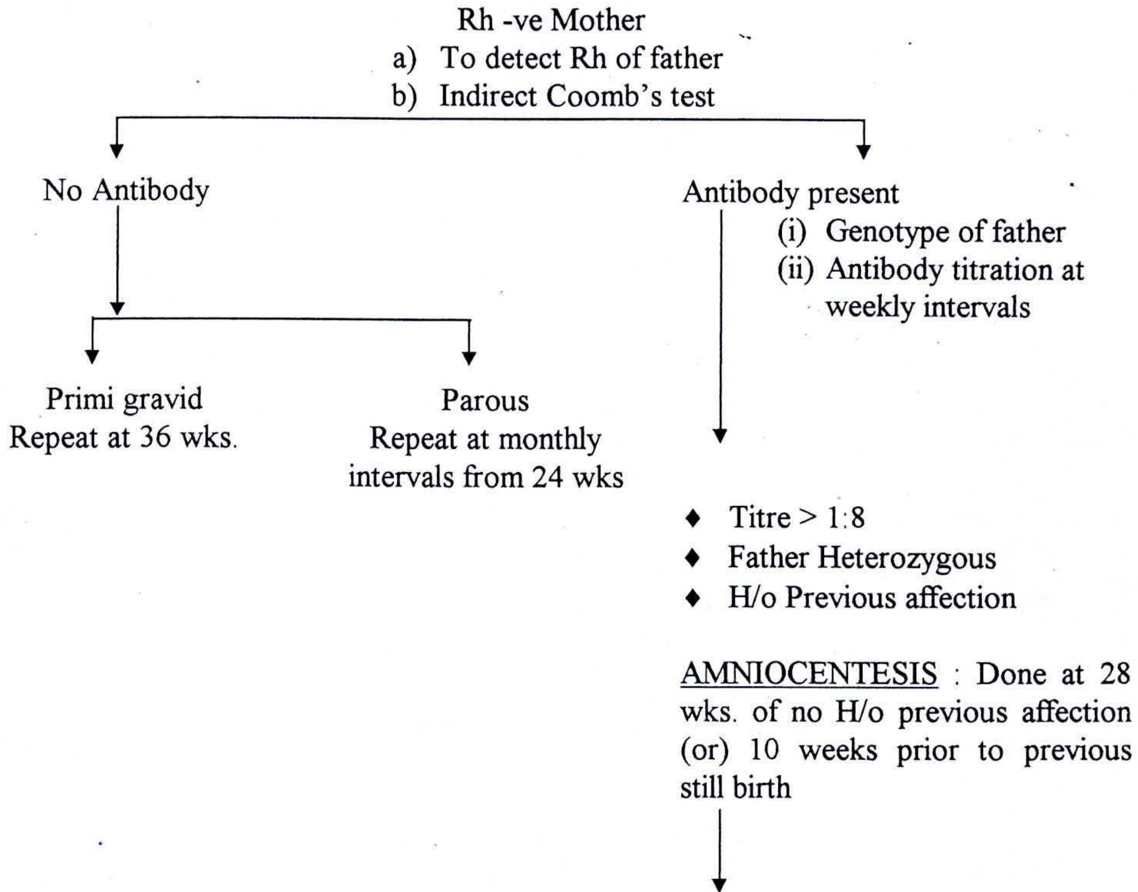
## LYTIC COCKTAIL REGIME OR DIAZEPAM

If magnesium sulphate is not available.

- Dilute pethidine 100mg in 20 ml 5% Dextrose and administer slow I.V. followed by intra muscular chlorpromazine phenergan 4th hourly or

- Diazepam 10mg slow IV followed by diazepam 40 mgm in 500 ml in 10% Dextrose.

## Scheme of Management of Rh -ve Mother




Optical density of bilirubin by spectro photometry and plotted in liley's chart.

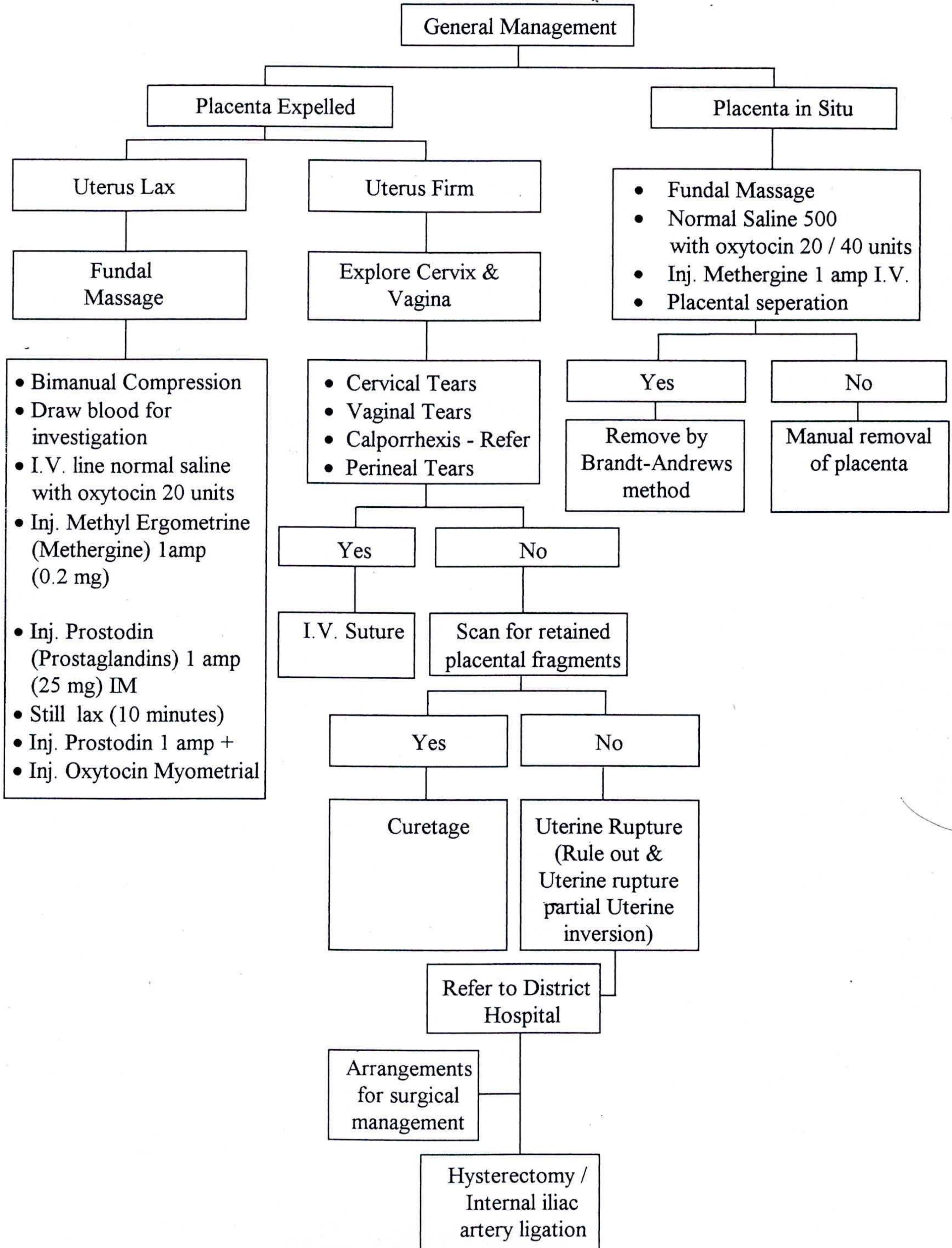
a) Low zone → Pregnancy continued to term.

b) Mid zone → Premature termination beyond 34 wks.

c) High Zone →
- (i) Pregnancy >34 wks. - Termination
- (ii) < 34 weeks - Intrauterine foetal transfusion. Terminate at 34 weeks.

# POST-PARTUM HAEMORRHAGE

Distinguish between atonic and traumatic varieties. In atonic PPH, bimanuel compression, Oxytocin IV IM and I V infusion mandatory.



**Other Causes of Postpartum Collapse**

Haemorrhage
Amniotic
Pulmonary embolism
Acute cardiac failure
Pneumonitis
Pneumothorax
Cerebrovascular accident
Eclampsia
Hypoglycemia
Septicemia

## RETAINED AND ADHERENT PLACENTA

Manual removal of placenta should be done if placenta is not expelled within 30 minutes. Adherent placenta can be treated conservatively, or surgically by hysterectomy depending on clinical findings.

## INVERSION OF UTERUS

Occur when there is uterine atony or mismanagement of third stage of labour. Immediate reposition should be done. In case of failure, surgery at District Major Institute.

## OBSTETRIC SEPTIC SHOCK

**Definition :**

Infection resulting in peripheral circulatory failure with inadequate tissue perfussion leading to cell disfunction or death. A variety of gram negative anaerobes and gram positive aerobes and anaerobes are implicated. As multiorgan involvement is common, Broad Spectrum antibiotics are mandatory. Gentamycin, ampicillin and metrogyl could be a safe regime. In a few cases mechanical ventilation may be needed. In uncontrolled cases surgical modality of treatment may be necessary. Prompt delivery is a must.

# OBSTRUCTED LABOUR

**Shoulder Dystocia (Obstetricians Night Mare!) :**

Anticipate shoulder dystocia in a DOPE patient. Diabetes, obesity post-term/prior large baby and excessive weight gain.

Suspect and anticipate when there is prolonged second stage of labour, Oxytocin use and midpelvic delivery.

**Management :**

Assess whesther bilateral, if unilateral perform Mc Robert's maneuver. If it fails perform woods maneuver. If this also fails deliver the posterior arm final resort is Zavaelli restitution Alert personel and deliver within 5 minutes.

When shoulder dystocia in anticipated, the obstetrician should mentally rehearse the sequence of steps necessary to treat this problem and be ready to act in a logical step by step fashion. ***Identify dope i.e.,*** (Diabetes, OBESE, Post-term, Excessive weight gain).

***Step I :*** Note the time and have the minutes counted off.

1. Call anaesthesia and alert the operating room and call for help.
2. Do not pull the baby's head.
3. Do not apply fundal pressure.

***Step II :***

1. Enlarge the episiotomy
2. Feel for posterior shoulder in the hollow of the sacrum.
3. If posterior shoulder is not found, it is bilateral shoulder dystocia and replace the head into the vagina and perform caesarean section . Restitute the head to original position, flex and apply upward pressure. (Zavanelli restitution)

***Step III :*** Mc Robert's maneuver

1. Remove the mother's legs from stirrups.
2. Abduct her legs and sharply flex them against her abdomen.
3. Ask your assistant to apply suprapubic pressure directed laterally and inferiorly.
4. Apply moderate traction on the fetal head to a count of 30.

***Step IV :*** Oblique diameter :

1. Move shoulder from anter posterior to oblique diameter of the inlet.
2. If there is no descent rotate posterior shoulder to anterior under the symphysis pubis and simultaneously apply suprapubic pressure in the opposite direction.

*Step V :*

If no progress extract the posterior arm. Sweep the posterior arm of the fetus across the chest keeping the arm flexed at the elbow. Grasp the fetal hand and pull the hand of the arm along the fetal head delivering the posterior arm. If unsuccessful proceed to step 6.

*Step VI :*

Zavanelli restitution and Caesarean section.

***Meconium aspiration syndrome :***

1. Amnio infusion before delivery (500ml of warm normal saline).
2. Nasopharyngeal aspiration before the first breath.
3. Endotracheal aspiration immediately after birth.

## RUPTURE UTERUS

**Identification :** Scan rupture — Foetal distress, pain and tenderness over uterine scan. Bleeding per vagina.

Rupture due to Obstructed labour — Identification of Bandl's ring stretched lower segment recersion of presenting part after uterine rupture.

In complete rupture foetal parts will be felt superficial, uterus conton will be lost and patient would be in a state of shock.

***Definition :***

Dissolution of continuity of uterine wall any time beyond 28 wks. Of pregnancy.

1) Complete - Laceration extends into peritoneal cavity common in upper segment.
2) Incomplete- Peritoneum is intact common in lower segment.

***Causes :***

1. *During Pregnancy :*

- Multipara (because of increased fibrosis)
- Previous C/S sear, Hysterotomy
- Pregnancy in rudimentary born
- Previous H/o curettage of puerperial ut.
- Manual removal of placenta (MRP)
- Myomectomy
- Fall / Blow
- Adenomyosis
- Perforating mole

2. *During Ordinary labour :*

- In addition to above causes
- Acquired cervical stenosis
- Misuse of oxytocic drugs

3. *During Protracted Labour :*

- Bandl's ring
- Pelvic deformity
- Malpresentations : Brow
  Shoulder
- Hydrocephalus
- Iatrogenic trauma in delivering foetus
- Internal version / failed forces/ destructive operation
- MRP

4. *Rupture uterus :*

- During Pregnancy
  - Spontaneous
  - Scar rupture

- During Labour
  - Scar rupture
  - Obstructed labour

***Clinical features :***

- H/o giving way of uterus
- Severe abdominal pain, supra pubic pain.
- Shock / collapse
- H/o Blood stained urine.
- Bladder tenesumus - in silent rupture.

***On Examination :***

- Foetal parts palpable superficially, uterine contour absent.
- Localised fullness + Tenderness over uterine scar, broad ligament
- Vaginal Hemorrhage
- Features of shock

Silent rupture can also occur without any symptoms, especially in previous caesareans.

***Management :***

- Resuscitation and Laparotomy should be done simultaneously
- On Laparotomy
  1) Closure of the rent with deep sutures + Tubectomy
  2) Hysterectomy - to stop hemorrhage if uncontrolled by other means.

*Prophylaxis :*

- Rupture during protracted labour can be avoided by early recognition of problem and use of proper method of delivery.
- In case of anticipated rupture - C/S done at 38 weeks.

## AMNIOTIC AND THROMBOEBOLISM

Sudden and mostly fatal (80%) catastrophe in Obstetrics.

Treat respiratory distress and DIC which accompany this condition.

## DVT (DEEP VEIN THROMBOSIS)

Can be diagnosed clinically and confirmed by Doppler ultrasound and venography.

Pulmonary embolus can be suspected by a VQ scan mismatch ad confirmed by arteriography.

**Treatment :**

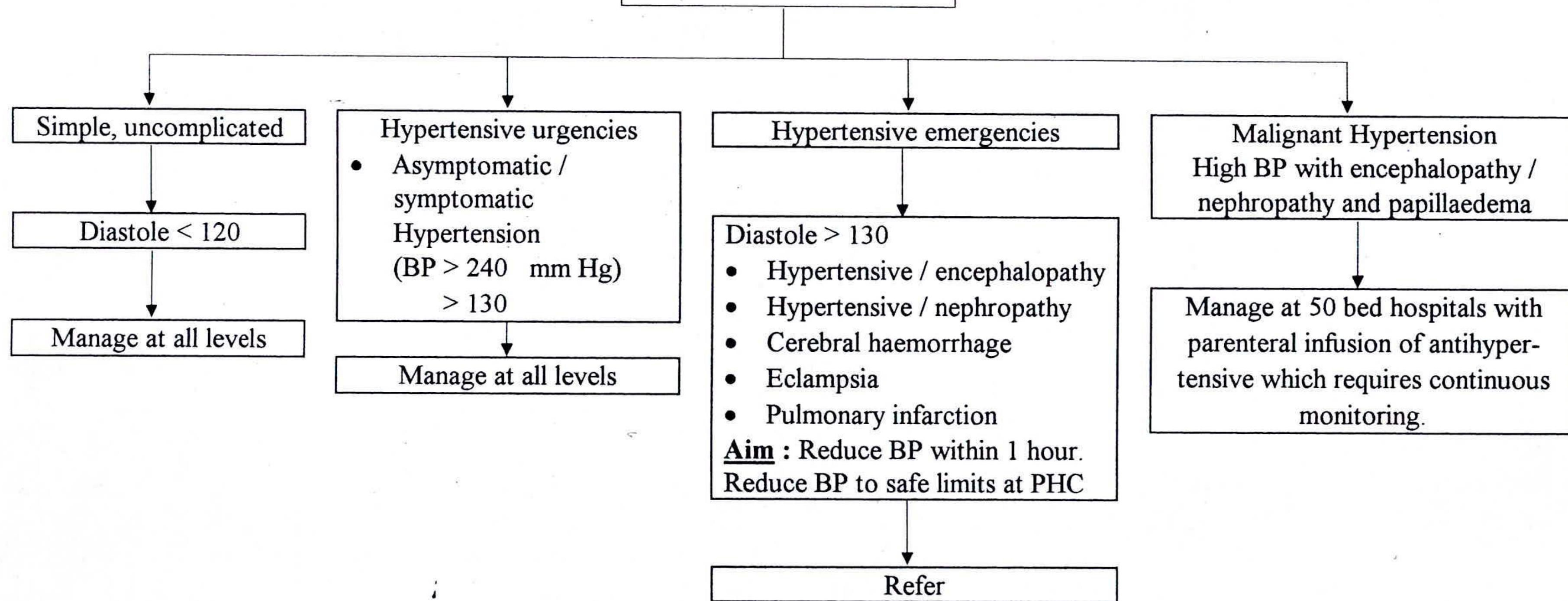
- Heparin
- Oxygen
- Maintenance of cardiac output
- Blood pressure
- Correction of coagulopathy.

