INDEX

adenosine, 187
adrenal failure, 91
adrenaline, 179–80
advanced neonatal nurse practitioners (ANNPs), 3
afterload, 174
airway pressure, 121
airways management see respiration and ventilation
alcohol abuse, 223–4
amniocentesis, 17
amphetamine abuse, 253
anaemia, 302–4
analgesia, preterm infants, 73
anencephaly, 247
aneuploidies, 155–8
anomaly scan, 18
anorectal malformations, 149–50
antenatal care, 14–17
booking and risk assessment, 14–16
screening, 16–17, 18
antibiotics, 283–4
peripartum, 278–9
antibodies, 276
antigen receptors, 275–6
antiphospholipid syndrome, 27–8
assisted conception, 15
atrioventricular septal defects, 191–2
attachment theory, 52
autonomy, 334–5
autosomal inheritance, 161–3
BAT (brown adipose tissue), 83
bathing, 327
Beckwith-Weidemann syndrome, 95
behaviour patterns, 247
Bell's criteria for NEC, 139
beneficence, 334–5
bilirubin, 3, 305–6
BiPAP, 122
birth management
induction of labour, 31–2
of caesarian sections, 33–4
of forceps deliveries, 33
of vacuum-assisted device deliveries, 33
prematurity, 32
team and multiprofessional working, 34–5
type of delivery, 32–3
see also newborn infant care
birth trauma, 250–51
blood circulation, foetal, 39–44
blood clotting problems, 309–12
blood components, 297–300
production, 300–301
blood gases, interpretation, 123–4
blood glucose, foetal, 44
blood groups, 301–2
blood pressure, 175
see also hypertension and pre-eclampsia
blood tests, antenatal screening, 16
blood transfusions, 304–5
BMI (body mass index), and risk, 15
bolus feeds, 215
bonding theory, 52–3
bottle feeding, 329
brain, anatomy and embryology, 244–5
brain injury
mechanisms, 254
pre-term, 257–8
breast milk, 48, 212–14
feeding problems, 214
feeding strategies, 329
following infant death, 271
storage, 213
supplementation, 213
breathing see respiration and ventilation
caesarean sections
care planning, 34
incidence, 33
indications for use, 33–4
risks, 34
calcium requirement, 210
captopril, 187
caput succedaneum, 250
cardiac catheterisation, 188–9
cardiac failure, 184–6
cardiac output, 173
cardiac surgery, general considerations, 189–90
cardiac ultrasound, 188
cardiovascular anomalies, 172–204
investigations and assessment, 176–7
and maternal diabetes, 23
medical treatments, 186–8
in preterm infants, 72
in SGA infants, 67
surgical interventions, 189–90
types and management, 177–204
see also individual conditions
cardiovascular circulation
embryonic, 172–3
foetal, 39–42, 173
post-natal, 173
care, definitions, 6
caudal regression syndrome, 23
cranial ultrasound, 188
CEMACH report (2004), 14, 34–5
cerebral palsy, 250
cerebellar haemorrhage, 251
children's rights, 335
cholestasis, 225
chorionic villus sampling (CVS), 17
Christchurch Women's Hospital (New Zealand), 1, 2
chromosome abnormalities, 69
additions, 159–60
deletions, 159
duplications, 159
inversions, 159
mosaicism, 160
rings, 159
chronic lung disease (CLD), 111–12
circulation, foetal, 39–44
clinical environments, 53–4
Clinical Risk Index for Babies (CRIB), 7–8
clotting factor deficiencies, 310–12
CMV (control mode ventilation), 121
nursing care, 124–9
cocaine abuse, 253–4
caesarean sections
incidence, 33
indications for use, 33–4
risks, 34
calcium requirement, 210
captopril, 187
caput succedaneum, 250
cardiac catheterisation, 188–9
cardiac failure, 184–6
cardiac output, 173
cardiac surgery, general considerations, 189–90
colostomy, infant discharge considerations, 353–4
congenital defects (general), 152–5
basic mechanisms and principles, 153–5
embryonic development, 66–8
management of neonates, 168
see also genetics
congenital diaphragmatic hernia, 147–8
congenital heart disease see cardiovascular anomalies; heart defects (congenital)
