

An early start to life The Preterm Baby

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Definitions (1)

- Term 37-41⁺⁶ wks
- Post-Term ≥ 42 wks
- Preterm < 37 wks
- Moderately PT 32-36⁺⁶ wks
- Severely/Very PT 28-31⁺⁶ wks
- Extremely PT < 28 wks

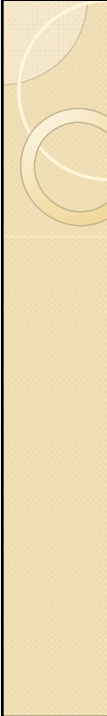
Definitions (2)

- Low Birth Weight <2.5kg
(LBW)
- Very Low Birth Weight <1.5kg
(VLBW)
- Extremely Low Birth Weight <1kg
(ELBW)



Aetiology 1 - (Maternal)

- Idiopathic
- Low socio-economic status
- Malnutrition
- Age <16 or >35
- Smoking & drug abuse
- Stress
- Malformations of uterus & cervix
- Previous preterm delivery or late miscarriage



Aetiology 2 - (Maternal)

- Maternal illnesses

UTI & asymptomatic bacteriuria

Bacterial vaginosis

Anaemia

Diabetes

Hypertension or PET



Aetiology 3 - (Fetal)

- Multiple gestation
- Congenital malformation
- Fetal distress
- Polyhydramnios




Aetiology 4 - (Iatrogenic)

- Fetal distress
- IUGR
- Uncontrolled PIH/ Eclampsia
- APH
- Diabetes
- Maternal cardiac disease
- Chorioamnionitis
- Incorrect estimate of gestational age



Prevention & Obstetric management

- Health promotion programmes
- Antenatal care – PIH, diabetes
- Cervical cerclage
- Detection & treatment of infection
- Tocolytics
- Optimising outcome for baby:
Steroids; IUT.



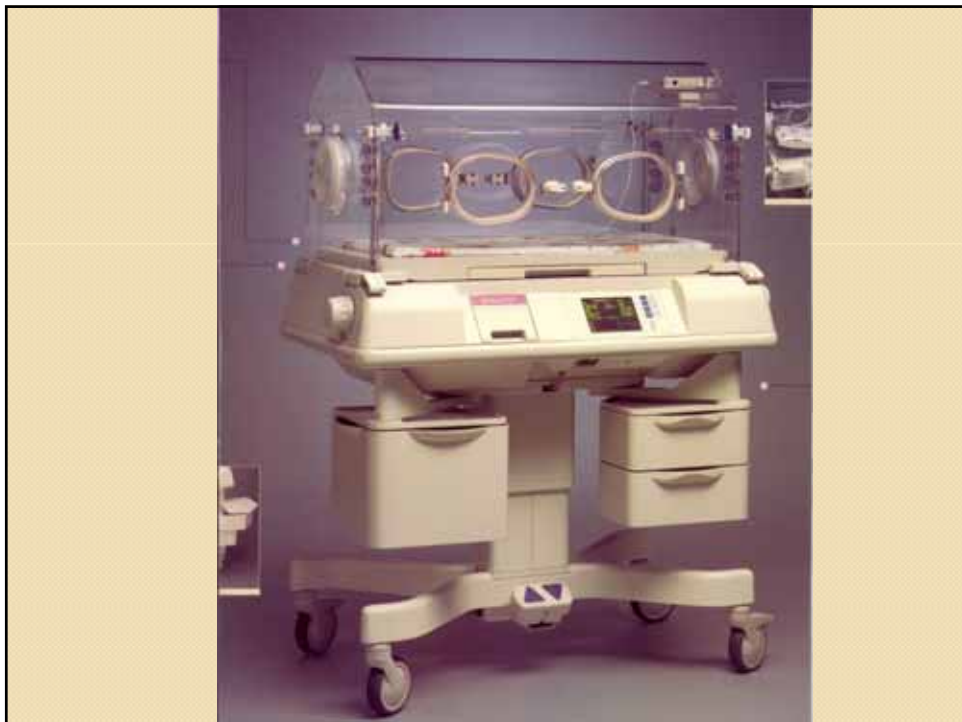
**PROBLEMS OF
PREMATURITY &
POST-NATAL
MANAGEMENT**

Resuscitation

- Difficulty in extra-uterine adaptation.
- Delivery in level 3 NICU.
- Appropriate planning & immediate availability of qualified personnel & equipment.
- Prompt resuscitation & stabilization.
- PNT