## CONCLUSION

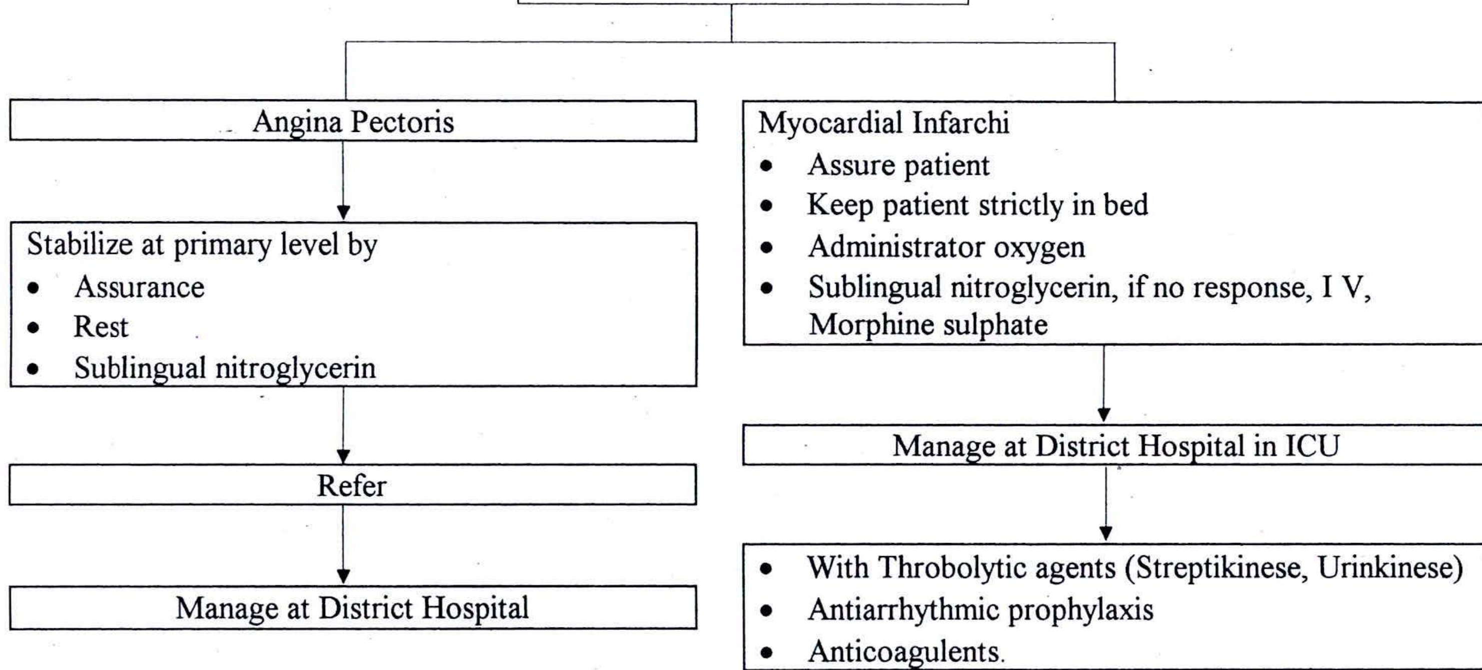
Thus, most of the Obstetric emergencies are concerned with massive haemorrhage, be it during pregnancy or Labour, Professional Knowledge and Skill with prompt action can save almost all the lives.

Occasionally encountered emergencies like shoulder dystocia is an Obstetrician's nightmare. Rehearse ad practice the steps again and again. Display the protocol in the Labour room. Identify the patients at risk and refer for early Caesarean section.

Emergencies like eclampsia and medical complications should be thoroughly mastered by every PHC medical officer.


HYPERTENSION
Simple, uncomplicated
Diastole < 120
Manage at all levels
Hypertensive urgencies
• Asymptomatic / symptomatic Hypertension (BP > 240 mm Hg) > 130
Manage at all levels
Hypertensive emergencies
Diastole > 130
• Hypertensive / encephalopathy
• Hypertensive / nephropathy
• Cerebral haemorrhage
• Eclampsia
• Pulmonary infarction
Aim : Reduce BP within 1 hour.
Reduce BP to safe limits at PHC
Refer
Malignant Hypertension
High BP with encephalopathy / nephropathy and papillaedema
Manage at 50 bed hospitals with parenteral infusion of antihyper-tensive which requires continuous monitoring.

# ANGINA PECTORIS



# EPILEPSY

Epilepsy

- Recurrent seizures
- Abnormal mental status or focal neurologic symptoms postictally.

↓

PHC Level

- Control generalised seizures by giving phenytoin / carbamazepine / phenobarbitane

↓

Refer to District Hospital

↓

Investigate (FBC, Blood glucose, LFT, STS etc.,)

↓

Refer to Neurophysician for detailed investigation (ECG, imaging) and management.

# HEAD INJURIES

1. Maintain airway patency by keeping the patient in the lateral position to prevent the tongue from falling back. Clear the mouth and oropharynx of secretions by means of suction. Introduce an oro-pharyngeal or naso-pharyngeal airway. Perform endotracheal intubation if necessary.

2. Ensure adequate gaseous exchange by providing oxygen. Give positive pressure ventilation using the Ambu bag if necessary.

3. Check the vital signs. The presence of hypo-tension is more likely to be due to injuries other than head injury. These may be external or internal injuries. Therefore it is essential to do full physical examination.

4. Evaluate the severity of the head injury using the Glasgow Coma Scale.

| Eye Opening | Verbal Response | Motor Response |
|---|---|---|
| E1 No eye opening | V1 No verbal response | M1 No motor response |
| E2 Eye opening to pain | V2 Incomprehensible | M2 Abnormal extensor |
| E3 Eye opening to call | V3 Inappropriate words | M3 Abnormal flexion |
| E4 Spontaneous eye opening | V4 Confused | M4 Withdraws |
| | V5 Oriented | M5 Localises |
| | | M6 Obeys commands |

A GCS RATING OF LESS THAN 7 OR 8 DENOTES COMA

5. The presence of pupillary asymmetry denotes incipient herniation. This requires urgent management with anti edema measures. In such a case rule out direct optic nerve or III cranial nerve injury.
6. Start an IV line. Anti edema measures and anticonvulsants may be given in consultation with the neurosurgeon.
7. Raise the head end of the cot by 30 degrees.
8. In case of local scalp injury - shave the area liberally, wash thoroughly with saline and probe the area gently with a gloved finger. Do not use any sharp instruments or probes for this purpose. Do not try to dislodge fractured fragments of skull. Suture the wound after lavaging with hydrogen peroxide and povidone iodine (Betadine / Wokadine).
9. In paraplegic / quadriplegic patients - do not try to extend or move the neck eg., during intubation. Put the patient on a flat board with sand bags on either side of the head to prevent movement. Put a cervical collar before shifting the patient anywhere.
10. Before doing any investigations - Eg. X-ray, CT Scan, consult the Resident on duty in Neurosurgery or the Neurosurgeon, if available or refer the patient to neurosurgeon unit.

# Disease - wise Statistics of Referral Cases

| Sl. No. | Name of Disease / condition | No. referred |
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| Sl. No. | Name of Disease / condition | No. referred |
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# IMPLEMENTATION

# OF

# REFERRAL SYSTEM

# IN

# TUMKUR DISTRICT

## 1st Level

## Referral - Zoning of PHC and CHC Hospitals within District

**1. District Hospital, Tumkur**

1. Kyatasandra
2. Urdigere
3. Mallasandra
4. Bellavi
5. Sirivara
6. Guluru
7. Honnadike
8. Nagavalli
9. Hebbur
10. Tumkur

**2. Taluk Hospital, Gubbi**

1. Hosakere
2. Cheluru
3. Tyagaturu
4. Nittur
5. Kadaba
6. Kallur
7. Doddachangavi
8. Chikkakunnula
9. Chandrashekarapura
10. Gubbi
11. PHC - Bidare
12. PHC - M M Kote

**3. Taluk Hospital, Kunigal**

1. Baktarahalli
2. Yadayuru
3. Amruttur
4. Hurkidurga
5. Chowdanakuppe
6. Yedavani
7. Huttaridurga
8. Kunigal
9. K.Honnamachanayya
10. Halapanagudda
11. Teredakupse

**4. Taluk Hospital, Tiptur**

1. Halkurike
2. Halepalya
3. Aralaguppe
4. Honnavalli
5. Suguru
6. Nonavinakere
7. Hongelakshmikshetra
8. Biligere

**5. Taluk Hospital, Turuveker**

1. Banasandra
2. Turuvekere
3. Dandinashivara
4. Mayasandra
5. Mavinakere
6. Dabbegatta
7. Kanattur
8. Shettigondanahalli
9. Talakere

**6. Taluk Hospital, Chikkanayakanahalli**

1. Chikkanayakanahalli
2. Dasudi
3. Huliyaru
4. Timmanahalli
5. Handanakere
6. Kanaikere
7. Matigatta
8. Shettikere
9. PHC - J C Pura

**7. Taluk Hospital, Pavagada**

1. Pavagada
2. Tirumani
3. Y N Hosakote
4. Lingadahalli
5. Kotegudda
6. Mangalavada
7. Venkatapura
8. K T Halli

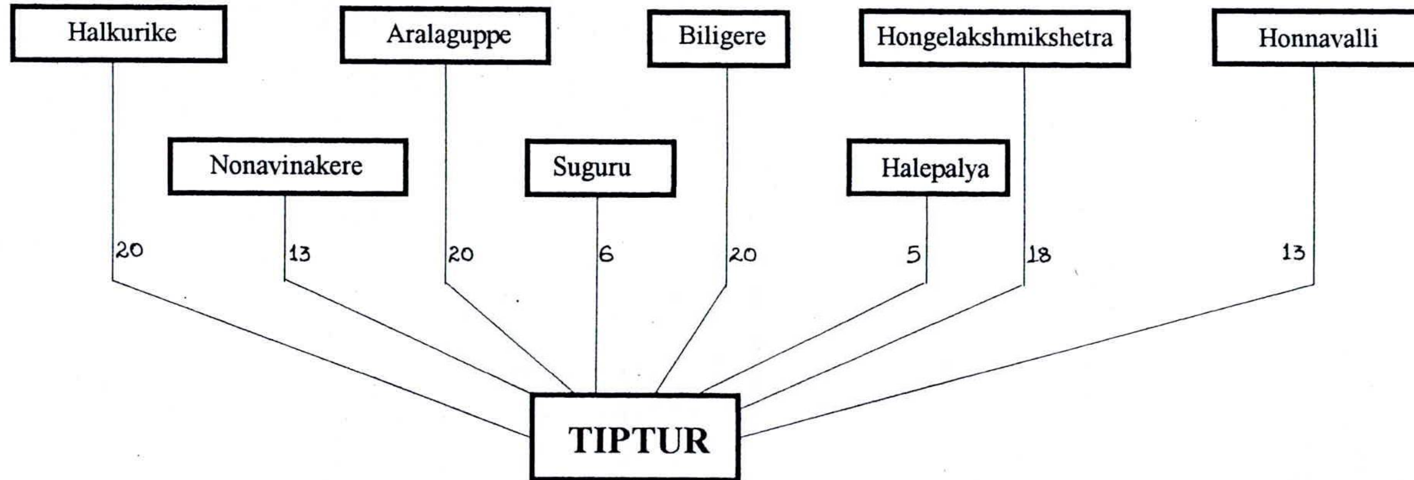
**8. Taluk Hospital, Madhugiri**

1. Madhugiri
2. Hosakere
3. Midigeshi
4. I D Halli
5. Muddenahalli
6. Kodigenahalli
7. Kodlupura
8. Maruvekere
9. Neralakere
10. Byalya
11. Dodderi
12. Badavanahalli
13. Kavandala