consent issues, 335–6
continuous positive airways pressure (CPAP), 115–17
 contractility, 174
 coroners, 268
counselling
antenatal and post diagnosis, 133–4
preconception and genetic, 14, 165–6
CRIB scores, 6–7
cyanosis, and heart failure, 185, 194–7
cytomegalovirus (CMV), 69, 286–7
dating scans, 18
death certificates, 267–8
decision-making partnerships, 336–8
see also treatment decision-making
developmental care, 316–21
models and frameworks, 316–21
rationale for use, 321–2
step-by-step approaches, 325–7
strategies and methods, 322–9
dexamethasone, 217
diabetes (maternal), 21–4, 44
care planning, 22
diagnosis and management, 21–2
neonatal outcomes, 22–3, 95
DIC see disseminated intravascular coagulation
digoxin, 187
diphtheria immunisation, 291
discharge planning, 345–7, 348–55
giving advice and training, 350–51
resuscitation procedures, 350–51
use of home oxygen, 351–3
use of nasogastric tubes, 353
disseminated intravascular coagulation (DIC), 311–12
dobutamine, 179–80
dopamine, 179–80
Down's syndrome, 69, 156–7
drug administration
preterm infants, 74
ventilated infants, 127–8
drug-abuse, neonatal consequences, 252–4
dying infants, 262–72, 343
ethical concerns, 341–3
home-based care, 354
palliative care, 264, 343
physiology of dying, 263
post-mortem examinations, 265–7
registration of the death, 267–8
religious and cultural considerations, 265
role of coroners, 268
situations in NNUs, 268–71
stages of grief, 271–2
dysmorphology
defined, 153
see also congenital defects (general)
echocardiography, 188
Edwards' syndrome, 69, 156–7
electrocardiogram (ECG), 188
electrolytes
monitoring, 92
parenteral feeds, 220
potassium, 91
sodium, 88–91
see also fluid balance
embryonic development, 66–8
cardiac function, 172–3
genetic abnormalities, 166–7
neurological function, 244–5
respiratory function, 102–4
emotional responses, neonatal experiences, 54–5
emotional support, for new parents, 55–6
encephalocoele, 247–8
encephalopathy, 254–7
diagnosis and presentation, 254–6
management, 256–7
endotracheal tubes, 117–19
management, 125–6
energy requirements, 208–9
enteral feeds, 329
breast milk, 212–14
gut priming, 214–15
environmental influences on care, 318
epilepsy, 24–5
epinephrine, 179–80
erthrocytes, 298–300
erythropoiesis, 301
ethics, 334–44
autonomy, 334–5
best interests, 335, 338
developmental care approaches, 316–17
informed consent, 335–6
justice, 335
managing uncertainty, 341
religious and philosophical perspectives, 341–3
euthanasia, 342–3
evaluating care services, 7–8
evidence-based practice, 8–10
exomphalos, 142–3
eye conditions, premature infants, 3, 75–6
Fallot's tetralogy, 194–6
family centred care, 317–18
family history, 15, 153
fats, 211, 220
feeding movements, 246–7
feeding strategies, 329
flow generators, 120
fluid balance, 88–91, 209
foetal, 44
management, 92–3
measurement, 92
neonates, 46–7, 49
preterm infants, 73
fluid composition, 92–3
fluid overload, 90
fluid requirements, 209
foetal blood sampling, 17
foetal period, defined, 68
foetus
assessments and screening, 17
circulation and metabolism, 39–44, 173
fluid balance, 44
growth, 18
lungs, 43–4, 45, 104–5
metabolite clearance, 44
physiological post-birth adaptations, 44–7
folic acid, and epilepsy, 24
food additives, 215–16
forceps deliveries, 33
formula feeds, 215–16
post-discharge, 217
frusemide/furosemide, 187
fungal infections, 282, 284
gastrointestinal conditions
congenital abnormalities, 67–8, 147–9
herniations, 67–8, 147–8
malrotation and volvulus, 148–9
preterm infants, 72
rectal malformations, 149–50
gastroschisis, 67–8, 141–2
GBS infections see group B streptococcal infections (GBS)
genetic counselling, 165–7

