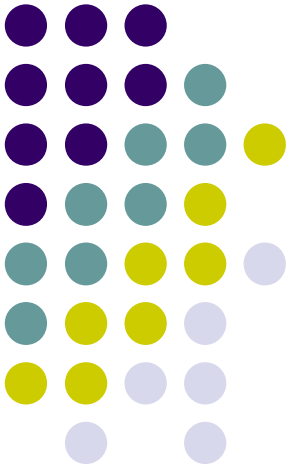
NEONATAL PEARLS

DAVID BOURCHIER



Outline

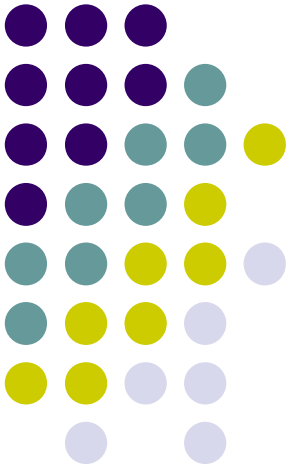
- Metabolic screening programme
- Audiology screening
- Antenatal risk factors for preterm delivery
- Antenatal renal pelvis dilatation
- Jaundice
- Kernicterus
- Vit D

Background

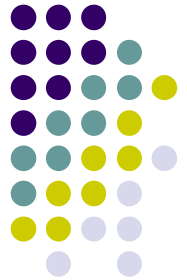
- 2007 65,602 livebirths(NZ)
- 1.2%(~700) <32wks gestation
  - 90% survival
  - 13% disability
    - Cerebral palsy
    - Visual/hearing deficit
    - Developmental delay

Newborn Metabolic Screening

Guthrie Card



Newborn Metabolic Screening Programme

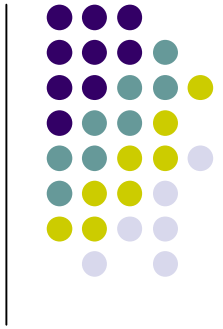


- LMC responsible for information,consent and obtaining sample
- Collect at 48 – 72hrs
- 28 conditions screened
  - 14 amino acid disorders(PKU,MSUD)
  - 9 Fatty acid oxidation disorders
  - Cystic fibrosis
  - Hypothyroidism
  - Congenital Adrenal hyperplasia
  - Galactosaemia
  - Biotinidase deficiency

NMSP contd

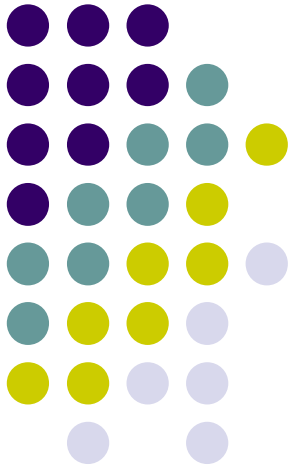
- 45 infants diagnosed each year
- Commonest: Hypothyroidism 15/yr
- Cystic fibrosis 8/yr

NMSP contd

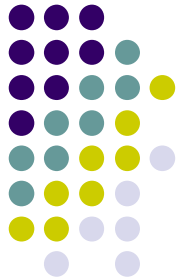


- If your patient has an abnormal result
  - Repeat test rate is 1 in 50 (~1300/yr)
  - Majority will have normal test on repeat
  - Mild abnormality.You will be advised by letter
  - Significant abnormality.LMC/Paed will be phoned
  - Ensure repeat test is completed asap
  - Any concerns ring NTC 0800 522 7587 or Paed

Audiology Screening

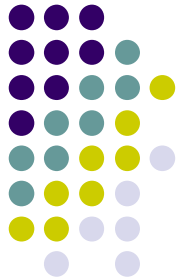


Audiology Screening



- NZ 1986-99 107 children(<18yrs) notified as deaf(National Audiology centre)
  - Mean age 28mths
  - 30% age <12mths
  - Waikato 1.9/1000 livebirths
- Why screen?
  - Language development
  - Treatments available

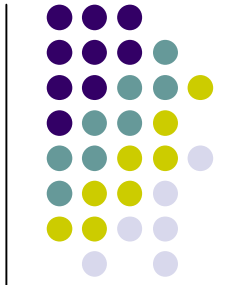
Audiology



- Waikato pilot study
  - Newborn testing at age 48hrs(>37wk gest)
  - aABR
  - Begun Feb 2004

