STUDY ON

" USE OF STOPS AS A PROGNOSTIC INDICATOR OF OUTCOME OF NEW BORN BABIES ADMITTED IN NICU"

Dissertation Submitted in partial fulfillment of

M.D. DEGREE EXAMINATION

M.D. PAEDIATRICS—BRANCH VII

CHENGALPATTU MEDICAL COLLEGE, CHENGALPATTU.

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY
CHENNAI, TAMILNADU

MARCH 2O13

CERTIFICATE

This is to certify that this dissertation titled - **"STUDY ON USE OF STOPS AS A PROGNOSTIC INDICATOR OF OUTCOME OF NEW BORN BABIES ADMITTED IN NICU"** has been prepared by Dr.S.SENTHIL MURUGAN, under my supervision in the Department of Paediatrics, Chengalpattu Medical College, Chengalpattu during the academic period 2010-2013 and is being submitted to the Tamil Nadu DR.M.G.R. Medical University, Chennai in partial fulfillment of the University regulation for the award of the M.D., Branch - VII, (Pediatrics) and his dissertation is a bonafide work.

Prof.Dr.M.UMAKANTHAN.M.D.
Professor and Head,
Dept.of Paediatrics,
Chengalpattu medical college,
Chengalpattu .

Prof.Dr.P.R.THENMOZHI VALLI.M.D
DEAN,
Chengalpattu medical college,
Chengalpattu.

DECLARATION

I **Dr.S.SENTHIL MURUGAN**, solemnly declare that this dissertation "**STUDY ON USE OF STOPS AS A PROGNOSTIC INDICATOR OF OUTCOME OF NEW BORN BABIES ADMITTED IN NICU"** is a bonafide record of work done by me in the Department of Paediatrics, Govt. Chengalpattu Medical College and Hospital,Chengalpattu, under the guidance of Prof.Dr.M.UMAKANTHAN. M.D.Department of Paediatrics, Govt. Chengalpattu Medical College and Hospital, Chengalpattu.

This dissertation is submitted to the Tamilnadu Dr.M.G.R. Medical University, Chennai in partial fulfillment of the University regulations for the award of M.D. Branch - VII, (Pediatrics) Examination to be held in April 2013.

Place : Chengalpattu

Date : 25.12.2012

Dr. S.SENTHIL MURUGAN

ACKNOWLEDGEMENT

I am extremely grateful to the Dean, Prof. Dr. P.R Thenmozhi valli.M.D, Govt. Chengalpattu Medical College and Hospital for granting me permission to conduct this study at Department of Pediatrics, Govt. Chengalpattu Medical College and Hospital, Chengalpattu.

I would like to express my sincere gratitude to my beloved Prof.Dr.M.Umakanthan. M.D. Department of Pediatrics, Govt. Chengalpattu Medical College and Hospital, Chengalpattu , for his support and encouragement to conduct this study.

With extreme gratitude, I express my indebtedness to my beloved Prof. Dr.Rajakumar M.D; Prof. Dr.Somasekar M.D;DCH; Prof. Dr.Ambikabathy M.D;DCH; for their motivation, advice and valuable criticism, which enabled me to complete this work.

My sincere thanks to Professors .Dr.Elilarasi M.D; Dr.Shanthi M.D; and Dr. Vivekanandan.M.D; Department of Paediatrics, Chengalpattu Medical College and Hospital, for their valuable suggestions and guidance.

I offer my special thanks to my Asso. Prof.Dr.Nedunchezhian, M.D., D.C.H.,Institute of Child Health for his invaluable help and suggestions which gave a final shape to my study.

I am very grateful to professor.Dr.J.Sathya.M.D.,D.C.H who was the key person in right from choosing this topic, guiding me in all stages of this work, helping me in the right path, and gave necessary advice in completing this study. I thank madam without whom this study could not have come here .

I also thank my Assistant Professors, Dr.S.Ravikumar, M.D., Dr.Arivoli, M.D.,Dr.K.Thilagavathy M.D;Dr.Narayanan M.D (Pediatrics), and Dr.Jagadeeswari, D.C.H., Dr.Mirna .M.D. , Dr.Suresh kumar .M.D. for their critical review and suggestions.

I also thank Mr.K.Boopathi. Statistician,ICMR, for his invaluable help in analysing the values.

I also thank Mrs.S.Suganya durga, B.com., for helping me in editing work.

I am greatly indebted to my family especially my parents and friends who have been the greatest source of encouragement and support which enabled me to complete this work.

I am grateful to all the newborn babies and their parents in my study to their co-operation and patience.

Ref.No.2508/MEI/2010

Office of the Dean,
Chengalpattu Medical College,
Chengalpattu – 603 001.

Dated:20.06.2012.

Sub: Medical Education – Chengalpattu Medical College, Chengalpattu – Dr.S.Senthil Murugan, Post Graduate Student in M.D.(Paediatrics) – Admitted during the Academic year 2010-2011 – Dissertation submitted for the Approval of the Human Ethical Committee for the study work entitled **"Use of Stops as a Prognostic Indicator of Outcome (Morbidity and Mortality) of New Born Babies admitted in NICU" – Approved – Orders - Issued.**

Ref: 1) Application dated: 26.03.2012f the Individual.
2) Letter dated 26.03.2012 of the Head of the Department of Paediatrics, Chengalpattu Medical College, Chengalpattu.

...

Dr.S.Senthil Murugan Post Graduate Student in M.D.(Paediatrics) of this college has submitted a Dissertation for the study work entitled "Use of Stops as a Prognostic Indicator of Outcome(Morbidity and Mortality) of New Born Babies admitted in NICU". The study of the above Dissertation Work of the above Individual has been approved by the Human Ethical Committee of the Chengalpattu Medical College, Chengalpattu which is forwarded herewith for further course of action.

Further, as per the Regulations of the Tamil Nadu Dr.M.G.R.Medical University, Chennai – 32 with regard to submission of 4 **Copies of Dissertation** with C.D.(2 copies) for the Post Graduate Degree Course, the Dissertation shall be a bound volume of minimum 50 pages and not exceeding 75 pages of typed matter (Double line spacing and one side only) excluding Certification, acknowledgement, annexure and Bibliography". The name of the candidate should not be found anywhere in the Dissertation except in the Certificate. The Dissertation should be forwarded through the Unit Chief/H.O.D./Head of the Institution as per the Colour **(LIGHT GREEN)** as communicated by the University.

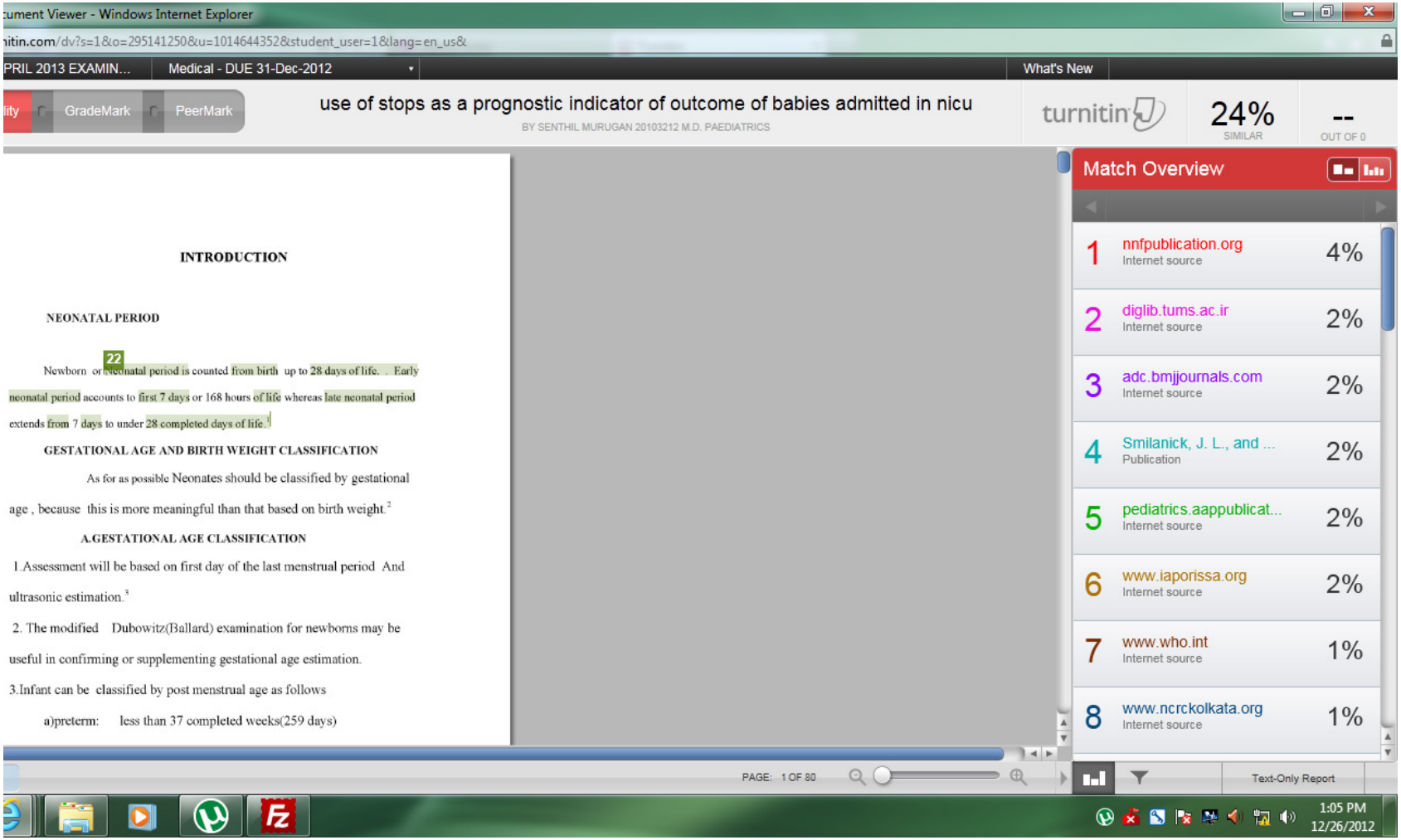
DEAN INCHARGE

Encl.: Copy of the Dissertation Study Work.

20/6/12

To
Dr.S.Senthil Murugan,
P.G.Student in M.D.(Paediatrics),
Chengalpattu Medical College, Chengalpattu. .. through the H.O.D. of General Medicine.

Copy to:
1)The Director of Medical Education, Chennai – 10.
2) The Controller of Examinations,
The Tamil Nadu Dr.M.G.R.Medical University, Chennai - 32.
3)The Head of the Department of Paediatrics,
Chengalpattu Medical College, Chengalpattu – 603 001.
4)ME II Section through the Office Superintendent (ME).
5)PG Admission file 2010-2011.


ument Viewer - Windows Internet Explorer
itin.com/dv?s=1&o=295141250&u=1014644352&student_user=1&lang=en_us&
PRIL 2013 EXAMIN...
Medical - DUE 31-Dec-2012
What's New
GradeMark
PeerMark
use of stops as a prognostic indicator of outcome of babies admitted in nicu
BY SENTHIL MURUGAN 20103212 M.D. PAEDIATRICS
turnitin
24%
SIMILAR
--
OUT OF 0
INTRODUCTION
NEONATAL PERIOD
Newborn or neonatal period is counted from birth up to 28 days of life. . Early neonatal period accounts to first 7 days or 168 hours of life whereas late neonatal period extends from 7 days to under 28 completed days of life.[1]
GESTATIONAL AGE AND BIRTH WEIGHT CLASSIFICATION
As for as possible Neonates should be classified by gestational age , because this is more meaningful than that based on birth weight.[2]
A.GESTATIONAL AGE CLASSIFICATION
1.Assessment will be based on first day of the last menstrual period And ultrasonic estimation.[3]
2. The modified Dubowitz(Ballard) examination for newborns may be useful in confirming or supplementing gestational age estimation.
3.Infant can be classified by post menstrual age as follows
a)preterm: less than 37 completed weeks(259 days)
Match Overview
1 nnfpublication.org Internet source 4%
2 diglib.tums.ac.ir Internet source 2%
3 adc.bmjjournals.com Internet source 2%
4 Smilanick, J. L., and ... Publication 2%
5 pediatrics.aappublicat... Internet source 2%
6 www.iaporissa.org Internet source 2%
7 www.who.int Internet source 1%
8 www.ncrckolkata.org Internet source 1%
PAGE: 1 OF 80
Text-Only Report
1:05 PM
12/26/2012

CONTENTS

INTRODUCTION

NEONATAL PERIOD

Newborn or Neonatal period is counted from birth up to 28 days of life. . Early neonatal period accounts to first 7 days or 168 hours of life whereas late neonatal period extends from 7 days to under 28 completed days of life.[1]

GESTATIONAL AGE AND BIRTH WEIGHT CLASSIFICATION

As for as possible Neonates should be classified by gestational age , because this is more meaningful than that based on birth weight.[2]

A.GESTATIONAL AGE CLASSIFICATION

1.Assessment will be based on first day of the last menstrual period And ultrasonic estimation.[3]

2. The modified Dubowitz(Ballard) examination for newborns may be useful in confirming or supplementing gestational age estimation.

3.Infant can be classified by post menstrual age as follows

a)preterm: less than 37 completed weeks(259 days)

b)term: 37 to less than 42 completed weeks(260-294 days)

c)post –term: 42 weeks (295 days) or more

d)late preterm is recently emerging classification referring to subgroups of infants between 34 and 38 weeks gestation.[4]

B.BIRTH WEIGHT CLASSIFICATION.

The commonly accepted definitions are as follows

1.normal birth weight(NBW) from 2500 to 3999 grams

2.low birth weight(LBW) less than 2500 grams(up to 2499 grams)

LBW infants can be further subclassified as follows:

a).very low birth weight (VLBW). Less than 1500 grams

b).Extremely low birth weight(ELBW). Less than 1000 grams

The newborn babies can be further classified as follows.[1]

1)preterm	a)SFD(small for date)
	b) AFD(appropriate for date)
	c) LFD(large for date)
2)term	a)SFD(small for date)
	b) AFD(appropriate for date)
	c) LFD(large for date)
3)post term	a)SFD(small for date)
	b) AFD(appropriate for date)
	c) LFD(large for date)

The newborn babies really constitute the foundation of human life. As we know that children are not mini-adults, neonates are not mini-children. They have peculiar health issues and problems because of structural and functional immaturity of various body organs depending upon their gestational age and birth weight. Neonatal period is the most vulnerable period of life and deaths during this first 28 days of life account for approximately 60% of all infant deaths and 40% of all deaths of under-5 children.[5]

GLOBAL NEONATAL HEALTH

Globally 130 million babies are being born every year and among these 4 million babies die during the newborn period i.e. first 4 weeks of life.

Most neonatal deaths occur with in first 7 days of life (75%) and almost 25% during first 24 hours. The risk that the baby may not survive during neonatal period is 30-fold higher than during the post-neonatal period. Almost 99% of newborn deaths occur in developing countries. India accounts to the maximum number of births every year (27 million) and neonatal deaths (1.2 million or 30% of global burden). Neonatal deaths account for two-third of all infant deaths and 40% of under -5 child deaths.[6] The millennium development goal 4 (reducing under-5 mortality by two-thirds) could not be achieved without significant reduction in neonatal deaths. The situation is further complicated due to global epidemic of HIV.

According to WHO2000 estimates, the important causes of neonatal deaths are

1)preterm births (27%)

2) severe infections (36%) a)sepsis/pneumonia 26%

b)tetanus 7%

c)diarrhea 3%

3) birth asphyxia (23%) and

4) congenital malformations (7%).

5)others (7%)

The common correlating factors of untoward neonatal outcome include poor health and nutritional status of women, illiteracy, lack of empowerment, early marriage and frequent pregnancies. In developing countries lack of resources, poor infrastructure, lack of antenatal care, deliveries by unskilled attendants or relatives and poor accessibility and credibility of the facility-based health care services are the important causes for the dismal situation of newborn health.

The neonatal mortality is even more high among the preterm babies because of anatomical and functional immaturity of various body organs. The lowest neonatal mortality is seen in term appropriate-for-dates babies. In every gestational group (whether preterm, term or post term) death is higher among SFD(small for date) and LFD(large for date) babies when compared to AFD(appropriate for date) babies.[1]

NEONATAL DEATHS

First day deaths are the death of the newborn babies occurring within 24 hours of age (to be excluded if baby had completed 24 hours of age). Early neonatal deaths are the deaths that occur within first week or 168 hours of age (to be excluded if baby has completed 168 hours of age). Neonatal deaths include all the deaths from birth up to 28days of age.

In premature babies, it will be more logical to count 28days of neonatal period from post conceptional maturity of 40 weeks rather than the date of birth. Ideally all neonatal deaths that happen before discharge from NICU should be taken in the statistics.

NEONATAL MORTALITY RATE (NMR)

Early NMR: Deaths of newborn babies weighing over 1000 g during first 7 days of life per 1000 live births.

Late NMR or unspecified NMR: Deaths of newborn babies weighing over 1000g during 28 days of life per 1000 live births.

The extended neonatal mortality rate is calculated by including the newborn babies weighing upto 500 g.

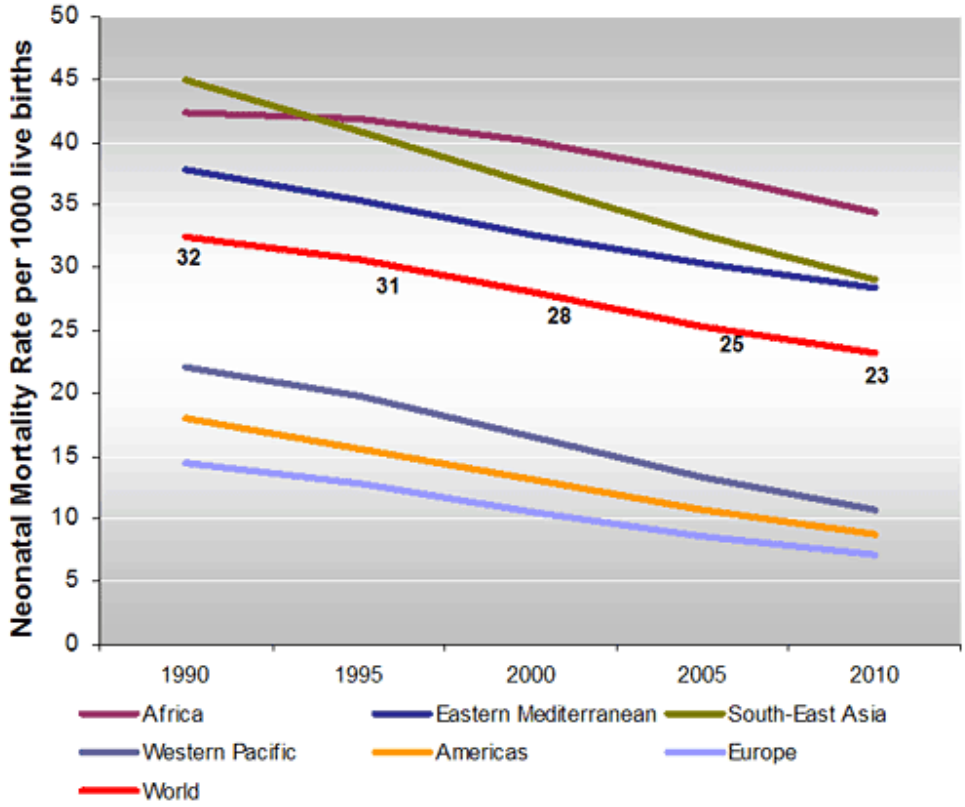
Currently the NMR in India is approximately 39 per 1000 live births and it accounts for nearly 62% of infant mortality and about 40% of under-5 child mortality. The NMR in rural areas is about one and a half times more than that in urban areas.

NEONATAL MORTALITY: TRENDS 1990-2010

Neonatal mortality is declining worldwide. The number of newborn babies that died among babies 0-28 days of life decreased from 4.4 million in the year 1990 to 3 million in 2010. There has also been a 28% reduction in the neonatal mortality rates (NMRs) during the same period of time, from an estimated 32 deaths per 1000 live births to 23 deaths per 1000 live births – but the progress has been slow. While there are certain advancements and NMRs have declined in all WHO regions of the world, the progress has not been uniformly distributed.

While NMRs have nearly halved in the European and Western Pacific regions, the reduction that has been observed in the African region was only of 19%. Through out the progress has been generally slow, and it is slowest in the region with highest NMR. Although both, number of deaths and neonatal mortality rates, have been coming down over the last 20 years, the proportion of the neonatal mortality among the under-five deaths has been increasing. Around the world, this proportion increased from an estimated 37% in 1990 to 40% in 2010. Areas with the largest increase in this proportion in relation to under-five deaths are the , South-east Asian region, European region and the Western Pacific region.[7]

Trends in neonatal mortality rates at global and regional levels 1990-2010



NEONATAL SEPSIS (NNS)

Systemic bacterial infections are commonly known as the term neonatal sepsis which includes , pneumonia , septicemia and meningitis of the neonates [8]. NNS is one of the leading cause and very important morbidities seen at the community and facility levels. It is also the one of the most important causes of newborn mortality in the community. Newborn infections are approximately causing about 1.6 million deaths globally and 40% of all newborn mortality due to sepsis occur in developing countries. As we all know that neonatal care has markedly improved over the last 10 years, both the overall and gestation specific

mortality occurring because of sepsis has not changed much due to increasing number of smaller babies surviving in the intensive care units.

Etiology

The organisms are responsible for most cases of NNS in the hospital are E.coli, s.aureus and klebsiella species .[8.]

EOS : early onset sepsis are infections occurring in newborn babies < 72 hrs of age-commonly presents as pneumonia and less frequently as septicemia or meningitis.

LOS: late onset sepsis are infections in newborn babies > 72 hrs of age and are caused usually by organisms that thrive in the external environment of home or hospital.

The mortality rates reported due to neonatal sepsis in various studies from India ranges between 45-58%. [8]

Bacterial sepsis and meningitis are continuing to be important causes of morbidity and mortality in neonates, especially in low-birth-weight infants. Preterm babies, anyhow, remain at higher risk for both EOS and its sequelae. These babies are also at inceased risk for hospital-acquired sepsis. Survivors of newborn sepsis can have several and severe neurologic sequelae because of central nervous system (CNS) infection, and also from

secondary hypoxemia that results from septic shock, persistent pulmonary hypertension, and severe parenchymal lung disease.

Many studies have reported that the incidence of EOS is varying from 1 to 4 cases per 1,000 live births. [9]

Early-onset sepsis may present as asymptomatic bacteremia, generalized sepsis, pneumonia, and/or meningitis. The clinical signs of EOS are usually manifested in the first hours of life; upto 90% of babies are symptomatic by 24 hours of life. Respiratory distress is the frequently presenting symptom.

Other less common and less specific signs of sepsis are irritability, lethargy, temperature instability, poor perfusion, and hypotension. Disseminated intravascular coagulation (DIC) with purpura and petechiae may develop in more severe septic shock. Gastrointestinal symptoms can of sepsis are poor feeding, vomiting, and abdominal distension. Meningitis can present either with seizure activity, apnea, and depressed sensorium, or sometimes it can complicate sepsis without any specific neurologic symptoms.

LOS is usually caused by GBS(group B Streptococcus) and gram-negative organisms like E.coli and klebsiella species. Aetiology of bacteremia in older infants (such as Streptococcus pneumoniae, and Neisseria meningititis) occur less commonly.[10]

There were Six studies addressing the issue of clinical signs in nosocomial sepsis : Three of them were from developing countries. [11-13] Of these, Okascharocen et al included all hospitalised neonates [11], Singh et al included all neonates admitted in the neonatal intensive care unit (NICU)[13] and Rosenberg et al have restricted their study to

newborn babies <- 33 weeks of gestation [12] . The signs included lethargy/ poor muscle tone, tachycardia, fever, abdominal distension, increased gastric aspirates, chest retractions, grunting, hypotension/delayed capillary refill, pallor, jaundice, hepatomegaly, apnea, abnormal skin color, bradycardia and increased ventilator requirements. There was no clear evidence that the signs are different in preterm and term infants. Late clinical signs that indicate severe septicemia are : sclerema, shock, features of disseminated intravascular coagulation, pulmonary hemorrhage, and collapse.

DANGER SIGNS IN THE NEWBORN

The young infant study data that was done in the Indian setting gives us the best possible scientific data on danger signs in newborn babies. Based on the study data majority of the danger signs have a sensitivity and a specificity of more than 80%.[14]

The following are the danger signs that are listed in the study

Difficulty in feeding

Convulsions

Lethargy(movement only when being stimulated)

Fast breathing(respiratory rate of >60)

Severe chest in drawing

Temperature of 37.5degrees C or more or below 35.5 degrees C.

HYPOTHERMIA AND HYPERTHERMIA

Thermoneutral environment:

This is defined as the gestational and post natal age specific temperature range in which the basal metabolic rate of the baby is at a minimum, oxygen utilization by the baby is lowest and baby thrives well [15]

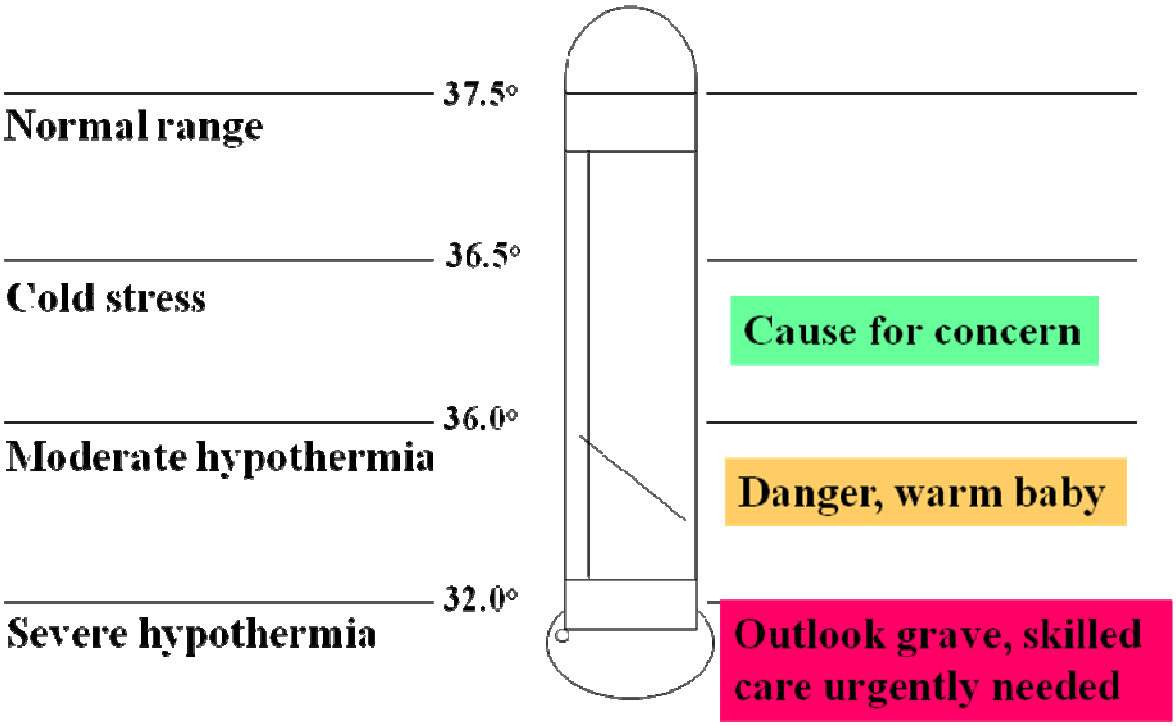
Hypothermia is defined by Axillary temperature of the baby <36.5 c [15]

Cold stress 36 c to 36.4 c

Moderate hypothermia 32 c to 35.9 c

Severe hypothermia < 32 c

Hyperthermia is defined by Axillary temperature of the baby >37.5 c.[15]



Hypothermia is very common at birth and it has a detrimental effect on the outcome and health of the babies. Hypothermia must be prevented by giving special attention to temperature maintenance in the baby. The delivery room must be warm (at least 25^{o} C) and free from draft of air. The baby must be received in a pre-warmed sterile towel. The baby must be dried completely including the head and face areas.[16] The wet towel must not be allowed to remain in contact with the baby. The baby must be placed in skin-to-skin (STS) contact with the mother as soon as possible after birth.[17] In addition to maintaining normal temperature of the baby, STS increases early breastfeeding and reduces the pain bleeding in the mother. The baby must be made to wear the caps and socks.