**FLOW CHART SHOWING REFERRAL ZONES AND CHAIN FOR TALUK HOSPITAL, TIPTUR**

**LEVEL**

**I** **PHC**




**II** **CHC**

**III** **TALUK HOSPITAL**

**IV** **DISTRICT HOSPITAL**

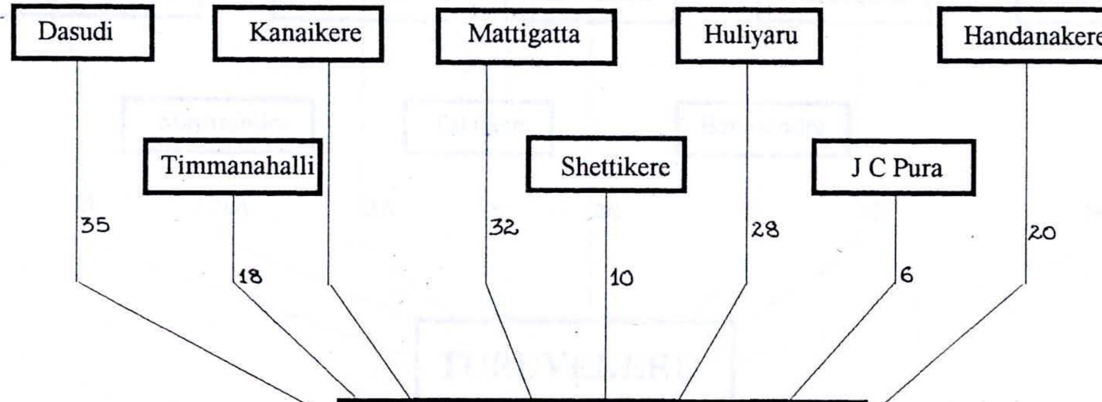
**TUMKUR**

NOTE : Numbers on the lines represent distance in kms

## FLOW CHART SHOWING REFERRAL ZONES AND CHAIN FOR TALUK HOSPITAL, CHIKKANAYAKANAHALLI

**LEVEL**

**I** **PHC**




**II** **CHC**

**CHIKKANAYAKANAHALLI**

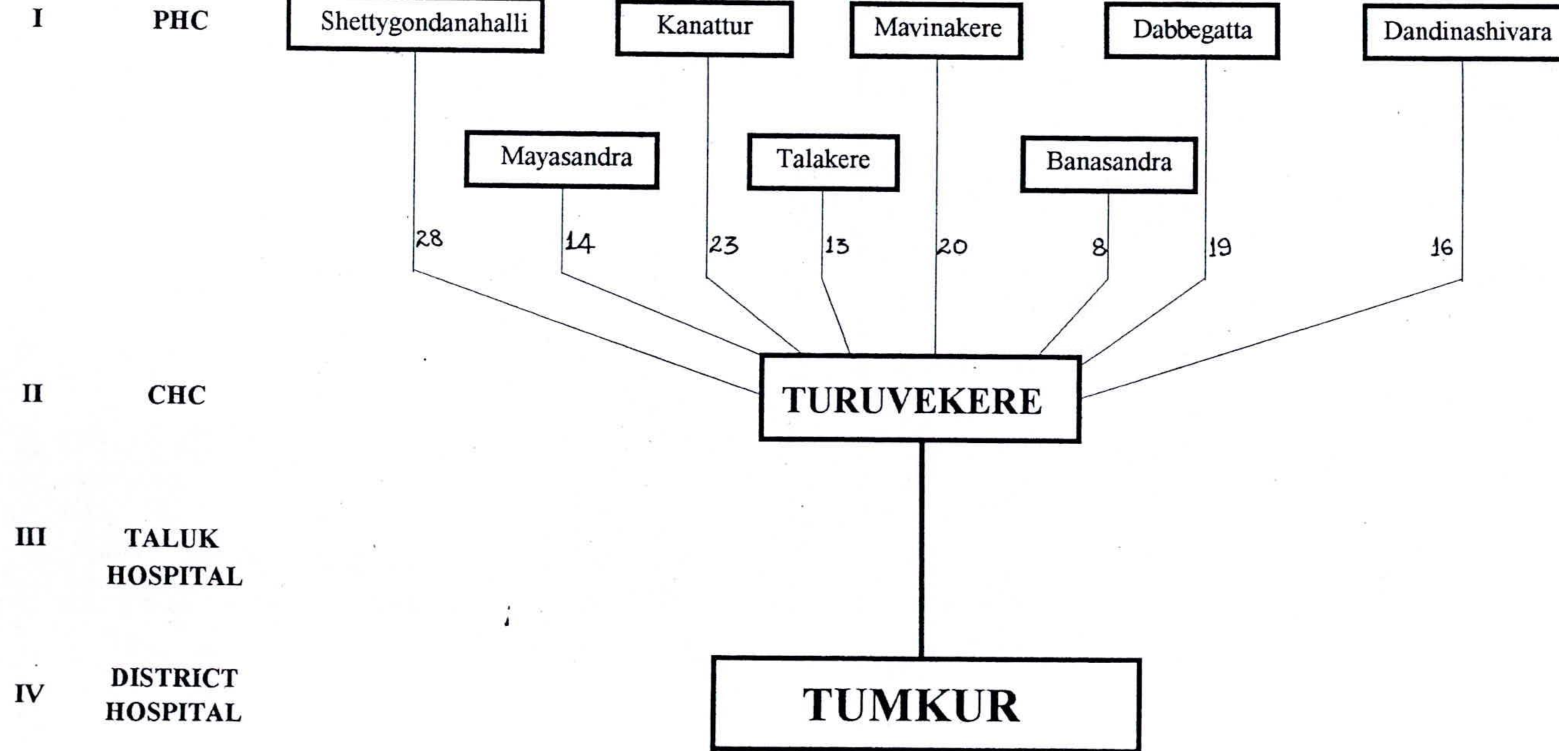
**III** **TALUK HOSPITAL**

**IV** **DISTRICT HOSPITAL**

**TUMKUR**

NOTE : Numbers on the lines represent distance in kms

## FLOW CHART SHOWING REFERRAL ZONES AND CHAIN FOR TALUK HOSPITAL, TURUVEKERE

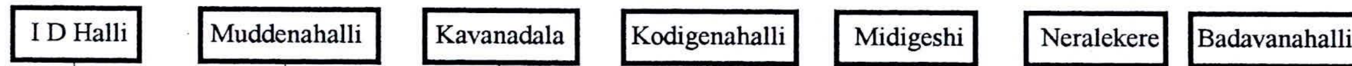


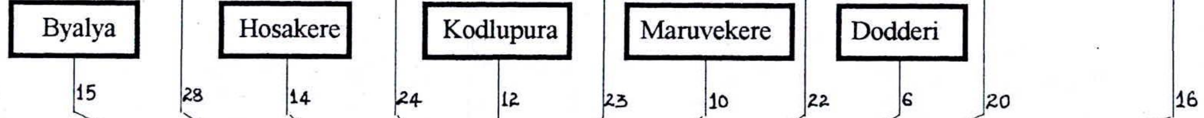

NOTE : Numbers on the lines represent distance in kms

**FLOW CHART SHOWING REFERRAL ZONES AND CHAIN FOR TALUK HOSPITAL, MADHUGIRI**

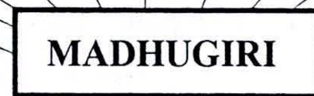
**LEVEL**

**I** **PHC**



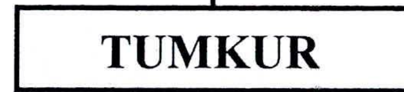




**II** **CHC**




**III** **TALUK HOSPITAL**

**IV** **DISTRICT HOSPITAL**

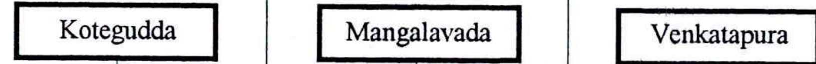



NOTE : Numbers on the lines represent distance in kms

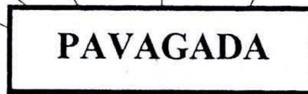
## FLOW CHART SHOWING REFERRAL ZONES AND CHAIN FOR TALUK HOSPITAL, PAVAGADA

**LEVEL**

**I** **PHC**

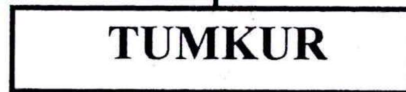



**II** **CHC**




**III** **TALUK HOSPITAL**

**IV** **DISTRICT HOSPITAL**

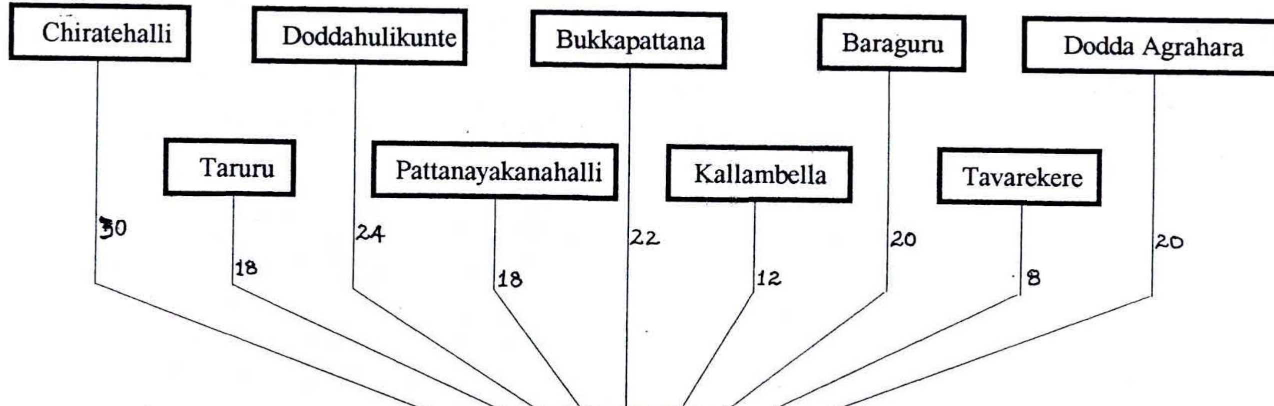



NOTE : Numbers on the lines represent distance in kms

## FLOW CHART SHOWING REFERRAL ZONES AND CHAIN FOR TALUK HOSPITAL, SIRA

LEVEL

I PHC




II CHC

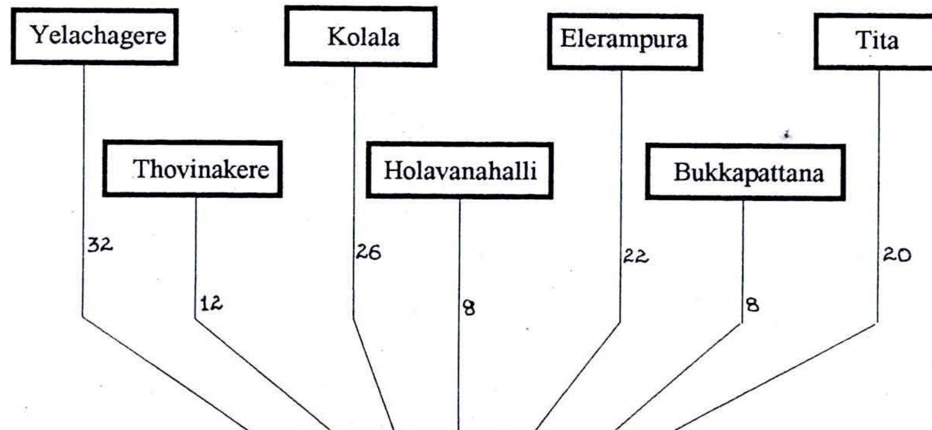
III TALUK HOSPITAL

IV DISTRICT HOSPITAL

NOTE : Numbers on the lines represent distance in kms

**FLOW CHART SHOWING REFERRAL ZONES AND CHAIN FOR TALUK HOSPITAL, KORATEGERE**

| LEVEL | | |
|---|---|---|
| I | PHC | |
| II | CHC | KORATAGERE |
| III | TALUK HOSPITAL | |
| IV | DISTRICT HOSPITAL | TUMKUR |




KORATAGERE

TUMKUR

NOTE : Numbers on the lines represent distance in kms

# STAFF NORMS & POSTINGS

## Staffing Norms for Districts and Sub-District Hospitals

| Category | Bed Strength | | | |
|---|---|---|---|---|
| | *30* | *50* | *100* | *>250* |
| 1. Surgeon | - | - | 1 | 1 |
| 2. Deputy Civil Surgeon (R.M.O.) | - | 1 | 1 | 1 |
| 3. Assistant Surgeon | 4 | 5 | 8 | 21 |
| 4. Dental Assistant Surgeon | 1 | 1 | 1 | 1 |
| 5. Nursing Superintendent Grade - I | - | - | 1 | 1 |
| 6. Nursing Superintendent Grade - II | - | - | 1 | 5 |
| 7. Nursing Tutor | - | - | - | 5 |
| 8. Staff Nurse | 6 | 10 | 20 | 60 |
| 9. Physiotherapist | - | - | 1 | 2 |
| 10. Pharmacist Grade I | - | 1 | 1 | 6 |
| 11. Pharmacist Grade II | 2 | 2 | 2 | 3 |
| 12. Senior Lab Technician | - | 1 | 1 | 2 |
| 13. Junior Lab Technician | 1 | 1 | 1 | 4 |
| 14. Lab attendants | 1 | 1 | 1 | 2 |
| 15. Refractionist | 1 | 1 | 1 | 1 |
| 16. Radiographer | - | - | - | 2 |
| 17. X-ray Technician | 1 | 1 | 2 | 3 |
| 18. Dark Room Assistant | 1 | 1 | 1 | 1 |
| 19. Lay Secretary | - | - | 1 | 1 |
| 20. Office Superintendent | 1 | 1 | 1 | 2 |
| 21. Senior Assistant / FDA | 1 | 1 | 2 | 2 |
| 22. Junior Assistant / SDA | 1 | 2 | 2 | 3 |
| 23. Typist-Cum-Clerk | 1 | 1 | 1 | 2 |
| 24. Medical Record Technician | - | - | - | 2 |
| 25. Electrician | - | - | - | 1 |
| 26. Carpenter | - | - | - | 1 |
| 27. Plumber | - | - | - | 1 |
| 28. Cook | 1 | 1 | 1 | 2 |
| 29. Helper to cook | 2 | 2 | 2 | 4 |
| 30. Group D | 10 | 15 | 25 | 50 |
| 31. Driver | 1 | 2 | 2 | 4 |
| 32. Psychiatrist | - | - | - | 1 |
| 33. Clinical Psychologist | - | - | - | 1 |
| 34. Psychiatric Social worker | - | - | - | 1 |
| 35. ECG Technician | - | - | 1 | 1 |
| 36. Social Worker (Skin VD) | - | - | - | 2 |

## Staff position of District Hospital, Tumkur District as on 01-03-1999

**Doctors :** **No. of Sanctioned Posts** : 32 **No. of Working** : 23 **No. of Vacant** : 09

| Sl. No. | Name | Qualification | Speciality | Designation | Working since | OOD / contract |
|---|---|---|---|---|---|---|
| 1. | Dr. Y N Raghavendra Rao | MBBS, MD | Physician | Dist. Surgeon | 24-06-98 | |
| 2. | Dr. S Venkatachalaiah Shetty | MBBS, MD | Physician | Sr. Specialist | 30-05-90 | |
| 3. | Dr. M R Srinivas Yogan | MBBS, MD | Physician | Sr. Specialist | 02-12-98 | |
| 4. | Dr. M C Yogimat | MBBS, MS | Surgeon | Sr. Specialist | 27-07-95 | |
| 5. | Dr. M G Doddegoudar | MBBS, MS | Surgeon | Sr. Specialist | 10-06-93 | |
| 6. | Dr. K V Suryaprabha | MBBS, DGO | OBG | Sr. Specialist | 23-10-98 | |
| 7. | Dr. P S Komala | MBBS, DGO | OBG | Sr. Specialist | 11-12-97 | |
| 8. | Dr. K T Doddathimmaiah | MBBS, D.Ortho | Orthopaedician | Sr. Specialist | 08-06-95 | |
| 9. | Dr. H D Indrakumar | MBBS, D. Ortho | Orthopaedician | Sr. Specialist | 08-07-91 | |
| 10. | Dr. H C Mruthyunjaya | MBBS, DCH | Paediatrician | Sr. Specialist | 11-12-97 | |
| 11. | Dr. Nadaf | MBBS, DCH | Paediatrician | Sr. Specialist | 14-08-97 | |
| 12. | Dr. Shashikala | MBBS, DA | Anaesthetist | Sr. Specialist | 11-12-97 | |
| 13. | Dr. Ashok Sharaf | MBBS, MD (Anaes.) | Anaesthetist | Sr. Specialist | 01-08-97 | |
| 14. | Dr. M H Govindraju | MBBS, DVD | Skin Specialist | Sr. Specialist | 17-09-92 | |
| 15. | Dr. K U Tiwari | MBBS, DMRD | Radiology | Sr. Specialist | 08-12-97 | |
| 16. | Dr. S V Srinivas | MBBS, MD (Anaes.) | Anaesthetist | Sr. Specialist | 08-06-90 | |
| 17. | Dr. Syed Ali Akbar | MBBS, DOMS | Eye Specialist | Sr. Specialist | 26-07-97 | |
| 18. | Dr. G Rajanna | MBBS, MS (Ortho.) | Orthopaedician | Sr. Specialist | 10-12-97 | |
| 19. | Dr. Kalleshaiah C K | MBBS, DCH | Paediatrician | Sr. Specialist | 10-12-97 | |
| 20. | Dr. Shivaram | MBBS, MS | Surgeon | Sr. Specialist | 01-07-98 | |
| 21. | Dr. V Govindarajalu | MBBS, ENT | ENT Specialist | Sr. Specialist | 03-02-99 | |
| 22. | Dr. K P Kalleshaiah | MBBS, DOMS | Eye Specialist | Sr. Specialist | 13-08-98 | |
| 23. | Dr. V G Ramesh | MBBS, DCH | Paediatrician | Sr. Specialist | 15-12-97 | |
| 24. | Dr. H Siddaiah | MBBS, DOMS | Eye Specialist | Sr. Specialist | 12-12-97 | |
| 25. | Dr. Sangitha Sharaf | MBBS, DCP | Pathologist | Sr. Specialist | 01-08-97 | |
| 26. | Dr. M R Krishnaiah | MBBS, ENT | ENT Specialist | Sr. Specialist | 01-04-98 | O O D |

