

Pediatrics Appendices

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Appendix 1. Search Strategies

Paediatrics – Diagnostic Imaging
Final Strategy
2023 Aug 10

Ovid Multifile

Database: Embase Classic+Embase <1947 to 2023 August 09>,
Ovid MEDLINE(R) ALL <1946 to August 09, 2023>
Search Strategy:

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1  Developmental Disabilities/ (39057)
2  exp Language Development Disorders/ (14315)
3  exp Communication Disorders/ (161360)
4  exp Speech Disorders/ (153739)
5  (developmental* adj3 (delay* or disabilit* or
disorder*)).tw,kw,kf. (102712)
6  ((communicat* or language* or speech or speak* or talk*)
adj3 (delay* or disabilit* or disorder*)).tw,kw,kf. (49143)
7  exp Congenital Abnormalities/ (2433405)
8  ((birth or congenital*) adj3 (abnormalit* or anomal* or defect*
or deform* or malform*)).tw,kw,kf. (245568)
9  exp Spinal Dysraphism/ (25048)
10 ((bifida or cleft or dysraphia or dermal or dysgraphia* or
dysraphic* or dysraphism or open or abnormalit* or anomal* or
defect* or deform* or malform*) adj3 (spina or spinal or spine or
spines)).tw,kw,kf. (61184)
11 (diastematomyelia* or lipomeningocele* or
lipomyelomeningocele* or meningomyelocele or myelodysplasia*
or neuroschis* or rachischis* or schistorrhach*).tw,kw,kf. (16223)
12 exp Hydrocephalus/ (91834)
13 (hydrocephal* or aqueductal stenosis#s or cerebral
ventriculomegal*).tw,kw,kf. (78604)
14 ((shunt? adj2 malfunction*) or brain ventricle dilatation* or
Costello syndrome or Dandy Walker syndrome or muscle eye
brain disease or VACTERL-H association or Walker Warburg
syndrome).tw,kw,kf. (5797)
15 exp Craniosynostosis/ (18928)
16 (craniosynostosis* or cranio-synostosis* or acrocephal* or
brachycephal* or craniostenosis* or cranio-stenosis* or craniosynostosis*
or cranio-synostosis* or lambdoid synostosis* or metopic synostosis*
or oxycephal* or plagiocephal* adj2 synostotic) or sagittal synostosis*
or scaphocephal* or trigonocephal*).tw,kw,kf. (21009)
17 (craniostenosis* or cranio-stenosis* or cranial synostosis* or
cranium synostosis* or cranial suture closure* or stenocephal* or
(synostosis* adj2 craniofacialis)).tw,kw,kf. (1806)
18 (acrocephalosyndactyl* or acro-cephalosyndactyl* or apert
syndrome or apert-crouzon disease or chozen syndrome or
kurczynski casperson syndrome or noack syndrome or pfeiffer
syndrome).tw,kw,kf. (3388)
19 Mastoiditis/ (6993)
20 (mastoiditis or (mastoid adj2 infect*) or (mastoid adj2
inflam*)).tw,kw,kf. (5438)
21 Orbital Cellulitis/ (2897)
22 (orbit* adj3 cellulitis).tw,kw,kf. (3562)
23 Deafness/cn [congenital] (2680)
24 Hearing Loss, Sensorineural/cn [congenital] (1189)
25 (deaf* adj3 congenital*).tw,kw,kf. (5027)
26 (hear* adj2 (loss* or lost or disorder*) adj3
congenital*).tw,kw,kf. (4243)

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27 ((Cockayne or KID or Pendred or Waardenburg) adj
syndrome?).tw,kw,kf. (5689)
28 Seizures, Febrile/ (9567)
29 ((convuls* or epilep* or fit or fits or seizure*) adj3 (pyrexia* or
fever* or febril)).tw,kw,kf. (4524)
30 ((convuls* or epilep* or seizure*) adj3 (suspect* or
suspici*)).tw,kw,kf. (3038)
31 exp Headache/ (315629)
32 (headache? or head ache? or cephalalgia* or cephalg* or
cephalodyn* or cephalgia or ((cerebral or cranial or cranium or
head) adj2 pain*) or cranialgia* or hemicrani* or hemi-
crani*).tw,kw,kf. (287358)
33 (thyroid adj3 (lump* or mass$2 or nodule?)).tw,kw,kf.
(35005)
34 exp Sinusitis/ (79835)
35 (sinusitis or rhinosinusitis or rhino-sinusitis or (sinus$2 adj3
infect*)).tw,kw,kf. (71813)
36 Torticollis/ (10042)
37 (torticollis or wry neck? or wryneck? or (cervical adj2
dystoni*)).tw,kw,kf. (13842)
38 Central Nervous System Infections/ (9862)
39 Vasculitis, Central Nervous System/ (1476)
40 ((central nervous system? or CNS) adj3 (infect* or inflam* or
angiitis or arteritis or vasculitis)).tw,kw,kf. (47133)
41 exp Back pain/ (184999)
42 (backache? or backpain? or dorsalgia* or discogenic pain? or
disco-genic pain? or lumbago?).tw,kw,kf. (14321)
43 ((ache or aches or aching or pain*) adj3 back?).tw,kw,kf.
(156386)
44 ((ache or aches or aching or pain*) adj3 (hip or
hips)).tw,kw,kf. (20189)
45 (coxalgia* or coxodynia*).tw,kw,kf. (446)
46 (limp or limps or limping).tw,kw,kf. (6056)
47 Developmental Dysplasia of the Hip/ (4492)
48 ((congenital* or developmental*) adj3 hip? adj3 (dislocat* or
displac* or dysplasi*)).tw,kw,kf. (5953)
49 exp Osteochondrosis/ (3362)
50 (osteochondrosis#s or osteo-chondrosis#s).tw,kw,kf. (5489)
51 ((Kocher* or Navicular* or Osgood-Schlatter* or
Scheuerman*) adj3 (disease? or disorder? or
syndrome?)).tw,kw,kf. (2621)
52 ((adolescen* or juvenile* or Scheuerman*) adj3
(hyperkyphosis or hyper-kyphosis or kyphosis)).tw,kw,kf. (1258)
53 Scoliosis/ (54480)
54 scoliosis#s.tw,kw,kf. (61791)
55 (short* adj2 stature?).tw,kw,kf. (36804)
56 ((Bloom or Cockayne or de Lange or Dubowitz or Ellis van
Creveld or floating harbo?r or Hunter or Hurler or Johanson
Blizzard or Kabuki make up or Kabuki make-up or Marinesco
Sjogren or Noonan or Prader Willi or Robinow or Schaaf Yang or
Seckel or Turner or Weill Marchesani or Weismann Netter) adj
syndrome?).tw,kw,kf. (38894)
57 (grow$3 adj2 (fail or failed or failing or failure?)).tw,kw,kf.
(16118)
58 ((Barth or Beckwith Wiedemann or Laron or Marfan or Nevo
or Nijmegen breakage or Schwartz Jampel or Shwachman or
Simpson Golabi Behmel or Sotos) adj synrome?).tw,kw,kf. (0)
59 exp Pneumonia/ (753435)
60 pneumoni*.tw,kw,kf. (571961)

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Appendix 1. Search Strategies