genetics
basic principles, 153–5
chromosome abnormalities and karyotyping, 155–60
implications for practice, 168–9
mitochondrial gene alterations, 164–5
mosaicism, 165
multifactorial conditions, 163–4
single gene conditions, 160–63
testing and screening, 167–8

ergimental matrix haemorrhage, 257–8

glucose metabolism, 93–4
foetal, 44
hyperglycaemia, 95–7
hypoglycaemia, 94–5
IUGR infants, 70
neonates, 45–6, 70

glucose monitoring, 48

glycosuria, 224


grief, 271–2
‘Groningen Protocol’, 342–3
Group B streptococcal infections (GBS), 16, 278–9, 280–81

growth measurements
full term infants, 216
preterm infants, 216–17


grunting, newborn, 21


ahemoglobin, foetal, 41–2
ahemoglobinopathies, 30–31
screening tests, 16
ahemolytic disease of the newborn, 306–7
ahemophilia, 311
ahemopoiesis, 300–301


ahemorrhage
clinical signs, 309–10
intra- and extra-cranial, 250–51
intraventricular, 257–8
head and neck, congenital abnormalities, 67
head circumference measures, 216, 217
Health Resource Groupings (HRGs), 6
hearing problems, premature infants, 76
heart defects (congenital), 67, 180–98
causes, 181–2
common conditions, 190
diagnosis, 182–3
future outlook, 198
informing parents, 188
investigations, 188–9
medical treatments, 186–8
monitoring and observation, 184–6
post-natal care, 183–9
surgery, 189–90
types, 190–204
see also individual conditions;
persistent ductus arteriosus (pDA)
heart failure, 184–6
heat devices, 85–6
heat loss and gain, 81–3
hepatitis B (HBV), 287–8
screening tests, 16
hernias, congenital abnormalities, 67–8, 147–8
heroin abuse, 252–4
HFOV (high frequency oscillatory ventilation), 122–3
nursing care, 128–9
Hirschprung’s disease, 143–4
history of neonatal care developments, 1–11
early accounts, 1–2
evolution of nursing practices, 3
models of care, 5
organisational restructuring, 4–5
pre- and post-natal transfers, 5–6
research methodologies, 8–10
service trends and evaluations, 6–8
technology developments, 3
HIV infections, 288–90
cellular responses, 277
management, 289–91
screening tests, 16
home-based care
benefits and rationale, 349
resuscitation training, 350–51
role of outreach services, 347–8
use of oxygen, 351–3
hospital discharge, 345–56
basic preparation, 345–7
practicalities and planning considerations, 348–55
human rights issues, 335
hydrocephalus, 249
hydrocortisone, 179–80
hyperglycaemia, 95–7
hyperinsulinism, 95
hyperkalaemia, 91
hypertension and pre-eclampsia, 17–21
care planning, 19–20
causes, 17–18, 18
diagnosis and management, 17–19
neonatal outcomes, 20–21
hyperthermia, 84–5
hypoglycaemia, 94–5, 97–9
hypokalaemia, 91
hypoplastic left heart syndrome (HLHS), 193–4
hypotenosis, 177–80
hypothermia, 83–4
complications, 257
hypothyroidism, neonatal, 29
hypoxic ischaemic insults, 89–90, 97–8, 254–5
I:E (inspiratory time: expiratory time) ratio, 120–21
ileostomy, infant discharge considerations, 353–4
immunisation programmes, 291, 292
immunity
adaptive, 275–7
gastrointestinal involvement, 279–8
innate, 274–5, 276
passive vs. active, 277–8
incubators, 84, 85
for transport, 239–40
indomethacin, 187, 203
induced labour, 31–2
infanticide, 341–2
infections, 274–92
bacterial, 279–81
congenital, 286–92
development of immunity, 274–8
foetal, 69
fungal, 282
hazards of peripartum antibiotics, 279–8
investigations, 282–3
neonatal, 279–86
prevention, 285–6
screening tests, 16
sepsis, 279–81
treatments, 283–6
informed consent, 335–6
inotropes, 178–80
instrumental deliveries, 33, 34
intrauterine growth retardation
see IUGR (In utero growth restricted) infants
intravenous immunoglobulin (IVIG), 285
intraventricular haemorrhage, 257–8
intubation, 117–19
management of tubes, 125–6
medications, 119
tube removal, 126–7
iron requirements, 210
IUGR (In utero growth restricted)
  infants, 65, 68–70, 217
  causes, 68–9
  nursing care, 70