**Paramedical Staff :**

| Staff | | Sanctioned | | Working | | Vacant | | Working since | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | TLGH | KHSDP | TLGH | KHSDP | TLGH | KHSDP | | |
| Pharmacist | Senior | 4 | - | 4 | - | - | - | | |
| | Junior | 2 | - | 2 | - | - | - | | |
| X-ray Technician | Senior | 1 | - | 1 | - | - | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| Lab Technician | Senior | 2 | 1 | 1 | - | 1 | 1 | | |
| | Junior | 4 | - | 1 | - | 3 | - | | |
| Nursing Superintendent | Grade I | - | - | - | - | - | 1 | | |
| Nursing Superintendent | Grade II | 1 | 1 | 1 | 1 | - | - | | |
| Sr. Staff nurses | | 9 | - | 6 | - | 3 | - | | |
| Staff nurses | | 41 | 25 | 40 | 25 | 1 | - | | |
| Refractionist | | 3 | - | 3 | - | - | - | | |
| Lab. Assistant | | - | - | - | - | - | - | | |
| Dark room assistant | | 1 | - | 1 | - | - | - | | |
| Sweeper | | 17 | - | 13 | - | 4 | - | | |
| Cook | | 5 | - | 5 | - | - | - | | |
| Dhobi | | 4 | - | 1 | - | 3 | - | | |
| ANM | | 11 | - | 11 | - | - | - | | |
| LHV | | 4 | - | 3 | - | 1 | - | | |
| Group D | | 74 | 2 | 56 | - | 18 | 2 | | |
| Health Assistant (Male) | Senior | 1 | - | - | - | 1 | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| Health Assistant (Female) | Senior | - | - | - | - | - | - | | |

## Staff position of Community Health Centre, Kunigal, Tumkur District as on 15-03-1999

**Doctors :**

No. of Sanctioned Posts : 8
No. of Working : 6
No. of Vacant : 2

| Sl. No. | Name | Qualification | Speciality | Designation | Working since | OOD / contract |
|---|---|---|---|---|---|---|
| 1. | Dr. K.R. Shivaprasad | MBBS, MD | Physician | TMO | 13-07-98 | |
| 2. | Dr. D. Shivananda | MBBS, DGO | Gynaecologist | MO | 28-10-98 | |
| 3. | Dr. K. Siddaiah | MBBS, D.Ortho. | Orthopaedics | MO | 03-07-98 | |
| 4. | Dr. A.E. Govindaraju | MBBS, MS (Oph.) | Ophthalmologist | MO | 02-08-95 | |
| 5. | Dr. B. Venkatesh | MBBS, MS (GS) | General Surgeon | MO | 20-07-95 | |
| 6. | Dr. M.R. Krishnaiah | MBBS (DLO) | E.N.T. | Sr. Specialist | | OOD to GH, Tumkur |
| 7. | | | | LMO | vacant | |
| 8. | | | Dentist | | vacant | |

**Paramedical Staff :**

| Staff | | Sanctioned | | Working | | Vacant | | Working since | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | KHSDP | | KHSDP | | KHSDP | | |
| Pharmacist | Senior | 1 | - | 1 | - | - | - | | |
| | Junior | 1 | - | - | - | 1 | - | | |
| X-ray Technician | Senior | 1 | - | 1 | - | - | - | | |
| | Junior | - | - | - | - | - | - | | |
| Lab Technician | Senior | - | 1 | - | - | - | 1 | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| Staff Nurses | | 2 | 5 | 1 | 5 | 1 | - | | |

## Staff position of General Hospital, Tiptur, Tumkur District as on 12-03-1999

**Doctors:**

No. of Sanctioned Posts : 10
No. of Working : 08
No. of Vacant : 02

| Sl. No. | Name | Qualification | Speciality | Designation | Working since | OOD / contract |
|---|---|---|---|---|---|---|
| 1. | Dr. T H Rangappa | MBBS, DCH, MD | Paediatrician | Administrative Medical Officer | 12-12-97 | |
| 2. | Dr. V N Ravindranath Singh | MBBS, MS (Gen. Surg.) | General Surgery | Sr. Specialist | 19-06-95 | |
| 3. | Dr. B N Tejpal | MBBS, DCH | Paediatrician | Sr. Specialist | 03-09-90 | |
| 4. | Dr. C L Prahalad | MBBS, D.Ortho | Orthopaedician | Sr. Specialist | 22-11-97 | |
| 5. | Dr. H A Ramegowda | MBBS, D. Ortho | Orthopaedician | Sr. Specialist | 12-08-98 | |
| 6. | Dr. B N Vishwanath | MBBS, DOMS, MS | Eye Specialist | Sr. Specialist | 07-01-99 | |
| 7. | Dr. B S Ramachandra | MBBS, MD | General Medicine | Sr. Specialist | 01-01-99 | |
| 8. | Dr. M N Ramakrishna | BDS, MDS | Dental Surgeon | Sr. Specialist | 22-08-96 | |
| 9. | Dr. Rajashekhar | MBBS, DA | Anaesthetist | Specialist | 07-05-99 | |

**Paramedical Staff :**

| Staff | | Sanctioned | | Working | | Vacant | | Working since | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | TLGH | KHSDP | TLGH | KHSDP | TLGH | KHSDP | | |
| Pharmacist | Senior | 1 | - | 1 | - | - | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| X-ray Technician | Senior | - | - | - | - | - | - | | |
| | Junior | 1 | 1 | 1 | 1 | - | - | | |
| Lab Technician | Senior | - | - | - | - | - | - | | |
| | Junior | 2 | - | 1 | - | 1 | - | | |
| Nursing Superintendent | Grade I | - | - | - | - | - | - | | |
| Nursing Superintendent | Grade II | - | - | - | - | - | - | | |
| Sr. Staff nurses | | 1 | - | 1 | - | - | - | | |
| Staff nurses | | 6 | 9 | 4 | 8 | 2 | 1 | | |
| Refractionist | | 1 | - | 1 | - | - | - | | |
| Lab. Assistant | | 1 | - | - | - | 1 | - | | |
| Dark room assistant | | 1 | - | 1 | - | - | - | | |
| Sweeper | | 2 | - | 2 | - | - | - | | |
| Cook | | 4 | - | 3 | - | 1 | - | | |
| Dhobi | | 2 | - | - | - | 2 | - | | |
| ANM | | 3 | - | 3 | - | - | - | | |
| LHV | | 1 | - | 1 | - | - | - | | |
| Group D | | 18 | 9 | 15 | - | 3 | 9 | | |
| Health Assistant (Male) | Senior | - | - | - | - | - | - | | |
| | Junior | 1 | - | - | - | 1 | - | | |
| Health Assistant (Female) | Senior | - | - | | | | | | |

## Staff position of Primary Health Centre, Turuvekere as on 17-02-1999

**Doctors :**

No. of Sanctioned : 2 + 2 (KHSDP) = 4
No. of Working : 2 + 1 (KHSDP) = 3
No. of Vacant : 0 + 1 (KHSDP) = 1

| Sl. No. | Name | Qualification | Speciality | Designation | Working since | OOD / contract |
|---|---|---|---|---|---|---|
| 1. | Dr. G. Shivaram | MBBS | - | THO | 28-05-90 | |
| 2. | Dr. Sreelatha C.H. | MBBS | - | LMO | June-93 | |
| 3. | Dr. B. Nanjappa | MBBS, DCH | Paediatrics | Asst. Surgeon | Aug -98 | |

**Paramedical Staff :**

| Staff | | Sanctioned | | Working | | Vacant | | Working since | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | KHSDP | | KHSDP | | KHSDP | | |
| Pharmacist | Senior | - | - | - | - | - | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| X-ray Technician | Senior | - | - | - | - | - | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| Lab Technician | Senior | - | - | - | - | - | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| Staff nurses | | 1 | 4 | - | 3 | 1 | 1 | | |

## Staff position of General Hospital, Gubbi, Tumkur District as on 12-04-1999

**Doctors :**

Sanctioned Posts : 4
Working : 4
Vacant : 0

| SL. No. | Name | Qualification | Speciality | Designation | Working since | OOD/ contract |
|---|---|---|---|---|---|---|
| 1 | Dr. Chandrappa | MBBS, DCH | Children Specialist | Taluk Health Officer | 10-11-98 | |
| 2 | Dr. S. Veerasangaiah | MBBS, DTCH | Chest & T B Specialist | Sr. Specialist | 20-02-98 | |
| 3 | Dr. Nagapushpa | MBBS | | Lady Medical Officer | 20-02-98 | |
| 4 | Dr. Rangaswamy | MBBS, DCH | Children Specialist | MOH | 10-09-98 | |

**Paramedical Staff :**

| Staff | | Sanctioned | | Working | | Vacant | | Working since | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | KHSDP | | KHSDP | | KHSDP | | |
| Pharmacist | Senior | - | 1 | - | - | - | - | | |
| | Junior | - | 1 | - | 1 | - | - | | |
| X-ray Technician | | - | 1 | - | 1 | | 1 | | |
| Lab Technician | | - | 1 | - | 1 | - | - | | |
| Staff nurses | | | 6 | | 6 | - | - | | |

## Staff position of General Hospital, Chikkanayakanahalli, Tumkur District as on 12-04-1999

**Doctors:**

Sanctioned Posts : 2
Working : 2
Vacant : 0

| SL. No. | Name | Qualification | Speciality | Designation | Working since | OOD/ contract |
|---|---|---|---|---|---|---|
| 1 | Dr. D.C. Mahadeva | MBBS, DCH | Children Specialist | Administrative Medical Officer | 26-03-98 | |
| 2 | Dr. T.D. Sateesh | MBBS | | MOH | 20-01-98 | |

**Paramedical Staff :**

| Staff | | Sanctioned | | Working | | Vacant | | Working since | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | KHSDP | | KHSDP | | KHSDP | | |
| Pharmacist | Senior | 1 | - | 1 | - | - | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| X-ray Technician | | 1 | - | 1 | - | - | - | | |
| Lab Technician | | 1 | - | 1 | - | - | - | | |
| Staff nurses | | 4 | - | 4 | - | - | - | | |

## Staff position of General Hospital, Madhugiri, Tumkur District as on 12-04-1999

**Doctors:**

Sanctioned Posts : 5
Working : 1
Vacant : 4

| SL. No. | Name | Qualification | Speciality | Designation | Working since | OOD/ contract |
|---|---|---|---|---|---|---|
| 1 | Dr. Choudhary | MS | General Surgery | | | |
| 2 | Dr. Lakshmi Raja | DGO | Gynaecologist | | | |
| 3 | | | Ophthalmologist | | | |

**Paramedical Staff :**

| Staff | | Sanctioned | Working | Vacant |
|---|---|---|---|---|
| Staff Nurses | | 4 | 3 | 1 |
| X-ray Technician | | 1 | 1 | 0 |
| Lab Technician | Senior<br>Junior | 1 | 0 | 1 |
| Pharmacist | Senior<br>Junior | 3 | 2 | 0 |

**Staff position of Community Health Centre, Pavagada, Tumkur District as on 06-03-99**

**Doctors:**

No. of Sanctioned Posts : 5
No. of Working : 3
No. of Vacant : 2

| Sl. No. | Name | Qualification | Speciality | Designation | Working since | OOD / contract |
|---|---|---|---|---|---|---|
| 1. | Dr. T.G. Dayananda | MBBS, MD | | Medical Officer | 24-06-93 | |
| 2. | Dr. G.R. Manjunatha Gowda | MBBS, MD | | Medical Officer | 12-01-98 | |
| 3. | Dr. N.S. Mamatha Devi | MBBS, MD | | LMO | 12-01-98 | |

**Paramedical Staff :**

| Staff | | Sanctioned | | Working | | Vacant | | Working since | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | CHC | KHSDP | CHC | KHSDP | CHC | KHSDP | | |
| Pharmacist | Senior | 1 | - | - | - | 1 | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| X-ray Technician | Senior | - | - | - | - | - | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| Lab Technician | Senior | 1 | - | - | - | 1 | - | | |
| | Junior | 1 | - | - | - | 1 | - | | |
| Staff nurses | | 3 | 3 | 3 | 2 | - | 1 | | |

## Staff position of Primary Health Centre, Sira, Tumkur District as on 16-01-1999

**Doctors:**

No. of Sanctioned Posts : 8
No. of Working : 4
No. of Vacant : 4

| Sl. No. | Name | Qualification | Speciality | Designation | Working since | OOD/Contract |
|---|---|---|---|---|---|---|
| 1. | Dr. B. Radhakrishna | B.Sc., MBBS, MS (GM) | Surgeon | Sr. MO / Specialist | 08-08-97 | KHSDP |
| 2. | Dr. K.V. Ramesh | MBBS, D. Ortho | Orthopaedician | Specialist | 27-11-97 | |
| 3. | Dr. R.T. Chandrashekarappa | MBBS, MS (Ortho) | Orthopaedician | Specialist | 16-11-98 | KHSDP |
| 4. | Dr. N. Gurudutt | MBBS, MD (Anae.) | Anaesthetist | Anaesthetist | 26-12-98 | |
| 5. | Dr. G.R. Ramesh | MBBS | - | - | 2 years | Contract OOD |
| 6. | Dr. Manjuladevi | MBBS | - | - | 2 years | Contract OOD |

**Paramedical Staff :**

| Staff | | Sanctioned | | Working | | Vacant | | Working since | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | KHSDP | | KHSDP | | KHSDP | | |
| Pharmacist | Senior | 1 | - | 1 | - | - | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| X-ray Technician | Senior | - | - | - | - | - | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| Lab Technician | Senior | - | - | - | - | - | - | | |
| | Junior | 1 | - | - | - | 1 | - | | |
| Staff Nurses | | 3 | - | 3 | - | - | - | | |

## Staff position of General Hospital, Koratagere, Tumkur District as on 08-03-1999

**Doctors:**

No. of Sanctioned Posts : 7
No. of Working : 4
No. of Vacant : 3

| Sl. No. | Name | Qualification | Speciality | Designation | Working since | OOD / contract |
|---|---|---|---|---|---|---|
| 1. | Dr. Muddukrishna | MBBS, (MD) | General Medicine | Medical Officer | 07-91 | |
| 2. | Dr. Gadag Nagappa | MBBS | | Sr. MO | 08-97 | |
| 3. | Dr. G.G. Batageri | MBBS, MS | Surgery | Surgeon | 09-98 | |
| 4. | Dr. K.G. Ramappa | MBBS, DCH | Paediatrics | Paediatrician | 10-97 | |

**Paramedical Staff :**

| Staff | | Sanctioned | | Working | | Vacant | | Working since | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | TLGH | KHSDP | TLGH | KHSDP | TLGH | KHSDP | | |
| Pharmacist | Senior | 1 | - | - | - | - | - | | |
| | Junior | 1 | - | - | - | - | - | | |
| X-ray Technician | Senior | - | - | - | - | - | - | | |
| | Junior | 1 | - | - | - | - | - | | |
| Lab Technician | Senior | - | - | - | - | - | - | | |
| | Junior | 1 | - | 1 | - | - | - | | |
| Staff nurses | | 3 | 3 | 2 | 3 | 1 | - | | |

