

Cambridge University Press 978-1-108-18598-1 — Investigation of Sudden Infant Death Syndrome Edited by Marta C. Cohen , Irene B. Scheimberg , J. Bruce Beckwith , Fern R. Hauck Index More Information

Index

risk factors and, 191-3 baby boxes, 138 abdomen secondary depression phase, 180 Baby Friendly Hospital Initiative examination, 49-51, 59-61 (BFHI), 142-3, 146 arrest, of suspects, 106 visceral trauma, 247-8 arrhythmogenic right ventricular baby nests (baby pods), 138 Aberdeen Area Infant Mortality Study cardiomyopathy (ARVC), back-to-sleep campaigns (AAIMS), 198-9 160 bed-sharing SIDS after, 149-50 abscesses, 102 asphyxia, 236-7 recurrent SIDS after, 130 accident and emergency (A&E) arousal response, 189 SIDS rate after, 136-7 departments cause of death classification, 41 bacteraemia, 100-1 accidental death, 41 causes of sleep-related, 236-7 bacterial infections, 163, 219-23 acid-base disorders, 213 parents' perspective, 6 bacterial translocation, post-mortem, acute tubular necrosis, 219-20 positional, 237 acylcarnitine (AC) profiles 100 sleep-related, 236-7 bacteriology bile, 121 asplenia, 219, 222 interpretation, 100-4, 222-3 blood, 117-20 autopsy, 48-53 samples, 53, 101-2 cultured fibroblasts, 122 ancillary investigations, 51, 53 Barth syndrome, 160 adenoviruses, 224 brain examination battered-child syndrome, 237-9 adrenal glands, 51 cerebral white matter, 98 batteries, swallowed, 232-3 adrenal haemorrhage, 221, 223, 248 brainstem, 96-7 BCGitis/BCGosis, 225 advocacy groups, 41 hippocampus, 97 bedding, 138-9 agency policies and practices, removal and fixation, 52, 95-6 beds, child and adult, 137-8 improving, 78-9 clinico-pathological summary, 53 bed-sharing, 149-53. See also alcohol consumption, maternal, 134 arousability and, 192-3 external examination, 48-9, 57-8 overlaying forensic (see joint pediatric/forensic autopsy findings, 53 bed-sharing and, 150-1 autopsy), Bowden's studies, 2 brainstem 5-HT deficits and, 199-202 histology samples, 49, 52 breastfed infants, 143, 151 alveolarcapillary dysplasia, 231-2 imaging findings, 89-93 fall in SIDS rates and, 149-50 ambulance service, 29 initial incision, 49-50 hazardous interactions, 132, 134, American Academy of Pediatrics instruments, 49 149-51 (AAP), 149, 151 internal examination, 49-52 risk in nonhazardous situations, amino acid testing, 119-21 joint forensic/paediatric. See joint 150 - 1anion gap, 108, 112 forensic/paediatric autopsy risk-reduction strategies, 151-3 anogenital injuries, 242-3 microscopic examination, 53 substance misuse and, 134, 149-50 anterior chest wall, 58-9 minimally invasive, 71-3 bedside sleepers (side cars), 138 anterior torso, musculocutaneous molecular. See genetic testing dissection, 58-9 bereavement, 12-15 NAME recommendations, 39-40 risk impeding aortic stenosis/atresia, 226 parental consent, 12, 16, 95 β -amyloid precursor protein (β APP) arcuate nucleus, 96, 162, 203 parents' perspective, 15, 46 arm chairs, cushioned, 137 immunohistochemistry, 257-9 pathologists performing, 21-22, 24, beta-blockers, 175 arousal, 189-94 bile brainstem 5-HT mechanisms, release of body after, 22, 24 analysis, 119, 121 190-191 religious objection laws, 41 breastfed infants, 143 samples, 109, 117 second post-mortem, 24 biochemical analysis definition, 189 suspicious signs, 30 inherited metabolic disease, 119 failure, 178, 180, 189, 193-4 tissue retention, 22, 249-50 poisoning, 106–9 inner-ear defects and, 164, 207-9 UK guidelines, 55 tissue samples, 117-18 intermittent hypoxia and, 189-90 UK legal framework, 21-22 pontine Kölliker-Fuse nucleus, biological risk factors, 127-8 US legal framework, 40-1 biopsy, targeted, 92 162 autoresuscitation, 180, 189, 196 birth-related injuries response to hypoxia and axonal injury, 96-7, 257-8 fractures, 245, 250 hypercapnia, 178-80, 189

266



Cambridge University Press 978-1-108-18598-1 — Investigation of Sudden Infant Death Syndrome Edited by Marta C. Cohen , Irene B. Scheimberg , J. Bruce Beckwith , Fern R. Hauck Index

More Information

Index

retinal haemorrhages, 254 subdural bleeding, 254 bite marks, 240 blankets, 139 bleeding disorders, 241, 253 blood cultures, 100-1 blood samples, post-mortem, 51, 108 biochemistry and toxicology, 107-9 collection, 50 drugs detected, 112 inherited metabolic disease, 117-21 blunt trauma, 239-41, 247 external examination, 48-9, 57-8 measurements, 48 parents' perspective, 12 police actions, 29 release after autopsy, 22, 24 bone scan, 243 bony lesions, 56 Bordetella pertussis, 219 botulism, 102 Bowden, K. M., 1-3 brachycephaly, 251 brain forensic pathology, 255-8 gross examination, 95-6, 255-6 microscopic examination, 257-8 removal, 52, 61-3, 95 sectioning and sampling, 52, 95-6, 249 - 50size abnormalities, 252 swelling, 250, 255-8 brainstem arousal response, 190-1 cardiorespiratory control, 180-3 effects of inflammation, 183 gliosis, 96 mechanisms of SIDS, 95, 178-83 pathology, 96-7 serotonin system, 195–204. See serotonin (5-HT) system, brainstem upstream influences on, 96-8, 182 breastfeeding, 142-3 bed-sharing and, 143, 151 mechanisms of protection, 143 methadone-using mothers, 135 pacifier/dummy use and, 143, 146-7 protective effects, 142-3 breathing control brainstem circuitry, 180-3, 196 effects of inflammation, 183 neuromodulation, 182-3 brief resolved unexplained events (BRUE), 237 Brugada syndrome, 160-1, 175 bruises, 238-41 ageing, 240-1