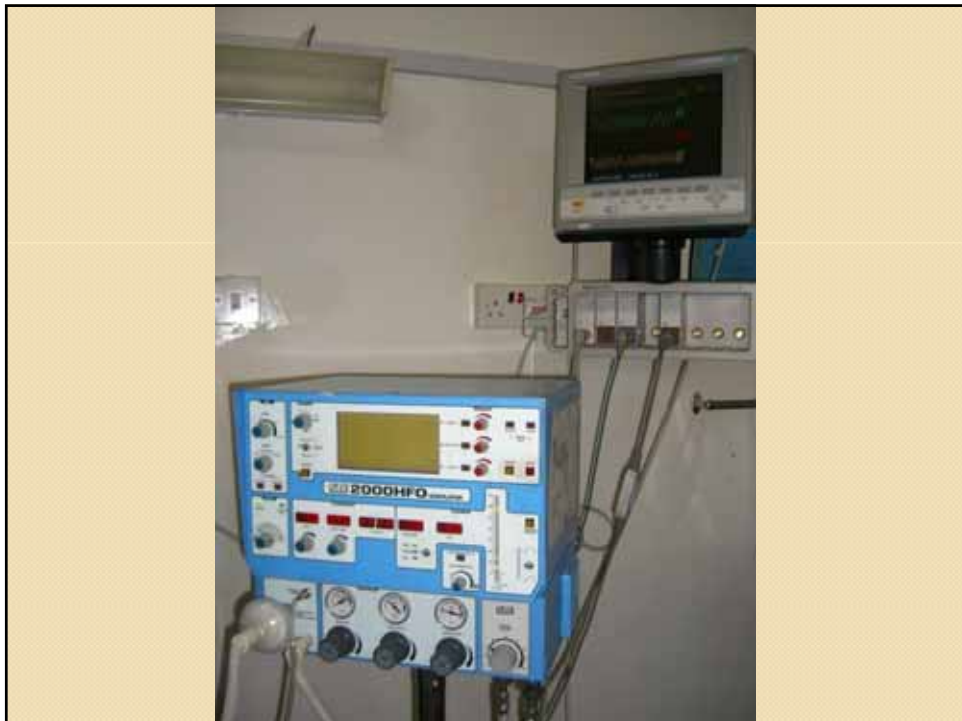
Temperature regulation

- Inability to shiver
- Large SA
- Decreased subcutaneous fat
- Reduced brown fat stores
- Servo-controlled incubator
- Humidity
- Easy access to infant
- Humidification of ventilator gases



Respiratory (1)

- RDS
- Apnoea of prematurity
- Pulse oxymetry, Cardio-resp monitoring & ABG.
- Oxygen
- Respiratory support – mechanical ventilation, NCPAP.
- Surfactant therapy
- Respiratory stimulant