NEONATAL HYPOGLYCEMIA and HYPERGLYCEMIA

Glucose is the most important fuel for the brain of the newborn babies. Low blood glucose in the neonatal period, alone as well as when co existing with other morbidities, predisposes the babies to long term neurological damage. The most frequent sequelae of hypoglycemia are disturbances in neurologic development and intellectual function, although minor deficits like spasticity, ataxia and seizure disorders can also develop. The development of these may be linked to etiology of hypoglycemia.[18]

Neonatal hypoglycemia is a frequent metabolic problem and the operational threshold values of blood sugar < 40 mg/dl (plasma glucose < 45 mg/dl) should initiate prompt and immediate management for hypoglycemia in all neonates.[18]. Confusion

is existing due to the reason that the "normal" range of blood glucose is different for each neonate and it rests upon a number of factors including birth-weight, gestational age, body reserves, feeding status, availability of energy sources and also the presence or absence of disease. [19-20] Cornblath et al postulated that 'hypoglycemia is not readily defined for the individual newborn baby and that operational threshold' (concentration of blood glucose at which intervention should be considered) must be established. [21-22] Operational thresholds are very much different from therapeutic goals, and they do not define normal or abnormal but provides a margin of safety. More importantly however, these operational definitions do not address whether the threshold level of blood glucose for intervention represents the threshold level for neuronal injury

Hypoglycemia is a frequent metabolic problem occurring in both the newborn nursery and neonatal intensive care unit (NICU). Majority of cases of neonatal hypoglycemia are transient, usually respond readily to treatment, and are associated with an very good prognosis. But persistent hypoglycemia is more likely to be associated with abnormal endocrine problems and possible neurologic sequelae.

The incidence of hypoglycemia that has been reported varies with its definition, but it has been estimated to occur in nearly 16% of large-for gestational-age (LGA) infants and about 15% of small-for-gestational-age (SGA) babies.

HYPERGLYCEMIA is commonly defined as a whole-blood glucose level >125 mg/dL or plasma glucose values > 145 mg/dL. This entity is frequently faced in low birth weight premature babies on parenteral glucose infusion but can also be seen in other babies who are sick. Usually there are no specific symptoms associated with neonatal

hyperglycemia, but the frequent and important clinical problems associated with hyperglycemia are hyperosmolarity and osmotic diuresis. Osmolarity of >300 mOsm/L frequently leads to osmotic diuresis (each 18 mg/dL rise in blood-glucose concentration raises serum osmolarity by 1 mOsm/L) . Resulting dehydration may occur fastly in small premature babies with large insensible fluid losses.

Exogenous insulin tretment has been used when blood sugar levels exceed 250 mg/dL inspite of attempts to reduce the amount of glucose delivered.

SCORING SYSTEMS TO ASSESS SEVERITY OF ILLNESS

Physiology-based severity scoring systems have been developed for use in neonatal intensive care. Scoring systems for newborn illness offer one way of correcting for case mix, adjustment being made for the illness severity measure when comparing to the outcomes.[23].

Many scoring systems have been developed to assess and to quantify the illness severity and to predict the morbidity and mortality in critically sick newborn babies admitted in the NICU.

Few of the currently available scoring systems are as follows

1) CRIB (clinical risk index for babies score)
2) SNAP (score for neonatal acute physiology) score
3) SNAP II
4) SNAP-PE II
5) CRIB II

In the neonatal care the two most commonly used scoring systems are SNAP .[24](+ SNAP II and SNAP PE II).[25] and CRIB.[26](& recently CRIB II).[27]

CRIB (CLINICAL RISK INDEX FOR BABIES SCORE).

The clinical Risk Index for Babies (CRIB) was introduced by the International Neonatal Network under the leadership of W. O. Tarnow- Mordi to predict risk of mortality for infants with birth weights of less than 1500 grams or gestational ages younger than 31weeks. [26,27] The score has been recalibrated with data from 1998 to 1999, using the variables birth weight, sex , gestational age, temperature at time of admission, and maximum base excess during the first hour of admission. The potential for early treatment bias has been decreased by recording measurements in the first hour after admission. The CRIB score correlates well with risk of mortality or the risk for major cerebral abnormality on ultrasound cranium with a receiver operating characteristic (ROC) curve area under the curve of 0.82. An important advantage of the CRIB II score (a 5-time version of the CRIB score) is its simplicity; but the restriction is that it was designed specifically for babies less than 32 gestational weeks.[27]

CRIB score initially included data from worst base deficit and maximum and minimum inspired oxygen concentration over first 12 hours, making it specifically sensitive to changes in early intervention .[23]

This score was developed in four tertiary care referral centers in UK on a cohort of 812 infants with a birth weight of <1500 g or gestational age of <31 weeks. The assessment of 6 parameters is made during the 12 hours period of observation after admission in NICU and is shown in Table.

CRIB SCORE	
Risk factor	**Score**
Birth weight (g)	
1351 - 1500	0
851 - 1350	1
701 - 850	4
≤ 700	7
Gestation (wk)	
> 24	0
≥ 24	1
Congenital malformations*	
None	0
Not acutely life-threatening	1
Acutely life-threatening	3

Maximum base excess in first 12 hrs (mmol/l)	
> to - 7.0	0
- 7.0 to - 9.9	1
- 10.0 to - 14.9	2
≥ - 15.0	3
Minimum appropriate Fio $_2$ In first 12 hr	
≤ 0.40	0
0.41 - 0.60	2
0.61 - 0.90	3
0.91 - 1.00	4
Maximum appropriate Fio$_2$ In first 12 hr	
≤ 0.40	0
0.41 - 0.80	2
0.81 - 0.90	3
0.91 - 1.00	5

*Excluding babies with lethal congenital malformations

The mortality associated with CRIB score of 0-5 is 5%, 35% for a score of 6-10, 70% for a score of 11-16 and over 80% mortality for a score of >16.

The CRIB score correlates well with both mortality risk and risk for major cerebral abnormalities on ultrasound of cranium.

SNAP (SCORE FOR NEONATAL ACUTE PHYSIOLOGY) SCORE.

The Score for neonatal acute Physiology (SNAP), was introduced by Richardson and coworkers, It is a physiology-based illness severity score that was originally based on measurements of 26 routine clinical tests and vital signs.[24,25] Both birthweight and SNAP are independent predictors of mortality.

SNAP score is a more complex score that was developed in USA. It takes into account 26 parameters for observation and assessment over a period of 24 hours (Table). The major restrictions of this scoring system includes its complexity, longer observation period of 24 hours and lack of any weightage to birth weight and gestation.

Score for neonatal acute physiology			
parameter	**1-Point range**	**3 –Point range**	**5-Point range**
❖ Blood pressure			
High	66-80	81-100	>100
Low	30-35	20-29	<20

❖ Heat Rate			
High	180-200	201-250	>250
Low	80-90	40-79	<40
❖ Respiratory rate	60-100	>100	…
❖ Temperature (^{0} F)	95-96	92-94.9	<92
❖ paO_2(mm Hg)	50-65	30-50	<30
❖ paO_2/Fio_2 ratio	2.5-3.5	0.3-2.49	<0.3
❖ pCO_2(mm Hg)	50-65	66-90	>90
❖ Oxygenation index*	0.07-0.20	0.21-0.40	>0.40
❖ Hematocrit (%)			
High	66-70	>70	…
Low	30-35	20-29	<20
❖ White blood cell count (x1000)	2.0-5.0	<2.0	…

❖ Immature to total ratio	>0.21	…	…
❖ Absolute neutrophil count	500-999	<500	…
❖ Platelet count (x 1000)	30-100	0-29	…
❖ Blood urea nitrogen (mg/dl)	40-80	>80	…
❖ Creatinine (mg/dl)	1.2-2.4	2.5-4.0	>4.0
❖ Urine output (ml/kg/hr)	0.5-0.9	0.1-0.49	<0.1
❖ Indirect bilirubin (by birth weight)			
>2kg: mg/dl	15-20	>20	…
≤ 2kg: mg/dl	5-10	>10	…
❖ Direct bilirubin (mg/dl)	≥2.0	…	…
❖ Sodium (mEq/l)			
High	150-160	161-180	>180
Low	120-130	<120	…

❖ Potassium (mEq/l)			
High	6.6-7.5	7.6-9.0	…
Low	2.0-2.9	<2.0	…
❖ Calcium (ionized) (mg/dl)			
High	≥1.4	…	…
Low	0.8-1.0	<0.8	…
❖ Calcium (total) (mg/dl)			
High	≥12	…	…
Low	5.0-6.9	<5.0	…
❖ Glucose (on reagent strip) (mg/dl)			
High	150-250	>250	…
Low	30-40	<30	…
❖ Serum bicarbonate (mEq/l)			
High	≥33	…	…
Low	11-15	≤10	…
❖ Blood pH	7.20-7.34	7.10-7.19	<7.10
❖ Seizures	Single	Multiple	…
❖ Apnea	Responsive to Stimulation	Unresponsive to stimulation	Complete apnea
❖ Stool guaiac	Positive	…	…

$$\text{Oxygenation index} = \frac{\text{MAP} \times \text{FiO}_2}{\text{paO}_2} \times 100$$

MAP: mean airway pressure, FiO2: fractional inspired oxygen concentration, paO_2: partial pressure of arterial oxygen.

SNAP-PE AND SNAP II

A new score that was based on birthweight, 5-minute Apgar sore, size for gestational age, and SNAP, is called the SNAP-PE (SNAP-Perinatal Extension), .It has been shown to be superior when compared to either birthweight or SNAP alone.

The scores were then followed by the next generation variants namely SNAP II and SNAP-PE II. They are based on severity of 6 physiological parameters namely (i) mean arterial pressure (MAP), (ii) ratio of partial pressure of oxygen (paO_2) to fraction of inspired oxygen (FiO_2), (iii) core body temperature (^{0}f). (iv) blood pH, (v) occurrence of seizures and (vi) oliguria. These data are collected during the first 12 hours of admission . It was shown to be very well compatible with SNAP I. It is valid for babies of all birthweight, and needs only 5 minutes to collect.[28]

It was also seen in a study of more than 10,000 infants at 58 sites in the Vermont Oxford Network that the present performance of SNAP II and SNAP-PE II is similar to that observed in the original validation report, and the addition of congenital anomalies as defined by the Vermont Oxford Network to SNAP-PE II has significantly improved discrimination to a level that was consistent with the Vermont Oxford risk-adjustment algorithm .[29]

CRIB II

CRIB II uses the following clinical variables- temperature on admission and maximal base deficit over the first hour , which along with gestational age, sex and birth weight provides the basis for the score.[23]

calculation matrix for CRIB II .[27]

The maximum (worst) score for birth weight and gestation is 15, which is obtained for a 22week male infant in less than 501gram birth weight

Birth weight In grams	22	23	24	25	26	27	28	29	30	31	32
2751 - 3000											0
2501 - 2750										1	0
2251 - 2500									3	0	0
2001 - 2250									2	0	0
1751 - 2000								3	1	0	0
1501 - 1750					6		5	3	2	1	0
1251 - 1500					8	6	5	3	3	2	1
1001 - 1250		12	10	9	8	7	6	5	4	3	3
751 - 1000		12	11	10	8	7	7	6	6	6	6
501 - 750	14	13	12	11	10	9	8	8	8	8	
251 - 500	15	14	13	12	11	10	10				

Gestational age (male infant in weeks)

Birth weight In grams	22	23	24	25	26	27	28	29	30	31	32
2751 - 3000											0
2501 - 2750										1	0
2251 - 2500									2	0	0
2001 - 2250									1	0	0
1751 - 2000								3	1	0	0
1501 - 1750					6		4	3	1	0	0
1251 - 1500					7	5	4	3	2	1	1
1001 - 1250		11	10	8	7	6	5	4	3	3	3
751 - 1000		11	10	9	8	7	6	5	5	5	5
501 - 750	13	12	11	10	9	8	8	7	7	7	
251 - 500	14	13	12	11	10	10	10				

Gestational age (female infant in weeks)

Temperature at admission (c)

≤ 29.6	5
29.7 – 31.2	4
31.3 – 32.8	3
32.9 – 34.4	2
34.5 - 36	1
36.2 – 37.5	0
37.6 – 39.1	1
39.2 – 40.7	2
≥ 40.8	3

Base excess (mmol/L)

< - 26	7
-26 to -23	6
-22 to -18	5
-17 to -13	4
-12 to -8	3
-7 to -3	2
-2 to 2	1
≥3	0

Sex, birth weight (gram) and gestation (weeks) _____

Temperature at admission (degree c) _____

Base excess (mmol/L) _____

Total CRIB score

The logistic regression equation relating CRIB II mortality

(CRIB II) algorithm is ;

Log odds of mortality = G = - 6.476 + 0.450 x CRIB II

Probability of mortality = exp(G)/ {1+exp(G)}

The range of possible CRIB II score is 0 to 27.

The SNAP score and the CRIB score are potentially useful in comparing the mortality rates and other outcomes from different NICUs. The lesser number of data elements that is needed for both CRIB II and SNAP II has made them compatible with a minimal data set approach. One of the important strengths of CRIB score is its simplicity and limited data elements.

One of the important drawbacks of both the scores is their use of variables that are measured during the first 1 to 12 hours after NICU admission. This leads to two potential problems. The first one is related to the first 12- hours period of observation. Richardson and associates has stated that the longer the period of observation, "the more contaminated it becomes with the effects of successful (or unsuccessful)treatment and thus no longer reflects admission severity.[30] . Because their values may be altered by therapy stared after admission, these illness severity scores are not fully independent of the quality of care or effectiveness of the care. The other problem encountered is that the observed severity of illness in the very same infant in the first 6 hours following transfer and admission to another unit. Further studies are warrented in determining the extent to which these potential problems restrict the usefulness of CRIB II and SNAP II for adjusting case mix.

THE APGAR SCORE

THE APGAR score is a practical method of systematically assessing the neonates immediately after delivery to help in identifying those babies needing resuscitation and to predict the survival in the newborn period. The 1 minute Apgar score may indicate the need for urgent resuscitation, whereas the 5, 10, 15 and 20 minute scores may signal the probability of successfully resuscitating a baby.There may be a number of factors for a lower score, which includes drugs given to the mother during labour and immaturity.

The Apgar score was basically not introduced to predict neurological outcome of the babies. Both the Apgar score and umbilical artery blood pH can predict newborn death. An Apgar score of 0-3 at 5 minute is rare but is a better predictor of newborn death(in both term and preterm infants) than an umbilical artery blood pH of 7.0 or less; the presence of both variables simultaneously accelerates the relative risk of newborn deaths in term and preterm babies.[109]

SIGN	**0**	**1**	**2**
Heart rate	Absent	Below 100	Over 100
Respiratory effort	Absent	Slow, irregular	Good, crying
Muscle tone	Limp	Some flexion of extremities	Active motion
Response to catheter in nostril (tested after oropharynx is clear)	No response	Grimace	Cough or sneeze
Color	Blue, pale	Body pink, extremities blue	Completely pink
Sixty sec after Complete birth of the baby (disregarding the cord and			

placenta), the five objective signs mentioned above are evaluated, and each sign is given a score of 0,1 or 2. A total score of 10 indicates a baby in the best possible condition. A baby with a score of 0-3 requires urgent resuscitation.

The Canadian Transport Risk Index of physiologic Stability (TRIPS) is a scoring system that has been introduced to assess the care of the infant during transport .It is Based on the collection of only four parameters (temperature, respiratory status, systolic blood pressure, and response to noxious stimuli). This approach had an area under the curve prediction of .83 for 7-day survival and .[25] for severe intraventricular hemorrhage in a Canadian population.[31] This soring system was also used to evaluate the effectiveness of different transport systems across Canada.[32] The important advantage of this score is that it assesses baby condition in a time frame that it is not restricted to the first 24hours of life with very high prediction characteristics. One important concern is that this score was not validated outside of Canada. Probable restrictions of this approach in different settings include respiratory severity being scored maximum with intubation and that there is no consideration of vasopressor use for support of blood pressure.

Tyson and coworkers recently made use of the National Institute of Child Health and Human Development (NICHD) Neonatal network database to develop a multi

variable model for prediction of survival and neuro developmental outcome for preterm babies of 22 to 25 weeks' gestation based on gestational age, birth weight, sex, multiplicity, and antenatal steroid status.[33] An online calculator is also available to determine the model predictions for specific value of the five variables in the approach. survival and survival free of handicap are the estimates.

Additional research is needed to identify the best models for predicting newborn risk and to determine their accuracy in identifying individual cases for institutions with poor quality of care.[34]

REVIEW OF LITERATURE

1) A comparison study of CRIB, CRIB II, SNAP, SNAPII and SNAP-PE scores in predicting the mortality in critically ill neonates.[35-48]

This study done by Masoumeh Mohkam et al reviewed these scoring systems in critically ill newborn babies to determine how well they could predict neonatal death.

This was a prospective cohort study that was conducted at the neonatal intensive care units of Mofid and Mahdieh hospitals between March 2006 and May 2009 in which they evaluated CRIB, CRIB II, SNAP, SNAPII and SNAP-PE score for each newborn baby and the final scores were then obtained. The predictive precision of these variables were then represented as area under the receiver operative characteristic curve, specificity, sensitivity, positive predictive value and negative predictive value.

Results: Of the 404 newborn babies studied 53% were male. Primary diagnoses were gastrointestinal obstruction, respiratory distress syndrome, prematurity, sepsis and neuromuscular diseases. They detected death in 20.5% and found a significant difference

in scoring systems between survived and mortality groups. The mean CRIB score in babies that survived was 2.57±3.66 and in dead newborn babies was 8.43±4.66 (p value<0.001). It was also noticed that the SNAP score had the maximum area

under the curve and themaximum sensitivity, specificity, positive predictive value, negative predictive value and they had the minimum score for CRIB II.

Conclusion: it was concluded that the newborn scoring systems can be a useful tool in prediction of mortality in NICUs and SNAP score could predict the death better than the others.

2) **study on use of the CRIB (clinical risk index for babies)score in prediction of newborn mortality and morbidity.**[49-63]

This was a prospective study of the outcome of care of a regional cohort of very low birthweight(<1500 g) and very preterm (<32 weeks) babies that was done by Richard H B de Courcy-Wheeler, et al.

Its aims were to assess the ability of the CRIB(clinical risk index for babies) score, rather than birth weight or gestational age ,to predict death before hospital discharge, neurological morbidity, and period of stay, and to assess CRIB score as an indicator of neonatal intensive care performance. complete data were available for 643 (95%) of the 676 live births that fulfilled the criteria . Compared with birthweight and gestation CRIB was better for the prediction of death. It was as good for the prediction of morbidity, and it was not as good for the prediction of period of stay.

CRIB score, birthweight and gestational age were all significant individual predictors of hospital death (P<0.0001). The ROC curve showed that

CRIB score predicted death with greater sensitivity, at all levels of specificity, than did birth weight or gestation.

3) study on neonatal mortality risk evaluation using CRIB score, birth weight and gestational age [64-74]

This was a study by Angela Sara J de Brito, et al.

The Objective of the study was to evaluate the mortality rate of very low birth weight babies born at a Neonatal Intensive Care Unit (NICU) during a specified period according to variations in the CRIB (Clinical Risk Index for Babies) score, gestational age and birth weight.

Methods : The CRIB score was prospectively applied to all neonates admitted in the N ICU of an university hospital, of Londrina, Brazil, from January 1997 to December 2000, with birthweight under 1,500 g and/or less than 31 weeks' gestational age. The exclusion criteria were: mortality within 12 hours of life, presence of associated lethal congenital malformations and neonates who had been referred from outside hospitals.

Results: The inclusion criteria was met by Two hundred and eighty-four babies. Mean gestational age was 30.2±2.4 weeks (median =30.0), Mean birth weight was 1,148±248 g with (median =1,180), and mean CRIB score was 3.8±4.4 (median =2.0). The newborn mortality rate was 23.2%, that varied according to gestational age <29 weeks (57.1%), mean birthweight <750 g (72.7%), and CRIB score >10 (79.4%). Receiver Operating Characteristic (ROC) curves were composed for Birth weight CRIB score, and gestational age to assess the ability of each variable in predicting hospital death and the areas under the

curve were respectively 0.76,0.88, and 0.81. Sensitivity, specificity and predictive values were evaluated and all variables were considered predictors of death.($p<0.0001$). The optimal cut off point based on the ROC curve for the CRIB score was 4 with sensitivity 75.8%, specificity 86.7, positive predictive value 63.3% and negative predictive value 92.2%.

Conclusions: This study concluded that babies with birthweight of less than 750 grams, less than 29 weeks gestational age and CRIB scores above 10 had higher daeth rates. However, a CRIB score more than 4 proved to be a
better predictor of death as compared to birthweight and gestational age.

4) A study was conducted by J H Baumer, et al to determine the perinatal factors associated with initial illness severity(measured by the CRIB (clinical risk index for babies) score) and its relation to survival to death.[75-84]

Methods— It was a retrospective study made of intensive care nursing records on 380 inborn babies, of less than 31 weeks gestation or 1501 g birthweight, admitted to one unit between 1984–86 and 1991–94.

Results—during the two time periods it was observed that the mean initial illness severity score rised significantly from 2.8 to 3.9. This increase was a result of the increase in the maximum appropriate inspired oxygen concentration during the first 12 hours. Risk adjusted survival was significantly greater after accounting for CRIB score but did not improve over time after accounting for gestation . There was also a significantly inverse association of Illness severity score with gestation and 1 and 5 minute Apgar scores,using

multiple regression analysis.There was also a 92% increase in the admission rate of babies under 31 weeks gestation, higher median 1 and 5 minute Apgar scores (6 vs 5 and 9 vs 8, respectively), more multiple births, and more caesarean section deliveries between the two time periods .

Conclusions— It was concluded that the increase in illness severity score and admission rate would have reflected changes in obstetric practice. The increase in illness severity score would also have reflected changes in early newborn care. However, after adjusting for CRIB score, risk adjusted death dropped significantly, indicating that neonatal care 12 hours from birth onwards has improved over time.

5) This was a study by Maliheh Kadivar,MD; et al with the aims to assess the usage of a scoring system as predictor of neonatal mortality rate among the babies admitted within one year to the neonatal intensive care unit (NICU) of the Children's Medical Center in Tehran, Iran.[85-96]

Material & Methods: Data was collected from 213 newborns admitted in the NICU from September2003 to August 2004. The demographic data, Apgar scores at 1 minute and 5 minutes, history and duration of previous hospitalization, initial diagnosis and final diagnosis, were collected along with scoring system by using the score for the neonatal acute physiology-perinatal extension II (SNAP-PE II) were carried out within 12 hours after admission to the NICU. All these variables were prospectively applied to the admitted neonates. Discharge or death in less than 24 hours after NICU admission were the exclusion criteria.

Results: The inclusion criteria was met by 198 newborn babies. The mean and standard deviation (SD) of the parameters including postnatal age, birth weight, SNAP, and Apgar scores at 1 minute and 5

minutes of newborn babies under this study were 7.6 (0.5) days, 2479.8 (29.4) grams, 21.6 (1.1), 7.47(0.08), and 7.71 (0.06), respectively. Twenty five of the 198 patients died (12.6%). Gestational age (P=0.03), birth weight (P=0.02), Apgar score at 5 minutes (0.001), and SNAP-PE II (P=0.04) were statistically significantly related to the death rate. Logistic regression analysis showed that only SNAP-PE II and Apgar score at 5 minutes can

It was concluded in the study that SNAP-PE II and Apgar score at 5 minutes could be used to predict death among the NICU babies. The best performance in predicting mortality in this study was by the SNAP-PE II score.

6)Vermont oxford revalidation study [97-100]

There was a study by John A. F. Zupancic, MD, et al

OBJECTIVES. The study was done with the objectives of (1) to document the performance of the revised Score for Neonatal Acute Physiology and the revised Score for Neonatal Acute Physiology Perinatal Extension in predicting mortality in the Vermont Oxford Network, compared with published normative values; (2) to determine whether this performance can be improved by recalibration of the weights for individual score items; (3) to determine the impact of adding congenital anomalies in the approach and (4) to compare

separately and in combination the performance against that of the Vermont Oxford Network risk adjustment,

METHODS. Data was collected prospectively for the revised Score for Neonatal Acute Physiology from Fifty-eight Vermont Oxford Network centers in the first 12 hours after admission of babies in 2002.

RESULTS. Analyses were undertaken for 9897 babies who met inclusion criteria out of the 10 469 infants for whom data were collected, and the median revised Score for Neonatal Acute Physiology was 5, and the mean birth weight was 1951 g. Recalibration of the revised Score for Neonatal Acute Physiology and revised Score for Neonatal Acute Physiology Perinatal Extension ended in minor changes in their discriminatory potential. The performance of the Vermont Oxford Network risk adjustment was similar in comparison with the revised Score for Neonatal Acute Physiology Perinatal Extension. It was concluded that the current score performance was similar to the previous observation, which indicates that the revised Score for Neonatal Acute Physiology and revised Score for Neonatal Acute Physiology Perinatal Extension have not decalibrated over the 7 years from the first cohort was assembled, inspite of advances in newborn care during that period. Inclusion of congenital anomalies to the revised Score for Neonatal Acute Physiology Perinatal Extension increased discrimination significantly, especially for babies with birth weights of _1500 g. The performance of the Vermont Oxford Network risk adjustment was similar when compared with the revised Score for Neonatal Acute Physiology Perinatal Extension.

7) STUDIES ON EFFECT ON HYPOGLYCEMIA IN THE NEURODEVELOPMENT

A review of literature revealed inconclusive evidence on the effects of neonatal hypoglycemia on neurodevelopment.[101] In a study of 151 babies with neonatal hypoglycemia , the babies were followed for 1-4 years and the occurrence of convulsions as a part of the newborn neurological syndrome was associated with an abnormal outcome in 50% and with transient neurological abnormalities an additional 12%. whereas babies with neurological features without convulsions did only minimally poorer than those with no neurological features.[102] observations from another larger multicentric prospective study of preterm babies indicates that even moderate hypoglycemia (at least one daily value of plasma values <47 mg/dl) can have significant impact in the outcome. If moderate hypoglycemia was present for 3 days or more there was a 30% incidence of neurodevelopmental sequelae and approximately 40% if present for 5 days or more.[103] In another study by stenninger et al [104] which reviewed the long-term, neurologic morbidity in 13 children with neonatal hypoglycemia, defined as blood glucose concentrations (< 27 mg/dL) compared with 15 children without neonatal hypoglycemia. Assessments in neurodevelopment were carried out at approximately 7.75 years of age. They observed that children with neonatal hypoglycemia had significantly higher difficulties in a screening test for minimal brain dysfunction, and were more frequently found to be hyperactive, impulsive, and inattentive. These children also had lower developmental scores when compared with controls. An Indian study conducted recently by Udani and co-workers has finally concluded that neonatal hypoglycemia is the most common etiology of remote symptomatic infantile onset epilepsy.[105]

STUDY JUSTIFICATION

Neonatal Intensive care is one part of paediatrics that has rapidly evolved in the past few decades. It Becomes a bound duty of the Neonatologist/paediatrician to counsel the Baby's parents/attenders at the time of admission. The most important Question that needs to be addressed is about the outcome or the prognosis of the Baby. With the Newborn baby that has a delicate and fragile internal environment and trying to adapt to the external environment it becomes all the more difficult for the treating paediatrician to comment on the prognosis of the of the Babies. The outcome of the Newborns admitted in NICU depends on a variety of factors including Quality of AN care, Delivery care, Quality of care given during transport of Babies from the place of delivery to the NICU and the care provided in the NICU.