- 61 (lobar or lung? or inflam*).tw,kw,kf. (4879129)
- 62 exp Bronchiolitis/ (36909)
- 63 bronchiolit*.tw,kw,kf. (34146)
- 64 exp Foreign Bodies/ (112695)
- 65 (foreign adj (body or bodies)).tw,kw,kf. (91488)
- 66 gossypiboma?.tw,kw,kf. (1066)
- 67 ((retain* or retention*) adj3 (surgical adj3 (implement? or instrument? or item? or needle? or sponge? or tool?))).tw,kw,kf. (989)
- 68 exp Asthma/ (462957)
- 69 asthma*.tw,kw,kf. (463699)
- 70 Respiratory Sounds/ (17561)
- 71 ((breath* or lung? or respirator*) adj3 sound?).tw,kw,kf. (9654)
- 72 (crackle? or rales or rhonch* or stridor* or wheez*).tw,kw,kf. (63739)
- 73 ((blunt or closed) adj (trauma? or injury or injuries) adj3 abdom?n*).tw,kw,kf. (1852)
- 74 Vomiting/ and (bile or biliary or bilious).ti,kf,kw. (1600)
- 75 ((vomit* or emes#s) adj3 (bile or biliary or bilious)).tw,kw,kf. (3175)
- 76 cholemes#s.tw,kw,kf. (0)
- 77 ((vomit* or emes#s) adj3 (infant* or neonat* or newborn*).tw,kw,kf. (1991)
- 78 Pyloric Stenosis, Hypertrophic/ (2563)
- 79 ((hypertrophic or infantile) adj3 pyloric steno#s).tw,kw,kf. (2)
- 80 exp Gastroesophageal Reflux/ (107683)
- 81 ((gastroesophageal or gastro-esophageal or gastroesophageal or gastro-oesophageal or gastric acid or esophagogastr* or oesophagogastr* or esophag* or oesophag*) adj2 (reflux\$2 or regurg)).tw,kw,kf. (83524)
- 82 (GERD or GORD).tw,kw,kf. (35480)
- 83 exp Jaundice, Neonatal/ (15658)
- 84 ((breastmilk or breast milk or newborn or neonat*) adj3 (icterus or jaundic)).tw,kw,kf. (10923)
- 85 (bronze baby syndrome? or erythroleukoblastos*).tw,kw,kf. (101)
- 86 ((rectal* or rectum* or rectocolic or recto-colic) adj3 (bleed* or blood* or h?emorrhag)).tw,kw,kf. (20796)
- 87 h?ematochezi*.tw,kw,kf. (8765)
- 88 ((fecal or feces or stool?) adj3 (bleed* or blood*).tw,kw,kf. (36235)
- 89 Meckel Diverticulum/ (9826)
- 90 (Meckel* adj1 (diverticle* or diverticul)).tw,kw,kf. (9636)
- 91 exp Intestinal Polypsis/ (24874)
- 92 Polypsis#s.tw,kw,kf. (45316)
- 93 exp Inflammatory Bowel Diseases/ (301613)
- 94 (inflam* adj3 bowel?).tw,kw,kf. (180020)
- 95 (IBD and (inflam* or bowel*).tw,kw,kf. (95855)
- 96 ((crohn? or cleron) adj3 (disease* or morbus or colitis* or colitides or enteriti)).tw,kw,kf. (157394)
- 97 ((regional* or granulomatous or terminal*) adj3 (colitis* or colitides or enteriti* or ileitis or ileitides or ileocolitis or ileo-colitis or enterocolitis* or entero-colitis)).tw,kw,kf. (7094)
- 98 ((colitis* or colitides or coloproctitis or colo-rectitis or proctocolitis or procto-colitis or rectocolitis or recto-colitis) adj3 (ulcer* or idiopathic* or gravis or mucosa)).tw,kw,kf. (140419)
- 99 (((colon or colonic) adj3 ulceration) and chronic\$).tw,kw,kf. (167)
- 100 exp Abdominal Pain/ (256594)
- 101 (abdom#n* adj3 pain*).tw,kw,kf. (215940)
- 102 exp Pelvic Pain/ (35754)
- 103 ((pelvic* or pelvis*) adj3 pain*).tw,kw,kf. (36076)
- 104 Appendicitis/ (46506)
- 105 appendicit*.tw,kw,kf. (53423)
- 106 (appendi* adj3 inflam*).tw,kw,kf. (3685)
- 107 Renal Colic/ (4412)
- 108 ((kidney? or renal or ureteral) adj3 colic?).tw,kw,kf. (7532)
- 109 exp Cholecystitis/ (49759)
- 110 cholecystitis#s.tw,kw,kf. (42099)
- 111 ((gallbladder? or gall bladder?) adj3 empty?ema*).tw,kw,kf. (689)
- 112 exp Pancreatitis/ (185792)
- 113 (pancreatit#s or pancreatic parenchyma* or peripancreatic fat necros#s or peri-pancreatic fat necros#s).tw,kw,kf. (175300)
- 114 exp Pyelonephritis/ (48420)
- 115 (pyelonephrit#s or pyelo-nephrit#s or (inflam* adj3 (kidney* or nephron*))).tw,kw,kf. (46991)
- 116 Ovarian Torsion/ (917)
- 117 ((ovarian or ovary or adnexal) adj2 torsion*).tw,kw,kf. (4430)
- 118 Intussusception/ (18422)
- 119 intus?usception.tw,kw,kf. (23384)
- 120 (invagination* adj3 (intestinal* or prolapse)).tw,kw,kf. (1159)
- 121 ((palpable adj3 (lump? or mass\$)) and (abdom#n* or pelvic* or pelvis)).tw,kw,kf. (195)
- 122 Constipation/ (128628)
- 123 (constipat* or (colon\$2 adj3 inertia?) or dyschezia?).tw,kw,kf. (87991)
- 124 Cryptorchidism/ (20725)
- 125 (cryptorchidism* or cryptorchism* or cryptoidism* or kryptorchism*).tw,kw,kf. (16057)
- 126 ((impalpable or undescended or maldescensus) adj3 (testes or testis or testic)).tw,kw,kf. (8507)
- 127 exp Hydronephrosis/ and (Fetus/ or exp Infant, Newborn/ (4456)
- 128 exp Hydronephrosis/ and (f?etus* or f?etal or newborn? or neonat*).ti,kw,kf. (2298)
- 129 ((hydronephro* or hydro nephro*) adj3 (f?etus* or f?etal or newborn? or neonat*).tw,kw,kf. (1233)
- 130 ((kidney? or renal) adj3 pelvi# dilat* adj5 (f?etus* or f?etal or newborn? or neonat*).tw,kw,kf. (119)
- 131 exp Enuresis/ (15908)
- 132 (enures#s or (involuntary adj3 urin)).tw,kw,kf. (14512)
- 133 exp Urinary Tract Infections/ (200049)
- 134 ((urinary or bladder* or kidney* or urethra or ureter) adj3 (inflam* or infect)).tw,kw,kf. (178836)
- 135 (cystit#s or urethrit#s).tw,kw,kf. (46943)
- 136 ((nonaccidental or deliberate or intended) adj3 (injury or injuries or trauma)).tw,kw,kf. (2095)
- 137 (physical* adj3 (abus* or assault)).tw,kw,kf. (27895)
- 138 or/1-137 [CONDITIONS OF INTEREST] (10905114)
- 139 exp Infant/ or exp Child/ or Adolescent/ (8398798)
- 140 (infant* or infanc* or baby or babies or child* or toddler* or preschool* or school next age* or boy or boys or girl or girls or adolescen* or teen or teens or teenager* or youth or youths or high-school*).tw,kw,kf. (5725015)
- 141 Pediatrics/ (159151)
- 142 p?ediatric*.tw,kw,kf. (1225813)
- 143 or/139-142 [PAEDIATRIC POPULATION] (10010498)
- 144 138 and 143 [CONDITIONS OF INTEREST - PAEDIATRIC POPULATION] (2501628)
- 145 Diagnostic Imaging/ (292664)