signs of abuse, 239-41 bucket-handle fractures, 245 bumper pads, 81-2, 139 burns, 241-2 C1-neurons, noradrenergic, 179-80 caffeine, 134 calcium (Ca²⁺)-related gene mutations, 173 - 4calcium, blood, 108 car seats, 138 carbohydrate disorders, inherited, 212, 215-16 cardiac arrhythmias channelopathies, 160-1, 172-6 fatty acid oxidation defects, 214 cardiac disease inherited, 160-1, 213 sudden deaths in infancy, 225-31 cardiac tumours, 229 cardiomyopathies, 160, 176, 214, 226-9 cardiopulmonary resuscitation (CPR), 245, 247-8 cardiorespiratory control, 180-3 care of next infant (CONI) programme, 3, 15-16 carers (caregivers). See also parents initial accounts, 31 interview by police, 32 risk factors for abuse, 30, 238-9 taking statements from, 33-4 carnitine palmitoyltransferase type 2 deficiency, 120 carotid bodies, 182, 190 case-control studies, 136 catecholaminergic polymorphic ventricular tachycardia (CPVT), 161, 175-6, 229 cause of death determination in US, 40-1 diagnostic shift, 6, 78 discussion with parents, 41, 87 final case discussion (UK), 86 inquest conclusions, 26-7, 35 parents' perspective, 6, 9 trends in US, 127-8 undetermined. See undetermined Centers for Disease Control and Prevention (CDC) investigation of SUID, 37-9 SUID Case Registry, 82-3 central nervous system forensic pathology, 249-59 histology samples, 52 inherited defects, 162 pathways, 161-2 cerebellum, delayed maturation, 96 cerebral venous and dural sinus thrombosis (CVDST), 254-5 cerebral white matter, 98

cerebrospinal fluid (CSF) samples collection, 51-2, 61-2 inherited metabolic disease, 117, poisoning, 109 cervical spine, excision, 66-7 channelopathies, cardiac, 160-1, 172-6 chemoreceptors, central, 190 chest. See also rib fractures examination, 48-50, 58-61 internal injuries, 248 skeletal trauma, 244-5 child abuse, 237-59. See also suspicious deaths autopsy findings, 239-59 mimics, 241, 246-7 pathologists' role, 238 risk factors and signs, 30, 238-9 child-care settings, 156 Child Death Overview Panel (CDOP), 23, 87-8 child death review (CDR), 11, 75-83 home visit, 45-6 improving reporting of SUID, 80-3 information shared, 77 objectives, 45, 77 participants, 76-7 role in improving outcomes, 78-80 steps in case discussion, 77 steps in process, 76 Child Death Review Case Reporting System (CDR-CRS), US National, 80-2 child fatality review board, 40 Child Practice Review (Wales), 23 chloride, blood, 108 choanal atresia, 231 chorioamnionitis, 102 chromosomal abnormalities, 164 chromosomal microarray (CMA), classification, sudden infant deaths, 41, 236 clavicular fractures, 245 clinical exome sequencing, 166 clinico-pathological summary, 53 Clostridium difficile, 222 Clostridium perfringens, 221 coagulation disorders, 241, 253 coliforms, 104 commensal flora, respiratory tract, 104 computed tomography, post-mortem (PMCT), 72-3, 89-91 intraosseous needle tracts, 90-1 normal variants, 89-90 post-mortem change, 89 conclusion, inquest, 26-7, 35 congenital heart disease, 225-6

congenital infections, 102

267

mimicking abuse, 241



Cambridge University Press 978-1-108-18598-1 — Investigation of Sudden Infant Death Syndrome Edited by Marta C. Cohen , Irene B. Scheimberg , J. Bruce Beckwith , Fern R. Hauck Index