The physiological status of the Newborn at the time of admission is one of the important determinants of the outcome of the baby. With the improving Quality of AN, Delivery, Transport and NICU cares, this becomes the single most important factor in predicting the prognosis of the Newborn.

In a Resource limited country like ours, with the increasing number of SNCUs through out the state with resultant increase in the Number of babies admitted in these SNCUs it is a must for the prognostic scoring system to be cost effective. The scoring systems currently available are costly and are complex and almost all these scoring systems have ABG as a parameter in their scores.As the facilities available to investigate the Newborn babies is minimal and non-availability of ABG analysers in except for the

premium NICUs, We need a scoring system that includes simple physiological / Biochemical parameters in predicting the outcome.

There exists a need to develop a simplified scoring system based on a limited number of clinical and biochemical parameters for the use in developing countries.[7]

TOPS:Temperature, Oxygenation(Airway&Breathing),Perfusion,Sugar [106] hypoglycemia,hypothermia,poor perfusion and oxygenation have been shown to be associated with high death in transported neonates.[107] TOPS a simplified assessment of neonatal acute physiology gives a good prediction of mortality in these neonates.[106,108]

The physiological status of the neonate can be assesed with reliability by using an acronym STOPS i.e. sensorium (lethargic or alert), temperature (cold stress, heater output of the incubator or open care system), Oxygen (Fio_2 needs to maintain normal arterial oxygen tension or saturation), Perfusion (capillary refill time and urine output) and Sugar (avoidance of both hypoglycemia and hyperglycemia).[7]

THE STOPS SCORE

The STOPS scoring system is an indigenous scoring system that was designed by prof. Dr. Naveen jain et al from KIMS(kerala institute of medical sciences) Trivandrum. The STOPS system has been used there for the past 8 years . currently a study is being done on “the diagnostic accuracy of STOPS singly and in combination with serum procalcitonin as sepsis screen in neonates “ which is expected to be finished in may 2013.

Apart from this there is no other studies conducted on STOPS scoring. Hence ours is one of the first few studies on STOPS score.

STOPS is a simple physiological scoring tool that can be effectively applied even in a very small/Resource limited NICU set up. This scoring system does not need skilled personnel, specialist equipment and can be done in a few minutes even by an untrained nurse precisely with out any difficulty.

AIM OF THE STUDY

The aim and objective of the study is to assess the usefulness of the indigenously developed simple cheap and easy to perform physiological scoring system "STOPS" in estimating the prognostic accuracy of the outcome of babies admitted in our NICU.

Study design

Prospective analytical study

Setting

20 bedded secondary care referral NICU of Govt. chengalpattu medical college hospital located in chengalpattu

Study period

4 months (march 2012 to june 2012)

SUBJECTS AND METHODS

Study population

All babies aged 0- 28 days admitted in our nicu

Exclusion criteria

1) babies < 28 weeks of gestation
2) babies <1000 grams of birth weight
3) babies with major surgical problems
4) babies with major congenital anomalies
5) babies more than 29 days of age

METHODOLOGY

STOPS scoring is done for all babies admitted in NICU at the time of admission and these babies are followed up to look for their outcome death/discharge

STOPS scoring is done as soon as the baby is received in the NICU

STOPS

S-SENSORIUM

T-TEMPERATURE

O-OXYGENATION

P-PERFUSION

S-SUGAR LEVEL

SENSORIUM

Score 0 babies who arouse spontaneously , remains alert, demonstrates active movement and cry normally would be defined as active

Score1 presence of any of these abnormal sensorium (irritability/ poor response to touch/weak cry/lethargy) would be recorded as score 1

Score 2 floppy/ unresponsive/apneic baby/babies having seizures at the time of admission

TEMPERATURE

The abdominal skin temperature is set at 36.5 c in open care radiant warmers

The heater output of servo controlled radiant warmer is recorded by the neonatal nurse

Score 0 normal temperature (36.5c to 37 c)

Score 1 temperature (36 c to 36.4 c and 37.1 c to 38 c) is recorded as score 1

Score 2 temperature (<36 c and >38 c) is recorded as score 2

The baby's skin temperature measured by probe will be cross checked by thermometer in axilla (for 5 minutes)

OXYGENATION

The oxygenation status of the baby is assessed by the presence of respiratory distress and requirement of oxygen for maintaining saturation (to keep SpO2 90 -95%).

Spo2 of the babies recorded with nellcor pulseoximeters

Score 0 babies with no respiratory distress/ not requiring oxygen to maintain spo2

Score 1 babies with respiratory rate 60-80/mt/with mild chest retractions/ mild grunt/ requiring fio2<60%

Score 2 babies with resp.rates >80/mt/ severe grunt/ marked chest retractions/ need for fio2 >60%/cpap/ventilator support

Oxygen would be delivered by oxyhood with 2 port holes on sides at a flow rate of 5 liters per minute. Both port holes on sides open will provide approximate 30% FiO2; one port hole on side open will provide 60 % FiO2; both port holes closed will provide FiO2 90%.

PERFUSION

Heart rates of babies are counted for 1 full minute and recorded

CRT (capillary refill time) is checked by applying pressure over sternum for 3 seconds and time taken for refill is noted

Score 0 babies with HR 100-160/mt/ CRT <3 secs

Score 1 babies with HR >160/mt/ CRT >3 secs

Score 2 babies with cold and clammy extremities/ CRT > 5 secs / bradycardia HR <60/mt

SUGAR LEVELS

CBG(capillary blood glucose) is checked using glucometer using heel prick method

Score 0 CBG 45 -180 mg/dl

Score 1 CBG <45 mg/dl corrected by 10% dextrose bolus 2 ml/kg/ CBG >180 mg/dl

Score 2 CBG <45 mg/dl requiring glucose infusion > 8mg/kg/mt

The cumulative scores are then calculated

The minimal score possible is 0 and the maximum possible is 10

STOPS SCORING

STOPS	SCORE 0	SCORE 1	SCORE 2
SENSORIUM	**Alert and active**	**Irritability/poor response To touch/reduced spontaneous Movements**	**Floppy/comatose Seizures on admission**
TEMPERATURE	**Euthermic (36.5c – 37c)**	**Cold stress (36c-36.4c) Fever (37.1c-38c)**	**Hypothermia (<36c)/ fever(>38c)**
OXYGENATION	**No respiratory distress/no oxygen requirement**	**Tachypnea(RR 60-80/mt)/mild grunting/minimal chest retractions/need for FiO2<60%**	**Tachypnea (RR>80/mt)/grunt/marked chest retractions/need for FiO2>60%/CPAP/ventilator support**
PERFUSION	**HR 100-160/mt CRT<3secs**	**Tachycardia (HR>160/mt)/ CRT>3 sec**	**Cold and clammy extremities/CRT>5 sec/oliguria/bradycardia**
SUGAR	**CBG 45-180 mg/dl**	**<45mg/dl corrected by dextrose bolus/>180mg/dl**	**<45 mg/dl requiring glucose infusions>8mg/kg/min**

RESULTS AND OBSERVATIONS

During the study period the number of babies admitted in our new born care unit as per our inclusion criteria were 771. Of the 771 babies male , female distribution was as follows

Frequency Table

SEX	Frequency	Percent
Male	446	57.8
Female	325	42.2
Total	771	100.0

Based on the place of delivery the babies were distributed as follows

BIRTH PLACE	Frequency	Percent
Inside	492	63.9
Outside	279	36.1
Total	771	100.0

Based on the gestational age the babies were distributed as follows

MATURITY	Frequency	Percent
Term	590	76.5
Pre-Term	181	23.5
Total	771	100.0

Of the 771 babies outcomes were as follows

OUTCOME	Frequency	Percent
Discharged	640	83.0
Death	64	8.3
Abscond	48	6.2
AMA	6	.8
Referral	13	1.7
Total	771	100.0

48 babies absconded from the study ,6 babies got discharged against medical advice and 13 babies were referred to higher center for further management. Hence for these babies the outcome (death/survival) was not known

Descriptive Statistics

	N	Mean	Std. Dev	Median	Minimum	Maximum
AGE IN DAYS	771	3.35	4.804	1	1	29
BIRTH WT IN KG	771	2.53	0.572	2.6	1	4.5
STOPS Score	771	1.08	1.601	0	0	10

Independent samples t-Test to compare the mean values between discharged and death

Variables	Outcome	N	Mean	Std. Dev	P-Value
AGE IN DAYS	Discharged	640	3.46	4.763	0.220
	Died	64	2.69	5.157	

Variables	Outcome	N	Mean	Std. Dev	P-Value
BIRTH WT IN KG	Discharged	640	2.57	0.558	<0.001
	Died	64	2.19	0.600	

Variables	Outcome	N	Mean	Std. Dev	P-Value
STOPS Score	Discharged	640	0.76	1.163	<0.001
	Died	64	4.36	1.820	

Chi-Square test to compare the proportions between Discharged and Death cases

		Outcome				Total		P-Value
		Discharged		Died				
		N	%	N	%	N	%	
SEX	Male	370	90.2	40	9.8	410	100.0	0.468
	Female	270	91.8	24	8.2	294	100.0	
Total		640	90.9	64	9.1	704	100.0	

		Outcome				Total		P-Value
		Discharged		Died				
		N	%	N	%	N	%	
BIRTH PLACE	Inside	408	91.5	38	8.5	446	100.0	0.449
	Outside	228	89.8	26	10.2	254	100.0	
Total		640	90.9	64	9.1	704	100.0	

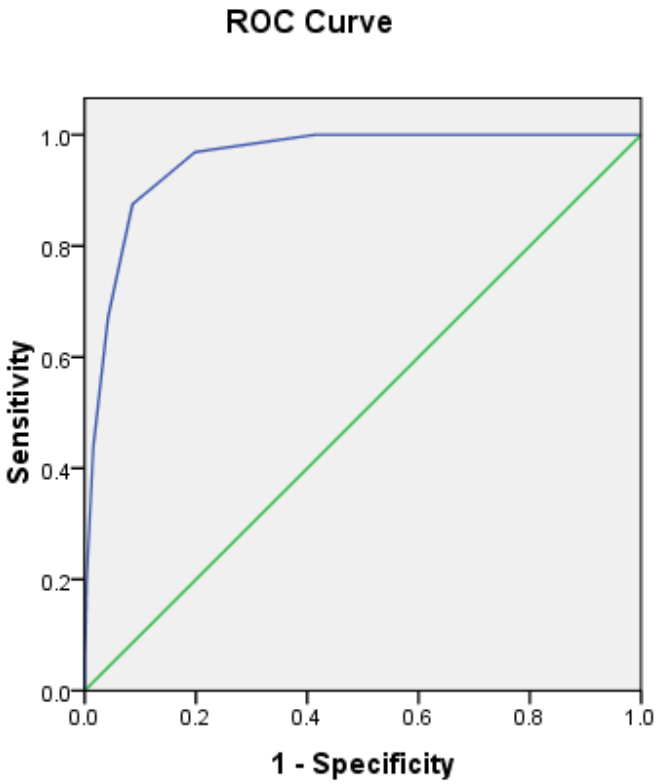
		Outcome				Total		P-Value
		Discharged		Died				
		N	%	N	%	N	%	
MATURITY	Term	505	93.9	33	6.1	538	100.0	<0.001
	Pre-Term	135	81.3	31	18.7	166	100.0	
Total		640	90.9	64	9.1	704	100.0	

		Outcome				Total		P-Value
		Discharged		Died				
		N	%	N	%	N	%	
Birth wt group	VLBW	16	64.0	9	36.0	25	100.0	<0.001
	LBW	201	87.0	30	13.0	231	100.0	
	Normal	423	94.4	25	5.6	448	100.0	
Total		640	90.9	64	9.1	704	100.0	

STATISTICAL ANALYSIS

ROC Curve analysis to find the best cut off point to predict the non-survival (Death)

All cases clubbed together



Area under the Curve = 0.955

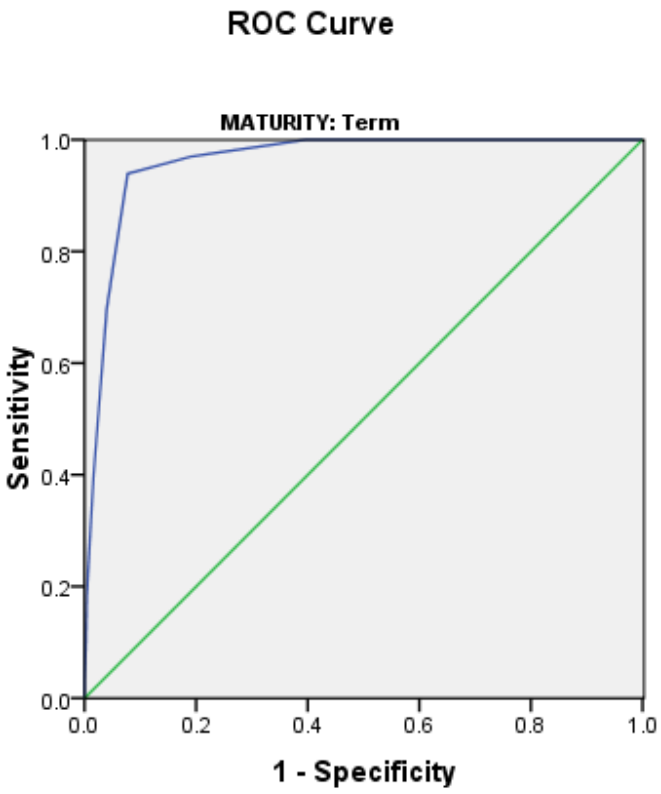
This result predicts that the STOPS score >2 will be the best cut off point to predict the non-survival (Death) status.

Sensitivity and Specificity Analysis

		Outcome		Total
		Died	Discharged	
STOPS score	> 2	56	55	111
	≤ 2	8	585	593
Total		64	640	704

Parameter	Estimate	Lower - Upper 95% CIs
Sensitivity	87.5%	77.23, 93.53
Specificity	91.41%	88.98, 93.34
Positive Predictive Value	50.45%	41.29, 59.58
Negative Predictive Value	98.65%	97.36, 99.31
Diagnostic Accuracy	91.05%	88.71, 92.94

Term wise Analysis: TERM



Area under the Curve = 0.962

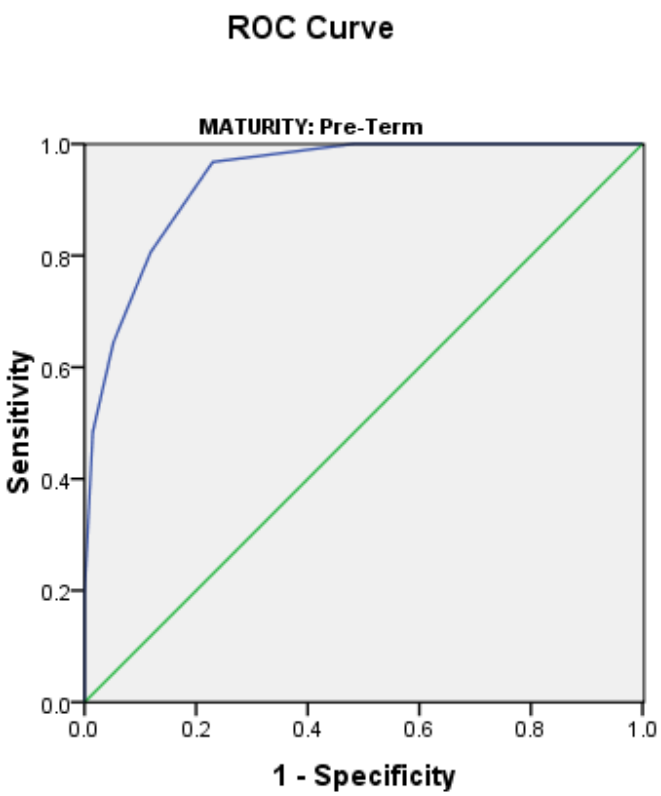
This result predicts that the STOPS score >2 will be the best cut off point to predict the non-survival (Death) status for Matured (FULL-TERM) babies.

Sensitivity and Specificity Analysis

		Outcome		Total
		Died	Discharged	
STOPS score	> 2	31	39	70
	≤ 2	2	466	468
Total		33	505	538

Parameter	Estimate	Lower - Upper 95% CIs
Sensitivity	93.94%	80.39, 98.32
Specificity	92.28%	89.62, 94.30
Positive Predictive Value	44.29%	33.25, 55.92
Negative Predictive Value	99.57%	98.46, 99.88
Diagnostic Accuracy	92.38%	89.82, 94.33

Term wise Analysis: PRE-TERM



Area under the Curve = 0.939

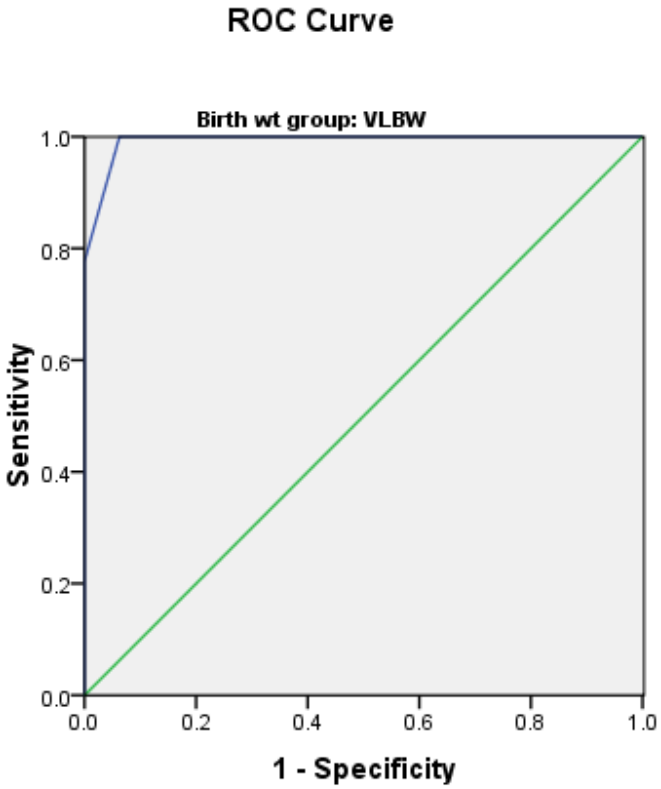
This result predicts that the STOPS score > 1 will be the best cut off point to predict the non-survival (Death) status for PRE-TERM babies.

Sensitivity and Specificity Analysis

		Outcome		Total
		Died	Discharged	
STOPS score	> 1	30	31	61
	≤ 1	1	104	105
Total		31	135	166

Parameter	Estimate	Lower - Upper 95% CIs
Sensitivity	96.77%	83.81, 99.43
Specificity	77.04%	69.25, 83.32
Positive Predictive Value	49.18%	37.06, 61.40
Negative Predictive Value	99.05%	94.8, 99.83
Diagnostic Accuracy	80.72%	74.05, 86.00

Birth weight group wise Analysis: VLBW



Area under the Curve = 0.993

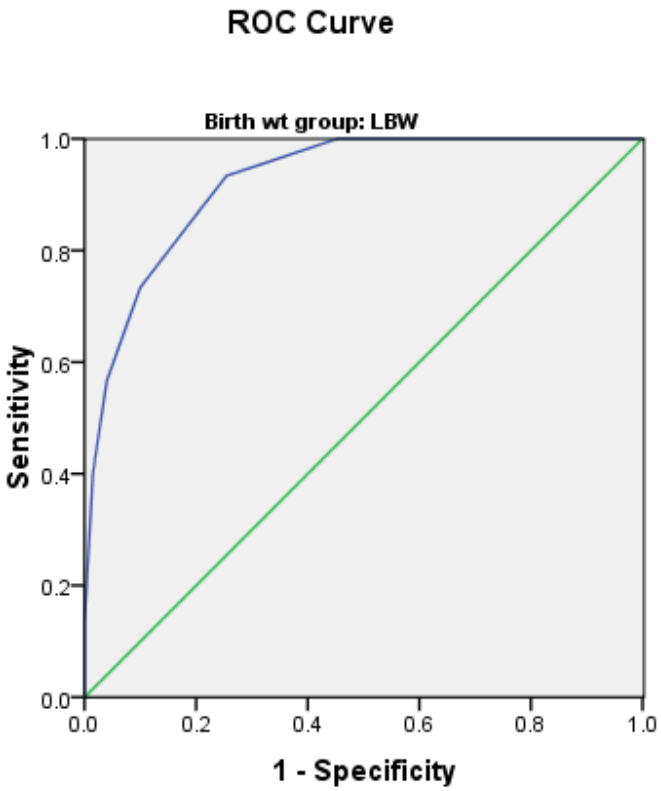
This result predicts that the STOPS score > 2 will be the best cut off point to predict the non-survival (Death) status for VLBW babies.

Sensitivity and Specificity Analysis

		Outcome		Total
		Died	Discharged	
STOPS score	> 2	9	1	10
	≤ 2	0	15	15
Total		9	16	25

Parameter	Estimate	Lower - Upper 95% CIs
Sensitivity	100.0%	70.08, 100.0
Specificity	93.75%	71.67, 98.89
Positive Predictive Value	90.00%	59.58, 98.21
Negative Predictive Value	100.0%	79.61, 100.0
Diagnostic Accuracy	96.0%	80.46, 99.29

Birth weight group wise Analysis: LBW



Area under the Curve = 0.923

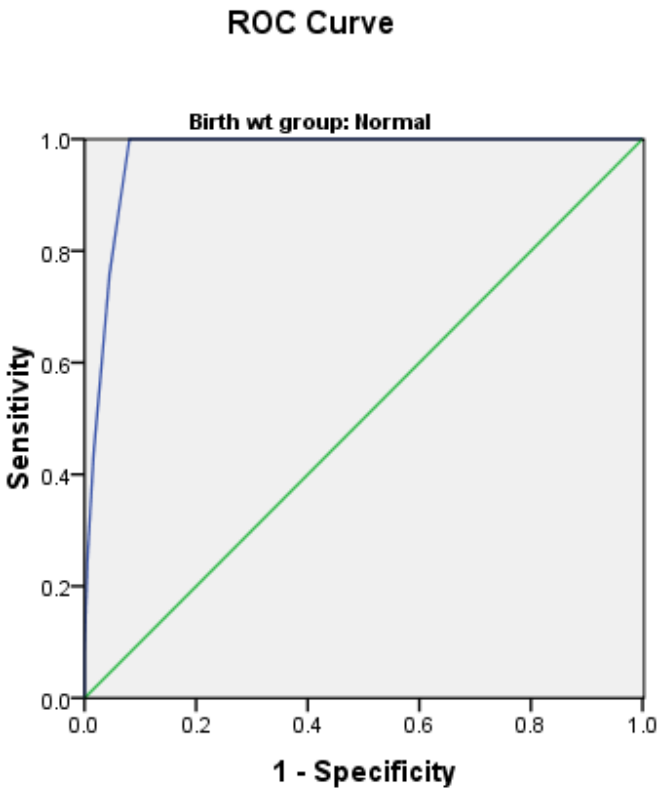
This result predicts that the STOPS score > 1 will be the best cut off point to predict the non-survival (Death) status for LBW babies.

Sensitivity and Specificity Analysis

		Outcome		Total
		Died	Discharged	
STOPS score	> 1	28	51	79
	≤1	2	150	152
Total		30	201	231

Parameter	Estimate	Lower - Upper 95% CIs
Sensitivity	93.33%	78.68, 98.15
Specificity	74.63%	68.19, 80.14
Positive Predictive Value	35.44%	25.80, 46.44
Negative Predictive Value	98.68%	95.33, 99.64
Diagnostic Accuracy	77.06%	71.22, 82.01

Birth weight group wise Analysis: NORMAL



Area under the Curve = 0.973

This result predicts that the STOPS score > 2 will be the best cut off point to predict the non-survival (Death) status for LBW babies.