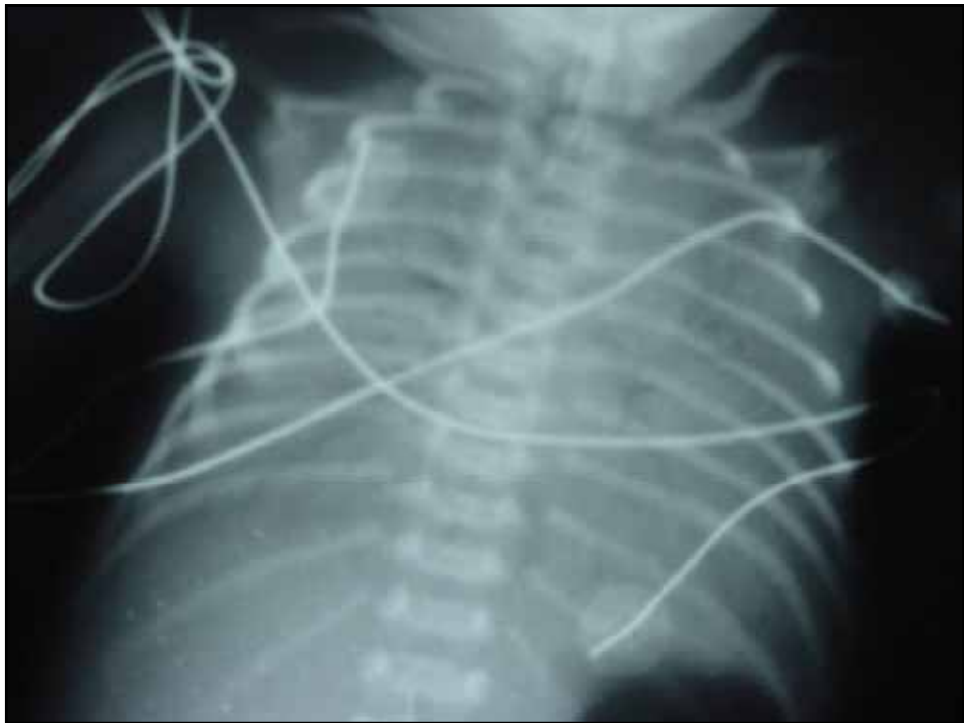












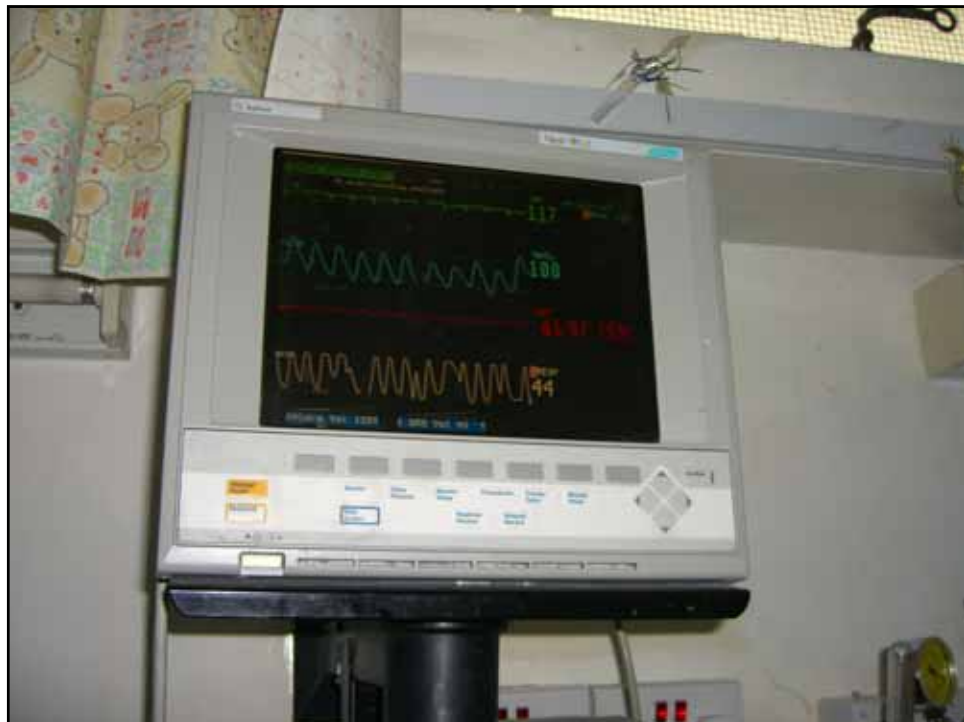


Respiratory (2)

- Pneumothorax
- Pulmonary haemorrhage
- Thoracocentesis
- ↑Ventilation
- Blood transfusion
- FFP/Vitamin K

Cardiovascular

- Hypotension
 - BP monitoring
 - Volume expansion
 - Inotropic support
- PDA
 - Cardiac echo
 - Diuretics
 - Indomethacin
 - Ibuprofen





Renal/Metabolic

- Electrolyte disturbances
- Hypocalcaemia
- Hypo/hyper-glycaemia
- Regular U's&E's
- Urine output
- Dextrostix
- Careful fluid management & administration
- Insulin infusion



GIT/Nutrition

- Feed intolerance
- High requirements
- NEC
- Gavage feeding
- TPN
- EBM+Fortifier
- Pre-term formulas
- Gastric decompression, NBM, iv antibiotics, surgical opinion.