More Information

Index

first reponders, 43 day-care environment, 156 contamination, microbiological, home visit, 32, 45-6 death scene investigation, 43 initial police actions, 29-30 epidemiology of SIDS coronary arteries physical evidence, 31 Netherlands, 10-11 anomalous origin, 226 UK, 153, 159 fibromuscular dysplasia, 226 residues, toxicology, 109 unsafe sleep environment, 236 US, 127-8, 159 epigenetic changes, 203 autopsy decision, 22 dehydration, 111-12, 248-9 delayed death in SIDS/SUID, 98, 255, epiglottitis, 219 further enquiries, 22-3 history, 19-20 epilepsy, 233, 256 dentate fascia, hippocampal, 97 Escherichia coli, 163, 219 independence, 20 Department of Health and Human ethnic/racial differences initial investigation, 21-2 bed-sharing, 151 inquest conclusion, 26-7 Services, US, 76 dilated cardiomyopathy (DCM), 160, infant sleep position, 136 inquest decision, 23-4 227, 229 SIDS rates, 127-8, 159 inquest procedure, 25 disseminated intravascular coagulation ethylene glycol poisoning, 112-13 inquest remit, 24-5 (DIC), 219-20 eupnoea, fictive, 179-80 legislation, 20 diving reflex, 97-8, 208-9 European Convention on Human notifying child deaths to, 20-1 DNA analysis. See genetic testing Rights (ECHR), Article 2, paediatric post mortems, 22 doctors, death certification, 20 19-20, 25-7suspicious deaths, 24 doll re-enactment, 39, 43, 56 evidence tissue retention, 22 UK legal framework, 19-27 Dravet syndrome, 233 expert, 34 drug misuse. See also substance abuse forensic trace, 56 unnatural deaths, 21 bed-sharing and, 150 securing and collecting, 29-30, US, 19, 36-9 child deaths, 109-11 32 - 33working with police, 21-2, 24, 29, post-mortem screening, 111-12 valuable physical, 31 Coroners (Inquests) Rules 2013, 20 pregnancy, 134-5 external post-mortem examination, drugs. See also toxicological analysis 48-9, 57-8 Coroners (Investigations) Regulations numbers of deaths, 109-10 eye movement desensitisation and 2013, 20 post-mortem screening, 111-12 reprocessing (EMDR), 14 Coroners and Justice Act 2009, 20 dual process model, grief, 13 co-sleepers, bedside and in-bed, 138 dummies. See pacifiers external examination, 48, 57-8 co-sleeping, 149-53. See also bedremoval, 65-6 duodenal injuries, 248 sharing; sofa-sharing hazardous interactions, 132, 134, dura, 98, 252-5 acute intradural bleeding, 98, 252 face 149 - 50incision, 62 dissection, 64-5 Māori practices, 152-3 external examination, 48, 57 sinuses, 254-5 costochondral junctions, 59-61, 246 cot death, 9, 53 subdural bleeding. See subdural trauma, 247 falls, 239, 251 Cot Death Foundation (Netherlands), bleeding dysmorphic features, 116, 213 families. See also carers; parents Cot Death Parent Association explaining cause of death to, 87 improving services for, 78-9 (Netherlands), 9, 11, 16 ears, examination, 48 cots (cribs), 138 e-cigarettes, 132 initial care, 11-12 couches, sharing. See sofa-sharing Ehlers-Danlos syndrome, 241 perspective on SIDS, 5-8 electron microscopy, 121-2 recurrent SIDS, 3, 129-30 coxsackieviruses, 223-4 craniosynostosis, 251-2 electrospray ionisation-tandem mass tissue retention and, 22 craniotabes, 52 spectrometry, 118-21 family doctors, 11, 16 crib death, 9 emergency departments, 29, 31-2, family history, 46 45-6. See Accident and family studies, recurrent infant cribs. See cots Emergency departments mortality, 129 criminal cases, 34-5 emergency services, 28-9, 43 fat deposition, 121-2 Crown Prosecution Service (CPS), 34 cyst-like brain lesions, 256 Emery, J. L., 1-3 fatty acid oxidation disorders, 212-14 encephalitis, viral, 224-5 cytomegalovirus (CMV), 102, 224 fetal and infant mortality review encephalomalacia-like lesions, (FIMR), 75 Davidson, W. H., 1 256 fibroblast cultures, 117-18, 122 encephalopathy, 257-8 fibromuscular dysplasia, 226 day-care environment, 156 endocardial fibroelastosis, 229 filicide, 3 Dbx1 neurons, 182 endocarditis, 102 final case discussion, UK, 86-7 death certificate, 20 enteroviruses, 223-4 finger-bone fractures, 245 death scene doll re-enactment, 39, 43, 56 environmental risk factors, 136-40. See first responders, 29, 43 also sleep environment FISH/QF-PCR, 164 examination, 43, 56

268



Cambridge University Press 978-1-108-18598-1 — Investigation of Sudden Infant Death Syndrome Edited by Marta C. Cohen , Irene B. Scheimberg , J. Bruce Beckwith , Fern R. Hauck Index