Sensitivity and Specificity Analysis

		Outcome		Total
		Died	Discharged	
STOPS score	> 2	25	34	59
	≤ 2	0	389	389
Total		25	423	448

Parameter	Estimate	Lower - Upper 95% CIs
Sensitivity	100.0%	86.68, 100.0
Specificity	91.96%	88.98, 94.19
Positive Predictive Value	42.37%	30.61, 55.07
Negative Predictive Value	100.0%	99.02, 100.0
Diagnostic Accuracy	92.41%	89.58, 94.52

Simple (uni-variate) Logistic Regression (Un-adjusted OR)

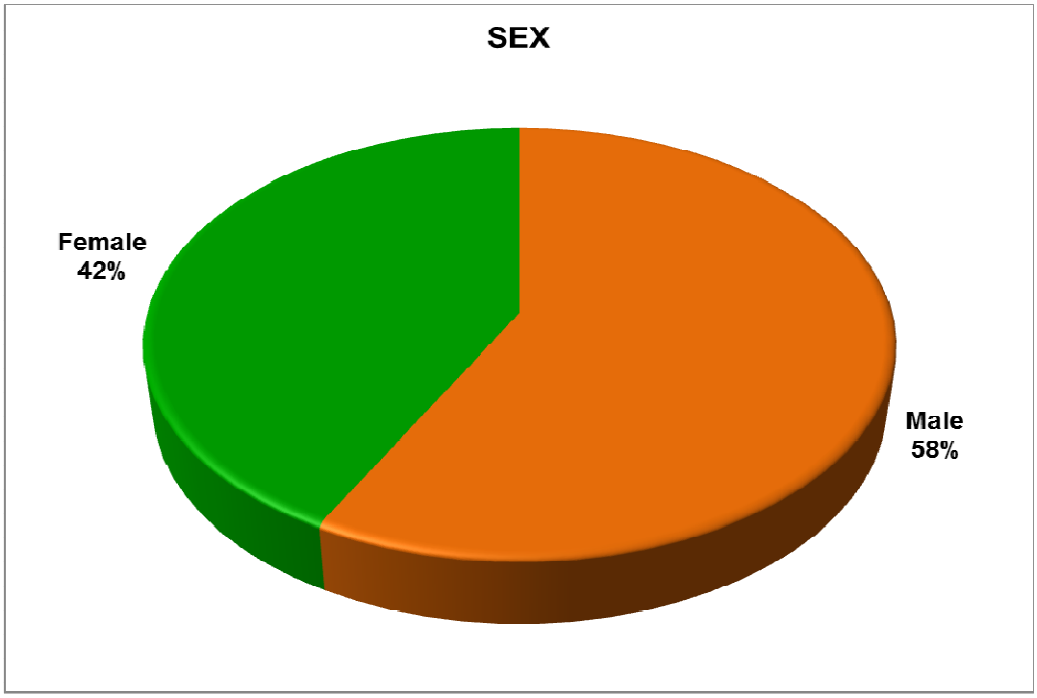
Factors		Died		OR	95% for OR		P-Value
		N	%		LL	UL	
MATURITY	Term	33	6.1	1.00			
	Pre-Term	31	18.7	3.51	2.08	5.95	<0.001
Birth wt group	Normal	9	36.0	1.00			
	VLBW	30	13.0	9.52	3.83	23.66	<0.001
	LBW	25	5.6	2.53	1.45	4.41	0.001
SENSORIUM	0	5	0.9	1.00			
	1	48	34.8	58.45	22.66	150.8	<0.001
	2	11	84.6	602.8	105.3	3451.8	<0.001
TEMPERATURE	0	39	6.5	1.00			
	1	14	19.2	3.41	1.75	6.65	<0.001
	2	11	35.5	7.91	3.54	17.68	<0.001
OXYGENATION	0	3	0.6	1.00			
	1	4	4.1	6.82	1.50	31.00	0.013
	2	57	44.5	127.4	38.8	417.6	<0.001
PERFUSION	0	32	4.9	1.00			
	1	27	64.3	35.16	17.04	72.54	<0.001
	2	5	100.0	-	-	-	-
SUGAR	0	50	7.7	1.00			
	1	9	19.6	2.91	1.33	6.38	0.007
	2	5	55.6	14.98	3.90	57.54	<0.001

Multivariate Logistic Regression (AdjustedOR)

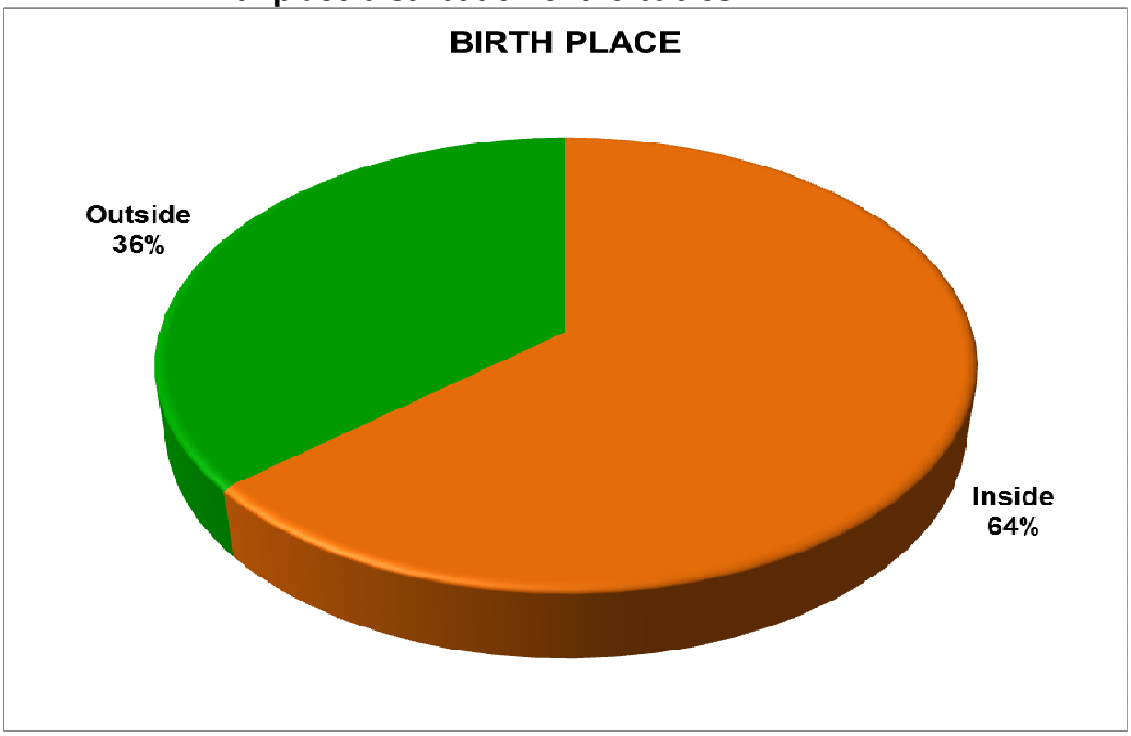
Factors		Died		AOR	95% for OR		P-Value
		N	%		LL	UL	
MATURITY	Term	33	6.1	1.00			
	Pre-Term	31	18.7	0.824	0.26	2.59	0.784
Birth wt group	Normal	9	36.0	1.00			
	VLBW	30	13.0	13.70	1.84	102.2	0.011
	LBW	25	5.6	4.43	1.47	13.40	0.008
SENSORIUM	0	5	0.9	1.00			
	1	48	34.8	13.73	4.63	40.69	<0.001
	2	11	84.6	73.56	6.49	833.7	0.001
TEMPERATURE	0	39	6.5	1.00			
	1	14	19.2	1.66	0.58	4.73	0.346
	2	11	35.5	0.92	0.24	3.51	0.900
OXYGENATION	0	3	0.6	1.00			
	1	4	4.1	4.80	0.92	25.17	0.063
	2	57	44.5	30.20	8.10	113.1	<0.001
PERFUSION	0	32	4.9	1.00			
	1	27	64.3	3.03	1.10	8.51	0.036
	2	5	100.0	-	-	-	-
SUGAR	0	50	7.7	1.00			
	1	9	19.6	0.65	0.20	2.11	0.470
	2	5	55.6	1.12	0.10	14.72	0.933

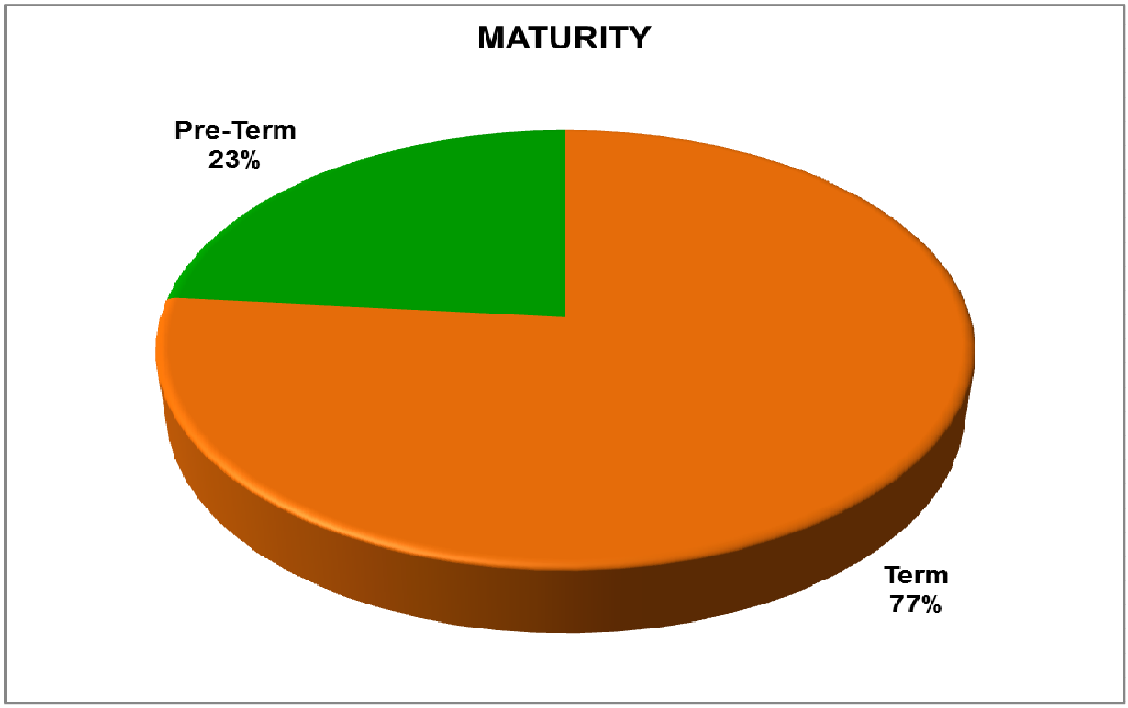
CHARTS

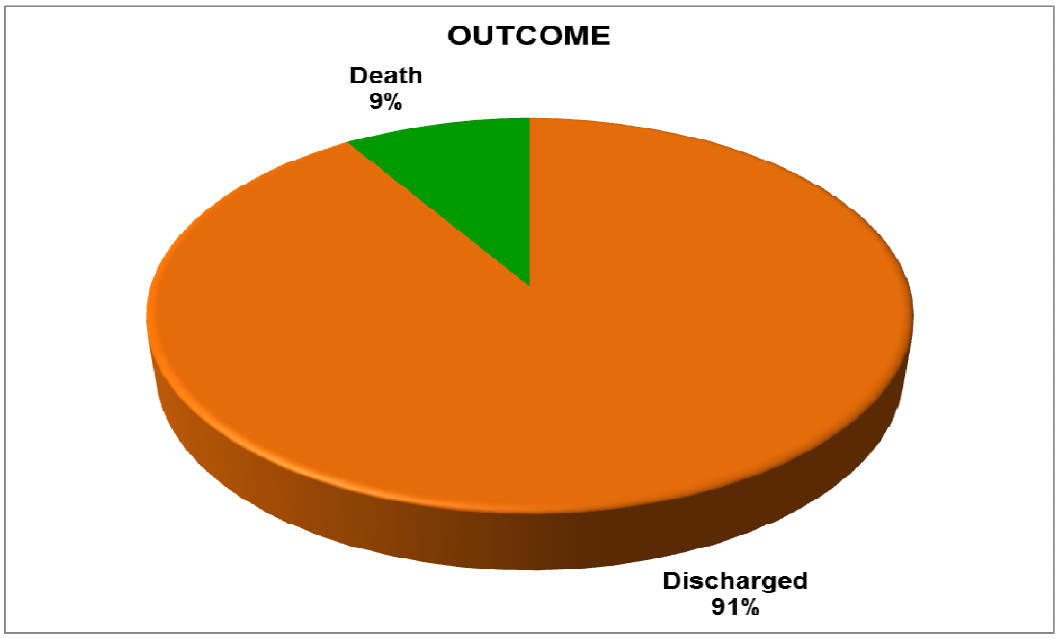
Sex distribution of the babies

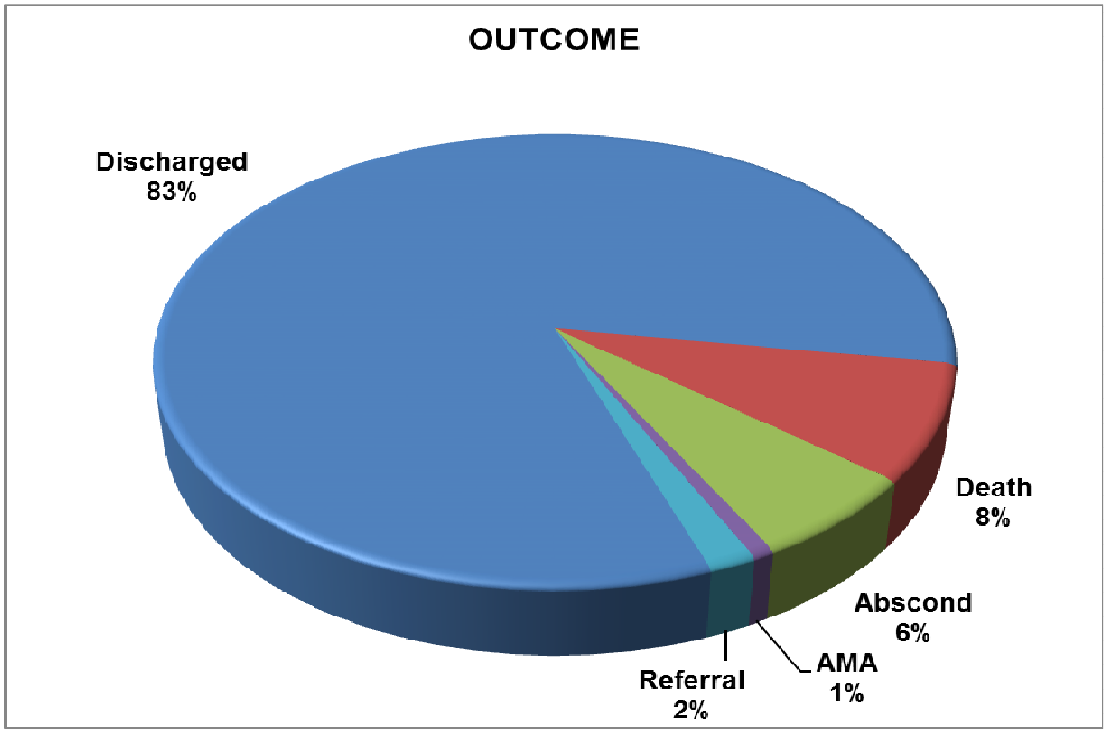


Birth place distribution of the babies

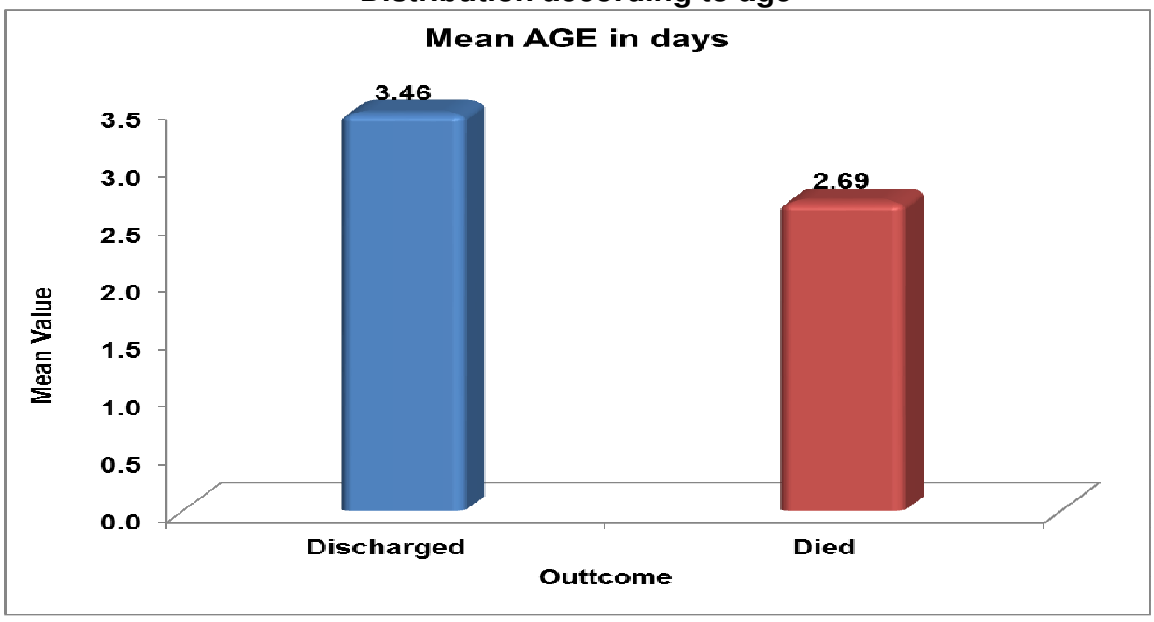



MATURITY
Pre-Term
23%
Term
77%

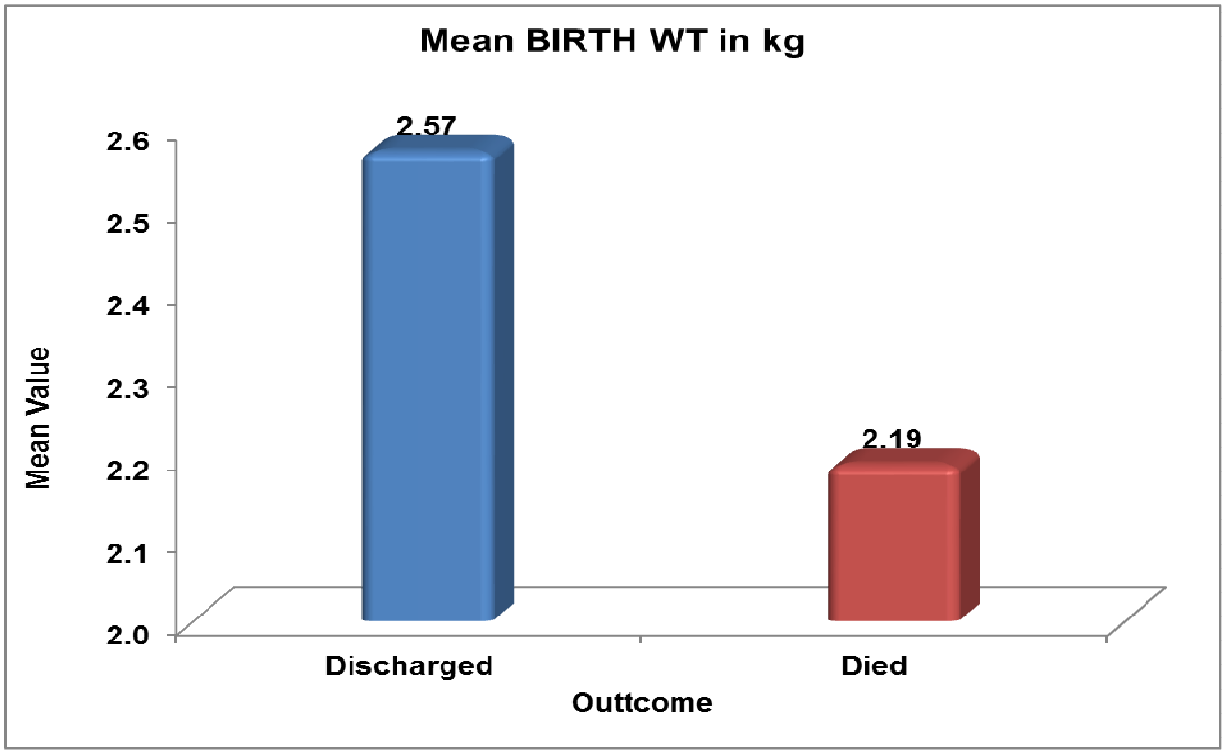

OUTCOME
Death
9%
Discharged
91%



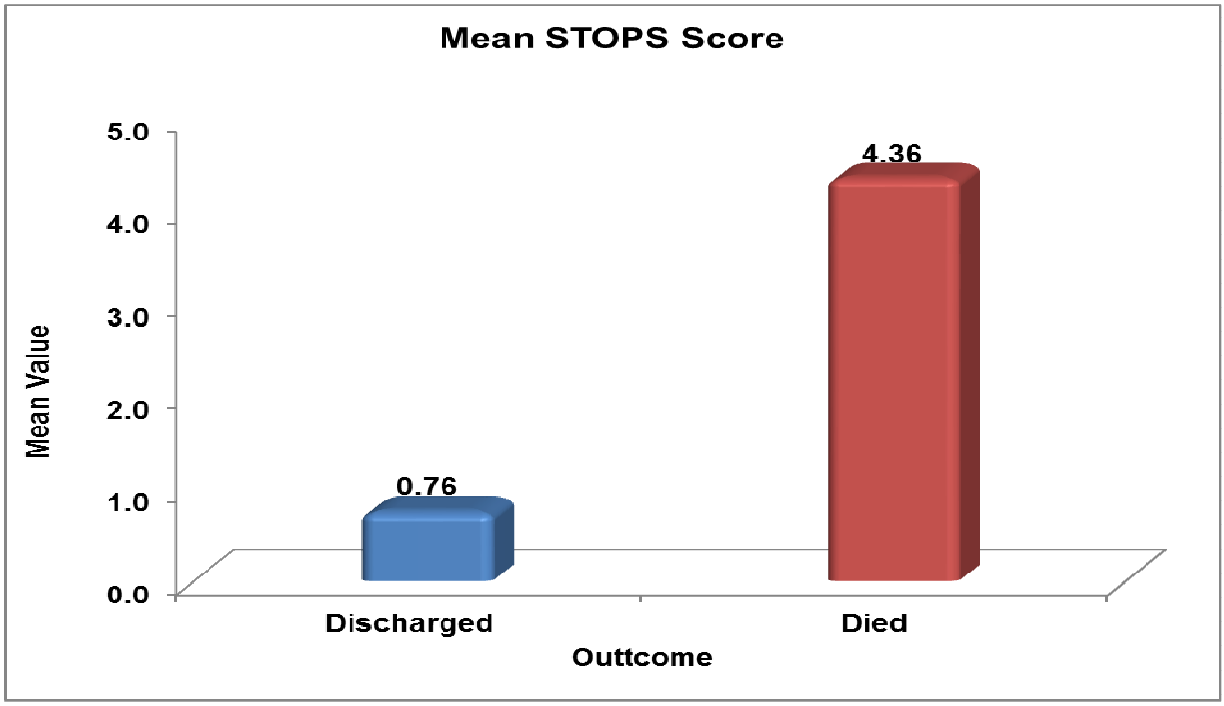
Distribution according to age

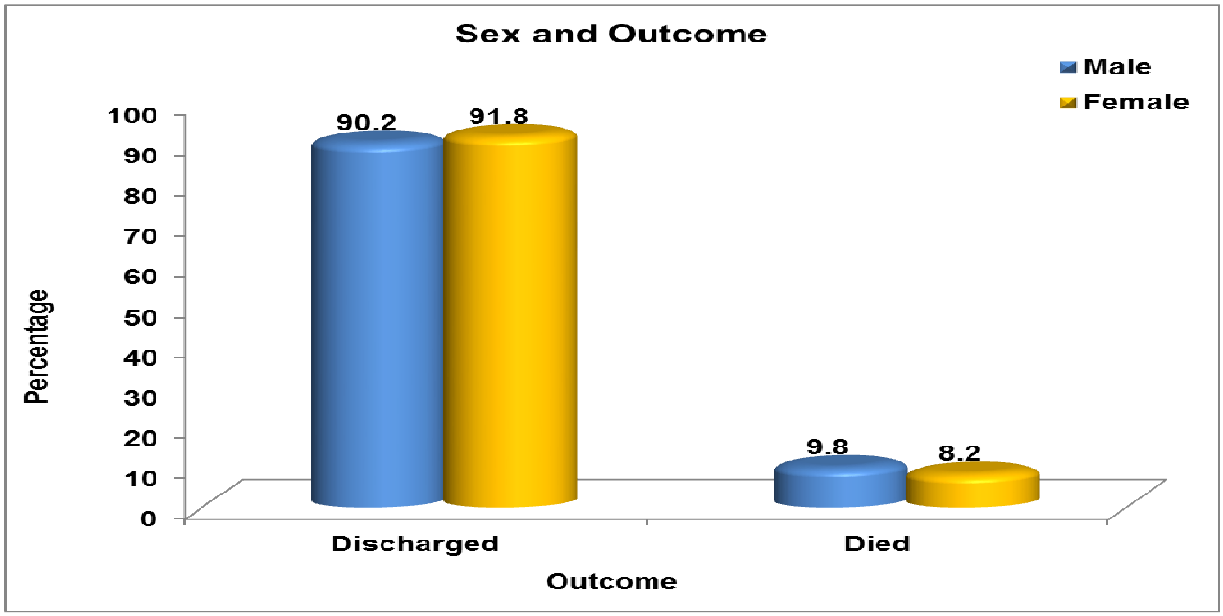


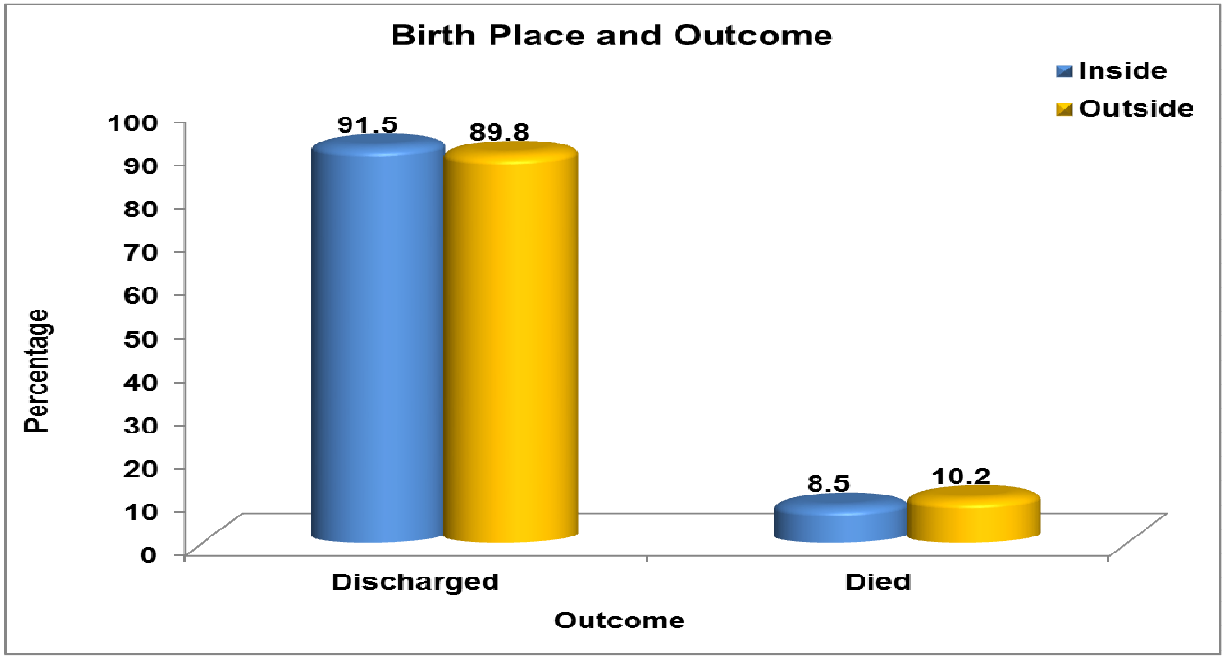
Distribution according to birth weight

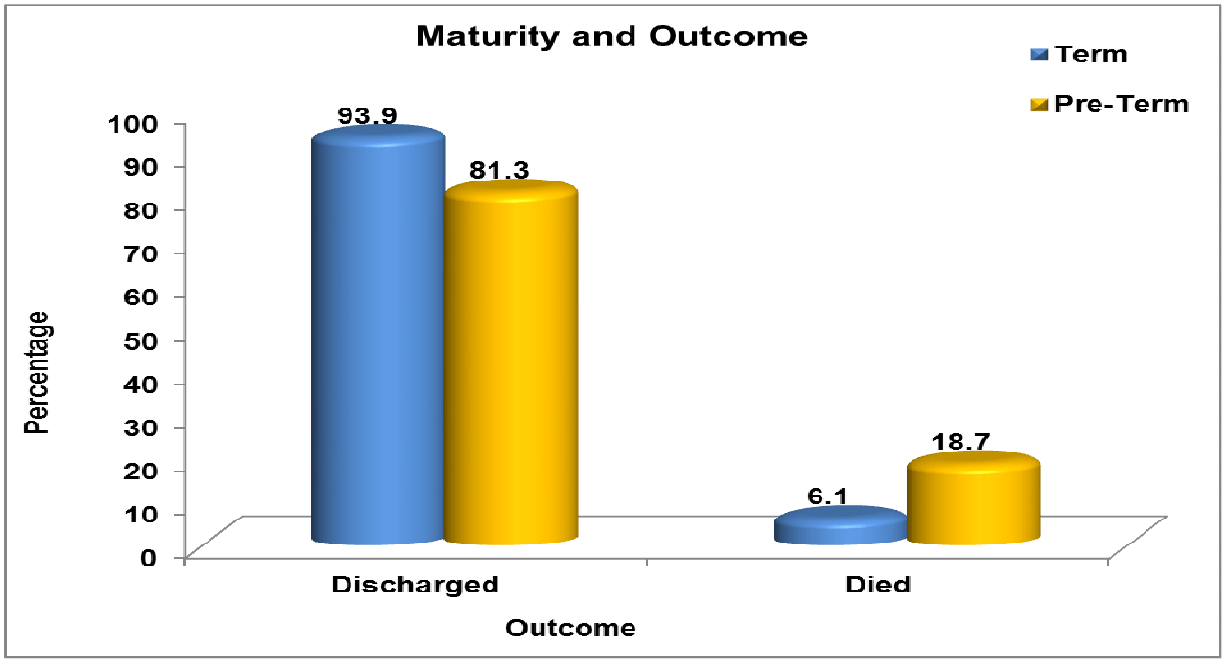


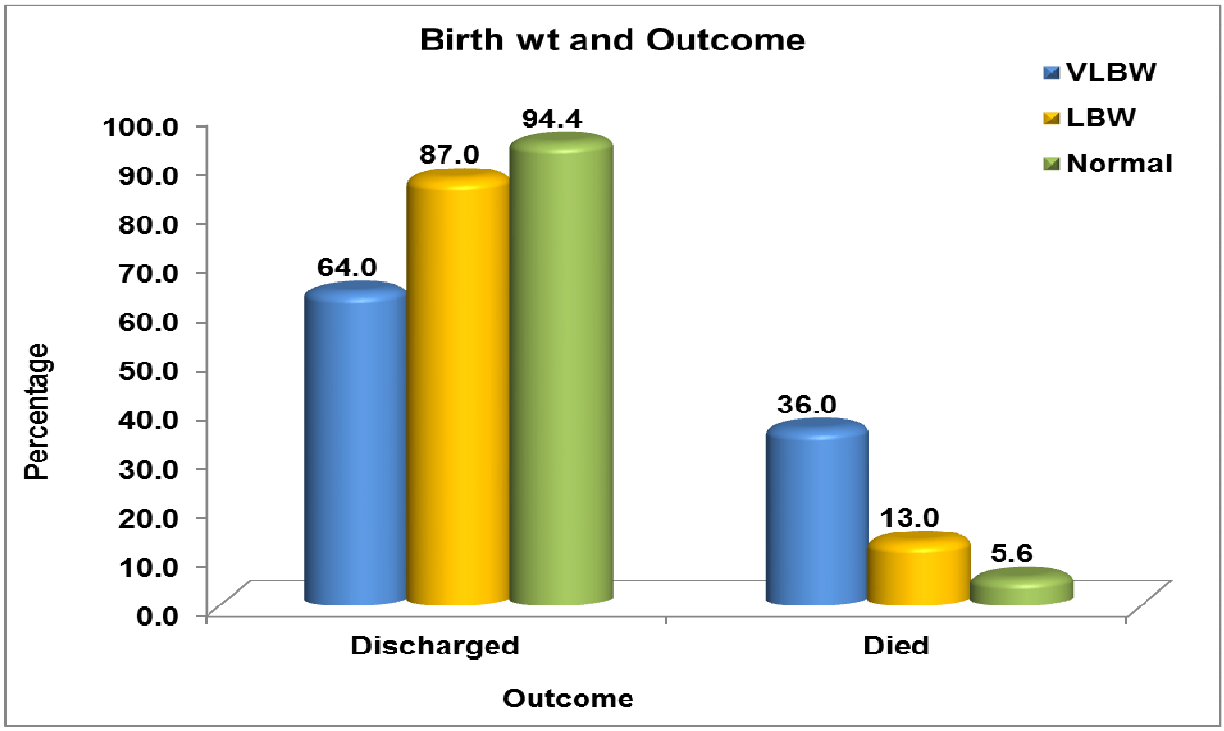
STOPS score distribution




Sex and Outcome
Male
Female
100
90
80
70
60
50
40
30
20
10
0
Percentage
90.2
91.8
9.8
8.2
Discharged
Died
Outcome


Birth Place and Outcome
Inside
Outside
100
90
80
70
60
50
40
30
20
10
0
Percentage
91.5
89.8
8.5
10.2
Discharged
Died
Outcome


Maturity and Outcome
Term
Pre-Term
Percentage
100
90
80
70
60
50
40
30
20
10
0
93.9
81.3
6.1
18.7
Discharged
Died
Outcome


Birth wt and Outcome
VLBW
LBW
Normal
Percentage
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
64.0
87.0
94.4
36.0
13.0
5.6
Discharged
Died
Outcome

CONCLUSION

STOPS is a useful scoring system in predicting the outcome of the babies admitted in NICUs.