Appendix 1. Search Strategies

- 146 dg.fs. [diagnostic imaging] (1447432)
- 147 (diagnos* adj3 (image? or imaging)).tw,kw,kf. (142084)
- 148 (x-ray* or xray*).tw,kw,kf. (987718)
- 149 Image Interpretation, Computer-Assisted/ (91803)
- 150 exp Imaging, Three-Dimensional/ (219319)
- 151 ((3D or 3-D or 3-dimension* or three dimension*) adj (image? or imaging)).tw,kw,kf. (50275)
- 152 exp Ultrasonography/ (1491682)
- 153 (ultrasound* or ultrasonograph* or ultra-sonograph* or ultrasonic* or ultra-sonic*).tw,kw,kf. (1152328)
- 154 (echograph* or echo-graph* or echotomograph* or echotomograph* or echosonograph* or echo sonograph*).tw,kw,kf. (26513)
- 155 exp Radiography/ (2690188)
- 156 (radiograph* or radiographic imag* or roentgenograph* or roentgeno-graph*).tw,kw,kf. (643183)
- 157 (fluoroscop* or fluoro-scop*).tw,kw,kf. (92749)
- 158 exp Radionuclide Imaging/ (452311)
- 159 ((radionuclide* adj2 imag*) or (radio-nuclide* adj2 imag*) or (radionuclide* adj2 scan*) or (radio-nuclide* adj2 scan*) or (radioisotope* adj2 imag*) or (radio-isotope* adj2 imag*) or (radioisotope* adj2 scan*) or (radio-isotope* adj2 scan*) or scintigra* or scinti-gra* or scintiphotograph* or scinti-photograph* or scintiscan* or scinti-scan* or scanograph* or lymphoscintigra* or lympho-scintigra*).tw,kw,kf. (158460)
- 160 exp Tomography/ (3463929)
- 161 (tomograph* or tomo-graph*).tw,kw,kf. (1219149)
- 162 (CAT scan* or CT scan* or PET scan* or PET imag* or PT scan* or PT imag*).tw,kw,kf. (412009)
- 163 (SPECTCT or SPECT CT or "SPECT/CT").tw,kw,kf. (18301)
- 164 (magnetic resonance imag* or MRI or MRIs or fMRI or fMRIs or NMR imag* or chemical shift imag* or magneti#ation transfer contrast imag* or spin echo imag* or zeugmatograph* or zeugmato-graph*).tw,kw,kf. (1321338)
- 165 (cineradiograph* or cine-radiograph* or cinefluorograph* or cine-fluorograph* or radiocinematograph* or radio-cinematograph*).tw,kw,kf. (4240)
- 166 Nuclear Medicine/ (45685)
- 167 ((nuclear or atomic) adj1 medicine?).tw,kw,kf. (48672)
- 168 (nuclear adj1 radiolog*).tw,kw,kf. (1326)
- 169 (sialogra* or salivogra* or sialoscintigra* or sialo-scintigra*).tw,kw,kf. (3377)
- 170 (enteroclys* or enterogra*).tw,kw,kf. (6516)
- 171 (esophagra* or oesophagra* or esophagogra* or oesophagogra*).tw,kw,kf. (7370)
- 172 ((CT or virtual) adj colonoscop*).tw,kw,kf. (1959)
- 173 (contrast adj (study or studies or medium)).tw,kw,kf. (47639)
- 174 (cholangiopancreatogra* or cholangio-pancreatogra* or ERCP or MRCP).tw,kw,kf. (58784)
- 175 cholecystogra*.tw,kw,kf. (5498)
- 176 (angiograph* or angio-graph* or angiogram* or angio-gram*).tw,kw,kf. (588438)
- 177 (perfusion adj3 (image? or imaging)).tw,kw,kf. (43732)
- 178 or/145-177 [IMAGING] (8611939)
- 179 144 and 178 [CONDITIONS OF INTEREST - PAEDIATRIC POPULATION - IMAGING] (580829)
- 180 exp Animals/ not Humans/ (17607187)
- 181 179 not 180 [ANIMAL-ONLY REMOVED] (485686)
- 182 (case reports or case series or address or autobiography or bibliography or biography or comment or dictionary or directory or editorial or "expression of concern" or festschrift or historical article or interactive tutorial or lecture or legal case or legislation or news or newspaper article or patient education handout or personal narrative or portrait or video-audio media or webcast or (letter not (letter and randomized controlled trial))).pt. (7006214)
- 183 181 not 182 [IRRELEVANT PUBLICATION TYPES REMOVED] (401905)
- 184 exp Guidelines as Topic/ (884348)
- 185 exp Clinical Protocols/ (311505)
- 186 Guideline.pt. (16579)
- 187 Practice Guideline.pt. (30566)
- 188 standards.fs. (767333)
- 189 Consensus Development Conference.pt. (12365)
- 190 Consensus Development Conference, NIH.pt. (801)
- 191 (consensus or guideline* or guidance? or standards or recommendation*).ti,kw,kf. (557132)
- 192 (expert consensus or consensus statement* or consensus conference* or clinical guideline? or practice guideline? or treatment guideline? or practice parameter* or position statement* or policy statement* or CPG or CPGs).tw,kw,kf. (316008)
- 193 or/184-192 [GUIDELINE FILTER] (2284226)
- 194 183 and 193 [CONDITIONS OF INTEREST - PAEDIATRIC POPULATION - IMAGING - GUIDELINES] (10019)
- 195 limit 194 to yr="2018-current" (4831)
- 196 195 use medall [MEDLINE RECORDS] (1043)
- 197 exp developmental disorder/ (60790)
- 198 exp developmental language disorder/ (14315)
- 199 exp communication disorder/ (161360)
- 200 exp speech disorder/ (153739)
- 201 (developmental* adj3 (delay* or disabilit* or disorder*)).tw,kw,kf. (102712)
- 202 ((communicat* or language* or speech or speak* or talk*) adj3 (delay* or disabilit* or disorder*)).tw,kw,kf. (49143)
- 203 exp congenital disorder/ (3146039)
- 204 ((birth or congenital*) adj3 (abnormalit* or anomal* or defect* or deform* or malform*)).tw,kw,kf. (245568)
- 205 exp spinal dysraphism/ (25048)
- 206 ((bifida or cleft or dysraphia or dermal or dysgraphia* or dysraphic* or dysraphism or open or abnormalit* or anomal* or defect* or deform* or malform*) adj3 (spina or spinal or spine or spines)).tw,kw,kf. (61184)
- 207 (diastematomyelia* or lipomeningocele* or lipomyelomeningocele* or meningomyelocele or myelodysplasia* or neuroschis* or rachischis* or schistorrhach*).tw,kw,kf. (16223)
- 208 exp hydrocephalus/ (91834)
- 209 (hydrocephal* or aqueductal stenosis or cerebral ventriculomegal*).tw,kw,kf. (78604)
- 210 ((shunt? adj2 malfunction*) or brain ventricle dilatation* or Costello syndrome or Dandy Walker syndrome or muscle eye brain disease or VACTERL-H association or Walker Warburg syndrome).tw,kw,kf. (5797)
- 211 exp craniofacial synostosis/ (11630)
- 212 (craniosynostos* or cranio-synostos* or acrocephal* or brachycephal* or craniostenosis* or cranio-steno* or craniosynosto* or cranio-synosto* or lambdoid synosto* or metopic synosto* or oxycephal* or plagiocephal* adj2 synostotic) or sagittal synostos* or scaphocephal* or trigonocephal*).tw,kw,kf. (21009)
- 213 (craniostenosis* or cranio-stenosis* or cranial synostos* or cranium synostos* or cranial suture closure* or stenocephal* or (synostos* adj2 craniofacialis)).tw,kw,kf. (1806)
- 214 (acrocephalosyndactyl* or acro-cephalosyndactyl* or apert syndrome or apert-crouzon disease or chotzen syndrome or

Appendix 1. Search Strategies

kurczynski casperson syndrome or noack syndrome or pfeiffer syndrome).tw,kw,kf. (3388)
 215 mastoiditis/ (6993)
 216 (mastoiditis or (mastoid adj2 infect*) or (mastoid adj2 inflam*)).tw,kw,kf. (5438)
 217 orbit cellulitis/ (2805)
 218 (orbit* adj3 cellulitis).tw,kw,kf. (3562)
 219 exp congenital deafness/ (7168)
 220 (deaf* adj3 congenital*).tw,kw,kf. (5027)
 221 (hear* adj2 (loss* or lost or disorder*) adj3 congenital*).tw,kw,kf. (4243)
 222 ((Cockayne or KID or Pendred or Waardenburg) adj syndrome?).tw,kw,kf. (5689)
 223 exp febrile convulsion/ (13700)
 224 ((convuls* or epilep* or fit or fits or seizur*) adj3 (pyrexia* or fever* or febril)).tw,kw,kf. (4524)
 225 ((convuls* or epilep* or seizur*) adj3 (suspect* or suspici*)).tw,kw,kf. (3038)
 226 headache/ (315588)
 227 (headache? or head ache? or cephalalgia* or cephalg* or cephalodyn* or cephalgia* or ((cerebral or cranial or cranium or head) adj2 pain*) or cranialgia* or hemicrani* or hemicrani*).tw,kw,kf. (287358)
 228 (thyroid adj3 (lump* or mass\$2 or nodule?)).tw,kw,kf. (35005)
 229 exp sinusitis/ (79835)
 230 (sinusitis or rhinosinusitis or rhino-sinusitis or (sinus\$2 adj3 infect*)).tw,kw,kf. (71813)
 231 exp torticollis/ (10042)
 232 (torticollis or wry neck? or wryneck? or (cervical adj2 dystoni*)).tw,kw,kf. (13842)
 233 exp central nervous system infection/ (348543)
 234 exp central nervous system vasculitis/ (13827)
 235 ((central nervous system? or CNS) adj3 (infect* or inflam* or angiitis or arteritis or vasculitis)).tw,kw,kf. (47133)
 236 exp backache/ (139918)
 237 (backache? or backpain? or dorsalgia* or discogenic pain? or disco-genic pain? or lumbago?).tw,kw,kf. (14321)
 238 ((ache or aches or aching or pain*) adj3 back?).tw,kw,kf. (156386)
 239 ((ache or aches or aching or pain*) adj3 (hip or hips)).tw,kw,kf. (20189)
 240 (coxalgia* or coxodynia*).tw,kw,kf. (446)
 241 (limp or limps or limping).tw,kw,kf. (6056)
 242 hip dysplasia/ (15557)
 243 ((congenital* or developmental*) adj3 hip? adj3 (dislocat* or displac* or dysplasi*)).tw,kw,kf. (5953)
 244 osteochondrosis/ (2645)
 245 (osteochondros#s or osteo-chondros#s).tw,kw,kf. (5489)
 246 ((Koehler* or Navicular* or Osgood-Schlatter* or Scheuerman*) adj3 (disease? or disorder? or syndrome?)).tw,kw,kf. (2621)
 247 ((adolescen* or juvenile* or Scheuerman*) adj3 (hyperkyphosis or hyper-kyphosis or kyphosis)).tw,kw,kf. (1258)
 248 exp scoliosis/ (66093)
 249 scolios#s.tw,kw,kf. (61791)
 250 (short* adj2 stature?).tw,kw,kf. (36804)
 251 ((Bloom or Cockayne or de Lange or Dubowitz or Ellis van Creveld or floating harbo?r or Hunter or Hurler or Johanson Blizzard or Kabuki makeup or Kabuki make-up or Marinesco Sjogren or Noonan or Prader Willi or Robinow or Schaaf Yang or Seckel or Turner or Weill Marchesani or Weismann Netter) adj syndrome?).tw,kw,kf. (38894)
 252 (grow\$3 adj2 (fail or failed or failing or failure?)).tw,kw,kf. (16118)
 253 ((Barth or Beckwith Wiedemann or Laron or Marfan or Nevo or Nijmegen breakage or Schwartz Jampel or Shwachman or Simpson Golabi Behmel or Sotos) adj synrome?).tw,kw,kf. (0)
 254 exp pneumonia/ (753435)
 255 pneumoni*.tw,kw,kf. (571961)
 256 (lobar or lung? or inflam*).tw,kw,kf. (4879129)
 257 exp bronchiolitis/ (36909)
 258 bronchiolit*.tw,kw,kf. (34146)
 259 exp foreign body/ (112695)
 260 (foreign adj (body or bodies)).tw,kw,kf. (91488)
 261 gossypiboma?.tw,kw,kf. (1066)
 262 ((retain* or retention*) adj3 (surgical adj3 (implement? or instrument? or item? or needle? or sponge? or tool?))).tw,kw,kf. (989)
 263 exp asthma/ (462957)
 264 asthma*.tw,kw,kf. (463699)
 265 exp abnormal respiratory sound/ (77496)
 266 ((breath* or lung? or respirator*) adj3 sound?).tw,kw,kf. (9654)
 267 (crackle? or rales or rhonch* or stridor* or wheez*).tw,kw,kf. (63739)
 268 ((blunt or closed) adj (trauma? or injury or injuries) adj3 abdom?n*).tw,kw,kf. (1852)
 269 bilious vomiting/ (863)
 270 ((vomit* or emes#s) adj3 (bile or biliary or bilious)).tw,kw,kf. (3175)
 271 cholemes#s.tw,kw,kf. (0)
 272 ((vomit* or emes#s) adj3 (infant* or neonat* or newborn*)).tw,kw,kf. (1991)
 273 hypertrophic pylorus stenosis/ (2020)
 274 ((hypertrophic or infantile) adj3 pyloric steno#s).tw,kw,kf. (2)
 275 exp gastroesophageal reflux/ (107683)
 276 ((gastroesophageal or gastro-esophageal or gastroesophageal or gastro-oesophageal or gastric acid or esophagogastr* or oesophagogastr* or esophag* or oesophag*) adj2 (reflux\$2 or regurg)).tw,kw,kf. (83524)
 277 (GERD or GORD).tw,kw,kf. (35480)
 278 newborn jaundice/ (8856)
 279 ((breastmilk or breast milk or newborn or neonat*) adj3 (icterus or jaundic*)).tw,kw,kf. (10923)
 280 (bronze baby syndrome? or erythroleukoblastos*).tw,kw,kf. (101)
 281 ((rectal* or rectum* or rectocolic or recto-colic) adj3 (bleed* or blood* or h?emorrhag*)).tw,kw,kf. (20796)
 282 h?ematochezi*.tw,kw,kf. (8765)
 283 ((f?ecal or f?eces or stool?) adj3 (bleed* or blood*)).tw,kw,kf. (36235)
 284 Meckel diverticulum/ (9826)
 285 (Meckel* adj1 (diverticle* or diverticul*)).tw,kw,kf. (9636)
 286 exp intestinal polyposis/ (24874)
 287 polypos#s.tw,kw,kf. (45316)
 288 exp inflammatory bowel disease/ (301613)
 289 (inflam* adj3 bowel?).tw,kw,kf. (180020)
 290 (IBD and (inflam* or bowel*)).tw,kw,kf. (95855)
 291 ((crohn? or cleron) adj3 (disease* or morbus or colitis* or colitides or enteriti*)).tw,kw,kf. (157394)