# Annexure

## Communication Facilities in Health Institution of Tumkur District

| Health Facility | Taluka | Telephone | Fax |
|---|---|---|---|
| District Hospital, Tumkur | Tumkur | DHO : 0816-78387<br>DS : 0816-78377<br>® : 0816-78437 | |
| CHC - Chikkanayakanahalli | Tumkur | 08133-27211 | |
| CHC - Gubbi | Tumkur | 08131-22271 | |
| CHC - Koratagere | Tumkur | 08138-2146 | |
| CHC - Kunigal | Tumkur | 08132-20450 | |
| CHC - Madhugiri | Tumkur | 08137-32419 | |
| CHC - Pavagada | Tumkur | 08136-20301 | |
| CHC - Sira | Tumkur | 08135-25212 | |
| CHC - Tiptur | Tumkur | 08134-51004 | |
| CHC - Turuvekere | Tumkur | 08139-47317 | |

# EQUIPMENT NORMS

# &

# SUPPLIES

**Name of the Hospital : District Hospital, Tumkur**

| Sl No. | Name of the equipment | Qty Supplied | Whether Installed |
|---|---|---|---|
| 1. | ECG | 1 | Yes |
| 2. | Cardiac Monitors | 3 | Yes |
| 3. | Defibrilators | 2 | Yes |
| 4. | Phototherapy Unit | 1 | Yes |
| 5. | Foetal Monitor | 1 | Yes |
| 6. | Ventilators | 2 | |
| 7. | Boyles Apparatus with flou tech | 1 | Yes |
| 8. | Slit Lamp | 1 | |
| 9. | Emergency Resuscitation Kit | 1 | |
| 10. | Baby Emergency Resuscitation Kit | 1 | |
| 11. | 5 AMC | 4 | |
| 12. | Dialysis Machine | 1 | |
| 13. | Automist | 2 | |
| 14. | Microscope | 2 | |
| 15. | Photo Electric Calorimeter | 1 | |
| 16. | Spectro Photometer | 1 | |
| 17. | Water Bath | 1 | |
| 18. | Hot air oven | 1 | |
| 19. | Distilled Water Stills | 1 | |
| 20. | Glucometer | 1 | |
| 21. | Microtom | 1 | |
| 22. | AC | 1 | |
| 23. | Water coolers | 1 | |
| 24. | Two body mortuary | 2 | |
| 25. | Generator 62.5 | 1 | |
| 26. | Intensifying screens 17 x 14 | 2 | |
| 27. | Intensifying screens 15 x 12 | 2 | |
| 28. | Intensifying screens 12 x 10 | 3 | |
| 29. | Intensifying screens 10 x 8 | 3 | |
| 30. | D D & C | 4 | |
| 31. | MTP | 4 | |
| 32. | Cervical Biopsy | 4 | |
| 33. | Evacuation | 2 | |
| 34. | Epiosotomy | 4 | |
| 35. | Delivery pack | 4 | |
| 36. | Venesection | 4 | |
| 37. | Caesarean section | 4 | |
| 38. | P N Sterilization | 4 | |
| 39. | Incision & Drainage | 2 | |
| 40. | Abdominal Hysterectomy | 4 | |
| 41. | Vaginal Hysterectomy | 4 | |
| 42. | Vagotomy | 2 | |
| 43. | Hemorrhoidectomy | 2 | |

| 44. | Appendectomy | 2 | |
|---|---|---|---|
| 45. | Hydrocele | 2 | |
| 46. | G J | 2 | |
| 47. | Suturing tray | 4 | |
| 48. | Suture removal | 4 | |
| 49. | L P tray | 8 | |
| 50. | Cholecystectomy | 2 | |
| 51. | Thyrodectomy | 2 | |
| 52. | Catherization tray | 8 | |
| 53. | Needling & Cataract (13 items) | 4 | |
| 54. | Cataract Operation | 4 | |
| 55. | Enucleation | 4 | |
| 56. | Probing of Lacrymal Passages | 4 | |
| 57. | Foreign Body in A C | 4 | |
| 58. | I M Nailing | 2 | |
| 59. | S P Nailing | 2 | |
| 60. | D C Plating | 1 | |
| 61. | Dynamic Hip Screw Fixation | 1 | |
| 62. | Fixation of Radius & Ulna | 1 | |
| 63. | A M Prosthesis | 2 | |
| 64. | Endo Laryngea Microsurgery | 2 | |
| 65. | Tracheostomy | 4 | |
| 66. | ENT Kit | 4 | |
| 67. | E E Set (7 items) | 4 | |
| 68. | General Anaesthesia Kit | 4 | |
| 69. | General Orthopaedic Kit | 4 | |
| 70. | Dental Kit | 3 | |
| 71. | Adult laryngoscope | 6 | |
| 72. | Baby laryngoscope | 4 | |
| 73. | P Hammer | 10 | |
| 74. | T D | 26 | |
| 75. | Nebulizer | 4 | |
| 76. | Fire extinguisher | 7 | |
| 77. | 500 mA X-ray | 1 | |
| 78. | 300 mA X-ray | 1 | |
| 79. | 100 mA X-ray | 1 | |
| 80. | 60 mA X-ray | 1 | |
| 81. | Tata Sumo | 1 | |
| 82. | O T focussing | 1 | |
| 83. | O T Mobile | 2 | |
| 84. | O T Lights (shadowless) | 2 | |
| 85. | Pulse oxymeter | 1 | |
| 86. | Centrifuge | 2 | |
| 87. | Auto analyser | 1 | |
| 88. | Oxygen Cylinder A | 2 | |
| 89. | Oxygen Cylinder R with T | 1 | |
| 90. | Nitrous Oxide A | 2 | |

| 91. | Nitrous oxide B | 1 | |
|---|---|---|---|
| 92. | Nitrous oxide R with T | 1 | |
| 93. | Autoclave horizontal | 2 | |
| 94. | Autoclave vertical | 2 | |
| 95. | Workshop maintenance vehicle | 1 | |

**Name of the Hospital : Korategere, Tumkur**

| Sl No. | Name of the equipment | Qty Supplied | Whether Installed |
|---|---|---|---|
| 1 | ECG | 1 | Yes |
| 2 | Emergency Resuscitation Kit | 1 | |
| 3 | Baby Emergency Resuscitation Kit | 1 | |
| 4 | 5 AMC | 1 | |
| 5 | Foot Suction Apparatus | 2 | |
| 6 | Suction Apparatus (Electrical) | 2 | |
| 7 | Instrument Sterilizer | 4 | |
| 8 | Automist | 1 | |
| 9 | Microscope | 1 | |
| 10 | Water Bath | 1 | |
| 11 | Hot air Oven | 1 | |
| 12 | Glucometer | 1 | |
| 13 | Water coolers | 1 | |
| 14 | D D & C | 2 | |
| 15 | MTP | 2 | |
| 16 | Cervical Biopsy | 1 | |
| 17 | Evacuation | 1 | |
| 18 | Episotomy | 2 | |
| 19 | Delivery pack | 2 | |
| 20 | Venesection | 2 | |
| 21 | Caesarean section | 1 | |
| 22 | P N Sterilization | 2 | |
| 23 | Incision & Drainage | 2 | |
| 24 | Suturing Tray | 1 | |
| 25 | Suture remover | 1 | |
| 26 | L P Tray | 2 | |
| 27 | Catherization Tray | 2 | |
| 28 | Cataract Operation | 1 | |
| 29 | Enucleation | 1 | |
| 30 | Probing of Lacrymal Passages | 1 | |
| 31 | Foreign body in AC | 1 | |
| 32 | Tracheostomy set | 1 | |
| 33 | ENT Kit | 1 | |
| 34 | General Anaesthesia Kit | 1 | |
| 35 | General Orthopaedic Kit | 1 | |
| 36 | Dental Kit | 1 | |
| 37 | Baby laryngoscope | 1 | |

| | | | |
|---|---|---|---|
| 38 | Adult laryngoscope | 1 | |
| 39 | T D | 10 | |
| 40 | Nebulizer | 1 | |
| 41 | Fire extinguisher | 4 | |
| 42 | 300 mA X-ray | 1 | |
| 43 | Tata Sumo | 1 | |
| 44 | O T focussing | 1 | |
| 45 | Oxygen cylinder B | 10 | |
| 46 | Oxygen cylinder R with F | 5 | |

**Name of the Hospital : C N Halli, Tumkur**

| Sl No. | Name of the equipment | Qty. Supplied | Whether Installed |
|---|---|---|---|
| 1 | ECG | 1 | Yes |
| 2 | Emergency Resuscitation Kit | 1 | |
| 3 | Baby Emergency Resuscitation Kit | 1 | |
| 4 | Dental Kit | 1 | |
| 5 | Dental Chair | 1 | Yes |
| 6 | 5 AMC | 1 | |
| 7 | Foot Suction Apparatus | 2 | |
| 8 | Suction Apparatus (Electrical) | 2 | |
| 9 | Instrument Sterilizer | 5 | |
| 10 | Automist | 1 | |
| 11 | Water Bath | 1 | |
| 12 | Hot Air Oven | 1 | |
| 13 | Glucometer | 1 | |
| 14 | A C | 1 | |
| 15 | Water coolers | 1 | |
| 16 | D D & C | 2 | |
| 17 | MTP | 2 | |
| 18 | Cervical Biopsy | 1 | |
| 19 | Evacuation | 1 | |
| 20 | Epiosotomy | 2 | |
| 21 | Delivery pack | 2 | |
| 22 | Venesection | 2 | |
| 23 | Caesarean section | 1 | |
| 24 | P N Sterilization | 2 | |
| 25 | Incision & Drainage | 2 | |
| 26 | Suturing Tray | 1 | |
| 27 | Suture remover | 1 | |
| 28 | L P Tray | 2 | |
| 29 | Catherisation Tray | 2 | |
| 30 | Cataract Operation | 1 | |
| 31 | Enucleation | 1 | |
| 32 | Probing of Lacrymal Passages | 1 | |
| 33 | Foreign body in AC | 1 | |

| 34 | Tracheostomy set | 1 | |
|---|---|---|---|
| 35 | ENT Kit | 1 | |
| 36 | General Anaesthesia Kit | 1 | |
| 37 | General Orhtopaedic Kit | 1 | |
| 38 | Dental Kit | 1 | |
| 39 | Adult laryngoscope | 1 | |
| 40 | Baby laryngoscope | 1 | |
| 41 | P Hammer | 2 | |
| 42 | T D | 9 | |
| 43 | Nebulizer | 1 | |
| 44 | Fire extinguisher | 4 | |
| 45 | Tata Sumo | 1 | |
| 46 | O T focussing | 1 | |
| 47 | Oxygen cylinder B | 10 | |
| 48 | Oxygen cylinder R with F | 5 | |
| 49 | Autoclave 2 Bin | 1 | |

**Name of the Hospital : Kunigal, Tumkur**

| Sl No. | Name of the equipment | Qty. Supplied | Whether Installed |
|---|---|---|---|
| 1 | ECG | 1 | Yes |
| 2 | Emergency Resuscitation Kit | 1 | |
| 3 | Baby Emergency Resuscitation Kit | 1 | |
| 4 | Dental Kit | 1 | Yes |
| 5 | Dental Chair | 1 | Yes |
| 6 | Foot Suction Apparatus | 2 | |
| 7 | Suction Apparatus (Electrical) | 2 | |
| 8 | Instrument Sterilizer | 4 | |
| 9 | Automist | 1 | |
| 10 | Water Bath | 1 | |
| 11 | Hot Air Oven | 1 | |
| 12 | Glucometer | 1 | |
| 13 | Water coolers | 1 | |
| 14 | MTP | 2 | |
| 15 | D D & C | 2 | |
| 16 | Cervical Biopsy | 1 | |
| 17 | Evacuation | 1 | |
| 18 | Epiosotomy | 2 | |
| 19 | Vaginal tray | 2 | |
| 20 | Delivery pack | 2 | |
| 21 | Caesarean section | 1 | |
| 22 | P N Sterilization | 2 | |
| 23 | Incision & Drainage | 2 | |
| 24 | Suturing Tray | 1 | |
| 25 | Suture remover | 1 | |
| 26 | L P Tray | 2 | |

| | | | |
|---|---|---|---|
| 27 | Catherisation Tray | 2 | |
| 28 | Cataract Operation | 1 | |
| 29 | Enucleation | 1 | |
| 30 | Probing of Lacrymal Passages | 1 | |
| 31 | Foreign body in AC | 1 | |
| 32 | Tracheostomy set | 1 | |
| 33 | ENT Kit | 1 | |
| 34 | General Anaesthesia Kit | 1 | |
| 35 | General Orhtopaedic Kit | 1 | |
| 36 | Adult laryngoscope | 1 | |
| 37 | Baby laryngoscope | 1 | |
| 38 | P Hammer | 2 | |
| 39 | T D | 8 | |
| 40 | Nebulizer | 1 | |
| 41 | Fire extinguisher | 4 | |
| 42 | 300 mA X-ray | 1 | |
| 43 | 100 mA X-ray | 1 | |
| 44 | Tata Sumo | 1 | |
| 45 | O T focussing | 1 | |
| 46 | Oxygen cylinder B | 10 | |
| 47 | Oxygen cylinder R with F | 5 | |
| 48 | Autoclave horizontal | 1 | |
| 49 | Autoclave vertical | 1 | |
| 50 | Autoclave 2 bin | 1 | |

**Name of the Hospital : Madhugiri, Tumkur**

| Sl No. | Name of the equipment | Qty. Supplied | Whether Installed |
|---|---|---|---|
| 1 | 100 mA X-ray | 1 | |
| 2 | O T Lights (shadowless) | 1 | |
| 3 | Centrifuges | 1 | |
| 4 | Autoclave horizontal | 1 | |
| 5 | Autoclave vertical | 1 | |

**Name of the Hospital : Sira, Tumkur**

| Sl No. | Name of the equipment | Qty. Supplied | Whether Installed |
|---|---|---|---|
| 1 | 300 mA X-ray | 1 | |
| 2 | Tata Sumo | 1 | |
| 3 | O T Lights (shadowless) | 1 | |
| 4 | Centrifuges | 1 | |
| 5 | Generator 15 KVA | 1 | |
| 6 | Autoclave vertical | 1 | |

**Name of the Hospital : Pavagada, Tumkur**

| Sl No. | Name of the equipment | Qty. Supplied | Whether Installed |
|---|---|---|---|
| 1 | Tata Sumo | 1 | |
| 2 | O T Lights (Mobile) | 1 | |
| 3 | O T Lights (Shadowless) | 1 | |
| 4 | Centrifuges | 1 | |
| 5 | Generator 15 KVA | 1 | |
| 6 | Autoclave horizontal | 1 | |
| 7 | Autoclave vertical | 1 | |