jaundice, 225, 305–8
  management, 307–8
  nursing care, 70

jerks and jitteriness, 252

justice, 335

kangaroo care, 86, 328–9

kidneys
  foetal, 44
  neonate, 47
  see also fluid balance

labour
  delivery types, 32–4
  induced, 31
  instrumental deliveries, 33
  LSCS (caesarean sections), 33–4
  premature, 32
  twin births, 32
  ventouse deliveries, 33
  see also newborn infant care

leucomalacia see periventricular
  leucomalacia

life expectancy, and treatment
decision-making, 340–41

lighting in units, 324

lipid, 211
  in feeds, 220
  intolerance, 224–5
  metabolism, 45–6

listeria, 279, 281

litigation, birth management
  problems, 35

long chain poly-unsaturated fatty
  acids (LCPs), 211

lungs
  anatomy and physiology, 105–7
  chronic disease, 111–12
  embryonic development, 102–4
  foetal, 42–3, 45, 104–5
  preterm infants, 72
  see also respiration and ventilation;
  respiratory distress syndrome
  (RDS)

lupus nephritis, 26

malrotation, 148–9

marijuana, 253

marital status and risk, 15

marker chromosomes, 159–60

maternal age, 14

maternal medical conditions, 17–31
  antiphospholipid syndrome, 27–8

  diabetes, 21–4
  epilepsy, 24–5
  hypertension and pre-eclampsia,
    17–21
  obstetric cholestasis, 29–30
  thyroid disease, 28–9
  medications see drug administration
  meningitis, 258
  immunisations, 291
  meningocoele, 247–8
  metabolic acidosis, 224
  microcephaly, 249
  micronutrients, 209–11
  mineral requirements, 209–10
  minimal enteral nutrition (MEN),
    214–15
  mitochondrial gene alterations, 164–5
  MMR immunisation, 291
  models of care, 5
  mortality rates, 6–7
  mosaicism, 165
  movement, 246–7
  support strategies, 327–9
  MRSA, 277, 278
  muscle tone, 246
  music, 323–4
  nappy changes, 327
  nasogastric tubes, 117–19
    home-based use, 353
    insertion methods, 326
  NEC see necrotising enterocolitis
    (NEC)
  necrotising enterocolitis (NEC),
    136–41
  neonatal abstinence syndrome, 252–4
  neonatal care
    definitions, 6
    evaluation tools, 7–8
    research methods, 8–10
    see also birth management; develop-
    mental care; newborn infant care
  neonatal care developments see
  history of neonatal care developments
  neonatal care units, development
  history, 4
  Neonatal Nurse Consultants, 3
  neonatal surgery see surgery; surgical
  conditions
  neonatal units, parental experiences,
    53–5

neural tube defects 66–7, 247–8

neurology, 243–59
  anatomy and embryology, 244–5
  clinical assessment, 245–7
  congenital abnormalities, 247–9
  encephalopathy, 254–7
  meningitis, 258
  neonatal abstinence syndrome,
    252–4
  preterm brain injury, 257–8
  seizures, 251–2
  trauma consequences, 250–51
  newborn infant care, 47–9
  IUGR babies, 70
  preterm babies, 71–5

NIDCAP (Newborn Individualised
  Developmental Care and
  Assessment Programme),
    320–30

nitric oxide, 129, 187

noise levels, 323–4

non-maleficence, 334–5

non-shivering thermogenesis, 83

nuchal scan, 18

nucleotides, 211

Nuffield Council on Bioethics, 343

nursing careers, current
devolutions, 3

nursing practices, development
  history, 3

nursing profession, development
  history, 3

nutrition (infants), 207–26
  body requirements, 208–11
  bottle feeding, 329
  breast milk, 48, 212, 329
  enteral feeds, 212–15
  feeding strategies, 329
  fluid balance, 49, 209
  formula feeds, 215–16
  glucose monitoring, 48
  parenteral feeds, 218–26
  post-discharge interventions,
    217
  trophic feeds, 214–15
  tube insertion, 326