Appendix 1. Search Strategies

- 292 ((regional* or granulomatous or terminal*) adj3 (colitis* or colitides or enteriti* or ileitis or ileitides or ileocolitis or ileo-colitis or enterocolitis* or entero-colitis*)).tw,kw,kf. (7094)
- 293 ((colitis* or colitides or coloproctitis or colo-rectitis or proctocolitis or procto-colitis or rectocolitis or recto-colitis) adj3 (ulcer* or idiopathic* or gravis or mucosa*)).tw,kw,kf. (140419)
- 294 (((colon or colonic) adj3 ulceration) and chronic\$).tw,kw,kf. (167)
- 295 exp abdominal pain/ (256594)
- 296 (abdom#n* adj3 pain*).tw,kw,kf. (215940)
- 297 exp pelvic pain/ (35754)
- 298 ((pelvic* or pelvis*) adj3 pain*).tw,kw,kf. (36076)
- 299 exp appendicitis/ (56882)
- 300 appendicit*.tw,kw,kf. (53423)
- 301 (appendi* adj3 inflam*).tw,kw,kf. (3685)
- 302 exp kidney colic/ (5020)
- 303 ((kidney? or renal or ureteral) adj3 colic?).tw,kw,kf. (7532)
- 304 cholecystitis/ (35085)
- 305 cholecystitis\$.tw,kw,kf. (42099)
- 306 ((gallbladder? or gall bladder?) adj3 empty?ema*).tw,kw,kf. (689)
- 307 exp pancreatitis/ (185792)
- 308 (pancreatit#s or pancreatic parenchyma* or peripancreatic fat necros#s or peri-pancreatic fat necros#s).tw,kw,kf. (175300)
- 309 exp pyelonephritis/ (48420)
- 310 (pyelonephrit#s or pyelo-nephrit#s or (inflam* adj3 (kidney* or nephron*))).tw,kw,kf. (46991)
- 311 ovary torsion/ (1383)
- 312 ((ovarian or ovary or adnexal) adj2 torsion*).tw,kw,kf. (4430)
- 313 exp intussusception/ (27489)
- 314 intus?usception.tw,kw,kf. (23384)
- 315 (invagination* adj3 (intestinal* or prolapse*)).tw,kw,kf. (1159)
- 316 ((palpable adj3 (lump? or mass\$)) and (abdom#n* or pelvic* or pelvis*)).tw,kw,kf. (195)
- 317 exp constipation/ (131626)
- 318 (constipat* or (colon\$2 adj3 inertia?) or dyschezia?).tw,kw,kf. (87991)
- 319 cryptorchism/ (25257)
- 320 (cryptorchidism* or cryptorchism* or cryptoidism* or kryptorchism*).tw,kw,kf. (16057)
- 321 ((impalpable or undescended or maldescensus) adj3 (testes or testis or testic*)).tw,kw,kf. (8507)
- 322 hydronephrosis/ and (exp fetus disease/ or fetus/ or newborn/).tw,kw,kf. (4919)
- 323 hydronephrosis/ and (f?etus* or f?etal or newborn? or neonat*).ti,kw,kf. (2297)
- 324 ((hydronephro* or hydro nephro*) adj3 (f?etus* or f?etal or newborn? or neonat*)).tw,kw,kf. (1233)
- 325 ((kidney? or renal) adj3 pelvi# dilat* adj5 (f?etus* or f?etal or newborn? or neonat*)).tw,kw,kf. (119)
- 326 exp enuresis/ (15908)
- 327 (enures#s or (involuntary adj3 urin*)).tw,kw,kf. (14512)
- 328 exp urinary tract infection/ (200049)
- 329 ((urinary or bladder* or kidney* or urethra or ureter) adj3 (inflam* or infect*)).tw,kw,kf. (178836)
- 330 (cystit#s or urethrit#s).tw,kw,kf. (46943)
- 331 ((nonaccidental or deliberate or intended) adj3 (injury or injuries or trauma*)).tw,kw,kf. (2095)
- 332 (physical* adj3 (abus* or assault*)).tw,kw,kf. (27895)
- 333 or/197-332 [CONDITIONS OF INTEREST] (11780886)
- 334 exp child/ or exp adolescent/ (7796952)
- 335 (infant* or infanc* or baby or babies or child* or toddler* or preschool* or school next age* or boy or boys or girl or girls or adolescen* or teen or teens or teenager* or youth or youths or high-school*).tw,kw,kf. (5725015)
- 336 exp pediatrics/ (202817)
- 337 p?ediatric*.tw,kw,kf. (1225813)
- 338 or/334-337 [PAEDIATRIC POPULATION] (9761111)
- 339 333 and 338 [CONDITIONS OF INTEREST - PAEDIATRIC POPULATION] (2714546)
- 340 diagnostic imaging/ (292664)
- 341 (diagnos* adj3 (image? or imaging)).tw,kw,kf. (142084)
- 342 (x-ray* or xray*).tw,kw,kf. (987718)
- 343 computer assisted tomography/ (898720)
- 344 computer assisted diagnosis/ (68110)
- 345 exp three-dimensional imaging/ (219319)
- 346 ((3D or 3-D or 3-dimension* or three dimension*) adj (image? or imaging)).tw,kw,kf. (50275)
- 347 exp echography/ (1491682)
- 348 (ultrasound* or ultrasonograph* or ultra-sonograph* or ultrasonic* or ultra-sonic*).tw,kw,kf. (1152328)
- 349 (echograph* or echo-graph* or echotomograph* or echotomograph* or echosonograph* or echo sonograph*).tw,kw,kf. (26513)
- 350 exp radiography/ (2690188)
- 351 (radiograph* or radiographic imag* or roentgenograph* or roentgeno-graph*).tw,kw,kf. (643183)
- 352 (fluoroscop* or fluoro-scop*).tw,kw,kf. (92749)
- 353 exp scintiscanning/ (215767)
- 354 ((radionuclide* adj2 imag*) or (radio-nuclide* adj2 imag*) or (radionuclide* adj2 scan*) or (radio-nuclide* adj2 scan*) or (radioisotope* adj2 imag*) or (radio-isotope* adj2 imag*) or (radioisotope* adj2 scan*) or (radio-isotope* adj2 scan*) or scintigra* or scinti-gra* or scintiphograph* or scinti-photograph* or scintiscan* or scinti-scan* or scanograph* or lymphoscintigra* or lympho-scintigra*).tw,kw,kf. (158460)
- 355 exp tomography/ (3463929)
- 356 (tomograph* or tomo-graph*).tw,kw,kf. (1219149)
- 357 (CAT scan* or CT scan* or PET scan* or PET imag* or PT scan* or PT imag*).tw,kw,kf. (412009)
- 358 (SPECTCT or SPECT CT or "SPECT/CT").tw,kw,kf. (18301)
- 359 (magnetic resonance imag* or MRI or MRIs or fMRI or fMRIs or NMR imag* or chemical shift imag* or magneti#ation transfer contrast imag* or spin echo imag* or zeugmatograph* or zeugmato-graph*).tw,kw,kf. (1321338)
- 360 (cineradiograph* or cine-radiograph* or cinefluorograph* or cine-fluorograph* or radiocinematograph* or radio-cinematograph*).tw,kw,kf. (4240)
- 361 nuclear medicine/ (45685)
- 362 ((nuclear or atomic) adj1 medicine*).tw,kw,kf. (48672)
- 363 (nuclear adj1 radiolog*).tw,kw,kf. (1326)
- 364 (sialogra* or salivogra* or sialoscintigra* or sialo-scintigra*).tw,kw,kf. (3377)
- 365 (enteroclys* or enterogra*).tw,kw,kf. (6516)
- 366 (esophagra* or oesophagra* or esophagogra* or oesophagogra*).tw,kw,kf. (7370)
- 367 ((CT or virtual) adj colonoscop*).tw,kw,kf. (1959)
- 368 (contrast adj (study or studies or medium)).tw,kw,kf. (47639)
- 369 (cholangiopancreatogra* or cholangio-pancreatogra* or ERCP or MRCP).tw,kw,kf. (58784)