In our study it has been observed that in overall a STOPS score of 3 or more is a good predictor of the death of the babies admitted in NICU. The ROC curve including all babies showed that the best cut off value for predicting the non survival status (death) was a score of 3 or more with the area under the curve being 0.955 .Its sensitivity was 87.5% with lower and upper (95%) confidence intervals 77.23, 93.53 , specificity was 91.41% with lower and upper (95%) confidence intervals 88.98,93.34 , positive predictive value was 50.45% with lower and upper (95%) confidence intervals 41.29, 59.58 and negative predictive value was 98.65% with lower and upper (95%) confidence intervals 97.36 , 99.31. its diagnostic accuracy in predicting death was 91.05% with lower and upper (95%) confidence intervals 88.91 ,92.94.

Coming to the term babies the observations were similar.

. The ROC curve for term babies showed that the best cut off value for predicting the non survival status (death) was a score of 3 or more with the area under the curve being 0.962 .Its sensitivity was 93.94% with lower and upper (95%) confidence intervals 80.39 ,98.32 , specificity was 92.28% with lower and upper (95%) confidence intervals 89.62 ,94.30 , positive predictive value was 44.29% with lower and upper (95%) confidence intervals 33.25,55.92 and negative predictive value was 99.57% with lower and upper (95%)

confidence intervals 89.82,94.33 . its diagnostic accuracy in predicting death was 92.38% with lower and upper (95%) confidence intervals 89.92 , 94.33.

The ROC curve for preterm babies showed that the best cut off value for predicting the non survival status (death) was a score of 2 or more with the area under the curve being 0.939 .Its sensitivity was 96.77% with lower and upper (95%) confidence intervals 83.81,99.43 , specificity was 77.04% with lower and upper (95%) confidence intervals 69.25, 83.32 , positive predictive value was 49.18% with lower and upper (95%) confidence intervals 37.06, 61.40 and negative predictive value was 99.05% with lower and upper (95%) confidence intervals 94.8, 99.83 . its diagnostic accuracy in predicting death was 80.72% with lower and upper (95%) confidence intervals 74.05, 86.0.

The ROC curve for very low birth weight babies showed that the best cut off value for predicting the non survival status (death) was a score of 3 or more with the area under the curve being 0.993 .Its sensitivity was 100% with lower and upper (95%) confidence intervals 70.08, 100 , specificity was 93.75% with lower and upper (95%) confidence intervals 71.67, 98.89 , positive predictive value was 90% with lower and upper (95%) confidence intervals 59.58, 98.21 and negative predictive value was 100% with lower and upper (95%) confidence intervals 79.61, 100 . its diagnostic accuracy in predicting death was 96% with lower and upper (95%) confidence intervals 80.46, 99.29.

The ROC curve for low birth weight babies showed that the best cut off value for predicting the non survival status (death) was a score of 2 or more with the area

under the curve being 0.923 .Its sensitivity was 93.33% with lower and upper (95%) confidence intervals 78.68, 98.15 , specificity was 74.63% with lower and upper (95%) confidence intervals 68.19, 80.14 , positive predictive value was 35.44% with lower and upper (95%) confidence intervals 25.80,46.44 and negative predictive value was 98.68% with lower and upper (95%) confidence intervals 95.33, 99.64 . its diagnostic accuracy in predicting death was 77.06% with lower and upper (95%) confidence intervals 71.22,82.01.

The ROC curve for normal birth weight babies showed that the best cut off value for predicting the non survival status (death) was a score of 3 or more with the area under the curve being 0.973 .Its sensitivity was 100% with lower and upper (95%) confidence intervals 86.68, 100 , specificity was 91.96% with lower and upper (95%) confidence intervals 88.98, 94.19 , positive predictive value was 42.37% with lower and upper (95%) confidence intervals 30.67, 55.07 and negative predictive value was 100% with lower and upper (95%) confidence intervals 99.02, 100 . its diagnostic accuracy in predicting death was 92.41% with lower and upper (95%) confidence intervals 89.58, 94.52.

Statistical analysis using simple (uni variate logistic regression) showed that all the individual variables gestational age(p value.001), birth weight (p value .001) , sensorium(p value .001) ,temperature(p value .001) ,oxygenation status(p values .013 for score 1 and .001 for score 2) , perfusion(p value .001) ,and sugar levels (p values .007 for score 1 and, 0.001 for score 2) had significant effect on neonatal mortality with p values < 0.05

Statistical analysis with multi variate logistic regression showed that the variables birth weight(p values .011 for VLBW babies and .008 for LBW babies), sensorium(p values .001) perfusion (p value .036)and Oxygenation status(p value .001 for score of 2) had statistically signicant effects on the mortality of the babies whereas gestational age, temperature, and sugar levels did not have statistically significant effects on the mortality of the babies.

From the above statistical analytic results it can be concluded that STOPS score is a useful tool in predicting the outcome of the babies admitted in NICUs

DISCUSSION

Though STOPS score was useful in predicting the outcome of the babies admitted in NICUs, at the end of our study we found that the prognostic accuracy was limited by the following factors in our study.

This study was done in a level 2 NICU . The sample size was 771 with most of the babies admitted in a more stable physiological status with the mean STOPS score of 1.08, median of 0 and standard deviation of 1.601. our study included all the babies admitted in our newborn care unit including those babies admitted for observation , preterm or low birth weight babies for care, neonatal depression, meconium stained babies for observation.

In future, larger multicentric trials with larger sample size, including babies needing level 3 NICU care, will certainly establish the prognostic accuracy of the STOPS score.

In addition we also observed that if STOPS score is extended giving weightage for gestational age and birth weight the prognostic accuracy can further be improved.

BIBLIOGRAPHY

1) Care of the newborn-7th edition by Meharban singh-page 7

2) Manual of neonatal care-6th edition-John P.Cloherty,Eric C.Eichenwald,Ann R.Stark.page 42

3) Manual of neonatal care-6th edition-John P.Cloherty,Eric C.Eichenwald,Ann R.Stark.page 1

4) Manual of neonatal care-6th edition-John P.Cloherty,Eric C.Eichenwald,Ann R.Stark.page 43

5) Care of the newborn-7th edition by Meharban singh-page 1

6) Care of the newborn-7th edition by Meharban singh-page 2

7) WHO website

8) Essential pediatrics-Ghai -7 th edition:page 136-138

9) Manual of neonatal care-6th edition-John P.Cloherty,Eric C.Eichenwald,Ann R.Stark.page 287

10) Guha's neonatology-principles and practice 3rd edition.page 176

11) Okascharoen C. Sirinavin S, Thakkinstian A, Kitayaporn D, Supapanachart S. A bedside prediction-scoring model for late-onset sepsis. j perinato 2005:25:778-83.

12) Rosenberg re, Ahmed an, Saha sk. Chowdhury ma. Ahmed s, Law pa et al. Nosocomial sepsis risk score for preterm infants in low-resource settings. j trop pediatr 2009; jul 21: epub ahead of print

13) Singh sa. Dutta S. Narang A. predictive clinical scores for diagnosis of late onset neonatal septicemia. j top pediatr 2003;49:235-9

14) Evidence based clinical practice guidelines, National neonatology forum,India october 2010.page 7

15) Essential pediatrics-Ghai -7 th edition:page 116

16) Dahm ls, James ls. Newborn temperature and calculated heat loss in the delivery room. pediatrics 1972; 49:504-13.

17) Moore er, Amderson gc, Bergman n.Early skin-to-skin contact for mothers and their healthy newborn infants. cochrane database of systematic review 2007. issue 3. art. no.: cd003519. doi: 10.1002/14651858. cd003519.pub2.

18) Evidence based clinical practice guidelines, National neonatology forum,India october 2010.page 63-64

19) Kalhan s; Sigal pw. Hypoglycemia : what is it for the neonate? am j perinatol 2000; 17:11-18

20) Aynsely-green a, Hawdon jm. Hypoglycemia in the neonate : current controversies. acta paediatr jpn 1997;39 (suppl 1): s12-6.

21) Cornblath m, Hawdon jm, Williams af, Aynsley-green a, Ward-plant mp, Schwartz r, Kalhan sc. Controversies regarding definition of neonatal hypoglycemia : suggested operational thresholds. pediatrics 2000;105:1141-5.

22) Cornblath m, Schwartz r, Aynsley-green a, Lloyd jk. (Editors-a ciba foundation discussion meeting) Hypoglycemia in infancy : the need for a rational definition. pediatrics 1990;85:834-7.

23) Roberton's textbook of neonatology 4th edition .page 49

24) Richardson dk.Gray je,MC Corrick,Workman k,Goldmann da 1993,
score for neonatal acute physiology: a physiologic severity index for neonatal intensive care. paediatrics 91:617-623.

25) Richardson dk, Corcoran jd, Escobar gj, Lee sk 2001 SNAP II and
SNAP PE II : simplified newborn illness severity and mortality risk scores. journal of paediatrics 138: 92-100

26) International neonatal network 1993 the CRIB (clinical risk index for
babies) score: a tool for assessing critical neonatal risk and comparing performance of neonatal intensive care units. lancet 342: 193-198

27) Parry g, Tucker j, Tarnow-Mordi w 2003 CRIB II: An update of the
clinical risk index for babies score. lancet 361: 1789-1791

28) Rogowski ja: Measuring the cost of neonatal and perinatal care,
pediatrics 103(1suppl e): 329,1999.

29) Zupancic jaf, et al: Von SNAP pilot project. Performance of the
revised score for neonatal acute physiology in the Vermont Oxford Network, pediatr Res 55:521a,2004.

30) Richardson DK, et al: risk adjustment for quality improvement,
pediatrics 103 (1supple):255,1999.

31) . Lee SK, et al: transport risk index of physiologic stability: a
practical system for assessing infant transport care, J Pediatr 139(2):220,2001.

32) Lee SK, et al: cost-effectiveness and choice of infant transport
systems, med care 40(8):705,2002.

33) .Tyson JE, et al: intensive care for extreme Prematurity: moving
beyond gestational age, N Eng J Med 358:1672, 2008.
34) Park RE, et al: explaining variations in hospital death rates.
randomness, severity of illness, quality of care, Jama 264:484,1990.
35) Horbar JD, Onnstad l, Wright E. Predicting mortality risk for infants
weighing 501-1500 grams at birth. Crit care med 1993; 21:12-18
36) Dorling JS, Field DJ, Manktelow B. Neonatal disease severity scoring systems.
Arch dis child fetal neonatal ed 2005; 90(1):11-6.
37) Dorling JS, Field DJ. value and validity of neonatal disease severity
scoring systems. Arch dis child fetal neonatal ed 2008; 93(2):80-2.
38) Courcy-wheeler RHB, Wolfe CDA. Use of the CRIB (clinical risk index for babies)
score in prediction of neonatal mortality and morbidity. Arch dis child 1995; 73:32-36.
39) Bard H. assessing neonatal risk: CRIB VS SNAP.Lancet 1993; 342(21):449-450.
40) Jean-Yves Marandon. dept. of anesthesia. Foch hospital (92 suresnes
- france) [internet] cited: 2009 July 21. available from: www.sfar.org.
41) Kadivar M, Sagheb S, Bavafa F. Neonatal mortality risk assessment in a neonatal
intensive care unit.(NICU). Iran J ped 2007; 17 (4):325-331.
42). Rautonen J, Makella A. CRIB and SNAP assessing
the risk of death for preterm neonates. Lancet 1994;21(343):1272-1273.
43). Bastos G, Gomes A. a comparison of 4 pregnancy assessment scales (CRIB, SNAP,
SNAP-PE, NTISS) in premature newborns. Acta med port 1997; 10(2-3):161-165.

44). Manktelow B, Draper S, Field J. Predicting neonatal mortality among very preterm infants: a comparison of three versions of the CRIB score. arch dis child fetal neonatal ed 2010; 95(1):9-13.

45). Rastogi, P.K, Sreenivas, V, Kumar, N. validation of CRIB II for prediction of mortality in premature babies. Indian Pediatrics. 2010;47(2):145-147.

46). Khanna R, Taneja V. the clinical risk index of babies (CRIB) score in India. Indian J pediatr 2002; 69 (11): 957-960.

47). Akima S, Kent a. Indomethacin and renal impairment in neonates. pediatr Nephrol 2004;19:490–493.

48). Pollack MM, Koch MA, Bartel DA. a comparison of neonatal mortality risk prediction models in very low birth weight infants. pediatrics 2000;105(5):1051-1057.

49) Grantj. the CRIB score. Lancet 1993; 342: 612.

50) Fenton a, Field d, Solimano a, Annich g. the CRIB score. Lancet 1993; 342: 612-3.

51) Sepkowitz s. the CRIB score. Lancet 1993; 342: 938.

52) Papile l-a, Burstein j, Burstein r, Koffier h. Incidence and evolution of subependymal and intraventricular haemorrhage: a study of infants with birthweights less than 1500g. jf pediatr 1978; 92: 529-34.

53) Altman d, Bland j. Diagnostic tests 3: Receiver operating characteristic plots. BMJ 1994; 309: 188.

54) Paneth n, KKiely jl, Wallenstein 5, Marcus m, Pakter j, Susser m. Newborn intensive care and neonatal mortality in low birthweight infants. N Eng.Jf med 1982; 307: 149-55.

55) Field d, Hodges 5, Mason e, Burton p.Survival and place of treatment after premature delivery. Arch dis child 1991; 66: 408-11.

56) Cooke r. Report of a working group of the british association of perinatal medicine and neonatal nurses association on categories of babies requiring neonatal care. Arch dis child 1992; 67: 868-9.

57) Regional perinatal monitoring group (RPMG). Perinatal profile 1990. London: south east thames regional health authority, 1992.

58) Powell p, Powell c, Hollis s, Robinson m. when will my baby go home? Arch dis child 1992; 67: 1214-6.

59) Roberton n. should we look after babies less than 800g?
arch dis child 1993; 68: 326-9.

60) Costello a, Hamilton p, Baudin j. prediction of Neurodevelopmental
impairment at four years from brain ultrasound appearance of very preterm infants. dev med child Neurol 1988; 30: 711-22.

61) Johnson a, Townshend p, Yudkin p, Bull d, Wilkinsom A.
functional abilities at age 4 years of children born before 29 weeks of gestation. BMJ 1993; 306: 1715-8.

62) Verloove-Vanhorick sp, Verwey ra, Brand r, Bennebroek
Gravenhorst j, Keirse Mjnc, Ruys jh. neonatal mortality risk in relation to gestational age and birthweight. Lancet 1986; I: 55-7.

63) Tarnow-Mordi w, Cooke r, parry g, ogston s. the crib score. lancet 1993; 342: 613.

64). Ballard jl, Khoury jc, Wedig k, Wang l, Eilers-walsman bl, Lipp r. new ballard score expanded to include extremely premature infants. j pediatrics 1991;119:417-23.

.65). Baumer jh, Wright d, Mill t. Ilness severity measured by crib score: a product of changes in perinatal care? Arch dis child 1997;77:211-5.

66). Fowlie pw, Gould cr, Tarnow-Modi wo, Strang Dma. Measurement properties of the clinical risk. Index for babies: reliability, validity beyond the first 12 hours and responsiveness over 7 days. Crit Care med 1998;26:163-8.

67). Kaarensen pi, Dohlen g, Fundingsrud hp, Dahal lb. The use of CRIB (clinical riak index for Babies) score in auditing the performance of one Neonatal Intensive Care Unit. Acta paediatr 1998;87:195-200.

68). Lago p, Freato f, Bettiol t, Chiandetti l, Vianello a, Zaramella p. Is the CRIB score (clinical risk Index for babies) a valid tool in predicting neurodevelopmental outcome in low birth weight infants. Biol neonate 1999;76:220-7.

69). Matsuoka ot, Sadek lsr, Haber JFS, Proença Rsm, Mataloun mmg, Ramos jls et al. Valor Preditivo do "clinical risk index for babies" Para o Risco de Mortalidade neonatal. Rev saúde pública 1998;32:550-5.

70). Procianoy rs, Benjamin acw, Martinez fe, Mussi-pinhata mm, Leone cr, Sadeck lsr et al. Crib e Peso de Nascimento: qual o melhor preditor de mortalidade em recém nascidos de muito baixo peso. In: anais do 17º congresso brasileiro de perinatologia 2001, 10-14 nov. Florianópolis; 2001. P. 187.

71). Rautonen j, Makela a, Boyd h, Apagasalo m, Pohjavuori m. CRIB and SNAP: assessing the risk of death for preterm neonates. Lancet 1994;343;1272-3.

72) Sarquis alf, Miyaki m, Cat mnl. Aplicação do escore CRIB para avaliar o risco de mortalidade. J pediatr 2002;78:225-9.

73) Scottish neonatal consultants collaborative study group/ the international neonatal network. CRIB (clinical risk index for babies), mortality, and impairment after neonatal intensive care. Lancet 1995;345:1020-22.

74) Silveira rc, Schlabendorff m, Procianoy rs. Valor preditivo dos escores de SNAP e SNAP-PE na mortalidade neonatal. j pediatr 2001;77:455-60.

75) Hope p. CRIB, son of APGAR, brother to APACHE. Arch dis child 1995;**72**:f81-f3.

76) Hughes-Davies th. The CRIB score. Lancet 1993;**342**:938.

77) Wyatt jc, Altman dg. commentary: prognostic models: clinically useful or quickly forgotten? Bmj 1995;**311**:1539-41.

78) Draper nr, Smith h. applied regression analysis. New york: John wiley and sons, 1981.

79) Hanley ja, Mcneill bj. A method of comparing the areas under the receiver operating characteristic curves derived from the same cases. radiology 1983;**148**:839-43.

80) Mccullagh p, Nelder ja. generalised linear models. 2nd edn. London: Chapman and Hall, 1989

81) Kiely jl, Kleinman jc, Kiely m. triplets and higher-order multiple births.time trends and infant mortality. Am j dis child 1992;**146**:862-8.

82) Seoud ma, Toner jp, Kruithoff c, Muasher sj. Outcome of twin, triplet, and quadruplet in vitro fertilization pregnancies: the Norfolk experience. fertil steril 1992;**57**:825-34.

83) Chen sj, Vohr br, Ohw. Effects of birth order, gender, and intrauterine growth retardation on the outcome of very low birth weight in twins. j pediatr 1993;123:132-6.

84) Imaizumi y. Perinatal mortality in single and multiple births in Japan, 1990-1991. Paediatric perinatal epidemiol 1994;**8**:205-15.

85). Marshall g, Tapia jl, d'apremont i, et al. A new score for predicting neonatal very low birth weight mortality risk in the neocosur South american network. j perinatol. 2005;25(9): 577-82.

86). Stevens sm, Richardson dk, Gray je, et al. a comparison of neonatal-mortality risk: ananalysis of clinical judgments. pediatrics1994; 93(6 pt 1): 945-50.

87). Petridou e, Richardson dk, Dessypris n, et al. outcome prediction in greek neonatal intensive care units using a score for neonatal acute physiology (SNAP). pediatrics 1998;101(6): 1037- 44

88) Grandi c, Tapia jl, Marshall g. Grupo colaborativo neocosur. an assessment of the severity, proportionality and risk of mortality of very low birth weight infants with fetal growth restriction. a multicenter south american analysis. j pediatr (rio j) 2005;81(3): 198-204.

89) Zardo ms, Procianoy rs. Comparison between different mortality risk scores in a neonatal intensive care unit.Rev saude publica2003; 37(5): 591-6.

90). Atasay b, Gunlemez a, Unal s, Arsan s. outcomes of very low birth weight infants in a newborn tertiary center in turkey, 1997-2000.
turk j pediatr. 2003; 45(4): 283-9.

91). Gera t, Ramji s. Early predictors of mortality in very low birth weight neonates. Indian pediatr. 2001; 38(6): 596- 602.

92). Maiya pp, Nagashree s, Shaik ms: Role of score for neonatal acute physiology (SNAP) in predicting neonatal mortality. Indian j pediatr.
2001; 68(9): 829- 34.

93). Arafa ma, Alshehri ma: predictors of neonatal mortality in the intensive care unit in Abha, Saudi arabia. Saudi med j. 2003; 24(12): 1374-6.

94). Kambarami r, Chidede o, Chirisa m. neonatal intensive care in a developing country: outcome and factors associated with mortality. cent afr j med. 2000; 46(8): 205-7.

95). Vasudevan a, Malhotra a, Lodha r, Kabra sk. profile of neonates admitted in pediatric ICU and validation of score for neonatal acute physiology (SNAP). Indian pediatr. 2006; 43(4):344-8.

96). Yau ki, Hsu ch. Factors affecting the mortality of sick newborns admitted to intensive care units. acta paediatr Taiwan 1999; 40(2): 75-82.

97). Suresh gk, Horbar jd, Kenny m, Carpenter jh. major birth defects in very low birth weight infants in the Vermont Oxford network. j pediatr. 2001;139:366–373

98). Hosmer d, Lemeshow s. Applied logistic regression. New york, ny: John wiley; 1989

99). Delong er, Delong dm, Clarke-Pearson dl. comparing the areas under two or more correlated receiver operating characteristic curves: a nonparametric approach. biometrics. 1988;44:837–845

100). Gagliardi l, Cavazza a, Brunelli a, et al. Assessing mortality risk in very low birthweight infants: a comparison of CRIB, CRIB-II, and SNAPPE-II. Arch dis child fetal neonatal ed. 2004;89:f419—f422

101) Boluyt n; Van kempen a, Offringa m. Neurodevelopment after neonatal hypoglycemia: a systematic review and design of an optimal future study. pediatrics.2006: 117:2231-43.

102) Koivisto m,Blanco-sequeiros m,Krause u.Neonatal symptomatic and asymptomatic hypoglycemia : a follow up study of 151 infants. dev med child neurol. 1972; 14(5): 603-614.

103) Lucas a, Morley r, Cole tj adverse neurodevelopmenta outcome of moderate neonatal hypoglycemia. Br med j: 1988;297(6659): 1304-1309.

104) Stenninger e, Glink r, Eriksson b, Sahlen c. long term neurological dysfunction and neonatal hypoglycemia after diabetic pregnancy. arch dis child fetal neonatal ed. 1998; 79 (3) : 174-179.

105) Udani v, Munot p, Ursekar m, Gupta s. neonatal hypoglycemic brain injury – a common cause of infantile-onset remote symptomatic epilepsy. Indian pediatr 2009; 46: 127-131.