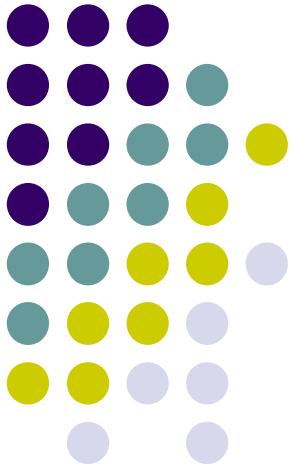
Audiology

Audiology

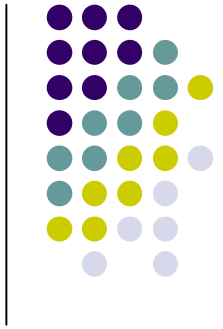


- Results
  - 28,000 infants screened(97% of eligible)
    - 483(1.7%) referred for followup (Diagnostic audiology)
    - 111(0.4%) hearing loss confirmed
    - 23 hearing aids/8 cochlear implants
  - 4/1000 livebirths(cf 1.9 prescreening)
- Hawkes Bay began in 2006,others following this year

Antenatal Risk Factors For Prematurity



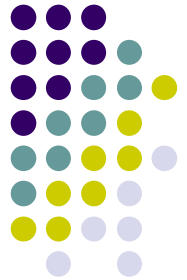
Antenatal risk factors for prematurity



- ~10% of births <37wks gestation

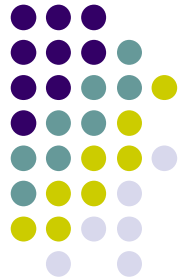
- Mulitple birth/ART
- Previous preterm birth
- Lack of antenatal care
- Lower SES
- Maori/Pacific Islanders
- Mat age <17yrs or >40yrs

Antenatal risk factors for prematurity



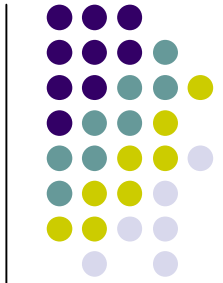
- PPROM 50-60% deliver within 1wk
  - Erythromycin reduces risk of delivery within 48hrs.Also reduces mortality and sign morbidity
- PPROM occurs in 20-50% of preterm deliveries (cf 3% term)
- Illicit drug use
- Vaginal bleeding in $2^{nd}/3^{rd}$ trimester

Antenatal risk factors for prematurity



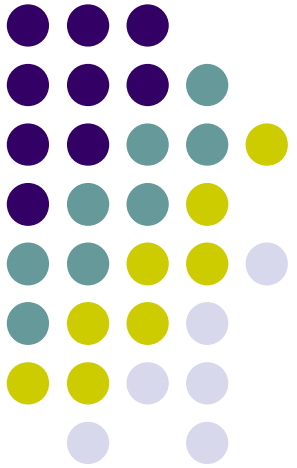
- Smoking reduces Bwt by ~ 200g at term
  - increased preterm delivery
- Alcohol 1-3 drinks/day reduces bwt by 100g at term
  - Speech/language delays
  - No PTL