obstetric cholestasis, 29–30

oedema, 185–6

oesophageal atresia, 144–6

oligohydramnios, 44

ORACLE trial, 32

organisational structure (neonatal
  care)
  development history, 4
  reforms of the 1990s, 4–5
  outreach services, 347–8
support for home oxygen use, 352–3
oxygen saturation
foetal, 41–2
measurement, 42
oxygen therapy, 115
early developments, 3
home-based, 351–3
oxytocin, 31
pacifiers, 214
pain, 321, 342–3
see also analgesia
palliative care, 264–5, 343
dying at home, 354
see also dying infants
parent support, 325
parental responsibility, 336
decision-making partnerships, 336–8
parenteral nutrition, 218–21
administration, 221–2
complications, 222–5
composition, 219–20
preparation and storage, 220–21
transition to enteral feeds, 225–6
parenthood, 51–7
characteristics, 52
demographic data, 51–2
experiences in neonatal units, 53–5
theories, 52–3
parenting needs, 322
Patau syndrome, 69, 157–8
pDA see persistent ductus arteriosus (pDA)
peak inspiratory pressure (PIP), 121
PEEP (positive end expiratory pressure), 121
periventricular leucomalacia, 72, 258
persistent ductus arteriosus (pDA), 198–204
clinical features, 199–201
management, 200–204
persistent pulmonary hypertension of the newborn (PPHN), 113–14
pertussis, immunisations, 291
philosophical perspectives, 341–3
phosphate, 210
phototherapy, 307
physical contact, 56
Pierre Robin sequence, 67
placental function, and IUGR, 69
plasma, 297–8
platelets, 298
Platt Report (1959), 55
polio immunisation, 291
polycythaemia, 70, 308–9
positioning and handling
preterm infants, 74
support strategies, 327–9
ventilated infants, 129
post-mortems, 265–7
posture, 246
support strategies, 327–9
potassium balance, 91
pre-eclampsia, 17–21
care planning, 19–20
causes, 17–18
diagnosis and management, 17–19
neonatal outcomes, 20–21
risk factors, 15
prebiotics, 211
Prechtl, Heinz, 327
preconception counselling, 14
preload, 173–4
premature infants, 66, 70–76
birth management, 32–3
early management, 71–5, 97–8
homeostasis and metabolism, 90–91, 93–4
problems and complications, 72, 75–7, 107–8
pressure generators, 120
propranolol, 188
prostaglandins, 186–7
protein, 209
metabolism, 45–6
parenteral feeds, 219
PS (pressure support), 121
PTV (patient triggered ventilation), 122
radiant warmers, 85
randomised controlled trials (RCTs), 9
reciprocal translocations, 158
rectal malformations, 148–9
red blood cells (RBCs), 298–300
regional neonatal care units, 4
religious perspectives, 341–3
dead and dying infants, 265
renal failure 91
reproductive health services, overview, 6–8
research governance, 10
research methodologies, 8–10
research regulation, 10
respiration and ventilation, 102–29
control mechanisms, 105–7
in the embryo, 102–4
in the foetus, 42–3, 104–5
post-birth changes, 44–5
problems in the newborn, 107–15
sudden clinical deterioration, 126
therapies and ventilatory support, 115–29
respiratory distress syndrome (RDS), 20–21, 108–11
fluid and sodium balance, 90
management, 110–11
respiratory syncytial virus (RSV) infections, 291
resuscitation
of neonates, 48
training for parents, 350–51
retinopathy of prematurity (ROP), 3, 75–6
Rhesus antigens, 302
risk assessment in pregnancy, 14
Robertsonian translocations, 158
room temperatures, 86
sanctity of life, 342
screening
antenatal, 16–17
for genetic conditions, 167–8
seizures, 251–2
sensory stimulation, 322
sepsis, 279
treatments, 284
SGA (small for gestational age) infants, 65–70
Sheldon Report (1971), 4
shoulder dystocia, 33
sickle cell disease, 30–31
side lying, 328
SIMV, 121–2
SIMV + PS, 122