**Name of the Hospital : Tiptur, Tumkur**

| Sl No. | Name of the equipment | Qty Supplied | Whether Installed |
|---|---|---|---|
| 1. | ECG | 1 | |
| 2. | Phototherapy Unit | 1 | |
| 3. | Boyles Apparatus without flou tech | 1 | |
| 4. | Optholmoscope | 1 | |
| 5. | Emergency Resuscitation Kit | 1 | |
| 6. | Baby Emergency Resuscitation Kit | 1 | |
| 7. | Air rotor | 1 | |
| 8. | 5 AMC | 1 | |
| 9. | Foot suction apparatus | 2 | |
| 10. | Suction apparatus (electrical) | 2 | |
| 11. | Instrument sterilizer | 9 | |
| 12. | Dialysis Machine | 1 | |
| 13. | Automist | 2 | |
| 14. | Photo Electric Calorimeter | 1 | |
| 15. | Water Bath | 1 | |
| 16. | Hot air oven | 2 | |
| 17. | Distilled Water Stills | 1 | |
| 18. | Glucometer | 1 | |
| 19. | AC | 1 | |
| 20. | Water coolers | 1 | |
| 21. | Generator 50 KVA | 1 | |
| 22. | D D & C | 2 | |
| 23. | MTP | 2 | |
| 24. | Cervical Biopsy | 2 | |
| 25. | Evacuation | 1 | |
| 26. | Episotomy | 4 | |
| 27. | Delivery pack | 4 | |
| 28. | Vaginal tray | 4 | |
| 29. | Caesarean section | 2 | |
| 30. | P N Sterilization | 4 | |
| 31. | Incision & Drainage | 4 | |

| | | | |
|---|---|---|---|
| 32. | Abdominal Hysterectomy | 2 | |
| 33. | Vaginal Hysterectomy | 2 | |
| 34. | Vagotomy | 1 | |
| 35. | Hemorrhoidectomy | 1 | |
| 36. | Appendectomy | 1 | |
| 37. | Hydrocele | 1 | |
| 38. | G J | 1 | |
| 39. | Suturing tray | 2 | |
| 40. | Suture removal | 3 | |
| 41. | L P tray | 3 | |
| 42. | Catherization tray | 4 | |
| 43. | Needling & Cataract (13 items) | 2 | |
| 44. | Cataract Operation | 2 | |
| 45. | Enucleation | 2 | |
| 46. | Probing of Lacrymal Passages | 2 | |
| 47. | Foreign Body in A C | 2 | |
| 48. | I M Nailing | 1 | |
| 49. | S P Nailing | 1 | |
| 50. | D C Plating | 1 | |
| 51. | Dynamic Hip Screw Fixation | 1 | |
| 52. | Fixation of Radius & Ulna | 1 | |
| 53. | Tracheostomy set | 2 | |
| 54. | ENT Kit | 2 | |
| 55. | E E Set (7 items) | 2 | |
| 56. | General Anaesthesia Kit | 2 | |
| 57. | General Orthopaedic Kit | 2 | |
| 58. | Dental Kit | 4 | |
| 59. | Adult laryngoscope | 2 | |
| 60. | Baby laryngoscope | 2 | |
| 61. | P Hammer | 3 | |
| 62. | T D | 15 | |
| 63. | Nebulizer | 2 | |
| 64. | Fire extinguisher | 6 | |
| 65. | 300 mA X-ray | 1 | |
| 66. | 100 mA X-ray | 1 | |
| 67. | 60 mA X-ray | 1 | |
| 68. | Ultrasound scanner | 1 | |
| 69. | O T focussing | 1 | |
| 70. | O T Lights (shadowless) | 2 | |
| 71. | Centrifuge | 1 | |
| 72. | Oxygen cylinder A | 2 | |
| 73. | Oxygen cylinder R with T | 1 | |
| 74. | Oxygen cylinder B | 17 | |
| 75. | Oxygen cylinder R with F | 8 | |
| 76. | Nitrous Oxide A | 2 | |
| 77. | Nitrous oxide B | 1 | |
| 78. | Nitrous oxide R with T | 1 | |

**Name of the Hospital : Turuvekere, Tumkur**

| Sl No. | Name of the equipment | Qty. Supplied | Whether Installed |
|---|---|---|---|
| 1 | ECG | 1 | Yes |
| 2 | Emergency Resuscitation Kit | 1 | |
| 3 | Dental Kit | 1 | Yes |
| 4 | Dental Chair | 1 | Yes |
| 5 | 5 AMC | 1 | |
| 6 | Foot Suction Apparatus | 1 | |
| 7 | Suction Apparatus (Electrical) | 1 | |
| 8 | Instrument Sterilizer | 3 | |
| 9 | Automist | 1 | |
| 10 | Microscope | 1 | |
| 11 | Water Bath | 1 | |
| 12 | Hot Air Oven | 1 | |
| 13 | Glucometer | 1 | |
| 14 | Water coolers | 1 | |
| 15 | D D & C | 2 | |
| 16 | MTP | 2 | |
| 17 | Cervical Biopsy | 1 | |
| 18 | Evacuation | 1 | |
| 19 | Episotomy | 2 | |
| 20 | Vaginal tray | 2 | |
| 21 | Delivery pack | 2 | |
| 22 | Incision & Drainage | 2 | |
| 23 | Suturing Tray | 1 | |
| 24 | Suture remover | 1 | |
| 25 | L P Tray | 1 | |
| 26 | Catherisation Tray | 1 | |
| 27 | Tracheostomy set | 1 | |
| 28 | ENT Kit | 1 | |
| 29 | Adult laryngoscope | 1 | |
| 30 | P Hammer | 1 | |
| 31 | T D | 5 | |
| 32 | Fire extinguisher | 2 | |
| 33 | 100 mA X-ray | 1 | |
| 34 | Tata Sumo | 1 | |
| 35 | O T focussing | 1 | |
| 36 | Oxygen cylinder B | 5 | |
| 37 | Oxygen cylinder R with F | 3 | |
| 38 | Autoclave with 2 bin | 1 | |

**Name of the Hospital : Gubbi, Tumkur**

| Sl No. | Name of the equipment | Qty. Supplied | Whether Installed |
|---|---|---|---|
| 1 | ECG | 1 | Yes |
| 2 | Emergency Resuscitation Kit | 1 | |
| 3 | Dental Kit | 1 | |
| 4 | Dental Chair | 1 | Yes |
| 5 | 5 AMC | 1 | |
| 6 | Foot Suction Apparatus | 1 | |
| 7 | Suction Apparatus (Electrical) | 1 | |
| 8 | Instrument Sterilizer | 3 | |
| 9 | Automist | 1 | |
| 10 | Water Bath | 1 | |
| 11 | Hot Air Oven | 1 | |
| 12 | Glucometer | 1 | |
| 13 | Water coolers | 1 | |
| 14 | D D & C | 2 | |
| 15 | MTP | 2 | |
| 16 | Cervical Biopsy | 1 | |
| 17 | Evacuation | 1 | |
| 18 | Episotomy | 2 | |
| 19 | Vaginal tray | 2 | |
| 20 | Delivery pack | 2 | |
| 21 | Suturing Tray | 1 | |
| 22 | Suture remover | 1 | |
| 23 | L P Tray | 1 | |
| 24 | Catherisation Tray | 1 | |
| 25 | Dental Kit | 1 | |
| 26 | Adult laryngoscope | 1 | |
| 27 | P Hammer | 1 | |
| 28 | T D | 5 | |
| 29 | Fire extinguisher | 2 | |
| 30 | 100 mA X-ray | 1 | |
| 31 | Tata Sumo | 1 | |
| 32 | O T Lights focussing | 1 | |
| 33 | Oxygen cylinder B | 5 | |
| 34 | Oxygen cylinder R with F | 3 | |
| 35 | Autoclave with 2 bin | 1 | |

# TUMKUR DSTRICT

PAVAGADA

SIRA

Sira

MADHUGIRI

Madhugiri

Koratagere

KORATAGERE

CHIKNAYAKANAHALLI

Chiknayakanhalli

GUBBI

Gubbi

TUMKUR

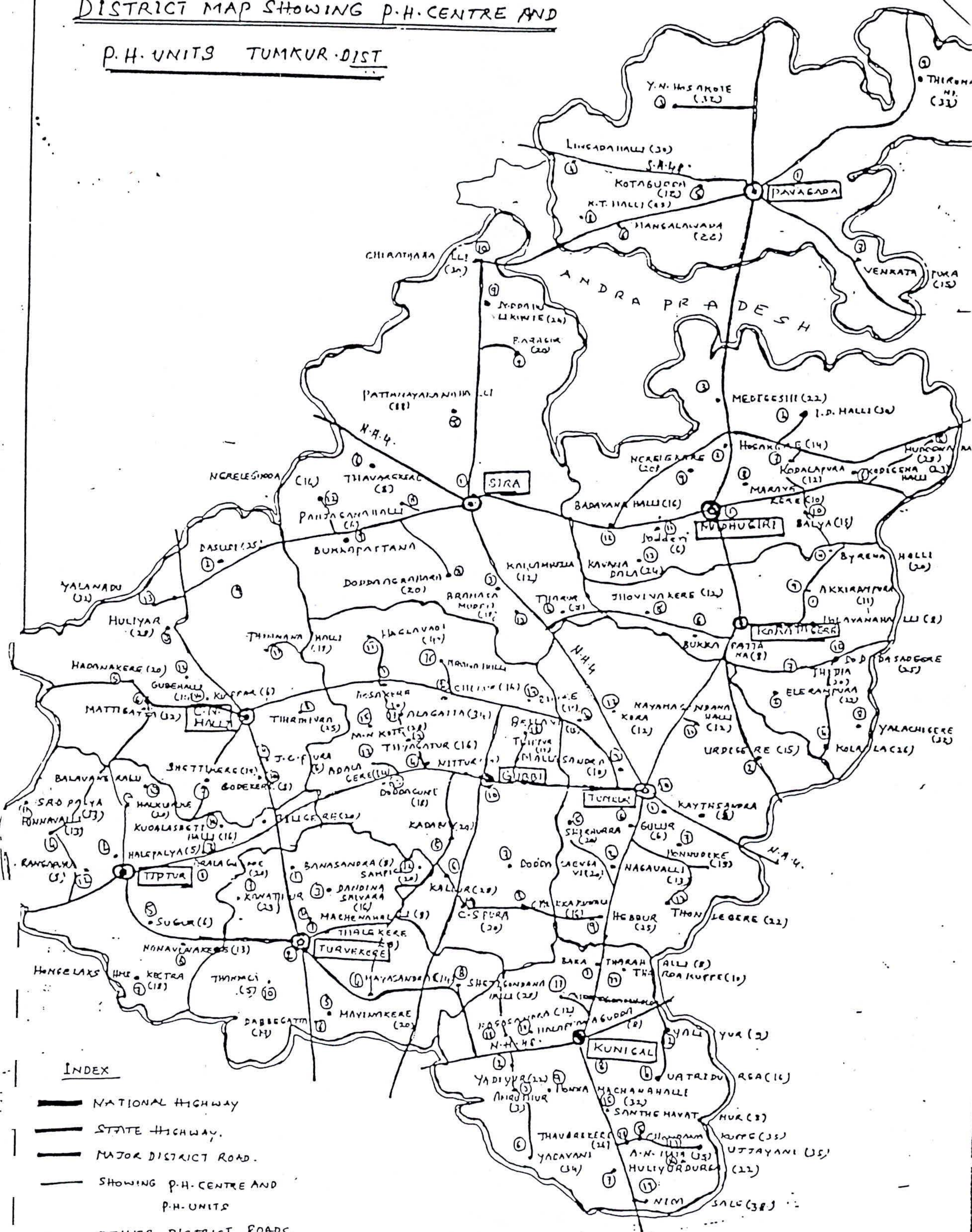
TIPTUR

TURUVEKERE

Kunigal

KUNIGAL

TM-120
07933
N96



DISTRICT MAP SHOWING P.H. CENTRE AND
P.H. UNITS TUMKUR DIST
PAVAGADA
SIRA
MADHUGIRI
KORATAGERE
C.N. HALLI
GUBBI
TUMKUR
TIPTUR
TURVEKERE
KUNIGAL
ANDRA PRADESH
N.H.4
S.H.48
KOTAGUDDA (12)
LINGADAHALLI (30)
Y.N. HOSAKOTE (32)
NAGALAMADAKA (22)
MEDIGESHI (22)
HOSAKERE (14)
BADAVANAHALLI (16)
HULIYAR (28)
BUKKAPATTANA
YALANADU
HADANAKERE (20)
MATTIGATTA (32)
HULIKUNTE
BALAVANERALU
KADABA (20)
BANASANDRA (8)
DANDINA SHIVARA (16)
MACHENAHALLI (8)
HEBBUR (25)
KAYTHSANDRA (8)
GULUR (6)
NAGAVALLI (13)
URDIGERE (15)
AKKIRAMPURA (11)
BYRENAHALLI (20)
ELERAMPURA (22)
YALACHIGERE (22)
DABBEGATTA (24)
MAYINAKERE (20)
YADIYUR (22)
HULIYURDURGA (22)
UTTAYANI (35)
NIDASALE (38)
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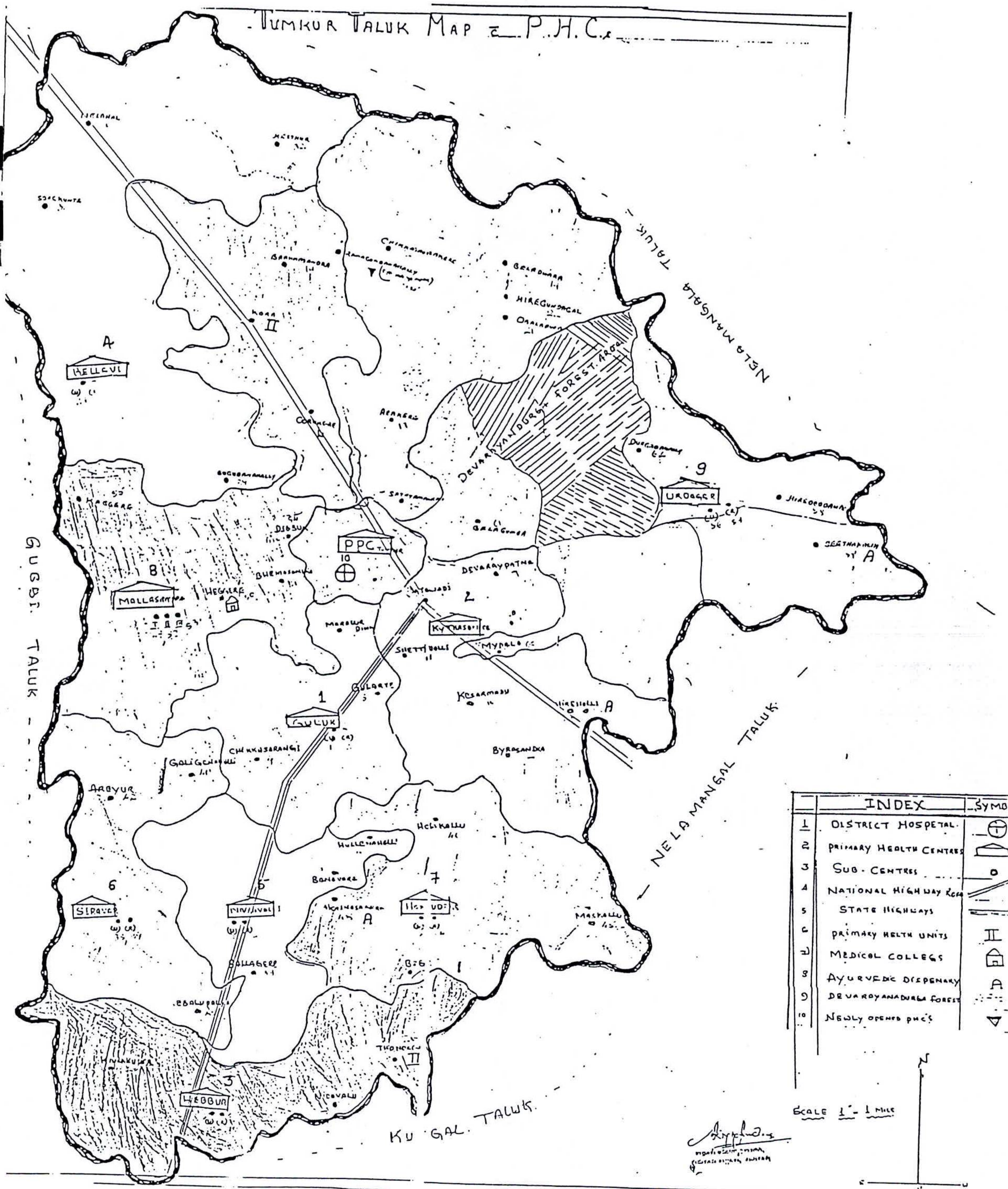
NATIONAL HIGHWAY
STATE HIGHWAY.
MAJOR DISTRICT ROAD.
SHOWING P.H. CENTRE AND
P.H. UNITS
OTHER DISTRICT ROADS.