More Information

Index

0	. 6 10	:
fluorescent in situ hybridisation	grief, 13	importance, 2
(FISH) QF-PCR	complicated, 13	neuropathological findings and, 95
FMO3 gene polymorphisms, 163	constructive, 13–14	home monitors, 15–16
fontanelles, 48, 52, 57, 252	factors impeding, 15	home visit, 32, 45–6
forensic autopsy, 24, 48, 55-69. See also	individual variations, 13	who and when, 45-6
joint forensic/paediatric	models of mourning, 13	obtaining history, 46
autopsy	group A streptococcus, 104, 219	homicide, 24
forensic pathologist, 24, 55	group B streptococcus (GBS), 104, 219,	hookah, 132
	221	hospital records, 32
forensic pathology, 235–59		
fractures, 243–7. See <i>also</i> rib fractures;	guilt, 13	5-HT (5-hydroxytryptamine). See
skull fractures	gut microbiome, 203	serotonin
abuse mimics, 246–7	Guthrie cards	5-HT receptors
ageing, 244	ante-mortem newborn screening,	changes in SIDS, 197–9
detection, 243–4	118–19, 123	prenatal adverse exposures and,
facial, 247	blood acylcarnitine profiles, 118–19	199–202
long bones, 245	blood amino acid profiles, 119-21	5-HT transporter (5-HTT)
post-mortem radiology, 89-90	post-mortem samples, 108, 117, 119	changes in SIDS, 197-8, 200
frozen tissue samples, 53, 101	1 , , , ,	gene polymorphisms, 162, 202
fructose intolerance, hereditary,	haematological malignancies, 232-3	5-HT _{1A} receptors
215–16	haemophagocytosis, 219, 222	changes in SIDS, 198–9
		nicotine interactions, 164
fructose-1,6-bisphosphatase	Haemophilus influenzae, 219, 221	
deficiency, 216	haemosiderosis, 237, 254–5	risk factor interactions, 199
funerals, 12	hair analysis, 109	5-HT _{2A} receptors, 164, 197, 199
	head	5-HT ₃ receptors, 197
GABAergic neurons, 192–3	external examination, 48, 57	Human Rights Act 1998, 19–20, 25
galactosaemia, 215-16	internal examination, 51–2	3-hydroxy-3-methylglutaryl (HMG)
Garrow, I., 1	shape and size abnormalities, 251-2	CoA lyase deficiency, 214
gas embolism, 90	head injuries	hypercapnia
gas chromatography mass	cerebral venous and dural sinus	arcuate nucleus function, 162
spectrometry (GC-MS), 111–12	thrombosis, 255	arousal response, 179, 189
gasping	scalp lesions, 250	brainstem 5-HT mechanisms, 190-1
arousal response, 179–80	skull fractures, 250–1	inner-ear defects and, 164, 207-8
medullary 5-HT neurons, 196	subcortical contusional tears, 256–7	hyperflexion/extension injuries, neck,
neuromodulation, 182–3		66, 258
	subdural bleeding, 252–5	hypernatraemia, 111–12
SIDS pathogenesis, 180	healthcare workers	
gastric contents, sampling, 109	home visit, 32, 45	hypertrophic cardiomyopathy (HCM),
gastroenteritis, 225	support for parents, 12	160, 227, 229
gene sequencing, specific, 165	Healthy People (HP) 2020 objective, 76	hypoglycaemia, 121, 213–14
general practitioners, 11, 16	hearing defects, 164, 207	hypoplastic left heart ventricle, 226
genetic testing	heart	hypostasis, 57–8
cardiac arrhythmias, 176	examination, 50	hypoxia
metabolic disease, 117, 119, 122	microbiology, 100-101	arousal response, 178-80, 189
sample collection, 49, 53, 249	heart rate	brainstem 5-HT deficits and, 203
technologies, 164-6	arousal response, 180	brainstem 5-HT mechanisms,
genetics, 159-66	brainstem circuitry, 180-3	190-1
brainstem 5-HT changes, 162, 202	Haemophilus influenza,	diving reflex, 208-9
cardiac arrhythmias, 173-4	hematological malignancies,	habituation to intermittent, 189-90
recurrent SIDS, 129–30	hepatitis, fulminant, 102	inner-ear defects and, 164, 207-8
SIDS susceptibility, 159–64	hepatoblastoma, 231–2	nicotine exposure and, 191–2
genital injuries, 242–3	hippocampus, 97	post-mortem MRI, 93
genitourinary system, examination, 51	histiocytoid cardiomyopathy, 228–9	prenatal alcohol exposure and,
		192–3
genotyping, 165	histochemistry, 121–2	
gentamicin, intratympanic, 207–9	histology samples	hypoxic-ischaemic brain injury, 97,
gliosis, brainstem, 96	abdomen and thorax, 49	180, 259
glucose testing, 108, 121	central nervous system, 52	.1
glutaryl-CoA dehydrogenase	inherited metabolic disease, 118	identification, formal legal, 34–5, 40
deficiency, 215	staining, 53	IL-10 gene polymorphisms, 163
glycogen deposition, 121-2	history of SIDS, 1–3	imaging, post-mortem, 89–93
glycogen storage diseases, 216	history, clinical	inherited metabolic disease, 116
gram-negative bacilli, 104	home visit, 46	minimally invasive autopsy, 71-3



Cambridge University Press 978-1-108-18598-1 — Investigation of Sudden Infant Death Syndrome Edited by Marta C. Cohen , Irene B. Scheimberg , J. Bruce Beckwith , Fern R. Hauck Index More Information

Index

imaging, post-mortem (cont.) pre-autopsy, 56 immune dysfunction, 163 immunodeficiency syndromes, 225 inborn errors of metabolism. See inherited metabolic disease infant and child death review. See child death review infanticide, 3 infections, 219-25 microbiological diagnosis, 100-4 pathogenic role, 163 post-mortem skin samples, 117-18 inferior olivary nucleus, gliosis, 96 inflammation, breathing control and, 183 inflicted injuries. See child abuse influenza virus, 224 inherited metabolic disease causes of sudden death, 212 clinical presentation, 212-16 investigations and analyses, 118-23 pathophysiology, 163, 211-16 post-mortem investigation, 116–23 samples, 116-19 inner-ear abnormalities, 164, 207-9 arousal failure, 164, 207-9 diving reflex and, 208-9 inquest, 24-7, 35 adjournment, 24 Article 2, 25-7 conclusions, 26-7, 35 deciding on, 21, 23-4 history in US, 36-7 opening the, 25 inspiratory control brainstem circuitry, 180-3 neuromodulation, 182-3 interested persons, 25 interleukin 6 (IL-6), 163 international normalised ratio (INR), 108 interviews home visits, 46 police, 32-4 intestines, examination, 50 intra-abdominal injuries, 247-8 intradural bleeding, 98, 252 intraosseous needle tracts, 90-2 investigation of sudden infant death advocacy groups in US, 40 Child fatality review board, 40 Coroners, 19-27 determining cause and manner of death, 40-1 final case discussion (UK), 86-7 first responders, 43 home visit, 32, 45-6 Medical examiner, 38-9