SiPAP, 122
SIPPV, 122
skin
functions and structures, 80
nursing care, 92
skin-to-skin care, 86
sleep needs, 321–2
small infants, 65–77
definitions, 65–6
embryonic and foetal development, 66–70
prematurity, 70–76
smell, 324–5
smoking, neonatal consequences, 253
socio-economic data, 15–16
sodium balance, 88–91, 209–10
see also fluid balance
sodium valproate, contraindications, 24
SP–B deficiency, 111
spina bifida, 248
screening tests, 16
spinal cord, neural tube defects, 66–7
spironolactone, 187
Staphylococcus aureus, 277
Starling's law, 174
steroids, 217
stoma care, 353–4
streptococcal infections, screening tests, 16
Streptococcus pyogenes, 277
stress responses, 321
subarachnoid haemorrhage, 250–51
subdural haematoma, 250
subgaleal haemorrhage, 250
sudden infant death syndrome (SIDS), 350
superantigens, 277–8
surfactant protein B deficiency, 11
surfactant therapy, 72, 109–10
surgery, 133–50
antenatal diagnosis and counselling, 133–4
management principles, 134–5
preoperative assessments, 135–5
post-operative care, 136
theatre checklists, 137–8
surgical conditions
exomphalos, 142–3
gastrochisis, 67–8, 141–2, 141–3
Hirschsprung's disease, 143–4
necrotising enterocolitis (NEC), 136–41
oesophageal atresia, 144–6
persistent ductus arteriosus (pDA), 203–4
syphilis, 286
screening tests, 16
systemic lupus erythematosus, 25–7
taste, 324–5
T-cell antigens, 276–7
technology developments, history, 3
temperature control see thermoregulation
temperature monitoring, 86
terminal conditions see dying infants
tetanus immunisation, 291
α-thalassaemia, 30
β-thalassaemia major, 30
thermoregulation, 47–8, 79–86
anatomy and embryology, 80
IUGR infants, 70
mechanisms, 81–3
preterm infants, 71–2
thrombocytopenia, 28, 309–10
thyroid disease, 28–9
tidal volume, 120
touch therapy, 56
trace elements, 210
tracheo-oesophageal fistula (TOF), 67, 144–6
traceostomy, home-based care, 354–5
training and education, development history, 3
transient tachypnoea of the newborn (TTN), 112–13
translocations, 158
transport of neonates, 5–6, 231–42
equipment, 232–3
inter-hospital, 231–2, 240–41
intra-hospital, 232
personnel and training, 232
recognition and referrals, 233–4
records and documentation, 241–2
stabilisation and preparation, 234–9
transfer to transport incubator, 239–41
transposition of the great arteries (TGA), 196
treatment decision-making, 336–8
balancing burdens and benefits, 339–41
withdrawal/withholding interventions, 339–41
tricuspid valve atresia, 196–7
trigger, 120
twin births, 32
ultrasound screening, 16–17, 18
umbilical cord, 40–42
clamping, 45
UN Convention on the Rights of the Child, 335
uncertainty, 341
uterus, hyperstimulation, 31
vacuum-assisted labour devices, 33
venous thromboembolism, 223
ventilation support, 115–19
classification of types, 119–20
fundamental principles, 120–21
intubation practices, 117–19, 126–7
medications, 127–8
modes and methods, 121–3
monitoring and interpreting blood gases, 123–4
nursing care, 124–9
sudden clinical deterioration, 126
ventouse deliveries, 33
ventricular septal defect (VSD), 190–91
virus infections, respiratory, 291–2
visual array in units, 324
vitamin A, 211
vitamin D, 211
vitamin E, 211
vitamin K deficient bleeding (VKDB), 310–11
vitamins, general, 210–11
volvulus, 148–9
VS (volume support), 121
water filled mattresses, 85–6
weighing, 326
whey formulas, 215
white blood cells, 298
Why Mothers Die (CEMACH 2004), 14, 34–5
Wilson-Mikity syndrome, 112
withdrawing treatment, 339–41
withholding treatment, 339–41
X-linked recessive inheritance, 163