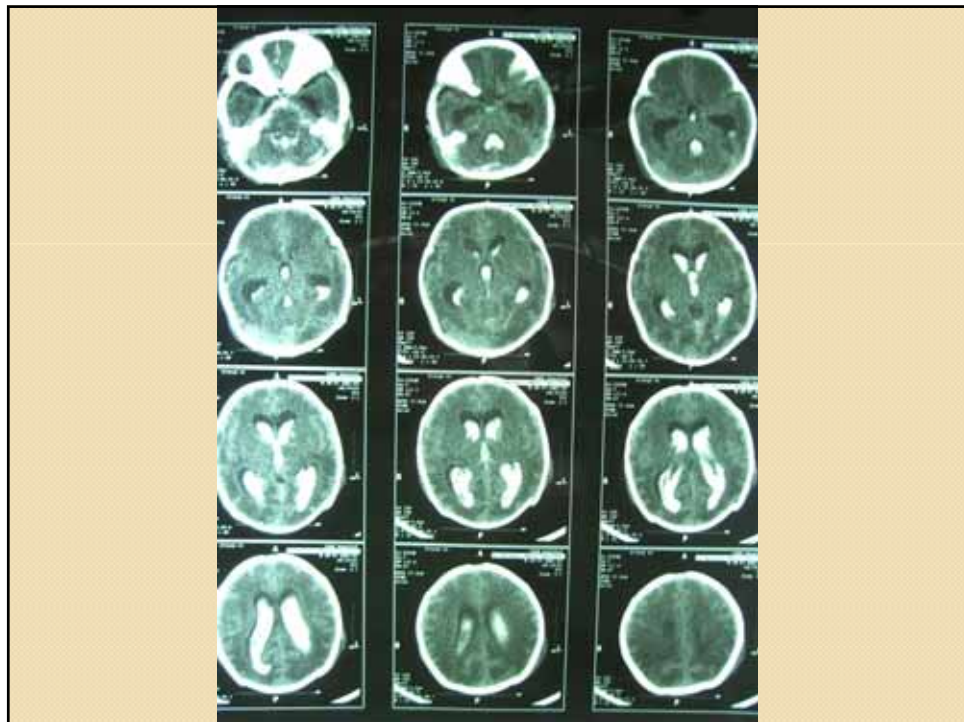


Neurological

- IVH

- Vitamin E, Ethamsylate
- Good ventilation management & control of BP
- Regular cranial USS





Others

- Haematological – anaemia/ thrombocytopenia
- Immunological – infection
- Psychological
- Multiple blood transfusions
- Multiple courses of antibiotics; antifungal.
- Parental support
- NIDCAP





Criteria for home discharge

- Clinically stable
- Stable temperature
- Good weight gain
- Mother's ability to care for baby
- Social circumstances



 **LONG TERM PROBLEMS
& FOLLOW-UP**

Respiratory

- CLD
- Recurrent respiratory infections
- Dexamethasone
- Nebulized/Inhaled therapy
- Chest physio
- Long term oxygen & prolonged hosp stay
- Recurrent re-admissions
- Immunization