106) Mathur nb.Aarora d. role of TOPS(a simplified assessment of neonatal acute physiology) in predicting mortality in transported neonates. acta paediatrica 2007:96;172-175

107) Sehgala.Royms. Dubey nk, Jyothi mc.factors contributing to outcome in newborn delivered out of hospital and referred to a teaching institution. Indian paediatrics 2001:38:1289-1294

108) Evidence based clinical practice guidelines, National neonatology forum, India october 2010.page 310

109) Kliegman,Behrman,Jenson,Stanton:Nelson textbook of pediatrics 18th edition:page 679-680

PROFORMA

NAME: **AGE:** **SEX:**

IP NO: **DOA:** **DOD:**

MATERNAL DETAILS

AGE **MATERNAL ILLNESS/SEPSIS**

GPLA **LMP** **EDD** **ROM**

PLACE OF DELIVERY **TIME OF DELIVERY**

MODE **BIRTH WT**

STOPS SCORING

	STATUS	**SCORE**
SENSORIUM		
TEMPERATURE		
OXYGENATION		
PERFUSION		
SUGAR		
TOTAL SCORE		

DIAGNOSIS WITH MATURITY

NEC **VENTILATOR** **CPAP** **SEIZURES**

CRP **SURFACTANT** **CLINICAL SEPSIS**

OUTCOME

	NAME	AGE IN DAYS	SEX	IP NO	PLACE	MATURITY	BIRTH WT IN KG	SENSORIUM	TEMPERATURE	OXYGENATION	PERFUSION	SUGAR	TOTAL	OUTCOME
1	B/O MOHANAPRIYA	26	M	1088	IN	T	2	1	0	0	0	0	1	DIS
2	B/O SHENBAGAM	4	F	1597	OUT	T	2.5	1	0	0	0	0	1	DIS
3	B/O INDHUMATHI	1	M	6578	IN	P	1.75	1	0	1	0	0	2	DIS
4	B/O NALINI	1	M	6758	IN	P	1.45	0	0	1	0	0	1	DIS
5	B/O JEEVA	4	M	7395	IN	P	2	0	0	0	0	0	0	DIS
6	B/O BAGYALAKSHMI	3	M	7422	IN	T	2.9	0	0	0	0	0	0	DIS
7	B/O RAJESWARI	1	M	7464	OUT	T	3.4	0	0	0	0	0	0	DIS
8	B/O LAKSHMI	3	F	7475	IN	T	2.2	0	0	0	0	0	0	DIS
9	B/O SUDHA	3	M	7495	OUT	T	2.5	0	0	0	0	0	0	DIS
10	B/O GOWTHAMI	6	M	7532	IN	T	2.3	0	0	0	0	0	0	DIS
11	B/O DHANAM	1	M	7533	OUT	T	2.25	0	0	1	0	2	3	DIS
12	B/O VANITHA	8	F	7543	IN	T	3	0	0	0	0	0	0	DIS
13	B/O VIJAYA	1	F	7546	IN	P	1.75	1	0	2	0	0	3	DEATH
14	B/O NANDHINI	1	F	7557	OUT	T	2.8	0	0	0	0	0	0	DIS
15	B/O GAJALAKSHMI	16	M	7584	IN	T	3.1	0	0	0	0	0	0	DIS
16	B/O REKHA	2	F	7623	IN	T	2.8	0	0	1	0	0	1	DIS
17	B/O NEELAVATHY	1	M	7631	IN	T	2.4	0	0	0	0	0	0	DIS
18	B/O NIRMALA	1	M	7661	OUT	T	2.5	1	2	2	1	1	7	DEATH
19	B/O UMA MAHESWARI	5	F	7672	IN	T	2.25	0	0	0	0	0	0	DIS
20	B/O ARABI	1	M	7687	IN	T	2.4	0	0	2	0	0	2	DIS
21	B/O NIRMALA	1	F	7699	IN	T	2.2	1	0	2	0	0	3	DIS/REF
22	B/O SUDHALAKSHMI	1	M	7724	IN	T	3.25	0	0	0	0	0	0	DIS
23	B/O KALAIVANI 'A'	1	F	7741	IN	P	2.3	0	1	0	0	0	1	DIS
24	B/O KALAIVANI 'B'	1	M	7742	IN	P	1.5	0	0	0	0	1	1	DIS
25	B/O AMALA	11	M	7769	OUT	T	2.6	0	0	0	0	0	0	DIS
26	B/O ELLAMMAL	6	M	7787	IN	T	2.7	0	0	0	0	0	0	DIS
27	B/O PRAMEELA	1	M	7873	IN	T	3.05	0	0	0	0	0	0	DIS
28	B/O JAYALAKSHMI	3	M	7879	OUT	T	2.5	0	0	0	0	0	0	DIS
29	B/O RAGEL	1	M	7901	OUT	T	2.6	1	0	2	1	0	4	DEATH
30	B/O LAKSHMI	5	M	7902	OUT	T	2.8	1	2	2	0	0	5	DEATH
31	B/O SUGANYA	1	F	7953	IN	P	2.1	0	0	0	0	0	0	DIS

32	JEGADEESH	13	M	7956	IN	T	2.5	0	0	0	0	0	0	DIS
33	B/O NANDHINI	20	F	7993	IN	T	2.9	0	1	1	1	0	3	DIS
34	B/O MAHESWARI	1	F	7994	OUT	P	1.55	0	2	0	0	0	2	DIS
35	B/O BAGYALAKSHMI	26	M	8082	IN	P	1.6	1	0	0	1	2	4	DIS
36	B/O MAHALAKSHMI	1	M	8084	OUT	T	2.74	2	1	1	1	0	5	DEATH
37	B/O SUDHA	1	F	8085	IN	T	3.25	0	0	0	0	0	0	DIS
38	B/O VASIMALA	1	M	8089	IN	T	2.7	0	0	0	0	0	0	DIS
39	B/O KARPAGAM	1	F	8161	IN	T	3.1	0	0	0	0	0	0	DIS
40	B/O LAKSHMI PRIYA	1	M	8188	OUT	T	3.1	0	0	0	0	0	0	DIS
41	B/O ANANDHI	7	F	8277	OUT	T	2.95	0	0	0	0	0	0	DIS
42	B/O KANNIGA	1	M	8279	OUT	P	2.25	0	0	0	0	0	0	DIS
43	B/O MUNIYAMMAL	1	F	8283	IN	T	2.95	0	0	0	0	0	0	ABS
44	B/O DEVI	1	M	8354	IN	P	1.8	0	1	0	0	1	2	DIS
45	B/O KALAIARASI	1	M	8374	OUT	T	2.3	0	0	0	0	0	0	DIS
46	B/O RATHI	1	M	8410	IN	T	3.3	0	0	1	0	0	1	DIS
47	B/O VASANTHI	1	F	8417	IN	P	1.2	0	0	0	0	0	0	DIS
48	B/O PORKODI	1	F	8458	IN	P	2.15	1	0	1	0	0	2	DEATH
49	B/O KANIMOZHI	5	M	8467	IN	T	2.7	0	0	0	0	0	0	ABS
50	B/O RAJESWARI	1	M	8472	IN	T	3.2	0	0	1	0	0	1	DIS
51	B/O VANITHA	1	M	8511	IN	T	3	0	0	0	0	0	0	ABS
52	B/O UMA	4	M	8520	OUT	T	3	0	0	0	0	0	0	DIS
53	B/O VIJAYALAKSHMI	1	F	8559	IN	T	2.3	0	1	0	0	0	1	DIS/REF
54	B/O SUDHA	4	F	8603	IN	T	2.7	0	0	0	0	0	0	DIS
55	B/O GOMATHY	6	F	8604	IN	T	3.2	0	0	0	0	0	0	DIS
56	B/O DEVI	5	M	8605	IN	T	2.17	0	0	0	0	0	0	DIS
57	B/O THILAGAVATHI	1	M	8626	IN	T	3.2	0	0	1	0	0	1	DIS
58	B/O DEVIKA	1	M	8715	OUT	T	2.2	0	0	1	0	0	1	DIS
59	B/O ANUSUYA	1	M	8728	IN	T	2.7	0	0	1	0	0	1	DIS
60	B/O VALLI	1	F	8841	IN	T	2.9	0	0	1	0	0	1	DIS
61	B/O SANGEETHA	1	M	8872	IN	T	3.25	0	0	2	0	0	2	DIS
62	B/O KALAISELVI	1	F	8874	IN	P	1.55	0	0	0	0	0	0	DIS
63	B/O ANJALI	1	M	8892	IN	T	1.8	1	2	2	0	0	5	DEATH

64	B/O VASUGI	3	F	8895	OUT	T	2.75	0	0	0	0	0	0	DIS
65	B/O SARITHA	21	M	8953	IN	T	2.8	0	0	0	0	0	0	DIS
66	B/O DEVI	1	F	9158	OUT	T	3.25	0	0	0	0	0	0	DIS
67	B/O INDIRA	1	M	9159	OUT	T	3.25	0	0	0	0	0	0	DIS
68	B/O KALAIVANI	1	F	9189	IN	T	3	0	0	0	0	0	0	DIS/REF
69	B/O GEETHA	1	F	9198	IN	P	2.4	0	0	1	0	0	1	DIS
70	B/O GOMATHI	4	M	9210	IN	T	2.6	0	0	0	0	0	0	DIS
71	B/O SUDHA	9	F	9212	IN	T	2.5	0	0	0	0	0	0	DIS
72	B/O GNANAMMAL	2	F	9213	IN	T	2.75	0	0	0	0	0	0	DIS
73	B/O SUSEELA	1	M	9216	IN	T	3.75	0	0	0	0	0	0	DIS
74	B/O PREMA	1	F	9217	OUT	T	2.3	0	0	1	0	0	1	DIS
75	B/O PRIYA	1	M	9218	IN	T	3.1	1	1	2	0	0	4	DIS
76	B/O DHATCHAYANI	1	M	9320	IN	T	2.6	0	0	0	0	0	0	DIS
77	B/O VENNILA	5	M	9329	IN	T	2.7	0	0	0	0	0	0	DIS
78	B/O ALAMELU	1	M	9332	IN	T	3.2	0	0	0	0	0	0	DIS
79	B/O LAVANYA	5	M	9381	IN	T	2.75	0	0	0	0	0	0	DIS
80	B/O SUDHA	1	M	9482	IN	P	2.2	1	0	1	0	0	2	DIS
81	B/O SATHYA	5	M	9489	IN	T	2.45	0	0	0	0	0	0	DIS
82	B/O SANGEETHA	1	F	9492	IN	T	3	0	0	0	0	0	0	DIS
83	B/O SHOBANA	1	F	9501	OUT	T	2.35	1	0	1	0	1	3	DIS
84	B/O ELAVARASI	6	M	9519	OUT	T	3.1	0	0	0	1	0	1	DIS
85	B/O GEETHA	1	F	9526	OUT	P	2.25	0	0	0	0	0	0	DIS
86	B/O BHARATHY 'A'	1	F	9535	IN	P	1.65	0	0	0	0	0	0	DIS
87	B/O AMULU	1	M	9557	OUT	T	2.3	1	0	2	1	0	4	DEATH
88	B/O KASTHURI	1	M	9607	IN	T	3	0	0	2	0	0	2	DIS
89	B/O SINDHUMATHY	5	M	9626	IN	T	2	0	0	0	0	2	2	DIS
90	B/O MUTHULAKSHMI	2	M	9637	OUT	P	2.2	1	0	2	1	0	4	DEATH
91	B/O KAVIKUIL	1	M	9645	IN	T	2.4	0	0	0	0	0	0	DIS
92	B/O SELVI	1	F	9652	IN	T	2.4	0	0	2	0	0	2	DIS
93	B/O DEVI	1	F	9656	OUT	T	2.2	0	0	0	0	0	0	DIS
94	B/O REKHA	1	M	9809	IN	T	2.4	0	0	0	0	0	0	DIS
95	B/O SOBHANA	1	M	9813	IN	P	2.3	0	0	2	0	0	2	DEATH
96	B/O LAKSHMI	1	F	9817	OUT	P	2.5	0	0	0	0	0	0	DIS

97	B/O MEENA	5	M	9841	IN	P	1.9	0	0	0	0	0	0	DIS
98	B/O BARANI	1	M	9868	IN	P	1.75	0	0	1	0	0	1	DIS
99	B/O TAMILSELVI	1	M	9884	OUT	T	3.25	1	1	2	0	0	4	DEATH
100	B/O SHABEENA	9	F	9889	OUT	T	2.8	0	0	0	0	0	0	DIS
101	B/O KANNAGI	23	M	9897	IN	P	1.8	1	2	2	1	0	6	DEATH
102	B/O RUTH	1	F	9916	OUT	T	3	0	0	1	0	0	1	DIS
103	B/O LAKSHMI	1	F	9923	IN	T	1.75	0	0	1	0	0	1	DIS
104	B/O SHEELA	1	M	9982	IN	T	2.65	0	0	2	0	0	2	DIS
105	B/O KOMALA	1	F	10041	IN	T	3.75	0	0	0	0	0	0	DIS
106	B/O ANNALAKSHMI	5	F	10053	OUT	T	2.8	0	0	0	0	0	0	DIS
107	B/O RAMANI	1	F	10097	IN	T	3.05	1	0	1	0	0	2	DIS
108	B/O SATHYA	1	F	10114	IN	T	2.7	0	0	1	0	0	1	DIS
109	B/O ELLAMMAL	1	M	10140	IN	T	3.1	0	0	1	0	0	1	DIS
110	B/O UMA	1	F	10151	IN	T	2.25	1	0	0	0	1	2	ABS
111	B/O AMUDHA	2	F	10159	OUT	T	2.6	0	0	0	0	0	0	DIS
112	B/O PARIMALA	4	F	10160	IN	T	2.65	0	0	0	0	0	0	DIS
113	B/O ANJALAI	2	F	10161	OUT	T	2.6	0	0	0	0	0	0	DIS
114	B/O SHEELA	3	F	10162	IN	T	3.3	0	0	0	0	0	0	DIS
115	B/O SUDHA	4	M	10166	IN	T	2.8	0	0	0	0	0	0	DIS
116	B/O SRIPRIYA	1	F	10173	OUT	T	2.6	0	0	0	0	0	0	DIS
117	B/O KUMARI	1	M	10183	OUT	T	2	0	0	0	0	0	0	DIS
118	B/O VIJAYALAKSHMI	1	M	10187	OUT	P	2	0	0	0	0	0	0	DIS
119	B/O KALAIVANI	1	M	10196	IN	T	3.2	1	0	0	0	0	1	DIS
120	B/O MARY VICTORIA	5	F	10199	OUT	T	2.75	0	0	0	0	0	0	DIS
121	B/O GAYATHRI	5	M	10209	OUT	T	2.8	0	0	0	0	0	0	DIS
122	B/O CHITRA	1	M	10210	IN	T	2.7	0	0	2	0	0	2	DIS

123	B/O KAVITHA	1	F	10217	IN	T	3.2	0	2	1	0	0	3	DIS
124	B/O AMULU	1	M	10293	IN	P	1.75	0	0	1	0	0	1	DIS
125	B/O SANDIYA	3	F	10295	IN	T	2.6	1	0	2	0	1	4	DIS
126	B/O LAKSHMI	1	M	10312	IN	P	1.5	0	0	0	0	0	0	AMA
127	B/O PADMAVATHY	4	M	10313	IN	T	3	0	0	0	0	0	0	DIS
128	B/O PUSHPA RANI	1	M	10325	IN	T	3.1	0	0	0	0	0	0	DIS
129	B/O MANORAJ	19	M	10360	OUT	T	2.7	0	0	1	0	0	1	DIS
130	B/O KALAIARASI 'A'	1	F	10367	OUT	P	1.5	0	0	0	0	0	0	DIS
131	B/O AMBIGA (A)	1	M	10374	IN	T	2.25	0	0	0	0	0	0	DIS
132	B/O AMBIGA (B)	1	M	10375	IN	T	2.2	0	1	0	0	0	1	DIS
133	B/O MAHESWARI	11	M	10440	OUT	T	2.5	1	0	2	2	2	7	DEATH
134	B/O RAJESWARI	1	F	10442	IN	P	1.5	2	0	2	1	0	5	DEATH
135	B/O KOMALA	3	M	10610	OUT	T	3	0	0	0	0	0	0	DIS
136	B/O SELVI	2	F	10623	OUT	P	1.45	0	0	0	0	0	0	DIS
137	B/O JOTHI	8	M	10649	IN	T	2.5	0	0	1	0	0	1	DIS
138	B/O SELVI	1	M	10667	IN	P	1.75	0	0	0	0	0	0	DIS
139	B/O BHAVANI	1	M	10763	IN	T	3.7	0	0	2	0	1	3	DIS
140	B/O MALAR	1	F	10799	IN	T	2.8	0	0	0	0	0	0	DIS
141	B/O REKHA	2	F	10820	IN	T	3.25	0	0	0	0	0	0	DIS
142	B/O ANUSHADEVI	1	M	10835	IN	P	1.7	0	1	0	0	0	1	DIS
143	B/O BHAVANI	15	M	10864	OUT	T	3.5	0	0	0	0	0	0	DIS
144	B/O MAHESWARI	1	F	10875	IN	P	2.25	1	2	2	1	0	6	DEATH
145	B/O KAMATCHI	1	M	10899	IN	P	2.09	1	0	2	2	0	5	DEATH
146	B/O POONGODI	1	M	10903	IN	T	2	1	1	0	0	0	2	DIS
147	B/O SUMITHRA	1	M	10929	IN	P	1.3	0	1	2	0	0	3	DEATH
148	B/O KAMATCHI	2	M	11026	OUT	T	2.5	0	0	0	0	0	0	DIS
149	B/O SUDHA	1	M	11050	OUT	P	3.3	0	0	1	0	0	1	DIS
150	B/O JOTHI	5	M	11092	IN	T	3.2	0	0	0	0	0	0	DIS
151	B/O GANASUNDARI	3	F	11094	IN	T	2.8	0	0	0	0	0	0	DIS
152	B/O PUSHPAVATHI	1	M	11108	IN	T	3	0	0	1	0	0	1	DIS
153	B/O VASUGI	1	M	11117	IN	T	2.95	0	0	0	0	0	0	DIS
154	B/O ANANDHI	1	F	11122	OUT	T	2.75	0	1	0	0	0	1	DIS

155	B/O VENDA	1	M	11124	IN	T	2.2	0	0	0	0	0	0	DIS
156	B/O BINDHIYA	27	F	11126	OUT	T	2.5	0	1	0	0	0	1	ABS
157	B/O KAMATCHI	1	F	11208	OUT	T	2.5	0	2	1	0	0	3	DIS
158	B/O VIJAYALAKSHMI	2	F	11212	IN	P	1.8	0	1	0	0	0	1	DIS
159	B/O MARIAMMAL	3	M	11216	OUT	T	2.25	0	0	2	0	0	2	DEATH
160	B/O JANSI RANI	1	F	11217	IN	T	2.7	0	0	1	0	0	1	DIS
161	B/O SUMATHI	1	M	11218	IN	P	1.7	0	0	0	0	0	0	DIS
162	B/O VIJAYALAKSHMI	8	F	11219	IN	T	2.7	0	0	0	0	0	0	DIS
163	B/O VAHITHA 'A'	1	M	11232	IN	P	2.7	0	0	0	0	0	0	DIS
164	B/O VAHITHA 'B'	1	M	11239	IN	P	1.5	0	0	0	0	0	0	DIS
165	B/O VANITHA	1	F	11267	IN	T	2.25	1	0	2	0	1	4	DIS
166	B/O MUMTHAJ	1	M	11269	IN	T	2.5	0	1	0	0	0	1	DIS
167	B/O SARANYA	7	F	11279	IN	T	2.4	1	0	0	0	0	1	DIS
168	B/O UMA MAHESWARI	5	F	11284	IN	T	2.7	0	0	0	0	0	0	DIS
169	B/O NIRMALA	2	F	11296	OUT	T	2.5	1	0	0	0	0	1	DIS
170	B/O DEVI	25	F	11307	IN	P	1.7	0	0	0	0	0	0	DIS
171	B/O KALAIARASI	4	M	11369	IN	T	3.25	0	0	0	0	0	0	DIS
172	B/O SATHYA	1	M	11385	OUT	T	3.5	0	0	2	0	0	2	DIS
173	B/O KANCHANA	8	F	11430	IN	T	3.25	1	0	0	0	0	1	DIS
174	B/O TAMILSELVI	4	M	11476	OUT	T	2.7	0	0	0	0	0	0	DIS
175	B/O KALA	1	M	11493	IN	T	2.14	1	0	1	0	0	2	DIS
176	B/O JAYA	4	M	11501	IN	T	1.75	0	0	0	0	0	0	DIS
177	B/O MALLIGA	1	F	11509	IN	P	1.75	0	1	1	1	0	3	AMA
178	B/O KOVINDHAMMAL	1	F	11570	OUT	T	3	1	0	0	1	0	2	DIS
179	B/O VENDA	1	M	11591	OUT	P	1.35	0	0	0	0	1	1	DIS
180	B/O DHARSHINI	22	F	11631	OUT	T	2.25	0	0	0	0	0	0	DIS
181	B/O SHAKILA	18	M	11638	OUT	P	1.75	0	1	2	1	0	4	DIS
182	B/O SARASWATHY	2	M	11656	OUT	T	1.75	1	0	1	0	2	4	DIS
183	B/O USHA	1	M	11659	IN	T	2.75	0	0	2	0	0	2	DIS
184	B/O SUMATHY	1	F	11663	OUT	P	1.5	0	1	0	0	0	1	DIS
185	B/O KRISHNAVENI	4	F	11683	IN	T	2.7	0	0	0	0	0	0	DIS
186	B/O REKHA	2	M	11710	OUT	T	3.3	0	2	2	0	0	4	DIS
187	B/O NATHIYA	1	F	11724	IN	P	1.75	1	1	2	1	0	5	DIS

188	B/O THILAGA	9	F	11775	IN	P	1.5	0	0	0	0	0	0	DIS
189	B/O ABIRAMI	1	M	11779	OUT	T	2.4	0	0	1	0	0	1	DIS
190	B/O SHANTHA	1	M	11785	OUT	T	3.3	2	0	2	1	0	5	DEATH
191	B/O MYTHILI	3	F	11799	IN	T	2.4	0	0	0	0	0	0	DIS
192	B/O MUTHUKUMARI	1	F	11885	IN	T	2.5	0	0	0	0	0	0	DIS
193	B/O LAKSHMI	1	F	11922	OUT	P	1.6	1	0	0	0	1	2	DIS
194	B/O PONNI	1	M	11952	IN	T	3.7	0	0	0	0	0	0	DIS
195	B/O DHANALAKSHMI	6	M	11955	IN	T	2.7	0	0	0	0	0	0	ABS
196	B/O ELLAMMAL	3	M	11970	OUT	T	3	0	0	0	0	0	0	DIS
197	B/O ALAMELU	1	F	11979	OUT	T	3.1	2	2	2	1	0	7	DIS
198	B/O REKHA	5	M	11983	OUT	T	2.25	1	1	2	0	1	5	DIS
199	B/O BHAVANI	1	F	12019	OUT	T	2.2	1	1	1	0	0	3	DEATH
200	B/O SWEETYFLORENCE	3	M	12036	IN	T	2.1	0	0	0	0	0	0	DIS
201	B/O PUSHPA	1	M	12052	IN	T	3.55	0	0	1	0	1	2	DIS
202	B/O KUMARI	1	M	12076	IN	T	2.65	1	0	0	0	0	1	DIS/REF
203	B/O MEENAKSHI	9	F	12078	IN	T	2.5	0	0	0	0	0	0	DIS
204	B/O ANUSIADEVI	9	M	12080	IN	P	1.6	0	0	0	0	0	0	DIS/REF
205	B/O GOMALA	1	F	12104	OUT	P	2.7	2	2	2	2	0	8	DEATH
206	B/O HEMAVATHY	1	F	12105	OUT	P	2.68	0	0	0	0	0	0	ABS
207	B/O DEEPIGA	4	M	12163	IN	T	2.8	0	0	0	0	0	0	DIS
208	B/O VASUMATHY	1	F	12232	IN	T	3	0	0	0	0	0	0	DIS
209	B/O SHOBANA	1	M	12245	IN	T	3.1	1	0	2	0	0	3	DIS
210	B/O KAVITHA	1	M	12247	IN	T	3	0	0	0	0	0	0	DIS
211	B/O LOKESHWARI	1	F	12248	IN	P	1.8	0	0	0	0	1	1	DIS
212	B/O MEGALA	1	M	12279	OUT	T	2.7	1	0	1	0	1	3	DIS
213	B/O GANDHIMATHI	2	F	12283	OUT	T	3.2	0	0	0	0	0	0	DIS
214	B/O ARULMOZHI	3	F	12315	IN	P	1.75	0	0	0	0	0	0	DIS
215	B/O GOMATHY 'A'	1	F	12316	OUT	P	1.75	0	0	0	0	0	0	DIS
216	B/O GOMATHI 'B'	1	M	12317	OUT	P	1.625	0	0	0	0	0	0	DIS
217	B/O BHAVANI	3	F	12338	OUT	T	3	1	0	0	0	0	1	DIS
218	B/O ALAMELU	1	F	12340	IN	T	2.5	0	0	0	0	0	0	DIS
219	B/O JAYASRI	1	F	12360	IN	T	2.2	0	0	0	1	1	2	DIS
220	B/O RENUGA	1	F	12363	IN	T	3.1	0	0	0	0	0	0	DIS

221	B/O LAKSHMI	1	F	12397	IN	P	2.5	0	0	1	0	0	1	DIS
222	B/O MUNIYAMMAL	1	F	12429	IN	P	1.8	0	0	0	0	0	0	DIS
223	B/O DEEPIGA	23	F	12431	IN	T	3.5	0	0	0	0	0	0	DIS
224	B/O MARAGADHAM	1	M	12449	IN	T	2.7	0	0	2	0	0	2	DIS
225	B/O SUMATHY	2	M	12450	OUT	T	3	1	0	0	0	0	1	DIS
226	B/O BHAVANI	1	F	12456	IN	T	2.6	1	0	1	0	0	2	DIS/REF
227	B/O LAKSHMI	1	M	12485	OUT	T	2.6	0	0	1	0	0	1	DIS
228	B/O BHAVANI	1	M	12522	OUT	T	2.9	0	1	0	0	0	1	DIS
229	B/O CHITRA	1	F	12551	IN	P	2.4	0	0	0	0	0	0	DIS
230	B/O ANURADHA	1	M	12659	IN	P	1.9	0	0	1	0	0	1	DIS
231	B/O PUNITHA	1	M	12668	IN	T	2.3	0	0	2	0	0	2	DIS
232	B/O KANIMOZHI	1	F	12673	IN	T	3	0	0	1	0	0	1	DIS
233	B/O KALA	1	F	12678	IN	T	3.45	0	0	2	0	0	2	DIS
234	B/O GEETHA	1	F	12680	OUT	T	2.4	0	0	0	0	0	0	DIS
235	B/O VANITHA	23	F	12717	OUT	T	1.9	1	1	2	0	0	4	DEATH
236	B/O KALIYAMMAL	1	F	12736	IN	T	3.8	0	0	0	0	0	0	DIS
237	B/O SARALA	3	M	12740	IN	P	2.25	2	2	2	2	2	10	DEATH
238	B/O VANITHA	7	F	12748	OUT	T	3.25	0	0	0	0	0	0	DIS
239	B/O SALSA	1	M	12768	IN	P	2	0	0	0	0	0	0	DIS
240	B/O PRIYA	1	M	12788	IN	T	2.7	0	0	2	0	0	2	DIS
241	BHARATH KUMAR	25	M	12811	OUT	T	2.6	0	0	0	0	0	0	DIS
242	B/O VIDHIYA	1	M	12824	IN	P	1.8	0	0	1	0	0	1	DIS
243	B/O REVATHY	6	F	12830	IN	T	2.75	1	0	0	0	0	1	ABS
244	B/O RADHIGA	1	M	12851	IN	P	2	0	0	0	0	0	0	DIS
245	B/O RENUGA	3	M	12852	IN	T	2.6	0	0	0	0	0	0	DIS
246	B/O SAGUNTHALA	1	M	12893	OUT	T	2.8	0	0	1	0	0	1	DIS
247	B/O USHA	1	M	12895	OUT	T	2.7	0	0	1	0	0	1	DIS
248	B/O GOMATHI	5	M	12897	IN	T	3	0	0	0	0	0	0	DIS
249	B/O GEETHA	1	M	12898	OUT	P	2.2	0	0	1	0	0	1	DIS
250	B/O POONGODI	4	M	12903	IN	T	2.75	0	1	0	0	0	1	DIS
251	B/O DEEPA	1	F	12908	IN	T	2.75	0	0	0	0	0	0	DIS
252	B/O GEETHA	2	M	12912	OUT	T	2.8	0	0	0	0	0	0	DIS
253	B/O KALAIVANI	11	M	12926	OUT	T	3	0	0	0	0	0	0	DIS