TUMKUR TALUK MAP ē P.H.C.
NELAMANGALA TALUK
GUBBI TALUK
NELAMANGAL TALUK
KU GAL TALUK
DEVARAYANDURGA FOREST AREA
PPC
KELLCUI
MOLLASANDRA
URDOGGER
GULUK
SIRAVER
HEBBUR
Devarayapatna
Koraa
Arbyur
Byrasandra
Maskallu
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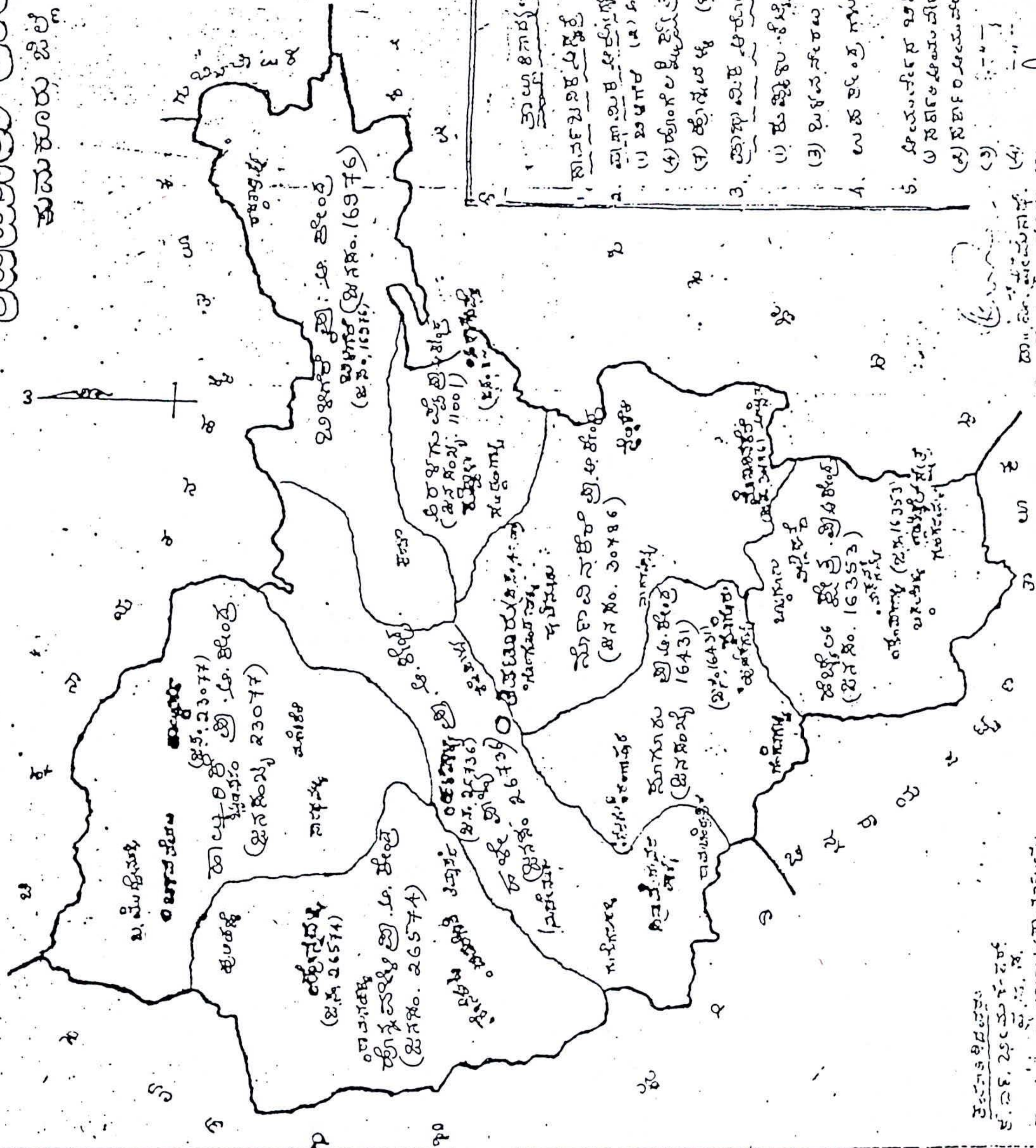
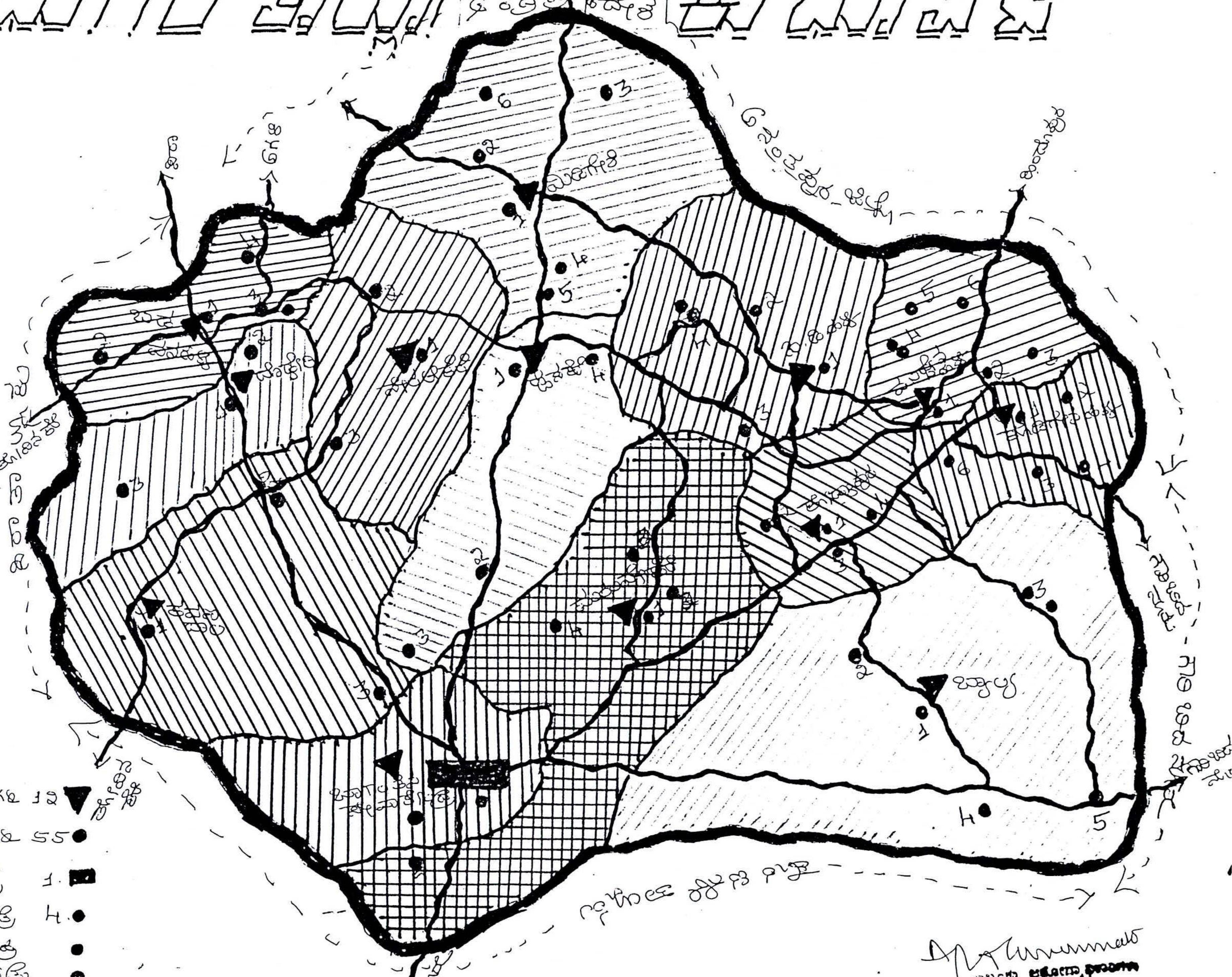
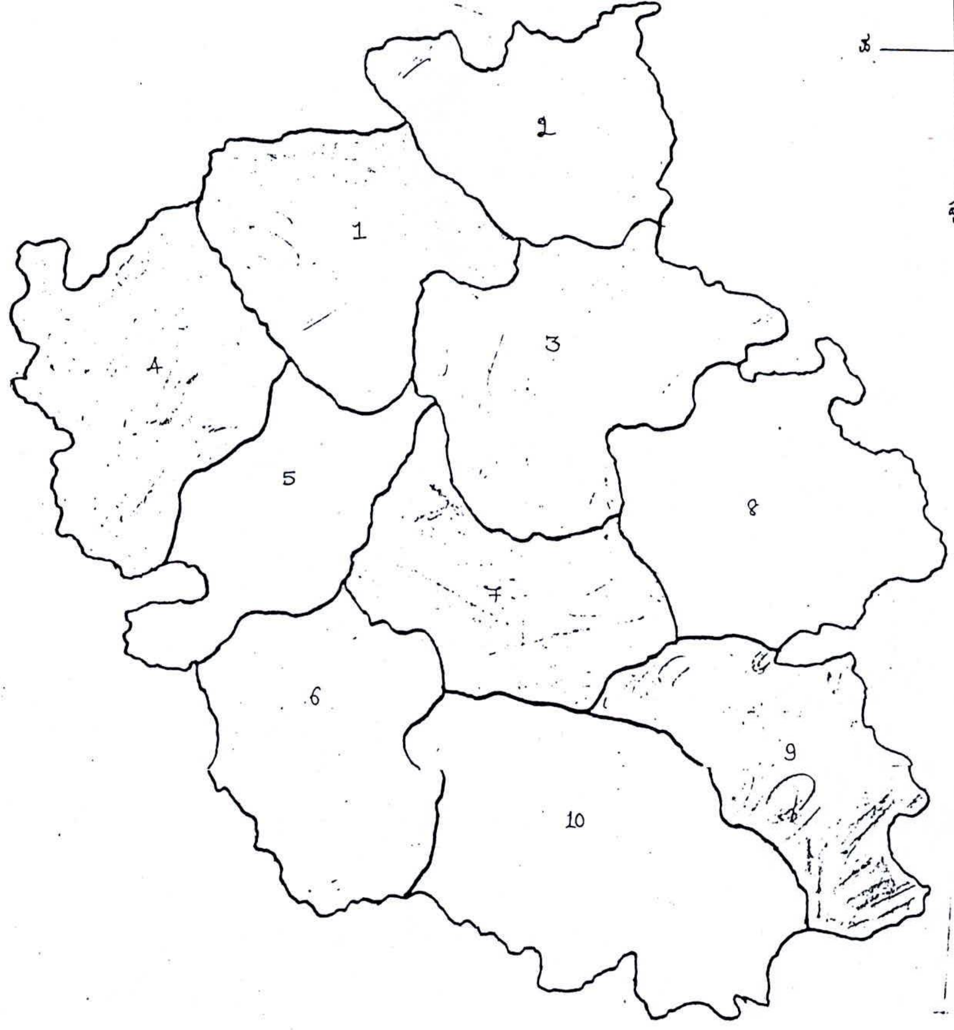
SYMB
1 DISTRICT HOSPETAL
2 PRIMARY HEALTH CENTRES
3 SUB-CENTRES
4 NATIONAL HIGHWAY ROAD
5 STATE HIGHWAYS
6 PRIMARY HELTH UNITS
7 MEDICOL COLLEGS
8 AYURVEDIC DISPENARY
9 DEVAROYANADURGA FOREST
10 NEWLY OPENED PHC'S
N
SCALE 1" - 1 MILE




ವಿವರ
1 ಪ್ರಾ. ಆ. ಕೇಂದ್ರಗಳು 12
2. ಉಪಕೇಂದ್ರಗಳು 55
3. ಸಾರ್ವಜನಿಕ ಆಸ್ಪತ್ರೆ 1
4. ಪ. ಆ. ಆಸ್ಪತ್ರೆ 4
5. ರಾ. ಕು. ಕ. ಕೇಂದ್ರ
6. ೨೦ರಾ. ಕು. ಆಸ್ಪತ್ರೆ

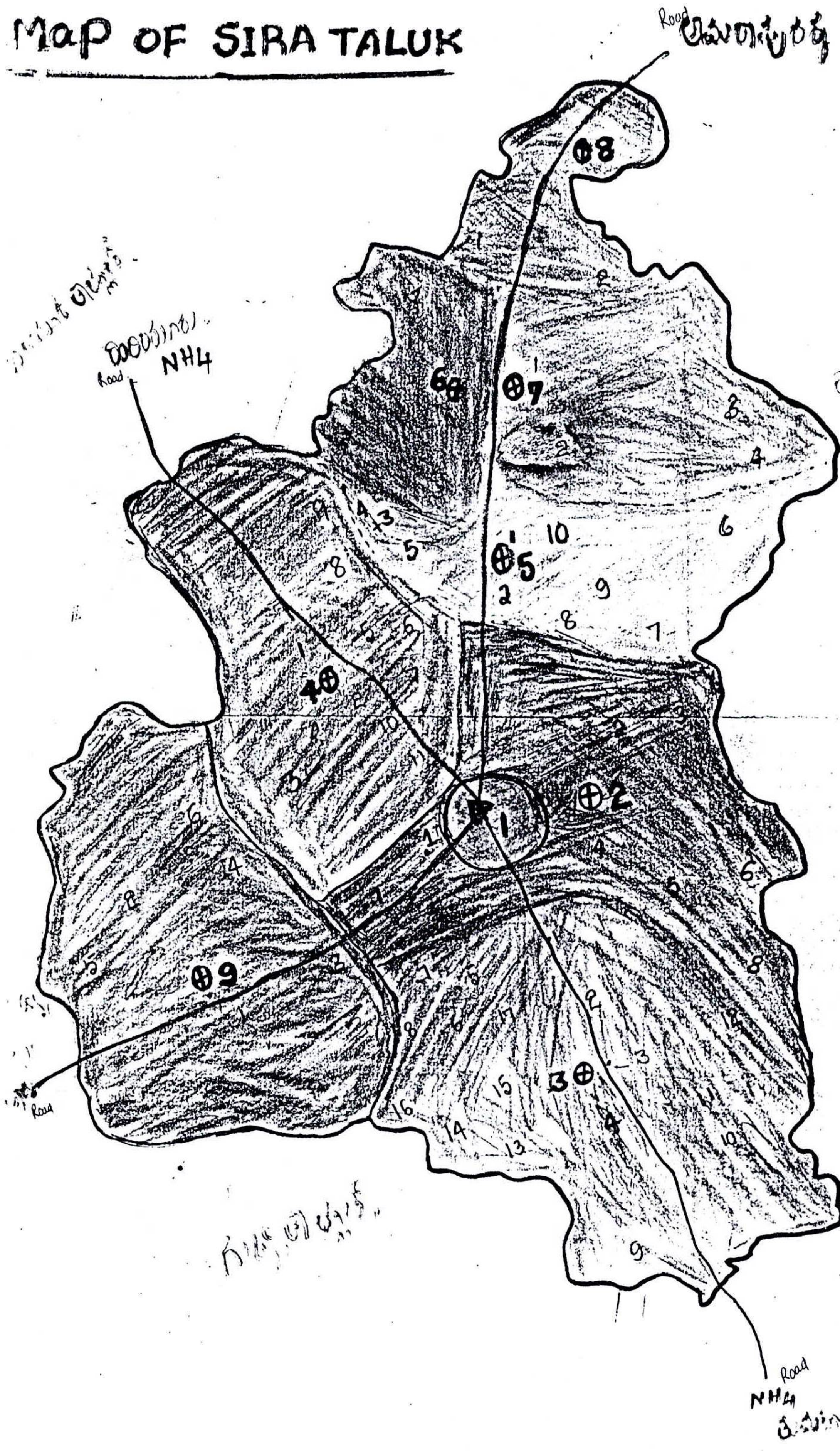
ಕುಣಿಗಲ್ ತಾಲ್ಲೂಕಿನಲ್ಲಿ ಇರುವ ಪ್ರಾ. ಆ. ಕೇಂದ್ರಗಳ ನಕ್ಷೆ.