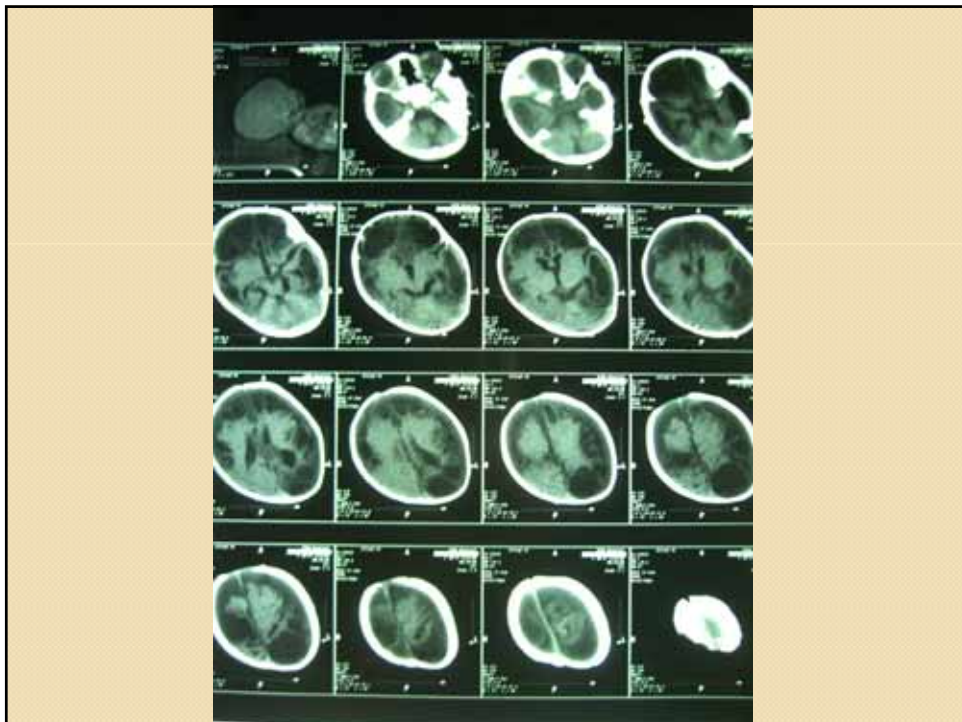


Nutrition & Growth

- Poor growth
 - Growth charts
 - High-calorie formula & vits
- Anaemia
 - Hb monitoring
 - Iron supplementation
- Rickets of prematurity
 - Phosphate supp

Neurological

- PVL & Cerebral palsy
- Convulsions
- Hydrocephalus
- ROP
- Hearing impairment
- Prevention
- Neuro-developmental follow-up
- PT & OT
- Anticonvulsants
- Neurosurgical opinion
- Ophthalmology r/v
- Hearing assessment





Psycho-social

- Learning difficulties
- Behavioural problems
- Family/social impact
- Developmental psychologist
- Special educational programme
- Psychotherapy
- Parent support groups