NAME guidelines, 39-40 Netherlands, 11 police, 28-35 role of child death reviews, 78 UK legal framework, 19-35 US legal framework, 36-41 Investigation Questionnaire for Sudden Unexpected Deaths in Infants, joint forensic/paediatric autopsy, 55 - 69brain and spinal cord removal, 61-4 cervical spine excision, 66-7 decision to perform, 24, 48 evisceration and special dissections, 58-69 external examination, 57-8 eves removal, 65-66 facial dissection, 64-5 information on circumstances of death, 55-6 information on death scene, 56

karyotyping, 164
KCNH2 gene mutations, 160, 172
KCNQ1 gene mutations, 160, 172, 176
Kennedy Report, 55
ketone body production/utilisation defects, 214–15
3-ketothiolase deficiency, 214–15
kidneys, 51, 100–1, 118
Kölliker-Fuse nucleus (KFN), 162

long bone removal, 69

rib cage removal, 66-7

jury, inquest, 25

232

pre-autopsy radiography, 56

procuring trace evidence, 56

juvenile myelomonocytic leukaemia,

labial frenulum, lacerations, 57–8, 247
lactate, blood, 108
lactic acidosis, congenital, 212
laryngeal chemoreflex, 97–8, 196
laryngeal immune system, 163
laryngomalacia, 231
leptomeninges, 255
lips, abrasions, 57, 247
liquid chromatography-mass spectrometry (LC-MS), 111–12
liver

external examination, 50–1 samples, 100–1, 107, 109, 118–23 liver disease, 213–14
Local Safeguarding Children Board
(LSCB), 22–3, 31, 88
long bones
fractures, 245
removal, 69
long QT syndrome (LQTS), 160–1,
172–5, 229
Lullaby Trust, 3
lungs
examination, 50
microbiology, 100–1, 104
lysergic acid diethylamide, ³ H-labelled
(³ H-LSD), 197–8, 200

macrocephaly/macroencephaly, 252 magnesium, blood, 108 magnetic resonance imaging (MRI), post-mortem findings, 91-3 inherited metabolic disease, 116 minimally invasive autopsy, 72–3 post-mortem changes, 92 Make a Memory, 12 malaria, 102 manner of death, determination, 24, 26-7, 40-1Māori, New Zealand, 138, 152-3 mattresses, 137-8 measurements, body, 48 Medical Certificate as to Cause of Death (MCCD), 20 Medical examiners UK, 20 US, 36-9 medical records, 31 medical treatment, deaths related to,

medium-chain acyl-CoA

deficiency

metatarsal fractures, 245

clinical presentation, 163, 214 post-mortem diagnosis, 118, medullary 5-HT system., 198-9. See serotonin system, brainstem melanosis, congenital dermal, 241 meninges, spinal, 258 meningitis, bacterial, 219, 221-3 meningococcus (Neisseria meningitidis), 104, 219, 221-3 meningoencephalitis, 102 metabolic bone disease, 246-7 metabolic disorders, inherited. See inherited metabolic disease metabolites, plasma, 121 metabolomics, 118 metaphyseal fractures, 245-7

dehydrogenase (MCAD)



More Information

Cambridge University Press 978-1-108-18598-1 — Investigation of Sudden Infant Death Syndrome Edited by Marta C. Cohen , Irene B. Scheimberg , J. Bruce Beckwith , Fern R. Hauck Index

Index

methadone	examination, 48-50	overheating, 137, 139, 162
poisoning, child deaths, 109–10	hyperflexion/extension injuries, 66,	overlaying
-using mothers, SIDS risk, 134–5	258 layered dissection, 58–60	autopsy findings, 236–7
methanol poisoning, 112 microbiology, post-mortem, 100–5	negative feelings/perceptions, 6	Bowden's studies, 2 substance misuse and, 150
additional samples, 100, 102	neglect, 237–9. See <i>also</i> child abuse	oxygen-conserving reflexes (OCR),
interpretation, 100–4	contributory, 26–7	97-8, 208-9
minimal sampling protocol, 53, 101	pathologists' role, 238	,
microcephaly/microencephaly, 252	starvation, 248–9	pacifiers (dummies), 146-8
Middleton (R (Middleton) v West	Neisseria meningitidis	breastfeeding and, 143, 146-7
Somerset Coroner [2004]), 20,	(meningococcus), 104, 219,	protective effects, 146–7
26–7	221–3 Netherlands, 9–16	paediatric pathologists, specialist,
mini-arousals, 207, 209 minimally invasive autopsy, 71–3	neurological deterioration, metabolic	21–22, 55 paediatricians
minor illness, prior, 2	disease, 213	emergency department, 32
mitochondria, abnormal, 122	neuromodulation, 182-3	home visit, 32, 45–6
mitochondrial 2-methylacetoacetyl-	neuromuscular disease, 232	pancreas, examination, 50-1
CoA thiolase deficiency, 214-15	neuropathology, 95-8, 249-59	parabrachial nucleus, 190–1
mitochondrial respiratory chain	New Zealand, 138, 152–3	paracetamol, 106
disorders, 122, 212	newborn screening	parafacial respiratory group. See
mitogenic cardiomyopathy, 228–9	hearing tests, 207 metabolic disorders, 211	retrotrapezoid nucleus
molecular analysis inherited metabolic disease, 117,	stored Guthrie cards, 118–19, 123	parasitosis, systemic, 102 parents. <i>See also</i> carers; families
119, 122	next-generation sequencing (NGS),	consent to autopsy, 12, 16, 95
pathogens, 101–2, 104–5	165-6, 176	cooperation with researchers, 9–11
molecular autopsy. See genetic testing	gene panels, 165-6	expectations, 12
Mongolian spot, 241	nicotine. See also smoking	explaining cause of death to, 41, 87
monoamine oxidase A (MAOA), 162,	alternative delivery systems, 132	follow-up support, 14–15
197, 202	arousal response and, 191–2	home visit, 46
mortuary staff, 46	metabolism, genetic variations,	initial accounts, 31
mourning. See grief mouth	163-4 prenatal and postnatal exposure,	initial care, 11–12
examination, 48, 57–8	131–3	interview by police, 32 perspective on SIDS, 5–8
injuries within, 247	replacement therapy, 133	relations with police, 30–1
multi-agency approach	NODOK procedure, 11–12	support and care, 9–16, 46
Child Death Overview Panels, 87	non-accidental injury. See child abuse	support groups, 7–8, 12, 40–1
child death reviews, 76-7	Noonan syndrome, 227, 229	taking statements from, 33-4
final case discussion, 86–7	noradrenergic brainstem nuclei, 182	parvovirus B 19, 224
infant death investigation, 31	Norris, Charles, 37	pathologists
multiple carboxylase deficiency, 215	NOS1AP gene variants, 161 nose, examination, 48	briefing prior to autopsy, 21–2,
multiple system atrophy, 182 muscle biopsy, 96, 108, 118–19, 122	nucleus ambiguus (NA), 180	55–6 performing the autopsy, 21–2, 24,
Mycobacterium tuberculosis, 104	nucleus tractus solitarius (nTS), 181–2,	48
myelitis, 102	196	responsibility in US, 40-1
myocarditis	nurses, home visit, 45	role in child abuse/neglect, 238
eosinophilic, 225-6		tissue retention, 22
tissue samples, 102	obstetric risk factors, 127	patterned injuries, 240
viral, 223–4	oesophagus, examination, 50	pelvis, examination, 50–1
myositis, diaphragmatic, 230, 232	oncocytic cardiomyopathy, 228–9 opiate misuse, 134–5	Pēpi-Pod™, 138, 152–3
National Association of Medical	optic nerve sheath haemorrhages,	pericardial fluid sampling, 109 pericardium, 50
Examiners (NAME), 1, 37,	253–4	perinatal infections, 102
39–40	old, 254	peripherally located cortical defects, 256
National Center for Fatality Review	orexin, 162	peritonitis, bacterial, 102, 222
and Prevention (NCFRP), 77-8,	organ retention, 22, 249-50	periventricular leucomalacia, 256
80, 83	organic acids, urinary, 121	pertussis (whooping cough), 219, 221
National Cot Death Study Group	organic acidurias, 212, 215	petechiae
(LWW) (Netherlands), 11	osmolar gap, 108 osteogenesis imperfecta, 241, 246	face, neck and chest, 57–8, 237
natural deaths, 41 neck	out-of-home settings, 82	intrathoracic, 209, 236 photographs, 12, 48
	1101114 044111150, 02	p.1010814p110, 12, 10