Appendix 1. Search Strategies

370 cholecystogra*.tw,kw,kf. (5498)
371 (angiograph* or angio-graph* or angiogram* or angio-gram*).tw,kw,kf. (588438)
372 (perfusion adj3 (image? or imaging)).tw,kw,kf. (43732)
373 or/340-372 [IMAGING] (8476711)
374 339 and 373 [CONDITIONS OF INTEREST - PAEDIATRIC POPULATION - IMAGING] (595814)
375 (exp animal/ or exp animal experimentation/ or exp animal model/ or exp animal experiment/ or nonhuman/ or exp vertebrate/) not (exp human/ or exp human experimentation/ or exp human experiment/) (13180449)
376 374 not 375 [ANIMAL-ONLY REMOVED] (591178)
377 (conference abstract or editorial or letter).pt. (8798466)
378 case report/ or exp case study/ or directory/ (5452829)
379 376 not (377 or 378) [IRRELEVANT PUBLICATION TYPES REMOVED] (309237)
380 exp practice guideline/ (742088)
381 (consensus or guideline* or guidance? or standards or recommendation*).ti,kw,kf. (557132)
382 (expert consensus or consensus statement* or consensus conference* or clinical guideline? or practice guideline? or treatment guideline? or practice parameter* or position statement* or policy statement* or CPG or CPGs).tw,kw,kf. (316008)
383 or/380-382 [GUIDELINE FILTER] (1328574)
384 379 and 383 [CONDITIONS OF INTEREST - PAEDIATRIC POPULATION - IMAGING - GUIDELINES] (6984)
385 limit 384 to yr="2018-current" (2754)
386 385 use emcxd [EMBASE RECORDS] (2167)
387 196 or 386 [BOTH DATABASES] (3210)
388 remove duplicates from 387 (2745) [TOTAL UNIQUE RECORDS]
389 388 use medall [MEDLINE UNIQUE RECORDS] (1042)
390 388 use emcxd [EMBASE UNIQUE RECORDS] (1703)

Appendix 2. Potentially relevant non-English guidelines

1. Nally AP, Galeano MA. [Screening and diagnostic recommendations in the developmental dysplasia of the hip]. *Recomendaciones en la pesquisa y diagnostico de la displasia del desarrollo de las caderas*. 2021; 119: S159-S158.
2. Anonymous. [Bronchiectasis not related to cystic fibrosis in children: Guidelines for diagnosis, monitoring and treatment]. *Bronquiectasias no relacionadas con fibrosis quística en niños: guías de diagnóstico, seguimiento y tratamiento*. 2020; 118:S164-S182.
3. Pilar HJ, Claudia AO, Gonzalez C C, Vilma Ch N, Rosati MMP. [Recommendations on diagnosis, management and study of the urinary tract infection in pediatrics. Nephrology Branch of the Chilean Society of Pediatrics. Part 1]. *Recomendaciones sobre diagnóstico, manejo y estudio de la infección del tracto urinario en pediatría. Rama de Nefrología de la Sociedad Chilena de Pediatría. Parte 1*. 2020; 91:281-288.
4. Pilar HJ, Vilma Ch N, Gonzalez CC, Rosati MMP, Claudia AO. [Recommendations on diagnosis, management and study of the urinary tract infection in pediatrics. Nephrology Branch of the Chilean Society of Pediatrics. Part 2]. *Recomendaciones sobre diagnóstico, manejo y estudio de la infección del tracto urinario en pediatría. Rama de Nefrología de la Sociedad Chilena de Pediatría. Parte 2*. 2020; 91:449-456.
5. Bom WJ, Knaapen M, Gorter RR, van Rossem CC. [Revised guideline for acute appendicitis. Amendments to diagnostics and treatment]. *Herziene richtlijn over acute appendicitis*. 2020; 164.
6. Krom H, Venmans LMAJ, Tabbers MM. [Guideline 'Ingestion of foreign bodies in children aged 0-18 years']. *Richtlijn 'Ingestie van corpora aliena bij kinderen van 0-18 jaar'*. 2019; 163.
7. Hernandez Moore E, Castello Gonzalez M, Aguilar Atanay D, Piovetti Dorta Y, de Mola Pino EL, Giraudy Zuniga M. Clinical practice guideline intussusception in children. *Revista Cubana de Pediatría*. 2021; 93: e1185.
8. Andres-Martin A, Escribano Montaner A, Figuerola Mulet J, Garcia Garcia ML, Korta Murua J, Moreno-Perez D, Rodrigo-Gonzalo de Liria C, Moreno Galdo A. Consensus Document on Community-Acquired Pneumonia in Children. SENP-SEPAR-SEIP. *Archivos de Bronconeumología*. 2020; 56: 725-741.

Appendix 3. AGREE-II assessments

Guideline	Domain 1				Domain 2				Domain 3									Domain 4				Domain 5					Domain 6			Overall quality
	1	2	3	Score (%)	4	5	6	Score (%)	7	8	9	10	11	12	13	14	Score (%)	15	16	17	Score (%)	18	19	20	21	Score (%)	22	23	Score (%)	
RCR 2017 [17]	3	3	3	9 (100)	3	3	3	9 (100)	3	3	3	3	3	1	3	1	20 (83)	3	3	3	9 (100)	3	2	3	1	9 (75)	2	2	4 (67)	High
ACR 2019 [18] Scoliosis	2	2	3	7 (78)	3	1	3	7 (78)	3	2	3	2	3	3	3	1	20 (83)	3	3	3	9 (100)	1	1	2	1	5 (42)	3	3	6 (100)	Moderate
ACR 2021 [19] Seizures	3	2	3	8 (89)	3	2	3	8 (89)	3	2	3	2	3	3	3	1	20 (83)	3	3	3	9 (100)	1	1	2	1	5 (42)	3	3	6 (100)	Moderate
ACR 2018 [20] Headache	2	2	3	7 (78)	3	1	3	7 (78)	3	2	3	2	3	3	3	1	20 (83)	3	3	3	9 (100)	1	1	2	1	5 (42)	3	3	6 (100)	Moderate
ETA 2022 [21] Thyroid nodules	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	1	3	3	1	20 (83)	3	3	3	9 (100)	1	2	1	1	5 (42)	3	3	6 (100)	Moderate
ACR 2019 [22] Neck mass	2	2	3	7 (78)	3	1	3	7 (78)	3	2	3	2	3	3	3	1	20 (83)	3	3	3	9 (100)	1	1	2	1	5 (42)	3	3	6 (100)	Moderate
ACR 2018 [23] Sinusitis	2	2	3	7 (78)	3	1	3	7 (78)	3	2	3	2	3	3	3	1	20 (83)	3	3	3	9 (100)	1	1	2	1	5 (42)	3	2	5 (83)	Moderate
German Gdn 2022 [25] Back pain	3	1	3	7 (78)	3	1	1	5 (56)	3	3	3	3	1	2	3	1	19 (79)	3	3	3	9 (100)	1	1	1	1	4 (33)	3	3	6 (100)	Moderate
ACR 2018 [26] Limping	2	2	3	7 (78)	3	1	3	7 (78)	3	2	3	2	3	3	3	1	20 (83)	3	3	3	9 (100)	1	1	2	1	5 (42)	3	3	6 (100)	Moderate
ACR 2019 [27] Devel. Dysplasia Hip	2	2	3	7 (78)	3	1	3	7 (78)	3	2	3	2	3	3	3	1	20 (83)	3	3	3	9 (100)	1	1	2	1	5 (42)	3	3	6 (100)	Moderate
ACR 2020 [30] Pneumonia	2	2	3	7 (78)	3	1	3	7 (78)	3	2	3	2	3	3	3	1	20 (83)	3	3	3	9 (100)	1	1	2	1	5 (42)	3	3	6 (100)	Moderate
ESPNIC 2020 [31] Pneu. & Bronchiolitis	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	3	3	3	2	23 (96)	3	1	3	7 (78)	1	3	3	3	10 (83)	3	3	6 (100)	High
Polish GdIn 2020 [32] Pneu. & Bronchiolitis	3	1	3	7 (78)	3	1	3	7 (78)	3	3	3	3	3	3	3	2	23 (96)	2	3	3	8 (89)	1	3	1	1	6 (50)	3	3	6 (100)	Moderate
SIGENP 2020 [33] Ingestion	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	2	3	3	1	21 (88)	3	3	3	9 (100)	1	3	1	3	8 (67)	3	3	6 (100)	Moderate
SFMU/SRLF/FGPICE 2019 [36] Asthma	3	1	3	7 (78)	3	1	3	7 (78)	3	1	3	3	1	3	3	1	18 (75)	3	1	3	7 (78)	1	1	3	1	6 (50)	3	3	6 (100)	Moderate