254	B/O DATCHAYANI	4	M	12928	OUT	T	3	0	1	0	0	0	1	DIS
255	B/O MAHESWARI	8	F	12938	IN	T	2.6	0	0	0	0	0	0	ABS
256	B/O VANISRI	1	M	12962	OUT	P	2.2	0	1	0	0	0	1	DIS
257	B/O CHANDRA	5	M	12982	OUT	P	1.5	0	0	0	0	0	0	DIS / REF
258	B/O CHITRA	3	F	13012	OUT	T	2.25	0	0	0	0	0	0	DIS
259	B/O JAYASEELI	4	M	13074	IN	T	2.9	1	0	0	0	1	2	DIS
260	B/O TAMILSELVI	5	M	13113	IN	T	3	1	1	0	0	0	2	DIS
261	B/O ADHILAKSHMI	12	M	13135	OUT	T	3.3	0	0	0	0	0	0	DIS
262	B/O RAJESWARI	7	M	13141	OUT	T	3.3	1	0	0	0	0	1	DIS
263	B/O GOWRI	16	F	13142	OUT	T	1.5	0	0	1	0	1	2	DIS
264	B/O CHITRA	1	F	13143	OUT	T	3.15	0	0	1	0	0	1	DIS
265	B/O PRIYA	1	M	13157	IN	T	3	1	0	0	0	0	1	DIS
266	B/O MARIAMMAL	1	F	13167	IN	T	3	0	0	0	0	1	1	DIS
267	B/O SELVI	1	M	13178	OUT	T	2.8	0	0	0	0	0	0	DIS
268	B/O KASIAMMAL	13	M	13218	IN	P	1.9	1	0	0	0	0	1	DEATH
269	B/O REVATHY	3	M	13273	OUT	P	2.4	0	1	0	0	0	1	DIS
270	B/O GAYATHRI	4	M	13277	OUT	T	3	1	0	0	0	0	1	DIS
271	B/O TAMILSELVI 'A'	1	M	13287	IN	T	3.15	0	0	1	0	0	1	DIS
272	B/O TAMILSELVI 'B'	1	M	13288	IN	T	2.7	0	0	1	0	0	1	DIS
273	B/O BHANUMATHI	19	M	13347	IN	T	3	0	0	0	0	0	0	DIS
274	B/O LAKSHMI	5	F	13368	IN	T	3.5	0	0	0	0	0	0	DIS
275	B/O MAHALAKSHMI	4	F	13372	IN	T	3	0	0	0	0	0	0	DIS
276	B/O MANJULA	4	M	13373	IN	T	3.1	0	0	0	0	0	0	DIS
277	B/O VIJAYALAKSHMI 'A'	1	M	13378	IN	P	1.7	0	0	0	0	0	0	DIS
278	B/O VIJAYALAKSHMI 'B'	1	M	13379	IN	P	1.5	1	0	2	0	0	3	DIS
279	B/O PANJALAI	1	M	13385	IN	T	2.75	0	0	1	0	0	1	DIS
280	B/O BANUMATHI	7	F	13393	IN	T	2.7	0	0	0	0	0	0	DIS
281	B/O LALITHA	1	M	13399	OUT	P	1.2	1	2	2	1	2	8	DEATH
282	B/O JAYAPRIYA	1	F	13417	OUT	P	2.2	0	0	0	0	0	0	DIS
283	B/O AMALA	5	M	13420	IN	T	2.5	0	0	0	0	0	0	DIS
284	B/O SIVARANJINI 'A'	1	F	13436	IN	P	1.5	0	0	0	0	0	0	DIS
285	B/O SIVARANJINI 'B'	1	F	13437	IN	P	1.6	0	0	0	0	0	0	DIS
286	B/O POORNIMA	5	M	13465	IN	T	3.43	0	0	0	0	0	0	DIS

287	B/O KANNIYAMMAL	7	M	13467	IN	T	3.2	0	0	0	0	0	0	DIS
288	B/O DEEPA	7	M	13478	OUT	T	2.8	0	0	0	0	0	0	DIS
289	B/O BARATHY	1	M	13480	IN	P	1.75	1	0	2	0	0	3	DIS
290	B/O CHITRA	1	M	13490	OUT	T	3	0	0	1	0	0	1	DIS
291	B/O CHITRA	1	M	13500	IN	T	2.85	1	1	2	0	0	4	DIS
292	B/O GOMATHY	2	F	13519	OUT	T	2.25	1	0	0	0	0	1	DIS
293	B/O GOMATHI 'A'	2	M	13522	IN	T	2.7	1	2	0	0	0	3	DIS
294	B/O SUGANTHI	1	F	13546	OUT	T	3	0	0	0	0	0	0	DIS
295	B/O EZHILARASI	3	F	13620	OUT	P	1.25	0	1	0	0	0	1	DIS
296	B/O SUMATHI	1	F	13653	OUT	T	2.7	0	0	0	0	0	0	DIS
297	B/O MARIYAMMAL	1	M	13725	OUT	T	2.8	0	0	0	0	0	0	DIS
298	B/O MUTHAZHAGI	12	F	13743	OUT	P	1.9	1	0	0	0	0	1	DIS
299	B/O ADHILAKSHMI	2	F	13746	OUT	P	2.2	0	0	0	0	0	0	DIS
300	B/O JAYANTHI 'A'	1	F	13767	IN	P	1.8	0	1	0	0	0	1	DIS
301	B/O JAYANTHI 'B'	1	F	13768	IN	P	1.59	1	1	0	0	0	2	DEATH
302	B/O SUMATHY	5	F	13772	OUT	T	3.2	1	0	2	0	0	3	DIS
303	B/O MATCHAVALLI	1	M	13793	IN	T	2.7	0	0	0	0	0	0	DIS
304	B/O PANJALAI	5	M	13795	IN	T	2.75	0	0	0	0	0	0	DIS
305	B/O REVATHY	1	M	13819	IN	T	3.2	1	2	2	0	0	5	DIS
306	B/O CHITRA	1	F	13829	IN	T	2.5	0	0	0	0	0	0	DIS
307	B/O SARASU	1	M	13831	OUT	T	3.5	0	0	0	0	0	0	DIS
308	B/O NALINI	22	M	13847	OUT	T	2.7	0	0	0	0	0	0	DIS
309	B/O KALPANA	1	F	14021	IN	P	1.14	1	0	0	0	0	1	DIS
310	B/O KUZHANDAIAMMAL	6	F	14034	IN	T	3	0	0	0	0	0	0	DIS
311	B/O SATHYA	21	M	14082	OUT	T	3.6	0	0	0	0	0	0	DIS
312	B/O KOMALA	9	M	14098	OUT	T	2.5	0	0	0	0	0	0	DIS
313	B/O MAHALAKSHMI	5	M	14100	OUT	P	1.15	1	0	2	0	1	4	AMA
314	B/O LAKSHMI	2	F	14105	IN	T	2.75	0	0	0	0	0	0	ABS
315	B/O SIVAGAMI	9	M	14109	OUT	T	2.1	0	1	0	0	0	1	DIS
316	B/O KALIYAMMAL	13	F	14129	IN	T	3.75	0	0	0	0	0	0	DIS
317	B/O MAHESWARI	1	F	14167	IN	P	1.3	1	0	2	1	0	4	DEATH
318	B/O RENUAMMAL	2	F	14172	OUT	T	2.75	0	0	1	0	0	1	DIS
319	B/O SELVI	1	F	14217	IN	T	2.9	0	0	0	0	0	0	DIS

320	B/O RAMANI	1	M	14236	IN	T	2.25	0	1	0	0	0	1	ABS
321	B/O SASIKALA	12	M	14239	OUT	P	2	0	0	0	0	0	0	DIS
322	B/O SIVASHAKTHI	1	F	14253	IN	T	3	0	0	0	0	0	0	DIS
323	B/O ABITHA BEGAM	3	M	14287	OUT	T	2.75	0	0	0	0	0	0	DIS
324	B/O RUKMANI	1	F	14300	OUT	T	2.15	2	1	2	1	0	6	DEATH
325	B/O KUMUDHA	1	F	14309	IN	P	1.75	0	1	0	0	0	1	DIS
326	B/O SUGUNA	1	F	14311	OUT	P	1.75	0	0	2	0	1	3	DIS
327	B/O SIVARANJINI	1	M	14313	OUT	T	2.65	2	0	0	0	0	2	DIS
328	B/O SARANYA	2	M	14315	OUT	T	3.25	0	0	0	0	0	0	DIS
329	B/O SHAKTHI	3	F	14348	IN	T	2.75	0	0	0	0	0	0	DIS
330	B/O MANJULA	1	F	14371	OUT	P	1.5	0	0	0	0	0	0	DIS
331	B/O SATHYA	3	M	14397	OUT	T	2.9	0	0	0	0	0	0	DIS
332	B/O JEYANTHI	1	F	14411	IN	T	3.25	0	0	0	0	0	0	DIS
333	B/O KAMALI	1	M	14457	IN	P	1.75	1	0	2	0	0	3	DIS
334	B/O BARATHI	1	M	14524	OUT	P	1.75	0	0	0	0	0	0	DIS
335	B/O NITHYAMALA	1	M	14538	OUT	P	1.25	1	2	2	0	0	5	DEATH
336	B/O JOSEPHINE	1	M	14554	IN	T	3.1	0	0	0	0	0	0	DIS
337	B/O RAJATHI	1	M	14576	IN	T	3.4	1	0	2	0	0	3	DIS
338	B/O LALITHA	2	F	14606	OUT	T	1.7	0	0	0	0	0	0	DIS
339	B/O RANJINI	4	M	14633	IN	T	2.5	0	0	0	0	0	0	ABS
340	B/O SHENBAGAM	1	F	14646	OUT	T	3	0	0	0	0	0	0	DIS
341	B/O SARALA	1	M	14649	IN	T	3	1	2	2	1	0	6	DIS
342	B/O GEETHA	10	M	14662	IN	T	2.1	0	0	0	0	0	0	DIS
343	B/O MYMOONBEEVI	5	M	14663	IN	T	2.5	0	0	0	0	0	0	DIS
344	B/O GEETHA	9	M	14664	IN	T	2.7	0	0	0	0	0	0	DIS
345	B/O SUGUNA	5	F	14665	IN	T	2.75	0	0	0	0	0	0	DIS
346	B/O SEETHA	5	M	14666	IN	T	2.5	0	0	0	0	0	0	DIS
347	B/O SIVAGAMI	1	M	14690	IN	T	2.7	0	0	0	0	0	0	DIS
348	B/O SUSEELA	9	M	14745	OUT	T	2.75	0	0	0	0	0	0	DIS
349	B/O SALSA	1	F	14761	OUT	P	1.75	0	0	0	0	0	0	DIS
350	B/O GOMATHY	1	M	14808	IN	T	2.5	0	0	0	0	0	0	DIS
351	B/O YASODHA	1	M	14839	OUT	P	2.4	0	0	0	0	0	0	DIS
352	B/O SOWMIYA	3	F	14852	OUT	T	3.5	0	0	0	0	0	0	DIS

353	B/O MAHALAKSHMI	3	M	14877	OUT	T	2.4	0	0	0	0	0	0	DIS
354	B/O LOGANAYAGI	1	M	14919	IN	P	2.4	0	0	1	0	0	1	DIS
355	B/O JEEVARANJANI	1	M	14920	IN	T	3.5	1	0	2	1	0	4	DIS
356	B/O UMA	1	M	15004	OUT	T	2.7	0	1	0	0	0	1	DIS
357	B/O KAMATCHI	1	M	15011	OUT	T	3.1	1	0	2	0	0	3	DIS/REF
358	B/O PABIITHA	1	M	15013	OUT	T	3	1	1	2	1	0	5	DIS
359	B/O ALAMELU	1	M	15016	IN	T	3	0	0	1	0	0	1	DIS
360	B/O SARANYA	1	M	15027	OUT	T	2.75	0	0	0	0	0	0	DIS
361	B/O PRIYA	1	F	15037	IN	P	1.75	1	0	2	0	0	3	DEATH
362	B/O VIJAYALAKSHMI	15	M	15086	IN	T	2.25	0	0	0	0	0	0	DIS
363	B/O VAITHESWARI	4	M	15117	IN	T	2.2	1	0	0	0	1	2	DIS
364	B/O AMUDHA	1	F	15247	IN	T	1.75	1	0	0	0	1	2	DIS
365	B/O UMA RANI	2	M	15248	IN	T	2.7	0	0	0	0	0	0	DIS
366	B/O GOVINDAMMA	1	M	15280	IN	T	2.5	0	0	1	0	0	1	DIS
367	B/O LAKSHMI	1	F	15294	OUT	T	2.3	0	0	1	0	0	1	ABS
368	B/O MONISHA	4	M	15301	IN	T	2.4	0	0	0	0	0	0	DIS
369	B/O SIVAGAMI	1	M	15318	IN	P	1.75	0	0	0	0	0	0	DIS
370	B/O RAMYA	1	F	15329	IN	T	2.8	0	1	1	0	0	2	DIS
371	B/O DHANALAKSHMI	1	F	15341	OUT	P	2.4	1	0	2	1	0	4	DIS
372	B/O RANI	8	M	15348	IN	P	1.85	0	0	0	0	0	0	DIS
373	B/O SUMATHI	1	M	15360	IN	P	2	1	0	2	0	0	3	DIS
374	B/O MUTHULAKSHMI	1	F	15379	IN	T	2.5	0	0	1	0	0	1	DIS
375	B/O KALPANA	1	F	15402	OUT	T	2.9	0	0	0	0	0	0	DIS
376	B/O REKHA	1	M	15432	OUT	T	2.5	1	2	2	0	0	5	DIS
377	B/O VANITHA	1	F	15443	OUT	T	2.5	0	0	0	0	0	0	ABS
378	B/O SELVI	14	F	15503	OUT	T	2.65	0	0	0	0	0	0	DIS
379	B/O RAJESWARI	6	M	15514	IN	T	2.5	0	0	0	0	0	0	DIS
380	B/O RAJESWARI	1	M	15534	IN	P	1.4	1	1	2	0	1	5	DEATH
381	B/O AVABEE	1	F	15547	OUT	T	2.8	0	1	2	1	0	4	DIS
382	B/O PREMA	1	M	15552	OUT	T	2.6	0	0	0	0	0	0	DIS
383	B/O DIVYA	1	M	15608	OUT	P	1.75	0	0	0	0	0	0	DIS
384	B/O PARIMALA	1	M	15648	OUT	T	1.8	0	0	0	0	0	0	DIS
385	B/O RADHA	1	M	15661	IN	T	2.7	0	1	0	0	0	1	DIS

386	B/O JAMUNA	1	M	15701	IN	T	2.7	0	0	1	0	0	1	DIS
387	B/O POONGODI	1	M	15705	IN	P	1.55	0	0	2	0	0	2	DIS
388	B/O KUPPU	2	M	15751	IN	T	2.5	0	0	0	0	0	0	DIS
389	B/O SHENBAGAVALLI	1	F	15791	IN	T	2.4	0	0	0	0	0	0	DIS
390	B/O RAMANI	1	M	15814	IN	T	3.7	0	0	1	0	0	1	DIS
391	B/O DHANALAKSHMI	4	F	15816	IN	T	2.9	0	0	1	0	0	1	DIS
392	B/O SEETHA	1	F	15817	IN	P	1.75	0	0	0	0	0	0	DIS
393	B/O CHITRA	4	M	15818	IN	T	2.5	2	2	2	2	2	10	DEATH
394	B/O SELVI	3	M	15819	OUT	T	2.8	0	0	0	0	0	0	DIS
395	B/O JOTHI	3	M	15836	IN	T	2.5	0	0	0	0	0	0	DIS
396	B/O VALARMATHY	1	F	15986	OUT	T	2.75	0	0	0	0	0	0	DIS
397	B/O KUTTIYAMMAL	1	M	16060	OUT	P	1.2	1	0	2	1	0	4	DEATH
398	B/O ANJALAI	12	M	16121	OUT	T	3.05	0	0	0	0	0	0	DIS
399	B/O MAHESWARI	1	M	16143	OUT	T	2.5	0	0	0	0	0	0	DIS
400	B/O SARIDHA	1	F	16187	OUT	T	2.75	0	0	0	0	0	0	ABS
401	B/O LAKSHMI	1	F	16212	IN	P	1.7	0	0	2	0	1	3	DIS
402	B/O NOORJAHAN	1	M	16217	IN	T	3.2	0	0	2	0	0	2	DIS
403	B/O BUVANESWARI	7	M	16251	OUT	P	1.3	1	0	0	0	1	2	DIS
404	B/O SATHYA BAMA	1	M	16290	IN	P	1.6	1	0	2	0	1	4	DEATH
405	B/O SARASWATHY	1	M	16302	OUT	P	1.5	0	0	0	0	0	0	DIS
406	B/O PARVATHY	1	M	16353	IN	T	2.5	0	2	2	0	0	4	DIS
407	B/O NEELA	1	F	16360	OUT	T	2.75	1	0	2	1	0	4	DEATH
408	B/O KALAIVANI	1	M	16368	IN	T	2.6	0	0	1	0	0	1	DIS
409	B/O SUMAIYA	1	F	16391	OUT	P	2.75	0	0	1	0	0	1	DIS
410	B/O MALINI	1	F	16423	IN	T	2.85	1	0	2	0	0	3	DEATH
411	B/O NEELAVENI	1	F	16427	IN	T	2.5	1	0	2	0	0	3	DEATH
412	B/O NIRMALA	7	F	16498	IN	T	2.5	0	0	0	0	0	0	DIS
413	B/O ANITHA	1	F	16504	IN	T	3	0	0	1	0	0	1	DIS
414	B/O VIJAYALAKSHMI	1	M	16566	IN	P	1.5	0	1	0	0	0	1	DIS
415	B/O ANITHA	1	F	16589	OUT	P	1.48	1	0	0	0	0	1	DIS
416	B/O RENUGA	4	M	16609	IN	T	2.5	0	0	0	0	0	0	DIS
417	B/O AMBIGA	1	F	16717	IN	T	2.8	0	0	0	0	0	0	DIS
418	B/O VIJAYALAKSHMI	1	F	16739	OUT	T	3	1	0	1	0	0	2	DIS

419	B/O JAYANTHI	4	F	16742	IN	P	2.4	0	0	0	0	0	0	DIS
420	B/O SANGEETHA	1	M	16754	IN	P	1.25	1	0	0	0	0	0	DIS
421	B/O LATHA	2	F	16756	OUT	T	2.7	1	0	0	0	0	1	DIS
422	B/O AMUDHA	3	F	16772	IN	T	2.4	0	0	0	0	0	0	DIS
423	B/O SASIKALA	1	F	16861	OUT	P	2.3	0	0	0	0	0	0	DIS
424	B/O MALLIGA	1	M	16878	IN	T	2.3	0	0	1	0	0	1	DIS
425	B/O MOHANA	1	M	16904	IN	T	3.5	0	0	0	0	0	0	DIS
426	B/O NIRMALA	1	M	16913	IN	T	3.5	1	0	0	0	0	1	DIS
427	B/O LATHA	1	F	16918	OUT	T	3.7	0	0	0	0	0	0	ABS
428	B/O KAVITHA	15	F	16927	IN	T	3.5	0	0	0	0	0	0	DIS
429	B/O GOMATHY	1	M	16932	IN	P	1.6	0	0	0	0	0	0	DIS
430	B/O ABIMA	13	F	16971	IN	T	3.1	0	0	0	0	0	0	DIS
431	B/O SHALINI	1	M	17007	IN	P	1.7	0	0	0	0	0	0	DIS
432	B/O CHITRA	1	F	17021	IN	T	2.75	0	0	0	0	0	0	DIS
433	B/O JAYANTHI	17	F	17033	OUT	T	3	0	1	0	0	0	1	DIS
434	B/O PARVATHY	1	F	17047	IN	P	1.8	1	0	1	0	0	2	DIS
435	B/O DEEPA 'A'	1	M	17050	IN	P	1.8	1	0	0	0	0	1	DIS
436	B/O DEEPA	1	F	17051	IN	T	1.5	1	0	0	0	1	2	DIS
437	B/O GOWRI	1	M	17059	IN	P	2.1	1	1	2	0	0	4	ABS
438	B/O MONISHA	1	F	17080	OUT	T	2.6	0	0	1	0	1	2	DIS
439	B/O SANJANA	22	F	17136	IN	T	2.8	0	1	0	0	0	1	DIS
440	B/O JANAGI	11	M	17137	IN	T	2.3	0	1	0	0	0	1	DIS
441	B/O RENUGAMMAL	3	F	17140	IN	T	2.3	0	0	0	0	0	0	DIS
442	B/O DEIVANAI	1	F	17165	IN	T	3.5	0	0	2	0	0	2	DIS
443	B/O MD HASINA	1	M	17167	IN	T	2.75	0	0	2	0	0	2	DIS
444	B/O PANITHA	1	M	17184	OUT	T	3.3	0	0	1	0	0	1	DIS
445	B/O SANGEETHA	9	M	17195	IN	T	2.5	0	0	0	0	0	0	DIS
446	B/O JEEVAMBIGAI	1	M	17231	IN	P	1.5	1	0	0	0	1	2	DIS
447	B/O RADIKA	1	M	17232	IN	P	2.3	0	1	1	0	0	2	DIS
448	B/O HEMAVATHY	1	F	17233	OUT	T	2.3	0	0	0	0	0	0	DIS
449	B/O SARANYA	1	F	17276	IN	T	2.5	0	0	2	0	0	2	DIS
450	B/O GOMATHY	1	M	17282	OUT	T	2.8	0	0	0	0	0	0	DIS
451	B/O LATHA	2	F	17295	OUT	T	2.6	0	0	0	0	0	0	DIS

452	AKSHAYA	25	F	17300	IN	P	1.1	1	0	2	0	0	3	DIS
453	B/O PUNITHA	5	M	17305	IN	T	2.4	0	0	0	0	0	0	DIS
454	B/O NAGAMMAL	1	M	17308	IN	P	1.8	0	0	2	0	0	2	DIS
455	B/O NALINI	1	M	17309	IN	P	1.8	0	0	2	0	0	2	DEATH
456	B/O BAVANI	3	M	17310	OUT	T	2.6	0	2	0	0	0	2	DIS
457	B/O SELVI	1	M	17338	IN	P	2.3	0	0	0	0	0	0	DIS
458	B/O LATHA	3	M	17340	IN	T	2.5	1	0	0	0	0	1	DIS
459	B/O NIROSHA	15	F	17362	IN	T	2.5	1	0	0	0	0	1	DIS
460	B/O VIJAYA	1	M	17368	IN	T	3.2	0	0	1	0	0	1	DIS
461	B/O MAHESWARI	1	M	17370	IN	T	3	0	0	1	0	0	1	DIS
462	SABARI	25	M	17414	OUT	T	3.75	1	0	0	0	0	1	DIS
463	B/O SUDHA	4	M	17433	IN	T	2.9	0	0	0	0	0	0	DIS
464	B/O SUDHA	1	F	17436	OUT	T	3	0	0	0	0	0	0	DIS
465	B/O GNANASOUNDARI	1	M	17456	IN	T	2.4	1	0	0	0	0	1	DIS
466	B/O VISHNU PRIYA	4	M	17480	OUT	T	3	0	0	0	0	0	0	DIS
467	B/O RAVATHY	4	M	17486	OUT	T	2.25	0	0	0	0	0	0	ABS
468	B/O SANGEETHA	1	F	17496	IN	P	1.2	0	1	0	0	0	1	DIS
469	B/O KAMATCHI	3	M	17590	IN	T	3	0	1	0	0	0	1	DIS
470	B/O NANDINI	4	F	17600	OUT	T	2.25	0	0	0	0	0	0	DIS
471	B/O MERLIYA	9	F	17602	IN	T	2.5	0	0	0	0	0	0	DIS
472	B/O JAYANTHI	1	M	17620	IN	P	2	0	0	1	0	0	1	DIS
473	B/O JEEVA	2	M	17626	OUT	T	2.5	0	0	0	0	0	0	DIS
474	B/O SUDHA	3	F	17636	OUT	T	3	0	1	0	0	0	1	DIS
475	B/O MANJUPRIYA	1	F	17653	IN	T	3	1	1	2	2	0	6	DIS/REF
476	B/O KALAISELVI	1	F	17662	IN	P	1.2	1	0	2	1	1	5	DEATH
477	B/O TAMILARASI	1	M	17682	OUT	T	2.6	0	0	0	0	0	0	DIS
478	B/O SUMATHY	1	M	17726	IN	T	2.75	0	0	2	0	0	2	DIS
479	B/O BALAMEENA	1	M	17750	OUT	P	1.9	0	0	0	0	0	0	DIS
480	B/O JEEVITHA	4	M	17767	IN	T	2.25	0	0	0	0	0	0	DIS
481	B/O REKHA	3	F	17791	OUT	T	3.6	0	0	0	0	0	0	DIS
482	B/O SAVITHRI	3	M	17794	OUT	T	2.5	0	0	0	0	0	0	DIS
483	B/O THILAGAVATHI	1	M	17947	IN	T	2.8	0	0	0	0	0	0	ABS
484	B/O ANANDHI	5	F	17950	IN	P	1.9	0	0	0	0	0	0	DIS

485	B/O SENTHAMARAI	1	M	17953	IN	T	2.4	0	0	2	0	0	2	DIS
486	B/O VASANTHI	4	M	17956	IN	T	2.6	0	0	0	0	0	0	DIS
487	B/O SATHYA	2	F	18078	OUT	T	2.5	0	0	0	0	0	0	DIS
488	B/O ARUNA	5	F	18083	IN	T	3.3	0	0	0	0	0	0	DIS
489	B/O SARIDHA	7	M	18120	OUT	T	2.75	0	0	0	0	0	0	DIS
490	B/O ANITHA	1	F	18128	IN	T	2.4	0	0	1	0	0	1	DIS
491	B/O RAJAKUMARI	1	M	18142	OUT	P	1.75	0	0	0	0	0	0	DIS
492	B/O ANBARASI	1	F	18148	OUT	P	3	0	0	0	0	0	0	DIS
493	B/O AMBIGA	1	F	18158	IN	T	2.8	1	0	2	0	0	3	DEATH
494	B/O NANTHINI	2	M	18175	IN	T	2.7	0	0	0	0	0	0	DIS
495	B/O ARULVENI	1	F	18195	IN	P	1.9	0	0	0	0	0	0	DIS
496	B/O MANJULA	7	M	18207	IN	P	1.5	0	0	0	0	0	0	DIS
497	B/O MANJULA	1	M	18217	OUT	P	1.6	0	0	1	0	0	1	ABS
498	B/O JAYARANI	1	F	18239	OUT	T	2.6	0	0	0	0	0	0	DIS
499	B/O SATHIYAVANI	1	F	18248	OUT	T	2.8	1	2	0	0	0	3	DIS
500	B/O SARASVATHY	1	F	18282	IN	T	2.75	0	0	0	0	0	0	DIS
501	B/O MEENA	2	F	18289	OUT	T	2.8	0	2	0	0	0	2	DIS
502	B/O MAHESWARI	7	F	18586	OUT	T	2.7	1	1	2	1	1	6	DEATH
503	B/O NEELA	5	M	18607	IN	P	2.5	0	0	0	0	0	0	DIS
504	B/O SHARMILA	1	M	18609	IN	T	2.65	1	2	2	0	0	5	DIS
505	B/O SATHIYAVANI	1	F	18610	IN	P	2.5	0	0	0	0	0	0	DIS
506	B/O RANJINI	3	M	18625	IN	T	2.4	0	2	0	0	0	2	DIS
507	B/O TAMILSELVI	2	F	18632	OUT	T	2.2	0	1	0	0	0	1	DIS
508	B/O VARALAKSHMI	1	F	18644	IN	T	2.8	0	0	0	0	0	0	DIS
509	B/O CHANDRA	1	F	18685	IN	T	1.8	0	0	0	0	0	0	DIS
510	B/O INDUMATHY	1	M	18689	IN	T	2.5	1	0	2	0	0	3	DEATH
511	B/O ANU	10	F	18737	OUT	T	2.8	0	0	0	0	0	0	DIS
512	B/O DATCHAYANI	1	M	18740	IN	T	3.1	2	1	2	1	0	6	DEATH
513	B/O MUTHAMMAL	1	M	18745	IN	P	2.5	2	0	2	1	0	5	DEATH
514	B/O SAIRABANU	4	M	18746	IN	T	2.75	0	0	0	0	0	0	DIS
515	B/O GOMATHY	4	M	18765	OUT	T	2.5	0	0	0	0	0	0	DIS
516	B/O MARRIAMMAL	1	M	18793	IN	T	2.2	1	2	2	0	0	5	DEATH
517	B/O SANGEETHA	4	M	18818	IN	T	3.35	0	0	0	0	0	0	DIS