271



Cambridge University Press 978-1-108-18598-1 — Investigation of Sudden Infant Death Syndrome Edited by Marta C. Cohen , Irene B. Scheimberg , J. Bruce Beckwith , Fern R. Hauck Index

Index

More Information

Phox2B gene polymorphism, 162 Pierre Robin syndrome, 231 pillows, 138 pituitary adenylate-cyclase-activating polypeptide (PACAP), 162 placenta, 116 plagiocephaly, 251 pleura, 49 pneumococcus. See Streptococcus pneumoniae pneumonia, 102, 219-21 pneumonitis, viral, 224 pneumothorax, 49 poisoning, 106-14 agents involved, 109-11 drug screening tests, 111-12 iatrogenic, 106 malicious, 107, 111-13 numbers of deaths, 109-10 sampling methods, 107-9 police, 28-35 assessing suspicious deaths, 30 decision on criminal process, 34 emergency department actions, 31-2 first actions at death scene, 29-30 guidance documents, 28 home visit, 32, 45-6 initial notification, 28-9 level of follow-up response, 30 major enquiry, 32-3 parents' perspective, 15 records of carers' accounts, 31 statements from witnesses, 33-4 valuable physical evidence, 31 working with coroner, 21-2, 24, 29, 34 - 5posterior torso, layered dissection, 61 post-inspiratory complex (PiCo), 180 post-mortem examination. See autopsy post mortem computed tomography, post mortem MRI, post mortem radiography, post-traumatic stress disorder/ reactions, 14 potassium (K+) channel gene mutations, 172-5 potassium, blood, 108 pre-Bötzinger complex (preBötC) arousal response, 179-80 cardiorespiratory coupling, 180 control of inspiration, 180, 182-3 pregnancy brainstem 5-HT deficits and, 199-202 drug misuse, 134-5 maternal smoking, 131-3 second-hand smoking, 132 smoking cessation, 131-3 pre-inquest review (PIR), 25, 35

prone sleeping position, 136-7 asphyxia related to, 236-7 child-care settings, 156 interaction with smoking, 132 pathophysiology, 136-7 soft surfaces, 137 protective factors. See also risk factors breastfeeding, 142-3 pacifiers/dummies, 146 prothrombin time, 108 pseudomembranous colitis, 221-2 pulmonary haemorrhage, 237 pulmonary haemosiderosis, 237 pulmonary vascular disease, 230-2 QT interval, prolongation, 134, 172-5 quantitative fluorescence-polymerase chain reaction (QF-PCR), 164 'question mark'incision, 51, 61 racial differences. See ethnic/racial differences radiography, post-mortem skeletal, 89 ageing of fractures, 244 diagnostic accuracy, 89 excised ribs, 66-7, 243 findings, 89-90 minimally invasive autopsy, 71-2 pre-autopsy, 56 'Rainbow' children, 7 raphe nuclei, 161, 181-3, 190-1 Red Book, 46 Registrar of Births and Deaths, 20 religious objection laws, 41 research, parental involvement, 9-11 respiratory chain disorders, mitochondrial, 122, 212 respiratory failure, neuromuscular disease, 231-2 respiratory syncytial virus (RSV), 163, 224 respiratory tract commensal flora, 104 disorders, 231-2 respiratory tract infections bacterial, 219-21 Bowden's studies, 1-2 microbiology, 102, 104 viral, 163, 224 retinal haemorrhages, 65, 253 old, 254 retroperitoneal injuries, 247-8 retropharyngeal abscess, 221 retrotrapezoid nucleus (RTN), 180-1, 191 rhabdomyomas, cardiac, 229 rib cage examination, 50, 59-61 removal, 66-8 rib fractures, 244-5