Appendix 3. AGREE-II assessments

Guideline	Domain 1				Domain 2				Domain 3									Domain 4				Domain 5					Domain 6			Overall quality
	1	2	3	Score (%)	4	5	6	Score (%)	7	8	9	10	11	12	13	14	Score (%)	15	16	17	Score (%)	18	19	20	21	Score (%)	22	23	Score (%)	
CHEST 2020 [34] Chronic cough	3	1	3	7 (78)	3	1	3	7 (78)	3	1	3	3	3	3	3	2	21 (88)	3	3	2	8 (89)	1	3	1	1	6 (50)	3	3	6 (100)	Moderate
ERS 2020 [35] Chronic cough	3	3	3	9 (100)	3	3	3	9 (100)	3	3	3	3	3	3	3	1	22 (92)	3	1	3	7 (78)	1	1	3	1	6 (50)	3	3	6 (100)	Moderate
ACR 2020 [38] Vomiting	2	3	3	8 (89)	3	1	3	7 (78)	3	2	3	2	3	3	3	1	20 (83)	3	3	3	9 (100)	1	1	2	1	5 (42)	3	3	6 (100)	Moderate
NASPGHN/ESPGHN 2018 [39] GE reflux	3	3	3	9 (100)	3	1	2	6 (67)	3	3	3	3	1	3	3	1	20 (83)	3	3	3	9 (100)	1	1	1	1	4 (33)	3	3	6 (100)	Moderate
ECCO/ESPGHN 2018 [43] Ulcerative colitis	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	1	3	3	1	20 (83)	3	3	3	9 (100)	1	3	1	1	6 (50)	3	3	6 (100)	High
ACR 2019 [41] Appendicitis	3	2	3	8 (89)	3	1	3	7 (78)	3	2	3	2	3	3	3	1	20 (83)	3	3	3	9 (100)	1	3	2	1	7 (58)	3	3	6 (100)	Moderate
SPIGC 2021 [45] Appendicitis	3	1	3	7 (78)	3	1	2	6 (67)	3	3	3	3	3	3	3	1	22 (92)	3	3	2	8 (89)	1	1	3	1	6 (50)	1	3	4 (67)	Moderate
WSES 2020 [48] Appendicitis	3	3	3	9 (100)	3	1	1	5 (56)	3	3	3	3	3	3	3	1	22 (92)	3	3	3	9 (100)	1	1	3	1	6 (50)	3	3	6 (100)	Moderate
CUA 2021 [42] Ureteral calculi	3	1	3	7 (78)	3	1	2	6 (67)	3	1	3	2	3	3	3	1	19 (79)	3	3	3	9 (100)	2	2	3	1	8 (67)	1	3	4 (67)	Moderate
EPC/HPSG 2018 [44] Pancreatitis	3	3	3	9 (100)	3	1	3	7 (78)	3	1	3	3	3	3	3	1	20 (83)	3	3	3	9 (100)	1	1	1	1	4 (33)	1	1	2 (33)	Moderate
NASPGHN 2018 [46] Pancreatitis	2	1	3	6 (67)	3	1	3	7 (78)	3	1	3	3	1	3	3	1	18 (75)	3	3	3	9 (100)	1	3	1	1	6 (50)	3	3	6 (100)	Moderate
NASPGHN/SPR 2021 [47] Pancreatitis	3	2	3	8 (89)	3	1	3	7 (78)	3	2	3	3	3	3	3	1	21 (88)	3	3	3	9 (100)	1	3	1	1	6 (50)	1	3	4 (67)	Moderate
ACR 2020 [49] Hydronephrosis	3	1	3	7 (78)	3	1	3	7 (78)	3	2	3	3	3	3	3	1	21 (88)	3	3	3	9 (100)	1	1	2	1	5 (42)	3	3	6 (100)	Moderate
Egyptian GdIn 2021 [50] Urinary tract infection	3	2	3	8 (89)	3	1	2	6 (67)	3	3	3	3	3	3	3	1	22 (92)	2	3	2	7 (78)	1	3	3	1	8 (67)	3	3	6 (100)	Moderate
ISPN 2023 [51] Urinary tract infection	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	3	3	3	2	23 (96)	3	3	3	9 (100)	3	3	3	1	10 (83)	3	3	6 (100)	High
Swiss Gldn 2021 [52] Urinary tract infection	3	1	3	7 (78)	3	1	3	7 (78)	3	3	3	3	1	3	3	1	20 (83)	3	3	3	9 (100)	3	3	1	1	8 (67)	1	3	4 (67)	Moderate

Appendix 3. AGREE-II assessments

Abbreviations: **ACR:** American College of Radiology; **CAR:** Canadian Association of Radiologists; **CUA:** Canadian Urological Association; **ECCO/ESPGHN:** European Crohn's and Colitis Organization and the European Society of Paediatric Gastroenterology, Hepatology and Nutrition; **EPC/HPSG:** European Pancreatic Club and the Hungarian Pancreatic Study Group; **ERS:** European Respiratory Society; **ESPNIC:** European Society of Paediatric and Neonatal Intensive Care; **ETA:** European Thyroid Association; **GE:** gastroesophageal; **NASPGHN:** North American Society for Pediatric Gastroenterology, Hepatology and Nutrition; **ISPN:** Indian Society of Pediatric Nephrology; **NASPGHN/ESPGHN:** North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition; **SFMU/SRLF/FGPICE:** Société Française de Médecine d'Urgence, the Société de Réanimation de Langue Française and the French Group for Pediatric Intensive Care and Emergencies; **SIGENP:** Italian Society of Pediatric Gastroenterology, Hepatology and Nutrition; **SPIGC:** Italian Polispécialistic Society of Young Surgeons; **RCR:** Royal College of Radiologists; **WSES:** World Society of Emergency Surgery

Appendix 4. Evidence tables

Table PD01. Development delay/congenital malformations

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; US: ultrasound	
CAR 2012 [16]	L01. SUSPECTED CONGENITAL MALFORMATION OF THE BRAIN - MRI: Indicated [B]: MRI is the definitive examination for suspected congenital malformation of the brain, providing the best definition of brain anatomy. - CT: Indicated [B]: In suspected congenital malformation of the skull, CT is required for the evaluation of bony anatomy. 3-D reconstruction is indicated for patients with craniosynostosis and craniofacial syndromes. L08. SUSPECTED CEREBRAL PALSY OR DEVELOPMENTAL DELAY - MRI: Specialized investigation [A]: The clinical diagnosis of cerebral palsy or developmental delay is rarely aided by imaging. However, MRI can demonstrate periventricular leukomalacia or hypoxic-ischemic injury in children with cerebral palsy. MRI can also demonstrate abnormalities in some genetic/metabolic conditions associated with developmental delay. - CT: Specialized investigation [A]: CT may be considered if MRI is contraindicated.
RCR 2017 [17]	P07. CONGENITAL DISORDERS OF THE BRAIN IN CHILDREN - MRI [B] - US [C] - CT [C] P13. DEVELOPMENTAL DELAY: SUSPECTED CEREBRAL PALSY - MRI [A]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD02. Suspected congenital malformation of the spine/ spinal dysraphism