Antenatal Risk factors for Prematurity

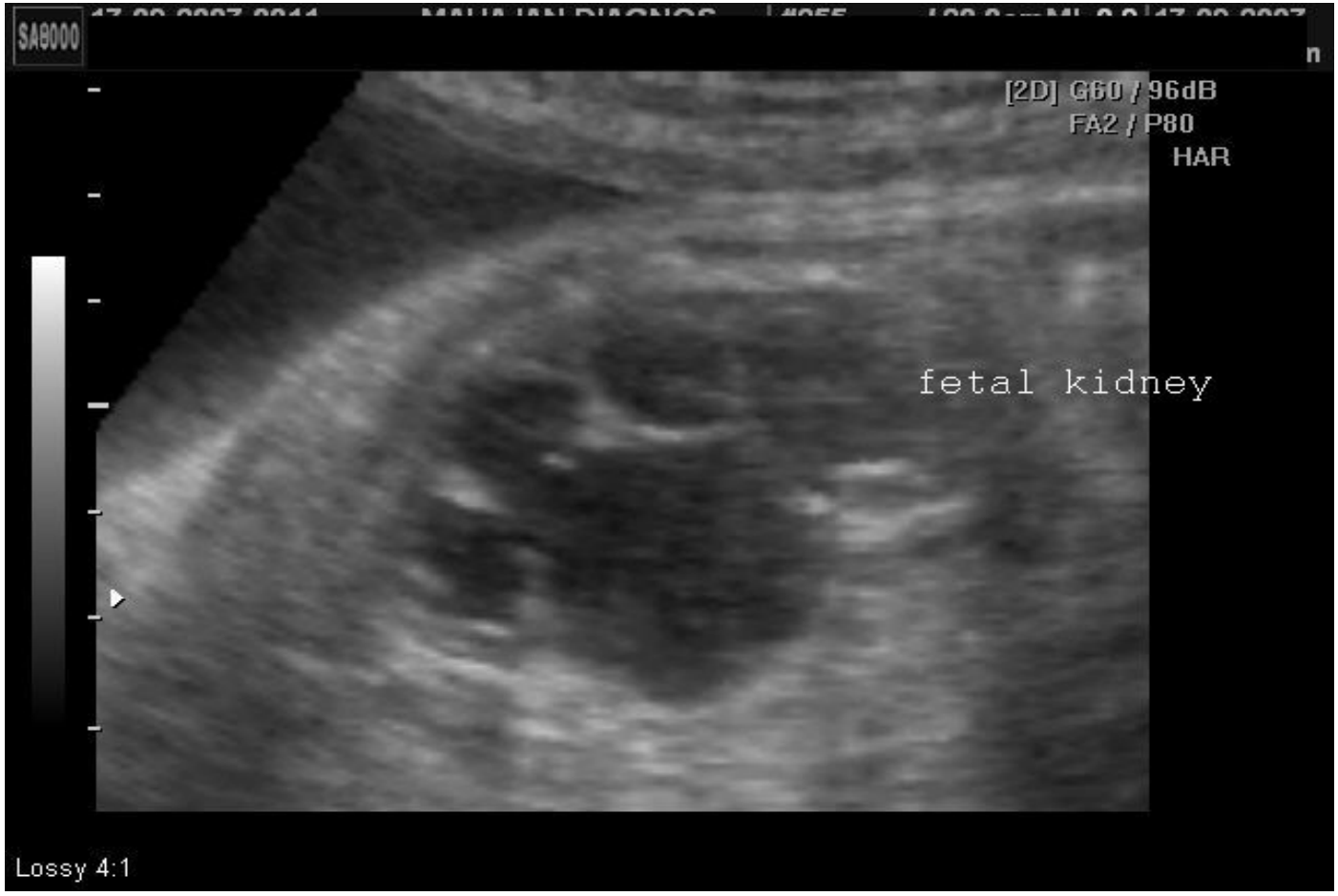


- What can I do?
  - Encourage antenatal care
  - Refer for Specialist assessment if;
    - PPROM
    - Previous prem
    - Multiple birth

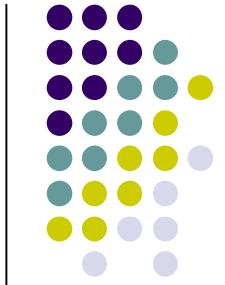
Antenatal Fetal Renal Pelvis Dilatation



Antenatal Renal Pelvis Dilatation

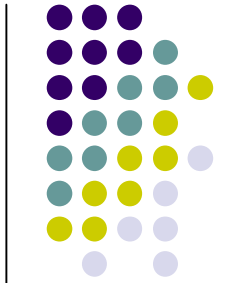


Antenatal fetal renal pelvis dilatation



- Why worry?
  - Marker for renal tract pathology
- 18-24 wk gestation scan
- 1% pregnancies(>5mm dilatation)
  - 2/3 5-10mm.No signfiicant renal tract pathology
  - 1/3 >10mm.2/3 of this group were found to have significant renal tract pathology postnatallly

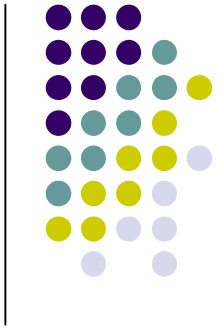
Antenatal Fetal Renal Pelvis Dilatation



- GP guidelines (postnatal)
  - <7mm.No action
    7-10mm.US at 5wks
    >10mm.US at 7 days and 3mths
  - Further investigation depends upon US findings
  - Discuss with Paediatrician or Paed Surgeon
  - Based on WWH guidelines