abuse mimics, 246 birth-related, 245 cardiopulmonary resuscitation, detection at autopsy, 59-61, 243-4 inflicted, 244-5 post-mortem imaging, 89-90 removal of rib cage, 66-8 spinal cord removal and, 67 ribs, histological examination, 67-8 rickets, 227, 246 risk factors. See also protective factors arousal and, 191-3 bed-sharing, 149-53 biological, 127-8 brainstem 5-HT deficits and, 199-203 child death review-based studies, 81 - 2day-care environment, 156 drug misuse in pregnancy, 134-5 Emery's studies, 3 environmental, 136-40 information gathering, 46 interactions between, 131-2, 149-50 nicotine exposure, 131-3 role of child death reviews in reducing, 79-80 triple-risk model. See triple-risk hypothesis room sharing, 149, 151-2 RYR2 gene mutations, 161, 175-6 sleep campaigns Māori initiative, 152-3 recurrent SIDS after, 130

safe-sleep campaigns. See also back-to-Salmonella, 104 salt poisoning, 111-12 samples ante-mortem, 107, 116 general post-mortem, 51, 53, 108 inherited metabolic disease, 116-18 microbiology. See microbiology, post-mortem toxicology, 107-9 scalds, 242 scalp incision, 51, 61 injuries, 250 scapular fractures, 245 scene of infant death. See death scene SCN5A gene mutations Brugada syndrome, 161, 175 long QT syndrome (LQT3), 160, 172, 175 secondary depression, 180 Senior Investigating Officer (SIO), 24, 29 - 30septicaemia/sepsis, 102, 219-20

premature babies, 95, 189



More Information

Cambridge University Press 978-1-108-18598-1 — Investigation of Sudden Infant Death Syndrome Edited by Marta C. Cohen , Irene B. Scheimberg , J. Bruce Beckwith , Fern R. Hauck Index

Index

Serious Case Review (SCR), 23, 31	developmental abnormalities, 250	stillbirths, 21
serotonin (5-HT)	examination, 52, 61, 63	stomach, 50–1
brainstem content, 197–200	opening, 52, 62–3	Streptococcus agalactiae. See group B
neurochemical mediators in brain,	skull fractures, 250–1	streptococcus
196-7	birth related, 250	Streptococcus pneumoniae
post-mortem serum levels, 204	inspection for, 61, 63 mimics, 250	(pneumococcus), 104, 219, 221
serotonin (5-HT) neurons	short falls, 251	Streptococcus, beta-haemolytic, 104, 219
immaturity, 198, 203 numbers and density, 197–8, 200	sleep devices, 137–8	stressors, exogenous, 180, 183
serotonin (5-HT) system, brainstem	sleep enablers (in-bed sleepers), 138	subarachnoid bleeding, spinal, 258–9
abnormalities in SIDS, 182–3,	sleep environment, 136–40 See <i>also</i>	subarachnoid spaces, benign
197–204	bed-sharing	enlargement, 256
anatomy and function, 195–6	child-care settings, 156	subcortical contusional tears, 256–7
arousal response, 190-1	safe, 140	subdural bleeding
caudal, 96, 195–6	unsafe, 41, 81-2, 236	acute, 252–3
developmental origin of deficits, 203	sleep position, 136-7, 156	detection, 62-3, 98
genetic studies, 161-2, 202	sleep surfaces, 81, 137-8	non-accidental head injury and,
medullary abnormalities, 198-200	firmness, 137	253-4
nicotine exposure and, 163-4, 191-2	sleeping sacks, infant, 139	old, 254–5
postnatal origin of deficits, 203	small-bowel injuries, 248	spinal, 258–9
risk factor interactions, 199–202	smoking. See also nicotine	substance abuse. See also alcohol
prenatal adverse exposure, 202	arousal response and, 191–2	consumption; drug misuse;
genetic susceptibility, 199–202	bans in public places, 132	smoking
rostral, 195–6	bed-sharing and, 132, 149–51	bed-sharing and, 134, 149–50
serotonin receptors. See 5-HT	brainstem 5-HT deficits and,	child deaths, 109–11
receptors	199–202	post-mortem screening, 111–12
serotonin transporter. See 5-HT	cessation in pregnancy, 131–3 maternal, 131–3	pregnancy, 134–5
transporter	outdoors vs indoors, 132	substance P, 98, 182–3
sex-ratio statistics, 2, 127 sexual abuse, 242–3	paternal, 131	Sudden Death in the Young Case Registry (SDY-CR), 83
shaken baby syndrome, 235, 253–4, See	smothering, 236–7	sudden infant death syndrome (SIDS)
also triad	social care records, 31	CDC guidelines, 39
short QT syndrome (SQTS), 176	sodium	clinico-pathological diagnosis,
siblings	blood, 108	53
impact of SIDS, 7	fractional excretion, 112-13	definition, 9, 236
risk of SIDS in subsequent, 129-30	sodium (Na ⁺) channel gene mutations,	neuropathology, 95-8
support and care, 12, 14	173-4 See also SCN5A gene	parents' perspective, 6, 9
witness statements, 33	mutations	post-infancy, 40
side cars (bedside sleepers), 138	sofa-sharing, 82, 137, 150-1	recent trends, 151–3
side sleeping position, 136	soft-tissue infections, 102	recurrent, 3, 129–30
siderophages, 237, 241	soft-tissue injuries, 57, 239–43	use of term, 1, 41
siderosis, 254–5	spinal cord	Sudden Infant Death Syndrome Act
SIDS. See sudden infant death	forensic pathology, 259	1974, 40
syndrome	injuries, 258 inspection, 52, 63–4	sudden unexpected death in infancy
sighs arousal response, 178–80	removal, 63–4, 67	(SUDI/SUID) causes, 219–33
brainstem circuitry, 179, 182	spinal cord injury without radiological	child death review process, 75–83
neuromodulation, 182–3	abnormality (SCIWORA), 258	definition, 236
skeletal survey, post-mortem. See	spine	forensic pathology, 235–59
radiography, post-mortem	examination, 51–2	improving reporting, 80–3
skeletal	forensic pathology, 258-9	investigation. See investigation of
skeletal trauma, 56, 243-7, See also	spleen, 50–1, 100–1	sudden infant death
fractures	stains, histological, 53	microbiology, 100-1
skin injuries, 57, 239-43	Staphylococcus aureus, 104, 163, 219	minimally invasive autopsy, 71–3
skin samples, 51, 108	Staphylococcus, coagulase negative,	police involvement, 28-30
collection, 49, 53	221–2	prevention, 79–80
for fibroblast culture, 117-18	starvation, 248–9	recent trends, 151-3
inherited metabolic disease, 119	statements, witness, 33–4	standard questionnaires, 39, 56
skull, 250–2	sternal fractures, 245	trends by cause, 127–8
deformation, 251-2	sterols, plasma, 121	use of term, 9, 41, 236