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
	CT: computed tomography; MRI: magnetic resonance imaging; US: ultrasound; XR: radiograph
CAR 2012 [16]	L02. SUSPECTED CONGENITAL MALFORMATION OF THE SPINE - MRI: Indicated [B]: MRI is the definitive examination for suspected congenital malformation of the spine, giving the best depiction of the spinal cord, conus and cauda equina. - CT: Moderately indicated [B]: Targeted CT may be required in addition to MRI in order to define bony anatomy, e.g. with complex forms of spinal dysraphism. L19. SUSPECTED SPINAL DYSRAPHISM, SCREENING IN LOW RISK INFANTS - US: Moderately indicated [B]: US has very good diagnostic performance, and it does not require sedation. Therefore, it is the preferred screening modality in infants of diabetic mothers and infants with intergluteal dimples. However, the yield in this population is very low. US should be performed before 6 months of age, because visualization becomes progressively more difficult with ossification of the posterior elements. - MRI: Not indicated [B]: MRI has the best diagnostic performance, but it requires sedation. It should therefore not be used as a screening modality. - XR lumbar spine: Not indicated [B]: XR lumbar spine has the poorest diagnostic performance and exposes children to radiation. It should therefore not be used as a screening modality for spinal dysraphism. L20. SUSPECTED SPINAL DYSRAPHISM, SCREENING IN HIGHER RISK INFANTS - US: Indicated [B]: Infants with lumbosacral dimple, hairy patch, hemangioma or anorectal/cloacal malformation are at higher risk of spinal dysraphism. US should be sufficient to rule out spinal dysraphism in infants presenting with only a lumbosacral dimple. - MRI: Specialized investigation [B]: MRI requires sedation, and the strength of the clinical indication must be weighed against the risk of sedation in consultation with a neurosurgeon. MRI should be considered when the risk of spinal dysraphism is high despite a negative US, or when the child is too old to have US. - XR lumbar spine: Not indicated [B]: XR lumbar spine has the poorest diagnostic performance and exposes children to radiation. It should therefore not be used as a screening modality for spinal dysraphism.
ACR 2019 [18] (Jones et al)	SCOLIOSIS – CHILD ▪ Variant 1. Child. Congenital scoliosis. Initial imaging.
RCR 2017 [17]	P08. CONGENITAL DISORDERS OF THE SPINE IN CHILDREN - MRI [B] - XR [B] - US [C] - CT [C] P18. SPINA BIFIDA OCCULTA IN CHILDREN - US/MRI [C] P19. SACRAL DIMPLE/PIT OR OTHER CUTANEOUS STIGMATA IN CHILDREN (E.G., HAIRY PATCH)

Appendix 4. Evidence tables

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
	CT: computed tomography; MRI: magnetic resonance imaging; US: ultrasound; XR: radiograph
	- US/MRI [B]

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD03A. Hydrocephalus: Suspected hydrocephalus

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; US: ultrasound	
CAR 2012 [16]	L03. SUSPECTED HYDROCEPHALUS, NEW DIAGNOSIS - MRI: Indicated [B]: MRI is the definitive examination for all malformations of the brain, offering superior resolution of brain anatomy, compared to other modalities. - CT: Moderately indicated [B]: CT can identify hydrocephalus rapidly and may therefore be preferred to MRI in a patient who is neurologically unstable. CT can provide some information about the cause of hydrocephalus and associated brain malformations when MRI is not readily available; however, its resolution of brain anatomy is inferior to that of MRI. - US: Moderately indicated [B]: US can identify hydrocephalus rapidly and without the need for ionizing radiation or sedation in young infants with open fontanelles; however, US alone does not permit a complete evaluation of the cause of hydrocephalus or associated brain malformations.

Abbreviations: CAR: Canadian Association of Radiologists

Table PD03B. Hydrocephalus: Treated hydrocephalus, suspected shunt malfunction

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; US: ultrasound; XR: radiograph	
CAR 2012 [16]	L04. TREATED HYDROCEPHALUS, SUSPECTED SHUNT MALFUNCTION - XR shunt series: Indicated [B]: XR of the whole shunt system (skull, chest, abdomen/pelvis) is required to identify the site of interruption. - MRI: Indicated [B]: MRI focused on the evaluation of size and configuration of cerebrospinal fluid spaces can be performed rapidly and without sedation in most patients, using single shot fast spin echo sequences. MRI is contraindicated in patients with some biomedical devices. Programmable shunt valves may be a problem. - US head: Moderately indicated [B]: US can identify hydrocephalus rapidly and without the need for ionizing radiation or sedation in young infants with open fontanelles. However, US may not reliably detect subtle changes in size or configuration of cerebrospinal fluid spaces on serial examinations. - CT: Moderately indicated [B]: CT can reliably detect changes in size and configuration of cerebrospinal fluid spaces on serial examinations. However, multiple examinations over time may impose a significant radiation burden on patients with repeated episodes of shunt malfunction. CT may be used when US is not appropriate and MRI is unavailable or contraindicated. L05. TREATED HYDROCEPHALUS, SUSPECTED SHUNT MALFUNCTION DUE TO CSF LOCULATION AROUND THE DISTAL END OF THE SHUNT - US abdomen/pelvis: Indicated [C]: US can detect CSF loculation around the distal end of the shunt.
RCR 2017 [17]	P12. HYDROCEPHALUS: SUSPECTED SHUNT MALFUNCTION IN CHILDREN - MRI [B] - CT [B] - US [B] - XR [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD04. Craniosynostosis

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; US: ultrasound; XR: radiograph	
CAR 2012 [16]	This scenario was not covered in the 2012 guideline
RCR 2017 [17]	P09. ABNORMAL HEAD SHAPE IN CHILDREN - US [B] - MRI [C] - Skull XR [C] - CT [C]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD07. Congenital or acquired hearing loss

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging	
CAR 2012 [16]	This scenario was not covered in the 2012 guideline.
RCR 2017 [17]	P11. DEAFNESS/HEARING LOSS IN CHILDREN - CT/MRI [A]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD08A. Febrile seizure

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CAR 2012 [16]	L06. FEBRILE SEIZURE - Imaging: Not indicated [B]: Abnormalities can be found in children with febrile seizures, especially focal or prolonged febrile seizures. However, there is no evidence that management is altered by imaging. Meningitis must be ruled out clinically, using lumbar puncture if appropriate.
ACR 2021 [19] (Trofimova et al)	SEIZURE – CHILD ▪ Variant 2. Children 6 months to 5 years of age. Simple febrile seizures. Initial imaging. ▪ Variant 3. Children 6 months to 5 years of age. Complex febrile seizures. Initial imaging.

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists

Table PD08B. Non-febrile seizure

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
	CT: computed tomography; MRI: magnetic resonance imaging; NM: nuclear medicine; PET-CT: positron emission tomography-computed tomography; SPECT: Single-photon emission computed tomography; XR: radiograph
CAR 2012 [16]	L07. SUSPECTED EPILEPSY - MRI: Indicated [B]: MRI is the definitive examination for all malformations of the brain, offering superior resolution of brain anatomy, compared to CT. It is therefore preferred to CT for the detection and characterization of malformations of cortical development and other epileptogenic lesions in children. Imaging is not indicated in any of the following conditions, which are typically not associated with structural epileptogenic lesions: childhood absence epilepsy, juvenile absence epilepsy, juvenile myoclonic epilepsy, benign childhood epilepsy with centrotemporal spikes (BECTS). - CT: Moderately indicated [B]: CT can reveal structural lesions that cause seizures, but has significantly lower resolution than MRI and requires radiation exposure. CT may be helpful to rule out acute or evolving intracranial pathology (e.g. hemorrhage, mass) in a child with non-febrile seizures, if MRI is not readily available or if MRI is contraindicated.
RCR 2017 [17]	P10. EPILEPSY IN CHILDREN - MRI [A] - CT [B] - PET-CT/NM (seek specialist advice)/ Regional cerebral blood flow SPECT [B] - Skull XR [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD09. Headache: Acute/subacute

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; CTA: computed tomography angiography; MRA: magnetic resonance angiography; MRI: magnetic resonance imaging; XR: radiograph	
CAR 2012 [16]	L10. HEADACHE: ACUTE, SUDDEN, SEVERE, “THUNDERCLAP” - CT: Indicated [B]: Although rare, aneurysmal hemorrhage can occur in children. In cases of sudden, severe headache (“thunderclap” headache), CT has excellent sensitivity and specificity for the detection of acute blood. CTA is required for the detection and characterization of aneurysms and vascular malformations. - MRI: Indicated [B]: Diffusion weighted imaging (DWI), fluid attenuated inversion recovery (FLAIR) and gradient recalled echo (GRE) sequences should be used to maximize detection of acute blood. MRA of the circle of Willis is required for the detection and characterization of aneurysms and vascular malformations.
ACR 2018 [20] (Hayes et al)	HEADACHE – CHILD ▪ Variant 1. Child. Primary headache. Initial imaging. ▪ Variant 2. Child. Secondary headache. Initial imaging. ▪ Variant 3. Child. Sudden severe headache (thunderclap headache). Initial imaging. ▪ Variant 4. Child. Headache attributed to infection. Initial imaging. ▪ Variant 5. Child. Headache attributed to remote trauma. Initial imaging.
RCR 2017 [17]	P14. HEADACHE IN CHILDREN - MRI/CT [B] - Skull XR [C]

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD10. Headache: Chronic/recurrent