518	B/O BANU	3	M	18824	OUT	T	3	0	0	0	0	0	0	DIS
519	B/O VALARMATHY	1	M	18827	IN	T	2.75	0	0	0	0	0	0	DIS
520	B/O MALLIGA	1	F	18838	IN	T	2.75	0	0	0	0	0	0	DIS
521	B/O SUDHA	2	M	18852	IN	T	2.75	1	1	1	0	0	3	DIS
522	B/O SASIKALA	1	F	18863	IN	T	3.6	1	0	2	0	0	3	DIS
523	B/O ALICE FILOMINA	3	M	18882	OUT	T	2.75	0	1	0	0	0	1	DIS
524	B/O KANAGA	3	M	18883	OUT	T	2.6	0	0	0	0	1	1	DIS
525	B/O PARVATHI	17	F	18930	IN	T	2.55	0	0	0	0	0	0	DIS
526	B/O SUGANYA	1	M	19006	IN	P	2.75	1	0	2	0	1	4	DIS
527	B/O VIJAYAKUMARI	1	F	19009	IN	T	2.1	0	0	2	0	0	2	DIS
528	B/O RENUGA	3	M	19036	OUT	T	3	1	1	0	0	0	2	DIS
529	B/O KAVITHA	3	F	19063	IN	T	2.3	1	1	0	0	0	2	ABS
530	B/O AMUDHA	27	F	19067	IN	T	1.6	0	0	0	0	0	0	DIS / REF
531	B/O SHEELA PRIYA	1	M	19100	IN	T	3	0	0	1	0	0	1	DIS
532	B/O LAKSHMI	2	M	19105	OUT	T	2.5	0	1	0	0	0	1	DIS
533	B/O SARANYA	1	F	19125	IN	T	2.65	0	0	0	0	0	0	DIS
534	B/O SHALINI	1	M	19145	IN	T	4.2	0	0	0	0	0	0	DIS
535	B/O SUSILA	3	F	19155	OUT	T	2.75	0	1	0	0	0	1	DIS
536	B/O MALATHI	1	F	19212	OUT	P	2.2	0	0	0	0	0	0	DIS
537	B/O LAKSHMI	1	M	19213	IN	T	2.5	0	0	0	0	0	0	DIS
538	B/O ARPUDAM	1	F	19214	IN	T	2.5	1	0	1	0	0	2	DIS
539	B/O POOGAVANAM	1	M	19217	OUT	T	3.2	0	1	1	0	0	2	DIS
540	B/O CHITRA	1	M	19268	OUT	T	3	0	0	0	0	0	0	DIS
541	B/O SRIVALLI	1	M	19317	IN	T	2.5	0	0	0	0	0	0	DIS
542	B/O SUDHA LAKSHMI	1	F	19363	IN	P	1.12	0	0	0	0	1	1	DIS
543	B/O SUGUNA	1	F	19379	IN	T	2.5	1	1	2	0	0	4	DIS
544	B/O ANUSUYA	2	M	19386	OUT	T	2.8	0	2	0	0	0	2	DIS
545	B/O ELLAMMAL	2	F	19387	IN	T	2.55	1	2	0	0	0	3	DIS
546	B/O UMA	1	M	19411	IN	P	1.7	1	0	2	1	0	4	DEATH
547	B/O SEETHA LAKSHMI	1	M	19425	IN	P	1.7	1	1	0	0	1	3	AMA
548	B/O SOUNDARYA	1	F	19493	IN	T	4.5	0	0	0	0	0	0	ABS
549	B/O FATHIMA	2	M	19498	OUT	T	2.25	0	2	0	0	0	2	ABS
550	B/O PRABAVATHY	2	F	19501	OUT	T	3.5	0	2	0	0	0	2	ABS

551	B/O SUMITHRA	6	F	19520	IN	T	2.6	0	2	0	0	0	2	ABS
552	B/O KAMATCHI	1	M	19526	IN	T	2.65	0	0	0	0	0	0	ABS
553	B/O NITHYA	3	F	19534	OUT	T	2.4	0	0	0	0	0	0	DIS
554	B/O MANJULA	2	F	19575	IN	T	2.5	0	0	0	0	0	0	DIS
555	B/O VALLI	3	M	19620	IN	T	2.5	0	0	0	0	0	0	ABS
556	B/O ANJALATCHI	1	M	19634	IN	T	3.65	1	1	2	0	0	4	DEATH
557	B/O KAMATCHI	1	F	19651	IN	T	2.9	0	0	0	0	0	0	ABS
558	B/O PRIYA	5	M	19653	IN	T	3.5	0	0	0	0	0	0	ABS
559	B/O SELVI	22	M	19659	OUT	T	4.2	0	0	0	0	0	0	DIS
560	B/O BHAVANI	1	F	19661	OUT	T	3.75	0	0	0	0	0	0	DIS
561	B/O PUSHPALATHA	4	M	19663	IN	T	2.5	0	0	0	0	0	0	DIS
562	B/O USHA	1	M	19672	IN	T	2.6	0	0	2	0	0	2	DIS
563	B/O SURYA GANDHI	2	F	19721	IN	T	1.8	0	1	1	0	0	2	DIS
564	B/O PUSHPA	1	M	19736	IN	T	2.45	1	0	2	0	0	3	DIS
565	B/O MARRIAMMAL	2	M	19763	OUT	T	3	0	1	0	0	0	1	DIS
566	B/O THARANI	3	M	19765	OUT	T	2.24	0	0	0	0	0	0	DIS
567	B/O JEBASHEELA	7	M	19769	IN	T	3.2	0	0	0	0	0	0	DIS
568	B/O MAHESWARI	1	F	19778	IN	T	3.75	0	0	0	0	0	0	DIS
569	B/O SATHYA	1	M	19779	IN	T	2.7	1	0	2	0	0	3	DIS
570	B/O PRIYA	1	F	19781	IN	T	2.1	1	0	2	0	0	3	DIS
571	B/O NADHIYA	1	M	19797	IN	T	2.6	1	0	2	0	0	3	DIS
572	B/O VENNILA	1	M	19806	IN	T	2.25	1	1	2	0	1	5	DEATH
573	B/O MAHESH	1	F	19826	OUT	T	3	0	0	1	0	0	1	DIS
574	B/O SUMAILA	3	M	19844	IN	T	2.7	0	0	0	0	0	0	DIS
575	B/O SAVITHA	1	M	19845	IN	T	2.5	0	0	0	0	0	0	ABS
576	B/O LAKSHMI	1	F	19851	OUT	T	3.6	0	0	2	0	0	2	DIS
577	B/O DHANALAKSHMI	1	F	19854	IN	T	2.6	1	0	2	1	0	4	DEATH
578	B/O PUNNNIYASELVI	3	F	19869	IN	T	2.9	0	0	0	0	0	0	ABS
579	B/O SARASVATHY	1	M	19897	IN	P	2.4	1	0	1	0	0	2	ABS
580	B/O UMARANI	1	M	19898	OUT	T	2.6	0	0	0	0	0	0	ABS
581	B/O MUTHULAKSHMI	1	F	19901	OUT	T	3	0	0	0	0	0	0	DIS
582	B/O SUSILA	1	M	19957	OUT	T	2.6	0	0	0	0	0	0	DIS
583	B/O RAVATHY	3	M	19991	OUT	T	2.15	0	0	0	0	0	0	DIS

584	B/O ILAYABARATHI	1	M	20019	IN	T	2.6	0	0	0	0	0	0	DIS
585	B/O SATHYA	8	M	20026	IN	T	2.5	0	0	0	0	0	0	DIS
586	B/O LOGANAYAGI	1	F	20061	OUT	T	1.9	0	0	0	0	0	0	DIS
587	B/O RAMALAKSHMI	1	M	20065	IN	T	3.2	0	0	0	0	0	0	ABS
588	B/O SANKARI	1	F	20113	IN	P	1.5	0	0	0	0	0	0	DIS
589	B/O MUTHAMMAL	2	M	20114	IN	T	2.5	1	1	1	1	0	4	DIS
590	B/O ADHILAKSHMI	18	F	20171	OUT	T	2.5	0	0	0	0	0	0	DIS
591	B/O RAMYA	1	F	20181	OUT	T	3.2	0	1	1	0	0	2	DIS
592	B/O BUVANESWARI	2	M	20192	IN	T	2.4	0	0	0	0	0	0	DIS
593	B/O AMALA	1	F	20211	IN	T	2.55	1	0	0	0	0	1	DIS
594	B/O KUPPU	1	M	20234	IN	T	2.65	0	0	1	0	0	1	DIS
595	B/O ANANDI	1	M	20242	OUT	T	2.9	0	0	0	0	0	0	DIS
596	B/O POTHUMANI	1	F	20243	OUT	T	2	0	0	0	0	1	1	DIS
597	B/O JEEVA	1	M	20254	IN	P	1.9	0	0	0	0	1	1	DIS
598	B/O SUGANYA	1	F	20259	IN	T	2.75	0	0	0	0	0	0	DIS
599	B/O DARSHINI	20	F	20272	IN	T	3.8	0	0	0	0	0	0	DIS
600	B/O CHANDRA 'A'	11	F	20298	IN	T	1.75	0	0	0	0	0	0	DIS
601	B/O SARITHA	1	F	20344	OUT	T	3.4	0	0	0	0	0	0	DIS
602	B/O NATHIYA	4	M	20348	OUT	T	2.75	0	2	0	0	0	2	DIS
603	B/O ASHA	1	F	20366	IN	T	2.7	1	0	2	1	0	4	DIS
604	B/O UMA MAHESWARI	1	M	20396	IN	T	2.95	1	2	2	0	0	5	DIS
605	B/O ALAMALU MANGAI	1	M	20419	IN	T	2.7	0	0	0	0	0	0	DIS
606	B/O KUTTIYAMMAL	3	M	20420	IN	T	3.2	0	0	0	0	0	0	ABS
607	B/O SENTHAMARAI	24	M	20436	IN	T	1.4	0	0	0	0	0	0	DIS
608	B/O DEVI	1	M	20443	OUT	T	4.05	0	0	0	0	1	1	DIS
609	B/O LATHA	5	M	20479	IN	T	2.7	0	0	1	0	0	1	DIS
610	B/O VANITHA	1	M	20493	OUT	T	3.4	1	1	2	1	0	4	DEATH
611	B/O KANNIYAMMAL	2	M	20515	OUT	T	2.6	0	0	0	0	0	0	DIS
612	B/O GAJALAKSHMI	1	M	20544	IN	T	2.5	0	0	2	0	0	2	DIS
613	B/O THENMOZHI	1	M	20545	IN	T	2.5	0	0	0	0	0	0	DIS
614	B/O RUBINI	5	F	20564	IN	T	2.6	0	0	0	0	0	0	DIS
615	B/O MAHESWARI	1	M	20618	IN	T	2.75	0	0	0	0	0	0	DIS
616	B/O NIRAIMATHI	1	F	20625	IN	T	2.8	0	0	0	0	0	0	DIS

617	B/O DIVYA	6	M	20632	IN	T	2.5	0	0	0	0	0	0	DIS
618	B/O SELVI	6	F	20639	IN	T	2.6	0	0	0	0	0	0	DIS
619	B/O PUSHPA	1	M	20653	OUT	P	2.5	1	0	2	0	1	4	DIS
620	B/O ANBUSELVI	22	F	20654	IN	P	1.4	0	0	0	0	0	0	DIS
621	B/O PARIMALA	2	M	20675	IN	T	2.6	1	0	0	0	1	2	ABS
622	B/O SARITHA	2	F	20690	OUT	T	3.5	0	1	0	0	0	1	DIS
623	B/O JAYALAKSHMI (RAMAJAYAM)	1	F	20706	OUT	T	2.4	1	0	1	0	1	3	DEATH
624	B/O USHA	6	F	20711	OUT	T	2.5	0	0	0	0	0	0	DIS
625	B/O GEETHA	1	F	20717	IN	P	1.6	1	0	2	0	2	5	DEATH
626	B/O JAYANTHI	1	M	20720	IN	P	2.9	0	0	0	0	0	0	DIS
627	B/O NAGU	1	F	20725	OUT	P	1.75	0	0	0	0	0	0	DIS
628	B/O GEETHA	1	F	20772	IN	T	2.85	0	1	0	0	0	1	ABS
629	B/O SHARMILA	1	M	20779	IN	T	2.75	0	0	0	0	0	0	DIS
630	B/O KANCHANA	1	F	20782	IN	T	2.6	0	0	0	0	0	0	DIS
631	B/O MALINI	1	M	20786	OUT	T	1.75	0	1	0	0	0	1	ABS
632	B/O ELLAMANI	7	M	20787	IN	T	3.8	0	0	0	0	0	0	DIS
633	B/O BHARATHI	2	M	20805	OUT	T	3.4	0	0	0	0	0	0	DIS
634	B/O SATHYA	3	F	20806	OUT	T	2.5	0	0	0	0	1	1	ABS
635	B/O GUNASUNDARI	1	M	20817	OUT	T	2.5	0	0	0	0	0	0	DIS/REF
636	B/O PARVATHI	1	M	20841	IN	T	2.5	0	0	0	0	0	0	DIS
637	B/O KANIMOZHI	1	F	20858	IN	T	2.1	0	0	0	0	0	0	DIS
638	B/O KARPAGAM	1	M	20861	IN	T	2.5	0	0	0	0	0	0	DIS
639	B/O KALPANA	2	M	20875	IN	T	2.7	0	0	0	0	0	0	DIS
640	B/O MALARVIZHI	1	F	20955	IN	T	2.7	0	0	0	0	0	0	DIS
641	B/O AMIRTHA VALLI	3	M	20963	OUT	T	2.4	0	1	0	0	0	1	DIS
642	B/O TAMILSELVI	27	F	20964	OUT	T	2.5	0	0	0	0	0	0	DIS
643	B/O JAYALAKSHMI	1	M	20969	IN	T	2.2	1	2	2	1	0	6	DIS/REF
644	B/O GOMATHI	7	M	20991	IN	T	2.1	0	0	0	0	0	0	DIS
645	B/O VIJAYA	1	M	21232	OUT	P	2.3	2	0	2	1	0	5	DEATH
646	B/O MANJULA	1	F	21243	OUT	T	2.5	1	0	2	0	0	3	DEATH
647	B/O NARMADHA	1	F	21247	IN	T	2.7	0	0	1	0	0	1	DIS
648	B/O SAMUNDEESWARI	2	M	21267	OUT	T	3.25	0	2	0	0	0	2	DIS
649	B/O SEETHA LAKSHMI	13	M	21271	IN	P	1.7	1	0	0	0	1	2	DIS

650	B/O SAROJA	1	F	21279	IN	P	2.1	1	0	2	1	1	5	DEATH
651	B/O REVATHY	4	M	21286	IN	T	2.8	0	0	0	0	0	0	DIS
652	B/O DHANALAKSHMI	4	M	21320	IN	T	2.75	0	0	0	0	0	0	DIS
653	B/O SWATHI	25	F	21364	IN	T	2.65	1	0	2	1	0	4	DEATH
654	B/O PRIYA	1	M	21380	IN	T	3.3	0	0	0	0	0	0	DIS
655	B/O BANUPRIYA	1	M	21387	OUT	P	1.7	0	0	0	0	0	0	DIS
656	B/O SATHYA	1	F	21406	OUT	T	2.6	0	0	0	0	0	0	DIS
657	B/O CHITRA	1	M	21412	IN	T	1.7	0	0	0	0	0	0	DIS
658	B/O IYYAMMAL	1	M	21469	OUT	T	2	1	0	0	0	0	1	DEATH
659	B/O VIJAYACHANDRIKA	2	M	21514	OUT	T	2.9	0	0	0	0	0	0	DIS
660	B/O KANNIYAMMAL	1	F	21523	IN	T	2	0	0	0	0	0	0	ABS
661	B/O ALAGAMBIGAI 'A'	1	M	21545	IN	P	1.6	0	0	0	0	0	0	DIS
662	B/O ALAGAMBIGAI 'B'	1	M	21547	IN	P	1.5	0	0	0	0	0	0	DIS
663	B/O SELVI	1	M	21629	IN	T	2.6	0	0	1	0	0	1	DIS
664	B/O UDAYA KUMARI	1	M	21635	OUT	P	1.295	0	0	0	0	1	1	DIS
665	B/O KANCHANA	5	F	21711	IN	T	2.9	0	0	0	0	0	0	DIS
666	B/O THENMOZHI	7	F	21719	OUT	T	2.45	0	0	0	0	0	0	DIS
667	B/O BHAVANI	1	M	21770	IN	P	1.855	0	0	0	0	0	0	DIS
668	B/O BALASARASWATHI	3	M	21778	IN	T	2.6	0	0	0	0	0	0	DIS
669	B/O JOTHI	1	M	21783	OUT	T	3.4	0	0	0	0	0	0	DIS
670	B/O JAYAMARY	1	M	21841	IN	T	2.75	0	1	0	0	0	1	DIS
671	B/O JOY	1	M	21842	IN	T	2.6	0	0	0	0	0	0	DIS
672	B/O NAVANEETHAM	1	F	21850	IN	T	3.25	0	0	0	0	0	0	DIS
673	B/O DEEPA	1	M	21860	OUT	T	3.5	0	0	0	0	0	0	DIS
674	B/O SIVARANJINI	1	F	21861	IN	T	2.53	0	0	0	0	0	0	DIS
675	B/O NITHIYASRI	14	F	21867	OUT	T	2.5	0	0	0	0	0	0	DIS
676	B/O CHITRA	2	M	21887	IN	P	2.2	1	1	2	0	1	5	DIS
677	B/O ANJALAI	1	M	21901	IN	T	2.5	0	0	1	0	0	1	DIS
678	B/O JANSIRANI	5	F	21902	IN	T	2.5	0	0	0	0	0	0	DIS
679	B/O SEETHA	2	F	21912	IN	T	2.9	0	1	0	0	0	1	DIS
680	B/O BAZHIRA	4	F	21928	IN	T	2.5	0	0	0	0	0	0	DIS
681	B/O SELVI	5	F	21960	IN	T	2.5	1	0	0	0	0	1	DIS
682	B/O AMALA	1	F	21976	OUT	T	2.8	0	0	0	0	0	0	DIS

683	B/O SANGEETHA	1	M	21982	IN	T	2.8	0	0	0	0	0	0	DIS
684	B/O GOVINDAMMAL	4	F	21997	OUT	T	2.3	0	0	0	0	0	0	ABS
685	B/O KANAGA	5	F	22059	OUT	T	2.8	0	0	0	0	0	0	DIS
686	B/O RASIYA	1	M	22069	IN	T	2.4	0	0	1	0	0	1	DIS
687	B/O SAMUNDEESWARI	4	F	22071	IN	T	2.3	0	0	0	0	0	0	DIS
688	B/O KUMUDHA	3	F	22073	IN	T	2.6	0	0	0	0	0	0	DIS
689	B/O LALITHA	1	M	22082	OUT	P	1.75	0	0	0	0	0	0	DIS
690	B/O HEMAVATHY	1	F	22083	IN	P	1.75	0	0	0	0	0	0	DIS
691	B/O SUDHA	1	M	22087	IN	T	2.6	0	1	1	0	0	2	DIS
692	B/O JEYANTHI	1	M	22093	IN	P	2.4	1	0	2	0	0	3	DIS
693	B/O VIJAYA	1	F	22101	IN	T	3.1	0	0	1	0	0	1	ABS
694	B/O CHITRA	1	M	22205	IN	P	2.2	0	0	2	0	0	2	DIS
695	B/O ANUPRIYA	1	F	22207	IN	T	2.5	0	0	1	0	0	1	DIS
696	B/O JAYALALITHA	1	M	22212	OUT	P	2.5	1	0	2	2	0	5	AMA
697	B/O SUSEELA	2	M	22217	IN	T	3	0	0	0	0	0	0	DIS
698	B/O MALAR 'B'	1	M	22223	IN	P	1.6	0	0	2	0	0	2	DEATH
699	B/O MALAR 'A'	1	M	22232	IN	P	1.5	0	0	1	0	1	2	DIS
700	B/O PUNITHA	1	F	22273	IN	T	2.6	0	0	0	0	0	0	DIS
701	B/O RAJESWARI	11	F	22275	IN	T	2.5	0	0	0	0	0	0	DIS
702	B/O SIVAGAMI	1	F	22300	IN	T	2.5	0	0	0	0	0	0	DIS
703	B/O PUSHPALATHA	14	M	22301	IN	T	3.3	0	0	0	0	0	0	DIS
704	B/O THENMOZHI	5	F	22312	IN	T	2.6	0	0	0	0	0	0	DIS
705	B/O SARANYA 'A'	1	M	22338	IN	P	1.53	0	0	0	0	0	0	DIS
706	B/O SARANYA 'B'	1	M	22339	IN	P	1.6	0	0	0	0	0	0	DIS
707	B/O MUTHULAKSHMI	1	M	22348	IN	T	3.5	0	0	0	0	0	0	DIS
708	B/O JEYASRI	1	F	22360	OUT	T	2.75	0	0	0	0	0	0	DIS
709	B/O MOHANASUNDARI	1	M	22392	IN	P	2.1	1	0	2	0	0	3	DEATH
710	B/O ABIMA	1	M	22446	OUT	T	2.2	0	0	0	0	0	0	DIS
711	B/O BHANU	3	M	22449	IN	T	2.7	0	0	0	0	0	0	DIS
712	B/O JEYANTHI	1	M	22450	IN	P	1.2	0	0	0	0	1	1	DIS
713	B/O GUNASUNDARI	1	M	22455	IN	P	1.9	1	0	2	0	0	3	DIS
714	B/O NANDHINI	5	F	22458	IN	T	2.6	0	0	0	0	0	0	DIS
715	B/O SEETHA	10	M	22483	IN	T	2.4	1	0	0	0	0	1	DIS

716	B/O GOWRI	1	F	22511	OUT	T	1.9	0	0	0	0	0	0	ABS
717	B/O MELITA	1	M	22558	OUT	T	3.15	0	0	0	0	0	0	DIS
718	B/O SURIYA	1	F	22607	OUT	T	2.75	0	0	0	0	0	0	DIS
719	B/O INDIRANI	1	F	22613	OUT	T	2.7	0	0	0	0	0	0	DIS
720	B/O SUGANTHI	1	M	22631	IN	T	2.3	0	0	2	0	0	2	DIS
721	B/O VENNILA	2	M	22636	IN	T	2.6	0	0	0	0	0	0	DIS
722	B/O KRISHNAVENI	2	F	22643	OUT	T	2.75	0	0	0	0	0	0	DIS
723	B/O VIJAY	2	F	22645	OUT	T	2.7	0	0	0	0	0	0	DIS
724	B/O SUMITHRA	3	F	22664	OUT	T	2	0	0	0	0	0	0	DIS
725	B/O LALITHA	13	M	22693	OUT	T	2.8	0	0	0	0	0	0	DIS
726	B/O SRIPRIYA	2	M	22706	IN	T	2.9	0	0	0	0	0	0	DIS
727	B/O STELLAMARI	8	M	22715	IN	T	3.1	0	0	0	0	0	0	ABS
728	B/O AMUDHAVALLI	1	M	22749	OUT	T	2.7	1	0	2	1	0	4	DEATH
729	B/O SUSILA	1	M	22755	IN	T	2.3	0	0	0	0	0	0	DIS
730	B/O GOMATHY	1	M	22779	IN	P	1.2	1	1	2	1	1	6	DEATH
731	B/O SEETHA	3	M	22782	IN	P	2.5	0	0	1	0	0	1	DIS/REF
732	B/O BHAVANI	5	F	22844	IN	T	2.5	0	0	0	0	0	0	DIS
733	B/O REVATHY	8	F	22848	OUT	T	3.4	0	0	0	0	0	0	DIS
734	B/O BHAVANI	3	F	22851	OUT	T	3.1	0	1	1	0	0	2	DIS
735	B/O PONKODI	1	M	22889	IN	T	2.5	0	0	2	0	0	2	DIS
736	B/O MEENA	1	F	22890	IN	P	1	1	0	2	0	0	3	DEATH
737	B/O SAMUNDEESWARI	1	M	22897	OUT	T	2	0	0	0	0	0	0	ABS
738	B/O AMALA	6	M	22905	IN	P	1.7	1	0	0	0	1	2	DIS
739	B/O SRIPRIYA	6	M	22909	IN	T	2.7	0	0	0	0	0	0	DIS
740	B/O SANGEETHA	3	M	22941	IN	T	2.4	0	0	0	0	0	0	DIS
741	B/O SARIDHA	1	M	22944	IN	T	2.47	0	0	0	0	0	0	DIS
742	B/O SIVAGAMI	1	M	22965	IN	T	2.5	0	0	1	0	0	1	DIS
743	B/O ANANDHI	4	F	22984	IN	T	2.9	0	0	0	0	0	0	DIS
744	B/O GANGAMMAL	1	F	22991	OUT	P	2.2	0	0	0	0	0	0	DIS
745	B/O THULASI 'B'	1	M	23019	IN	P	1.76	0	0	0	0	0	0	DIS
746	B/O THULASI 'A'	1	F	23020	IN	P	1.9	0	0	0	0	0	0	DIS
747	B/O LAVANYA	7	F	23029	IN	T	2.5	0	0	0	0	0	0	DIS
748	B/O SARITHA	6	F	23030	OUT	T	3.3	0	0	0	0	0	0	DIS

749	B/O MOHANAMBAL	1	M	23120	OUT	T	2.5	0	0	0	0	0	0	ABS
750	B/O SANGEETHA	8	F	23130	OUT	T	2.8	0	0	0	0	0	0	DIS
751	B/O AMUDHA	1	M	23187	IN	T	2.24	0	0	2	0	0	2	DIS
752	B/O ANUSUYA	1	M	23275	OUT	T	2.75	1	0	2	0	0	3	DEATH
753	B/O REVATHY	3	F	23281	IN	T	3	0	0	0	0	0	0	DIS
754	B/O DHATCHAYANI	4	M	23300	IN	T	3	0	0	0	0	0	0	DIS
755	B/O PARIMALA	1	M	23320	IN	T	2.75	1	0	1	0	0	2	DIS
756	B/O VIJAYA	1	M	23408	IN	T	2.5	2	0	2	1	0	5	DEATH
757	B/O MURUVAMMAL	1	F	23420	IN	T	2.4	0	0	0	0	0	0	DIS
758	B/O RADHA	5	M	23429	IN	T	3	0	0	0	0	0	0	DIS
759	B/O KRISHNAVENI	8	F	23434	OUT	T	2.75	0	1	0	0	0	1	DIS
760	B/O RAJALAKSHMI	9	M	23516	IN	T	2.8	0	0	0	0	0	0	DIS
761	B/O BUVANESWARI	1	M	23520	OUT	T	3	0	0	1	0	0	1	DIS
762	B/O ADHILAKSHMI	1	M	23528	IN	T	3	0	0	0	0	0	0	DIS
763	B/O RAJESWARI	2	F	23624	OUT	T	2.75	0	0	0	0	0	0	DIS
764	B/O SATHYA	1	F	23674	OUT	P	1.6	0	0	0	0	0	0	AMA
765	B/O ANITHA	1	F	30023	IN	T	3.5	0	0	1	0	0	1	DIS
766	B/O DEVI	1	M	30030	IN	T	2.8	0	0	2	0	0	2	DIS
767	B/O MD.ASINA	25	M	30094	IN	T	2.75	0	0	0	0	0	0	DIS
768	B/O GOMATHY	2	M	30101	IN	P	3	0	0	0	0	0	0	ABS
769	B/O GOVINDHAMMAL	1	M	30104	IN	P	2.8	0	0	0	0	0	0	ABS
770	B/O SHANTHA	1	F	30194	IN	T	2.8	0	0	1	0	0	1	DIS
771	B/O THENMOZHI	14	M	30388	OUT	T	2.6	0	1	0	0	0	1	DIS