Cambridge University Press 978-1-108-18598-1 — Investigation of Sudden Infant Death Syndrome Edited by Marta C. Cohen , Irene B. Scheimberg , J. Bruce Beckwith , Fern R. Hauck Index

More Information

Index

home visit, 32, 45-6 Sudden Unexpected Infant Death Case Touche (R v Inner N. London Coroner Registry (SUID-CR), 82-3 ex p Touche [2001]), 21 legal investigation framework, 19-35 sudden unexplained death in toxicological analysis, 106-14 childhood (SUDC), 40 recent trends in SIDS/SUDI, 152 chain-of-custody procedures, 106-7 United States (US) Sudden Unexplained Infant Death sampling, 107-9 bed-sharing, 151-2 Investigation form, 39 screening tests, 111-12 child death reviews, 75-83 SUDI. See sudden unexpected death in service provision (UK), 110-11 coroners, 19, 36-9 infancy suspicious deaths, 249 suffocation, accidental, 2, 78, 81-2 toxoplasmosis, 102 legal investigation framework, 36-41 SUID. See sudden unexpected death in traceless impact, 253-4 recent trends in SIDS/SUDI, infancy tracheomalacia, 231 supine sleeping position, 136 transposition of the great arteries, 226 151 - 2triad (encephalopathy, subdural and SUID Case Registry, 82-3 support, 9-16, 46 unnatural deaths, 20-1, 28, 41 support groups, parent, 7-8, 12, 40-1 retinal haemorrhages), 30, 235, urea cycle disorders, 119, 121, 212, suspicious deaths autopsy findings, 30, 235-59 cerebral venous and dural sinus 215 compassion for parents, 30-1 thrombosis, 255 urine samples, 51, 108-9 delayed death and, 255 collection, 51 coroner's perspective, 24 drug screening, 111-12 development of a major enquiry, 32-3 subdural bleeding, 253 inherited metabolic disease, 117, differential diagnosis, 238-9 trigeminocardiac reflex, 97-8 forensic autopsy, 24, 48, 55 triple-risk hypothesis, 159, 178 119, 121 parents' responses, 15 as basis for investigation, 43 Bowden's research, 1 ventilation, room, 139 police response, 29-31 verdict, inquest, 26 referral to police, 29 brainstem 5-HT deficits, 202-3 risk factors and signs, 30, 238-9 prone sleeping position and, 136-7 vertebrae, 258 very-long-chain fatty acids (VLCFAs), suture lines, cranial, 250 role of inflammation, 183 swabs, microbiological, 101-2 121 TRPM4 (transient potential melastatin swaddling, 139-40 4) gene mutations, 161 virology molecular analyses, 104-5 Swinscow, D., 1-3 truncus arteriosus, 226 synovial fluid samples, 109 samples, 53, 101-2 tryptophan, 191-2, 197 tryptophan hydroxylase 2 (TPH2), 197 viral infections, 163, 223-5 syphilis, congenital, 102 visceral trauma, 247-8 brainstem levels, 190, 197-200 vitamin C deficiency, 246 temperature risk factor interactions, 199 ambient room, 139, 180 tuberculosis, 102 vitamin D deficiency, 227, 229, 246-7 recordings, death scene, 30 tuberous sclerosis, 229 vitreous humour samples, 107, 109, 117, 121 thermoregulation, 162, 196 tumour necrosis factor-α (TNF-α), thoracic injuries, 244-5, 248 wahakura, 138, 152-3 thorax. See chest tumours, 229, 232-3 thymus, 49-50 water, fractional excretion, 112-13 tissue retention, 22, 249-50 ultrastructure, 121-2 Waterhouse Friedrichson syndrome, unascertained (cause of death), 53 tissue samples 221, 223 general, 53, 108 undetermined (cause of death) Waterlow classification, 249 inherited metabolic disease, 116, child death review-based studies, wedging, 237 118, 121-3Werne, J., 1 timing of collection, 116-17 diagnostic shift to, 6, 78 whole-exome sequencing (WES), 166 toxicology, 107, 109 parents' perspective, 6 whole-genome sequencing (WGS), tobacco use. See also nicotine; smoking recommended use, 1, 41, 53 166 whooping cough (pertussis), 219, 221 unexpected deaths, 20, 28 alternative products, 132 United Kingdom (UK) Williams syndrome, 232 prenatal and postnatal exposure, witnesses, 25, 33-4 131 - 3bed-sharing, 152 tonsillitis, clostridial, 221 Child Death Overview Panel. See Worcestershire Coroner case (2013), total anomalous pulmonary venous Child Death Overview Panel final case discussion, 86-7 wormian bones, 250 return, 226