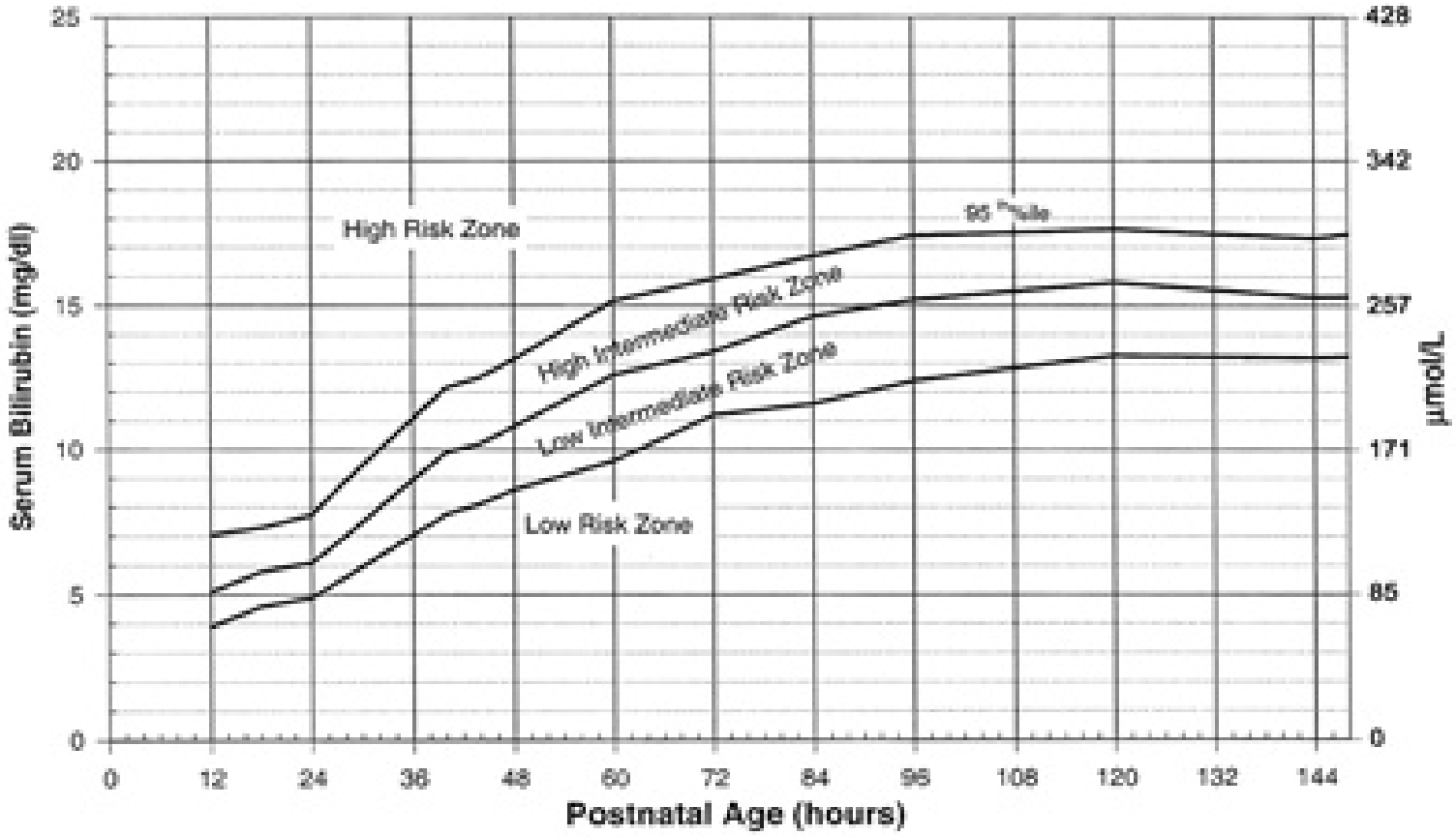
Jaundice.When to worry?

Jaundice.When to worry?

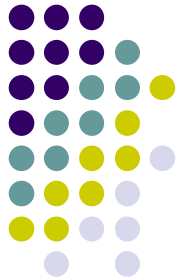


- Too early <24hrs
- Too High Age dependent nomograms
  - Advise threshold 24-48hrs >180umol/L
  - >48hrs 10% Bwt(gm)
  - (eg Bwt 3000g = SBR 300)
- Sick infant
- Prolonged >2wks in term infant
  - Conj/unconjugated SBR
  - Thyroid function tests

SBR Nomogram

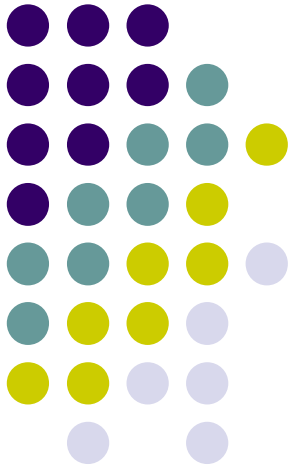


Kernicterus

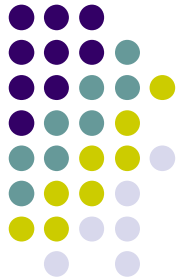


- High unconjugated bilirubin
  - Basal ganglia and auditory pathway damage
  - Seizures,deafness,mental retardation
- Risk factors
  - 34-37wk gestation
  - Breast fed
  - Asian(G6PD deficiency)
- Increasing incidence
- 2 cases in Waikato in 10yrs

Vitamin D



Vitamin D



- Preterm infants have reduced Ca,P,Vit D stores
- Diuretic,steroid treatment demineralises bone
- Increased fracture risk
- Prems: Vit D until ALP <400 and oral intake >500ml formula or solid
- Immune role?

Vitamin D

- Preterm infants require Vitamin D supplementation
- Vitadol C 0.3ml daily
  - (monitor ALP)
- One alpha drops(2mcg/ml) 1 drop BD
  - (Monitor serum Calcium/ALP)

The End