ಸೂಚಿ:

- ತಾಲ್ಲೂಕಿನ ಎಲ್ಲೆ.
- ಆರೋಗ್ಯ ಕೇಂದ್ರದ ವ್ಯಾಪ್ತಿ
- (1) ಪ್ರಾ. ಆ. ಕೇಂದ್ರ ; ಭಕ್ತರಹಳ್ಳಿ
- (2) — " — ತರೇದಕುಪ್ಪೆ
- (3) — " — ಕುಣಿಗಲ್
- (4) — " — ಎಡೆಯೂರು
- (5) — " — ಅಮೃತೂರು
- (6) — " — ಎಡವಾಣಿ
- (7) — " — ಕೆ. ಹೊನ್ನಮಾಚನಹಳ್ಳಿ
- (8) — " — ಹುತ್ರಿದುರ್ಗ
- (9) — " — ಚಾಡನಕುಪ್ಪೆ
- (10) — " — ಹುಲಿಯೂರುದುರ್ಗ

K.R. Sh...

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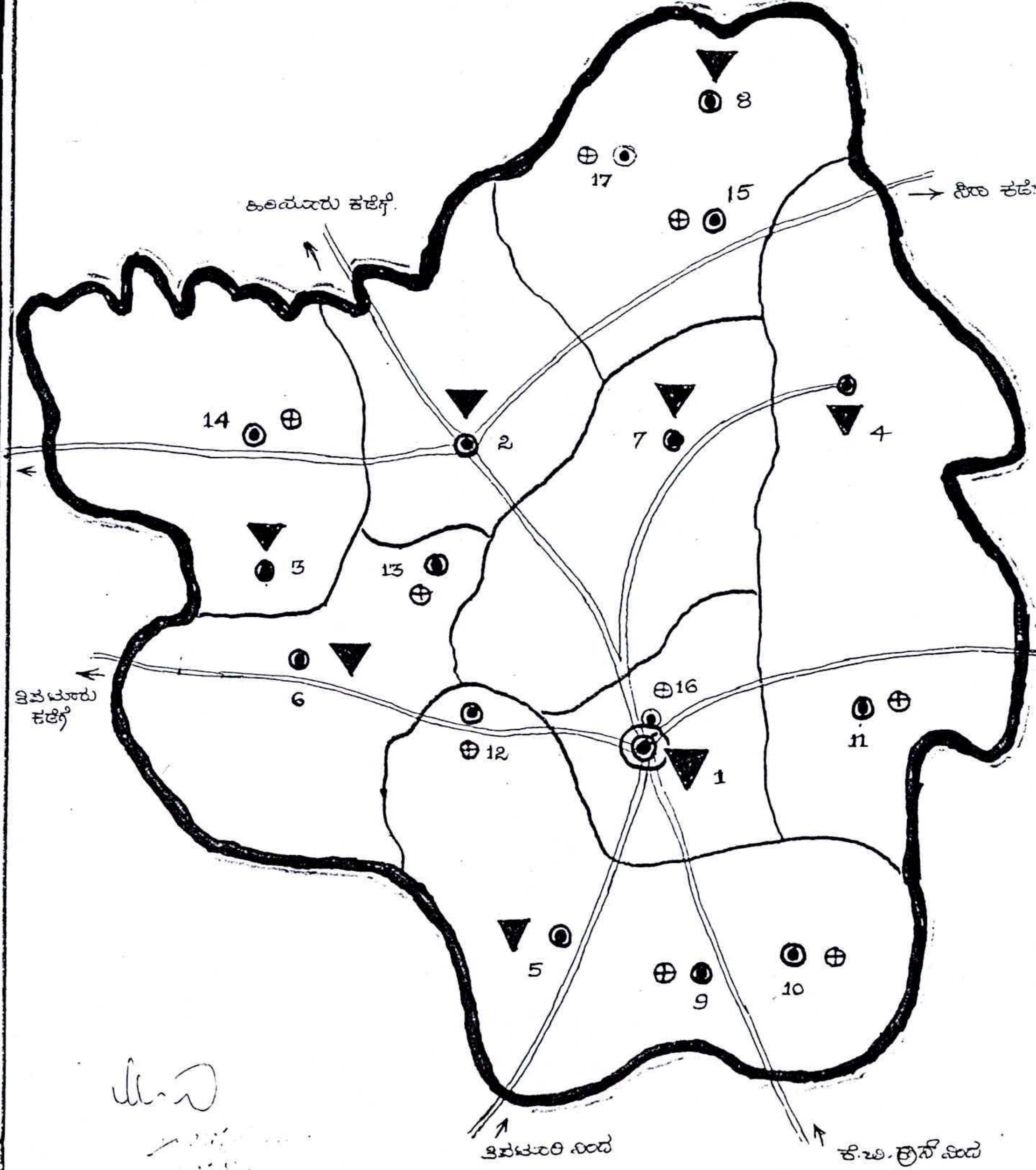
| 3 | ಕಳ್ಳಂಬೆಳ್ಳ |
| 4 | ತಾವರೇಕೆರೆ |
| 5 | ಪಟ್ಟನಾಯ್ಕನಹಳ್ಳಿ |
| 6 | ದೊಡ್ಡಹುಲಿಕುಂಟೆ |
| 7 | ಬರಗೂರು |
| 6 | ಚಿರತಹಳ್ಳಿ |
| 9 | ಬುಕ್ಕಾಪಟ್ಣ |

# ಚಿಕ್ಕನಾಯಕನಹಳ್ಳಿ ತಾ॥ನ ವಿವಿಧ ಆರೋಗ್ಯ ಸಂಸ್ಥೆಗಳು.




| ಪ್ರಾ। ಆ। ಕೇಂದ್ರಗಳು. ▼ | |
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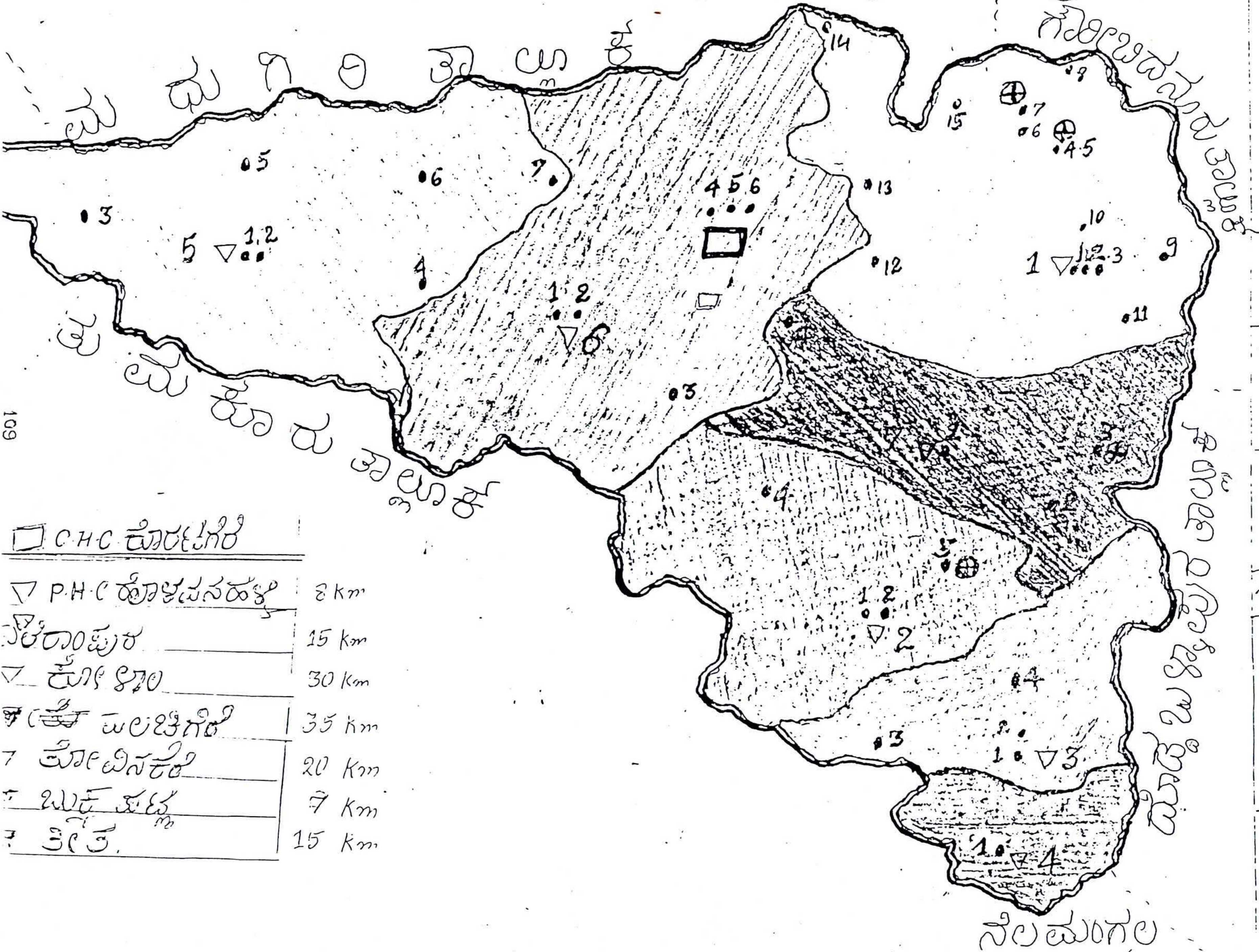
| 1 | ಚಿಕ್ಕನಾಯಕನಹಳ್ಳಿ |
| 2 | ಹುಳಿಯಾರು |
| 3 | ಹಂದನಕೆರೆ |
| 4 | ತಿಮ್ಮನಹಳ್ಳಿ |
| 5 | ಶೆಟ್ಟಿಕೆರೆ |
| 6 | ಮತಿಘಟ್ಟ |
| 7 | ಕಂದಿಕೆರೆ |
| 8 | ದಸೂಡಿ |
| **ಪ್ರಾ। ಆ। ಘಟಕಗಳು ⊕** | |
| 9 | ಜೆ.ಸಿ. ಪುರ |
| 10 | ಗೋಡೆಕೆರೆ |
| 11 | ತೀರ್ಥಪುರ |
| 12 | ಕುಪ್ಪೂರು |
| 13 | ಗೂಬೆಹಳ್ಳಿ |
| 14 | ಯಳನಡು |
| 15 | ಹೊಯ್ಸಲಕಟ್ಟೆ |
| 16 | ಚಿಕ್ಕನಾಯಕನಹಳ್ಳಿ } GAD |
| 17 | ಮೇಲನಹಳ್ಳಿ } GAD |


KUKHTHAGERE TQ.
ನೆಲಮಂಗಲ
C.H.C
P.H.C
8 Km
15 Km
30 Km
35 Km
20 Km
7 Km
15 Km
109
100

# ಗುಬ್ಬಿ ತಾಲ್ಲೂಕಿನ ನಕ್ಷೆ

ಗುಬ್ಬಿ

ಕಡಬ

ಸಿ.ಎಸ್.ಪುರ

10 km

20 km

22 km

28 km

21 km

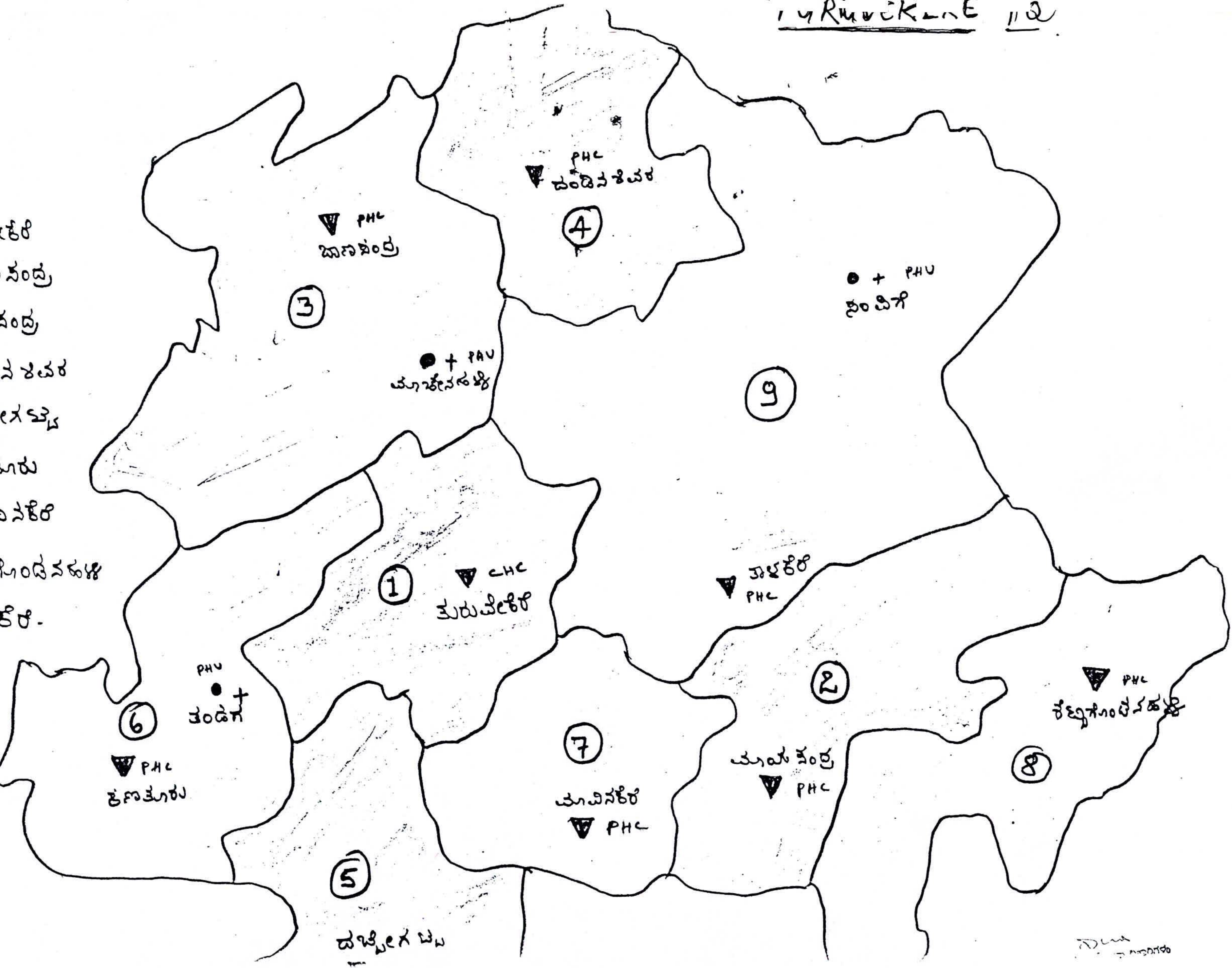
14 km

N

W

E

S


TURUVEKERE
1 - ತುರುವೇಕೆರೆ
2 - ಮಾಯಸಂದ್ರ
3 - ಬಾಣಸಂದ್ರ
4 - ದಂಡಿನಶಿವರ
5 - ದಬ್ಬೇಗಟ್ಟ
6 - ಕಣತೂರು
7 - ಮಾವಿನಕೆರೆ
8 - ಶೆಟ್ಟಿಗೊಂಡನಹಳ್ಳಿ
9 - ತಾಳಕೆರೆ.
PHC
CHC
PHU
PAU

ಪಾವಗಡ ತಾಲ್ಲೂಕು. ತುಮಕೂರು ಜಿಲ್ಲೆ