STATISTICS

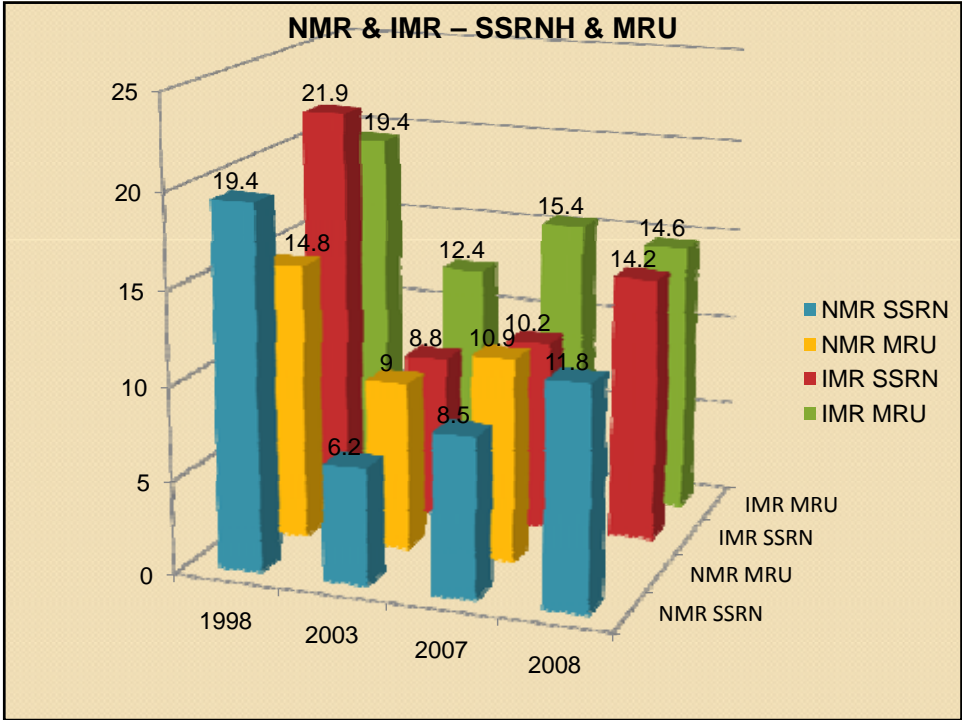
Incidence of prematurity

| SSRNH | |
|-------|------|
| 2003 | 5.5% |
| 2004 | 9.2% |
| 2005 | 5.5% |
| 2006 | 4.4% |
| 2007 | 7.5% |
| 2008 | 9.0% |

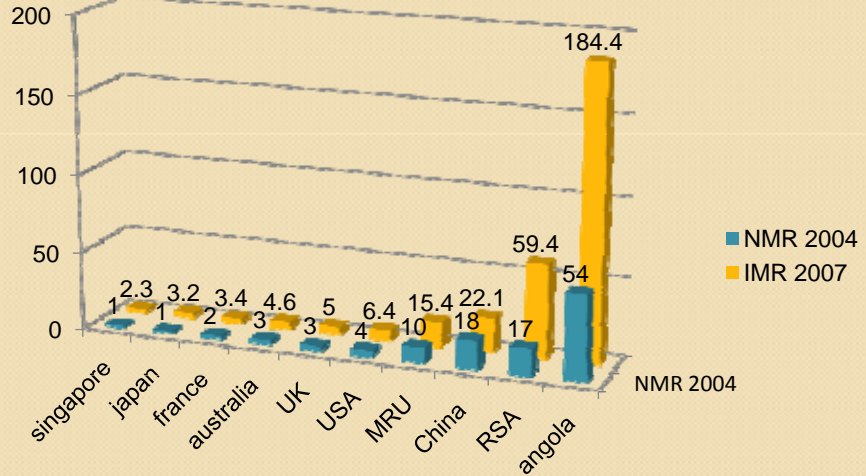
| Other countries | |
|------------------|-------|
| USA (2006) | 12.7% |
| UK (2007) | 8.6% |
| France | 7% |
| Australia (2002) | 7% |

Admissions to NICU

| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Admissions | 226 | 235 | 225 | 200 | 208 | 201 | 163 |
| Mortality % | 21 | 17 | 27 | 27 | 27 | 24 | 28 |
| Preterm % | 72 | 71 | 72 | 67 | 57 | 62 | 61 |
| Moderately PT (survival) | 58% (92%) | 51% (91%) | 53% (84%) | 44% (80%) | 37% (89%) | 49% (79%) | 42% (79%) |
| Severe PT (survival) | 30% (63%) | 42% (79%) | 34% (65%) | 46% (79%) | 49% (55%) | 36% (71%) | 33% (64%) |
| Extreme PT (survival) | 12% (26%) | 7% (55%) | 12% (45%) | 10% (8%) | 14% (44%) | 14% (50%) | 24% (71%) |



NMR & IMR WORLDWIDE



Survival of a 16-oz. baby (450g) DOB 30.01.1949; GA 26 wks

- Case report; Dr H Fakim; RMO; Civil Hospital; Mauritius
- BMJ 19.08.1950
- 31 y old mother
- At birth the infant was very feeble & did not cry...nikethamide....
- Wrapped up in cotton wool ...cot lined with blankets & kept warm with hot water bottle
- Fed on glucose water ..EBM...condensed milk
- 3.06kg at 5½m



Acknowledgements

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- All obstetricians for keeping us on our toes all the time.*
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