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; XR: radiograph	
CAR 2012 [16]	L09. HEADACHE: CHRONIC/RECURRENT - MRI: Specialized investigation [B]: In chronic/recurrent headache with a normal neurological examination, the yield of imaging is low. MRI may be used to rule out CNS pathology, if there remains concern after an evaluation by a neurologist. MRI is preferred to CT, because of its superior anatomical resolution and lack of radiation. Consideration should be given to magnetic resonance venography (MRV) to rule out venous sinus thrombosis. - CT: Specialized investigation [B]: CT may be used to rule out a space occupying lesion, if there remains concern after an evaluation by a neurologist. CT may be considered where MRI is not available or MRI is contraindicated. Consideration should be given to contrast enhanced CT to rule out venous sinus thrombosis.
ACR 2018 [20] (Hayes et al)	HEADACHE – CHILD ▪ Variant 1. Child. Primary headache. Initial imaging. ▪ Variant 2. Child. Secondary headache. Initial imaging. ▪ Variant 4. Child. Headache attributed to infection. Initial imaging.
RCR 2017 [17]	P14. HEADACHE IN CHILDREN - MRI/CT [B] - Skull XR [C]

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD11A. Neck mass/nodule: Thyroid mass/nodule

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
US: ultrasound	
CAR 2012 [16]	This scenario was not covered in the 2012 guideline.
European Thyroid Association 2022 [21] (Lebbink et al)	PEDIATRIC THYROID NODULES - Recommendation 3A: Thyroid US (2S) - Recommendation 3B: Complete neck US (4S)

Abbreviations: CAR: Canadian Association of Radiologists

Table PD11B. Neck mass/nodule: Non-thyroid mass/nodule

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CAR 2012 [16]	This scenario was not covered in the 2012 guideline.
ACR 2019 [22] (Aulino et al)	NECK MASS ▪ Variant 4. Child. Neck mass(es). Not parotid region or thyroid. Initial imaging.

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists

Table PD12A. Sinusitis: Acute sinusitis

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; XR: radiograph	
CAR 2012 [16]	L11. UNCOMPLICATED ACUTE SINUSITIS - Imaging: Not indicated [B]: Mucosal thickening is frequently seen in asymptomatic children, limiting the value of imaging for ruling in/out sinusitis. L12. DIAGNOSIS OF SINUSITIS IN DOUBT - XR sinuses: Moderately indicated [B]: XR is not reliable for confirming the diagnosis (see above). However, in some circumstances, such as when the diagnosis of sinusitis is in doubt, a negative XR may be helpful in shifting the focus of therapy. - CT sinuses: Not indicated [B]: The anatomical resolution of CT is not required in this scenario. Therefore, the increased radiation dose is not warranted. L14. COMPLICATED SINUSITIS - CT sinuses: Indicated [B]: CT with contrast enhancement can be used to assess for periorbital cellulitis, cavernous sinus thrombosis, and epidural/subdural empyema. The threshold for imaging should be lower in immunocompromised children. - MRI sinuses: Indicated [B]: MRI is superior to CT for the assessment of epidural/subdural empyema and brain abscess. MRI is therefore preferred when intracranial extension is strongly suspected. The threshold for MRI should be lower in immunocompromised children. - XR sinuses: Not indicated [B]: The anatomical resolution of XR is not sufficient to assess complicated sinusitis (e.g. periorbital swelling, ptosis, visual changes, cranial nerve palsies, altered mental status).
ACR 2018 [23] (Tekes et al)	SINUSITIS – CHILD ▪ Variant 1. Child. Uncomplicated acute sinusitis. Initial imaging.
RCR 2017 [17]	P15. SUSPECTED SINUSITIS IN CHILDREN - MRI/CT [B] - XR sinus [C]

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD12B. Sinusitis: Chronic sinusitis

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; XR: radiograph	
CAR 2012 [16]	L13. DEFINITE SINUSITIS, RESISTANT TO MAXIMAL MEDICAL THERAPY - CT sinuses: Specialized investigation [B]: CT can demonstrate anatomical causes of sinus obstruction that may require surgical intervention. It should therefore be performed in conjunction with ENT evaluation. - XR sinuses: Not indicated [B]: The anatomical resolution of XR is not sufficient to assess for anatomical causes of sinus obstruction.
ACR 2018 [23] (Tekes et al)	SINUSITIS – CHILD ▪ Variant 2. Child. Persistent sinusitis (worsening course or severe presentation, or not responding to treatment), or recurrent sinusitis, or chronic sinusitis, or define paranasal sinus anatomy before functional endoscopic sinus surgery. Initial imaging. ▪ Variant 3. Child. Sinusitis with clinical concern of orbital or intracranial complications. Initial imaging. ▪ Variant 4. Child. Suspected invasive fungal sinusitis. Initial imaging.

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists

Table PD13A. Torticollis: Congenital torticollis

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; US: ultrasound; XR: radiograph	
CAR 2012 [16]	L15. CONGENITAL TORTICOLLIS - US: Indicated [B]: US of the sternocleidomastoid muscles is useful to assess for fibromatosis colli. If US is negative, other imaging is indicated (see L16).
RCR 2017 [17]	P16. TORTICOLLIS WITHOUT TRAUMA IN CHILDREN - US [B] - XR [B] - MRI/CT [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD13B. New onset torticollis

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; US: ultrasound; XR: radiograph	
CAR 2012 [16]	L16. NEW ONSET TORTICOLLIS, NO HISTORY OF TRAUMA - XR: Indicated [B]: Muscular causes are most common, but XR is advised when history and physical examination are atypical. - MRI: Specialized investigation [B]: Persistent torticollis for one week justifies further imaging, following orthopaedic or neurosurgical consultation. MRI is preferred to CT when available, because of its superior definition of soft tissues and its lack of ionizing radiation. - CT: Specialized investigation [B]: Persistent torticollis for one week justifies further imaging, following orthopaedic or neurosurgical consultation. CT may be used if MRI is contraindicated.
RCR 2017 [17]	P16. TORTICOLLIS WITHOUT TRAUMA IN CHILDREN - US [B] - XR [B] - MRI/CT [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD15. Back pain

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; NM: nuclear medicine; XR: radiograph	
CAR 2012 [16]	L17. BACK PAIN - NM: Indicated [C]: NM bone scan with SPECT of the spine can be used to localize the site of abnormality for further imaging. - MRI: Specialized investigation [B]: Persistent back pain in children may have an underlying cause and justifies investigation. Back pain with scoliosis or neurological signs merits imaging. Choice of imaging should be made in consultation with a specialist (e.g. spine surgeon, rheumatologist) to maximize yield. - CT: Specialized investigation [B]: Persistent back pain in children may have an underlying cause and justifies investigation. Back pain with scoliosis or neurological signs merits imaging. Choice of imaging should be made in consultation with a specialist (e.g. spine surgeon, rheumatologist) to maximize yield.
German Society for Pediatric and Adolescent Medicine 2022 [25] (Frosch et al)	BACK PAIN IN CHILDREN AND ADOLESCENTS - Recommendation 10 (A, level of evidence 2, consensus 100%) - Recommendation 11 (A, expert consensus 100%)
RCR 2017 [17]	P17. BACK PAIN IN CHILDREN WITH ANY OF THE FOLLOWING FEATURES: - MRI [B] - CT [B] - XR [C] - NM [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD16. Hip pain or limping referable to hip pathology

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
MRI: magnetic resonance imaging; NM: nuclear medicine; US: ultrasound; XR: radiograph	
CAR 2012 [16]	L25. HIP PAIN OR LIMPING REFERABLE TO HIP PATHOLOGY, INITIAL EVALUATION - XR: Indicated [C]: XR is the most appropriate first imaging examination for suspected avascular necrosis and slipped capital femoral epiphysis. AP and frog leg lateral views of the pelvis and both hips should be performed, with gonadal shielding on one of these views. - US: Indicated [B]: US is the most appropriate initial imaging examination for suspected septic arthritis, transient synovitis, juvenile idiopathic arthritis or hemarthrosis. US has high sensitivity for the detection of hip effusion but cannot distinguish reliably among the different causes.
ACR 2018 [26] (Safdar et al)	ACUTELY LIMPING CHILD UP TO AGE 5 ▪ Variant 2. Child up to age 5. Acute limp. Pain. Localized symptoms. No concern for infection. Initial imaging. ▪ Variant 4. Child up to age 5. Acute limp. Symptoms localized to the hip. Concern for infection. Initial imaging. ▪ Variant 5. Child up to age 5. Acute limp. Symptoms localized to lower extremity (not pelvis or hips). Concern for infection. Initial imaging.
RCR 2017 [17] (see P35, P37, M21)	P34. HIP PAIN IN CHILDREN: SUSPECTED IRRITABLE HIP - US [B] - XR [C] - MRI [B] P35. LIMP (NO TRAUMA) IN CHILDREN - US [B] - MRI [B] - XR [B] - NM (bone scan) [B]

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD17. Limping and unable to localize symptoms

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
	IV: intravenous; MRI: magnetic resonance imaging; NM: nuclear medicine; US: ultrasound; XR: radiograph
CAR 2012 [16]	L27. LIMPING IN A CHILD TOO YOUNG TO LOCALIZE SYMPTOMS - XR tibia/fibula: Indicated [C]: In the initial evaluation, XR of the tibia and fibula may identify a toddler's fracture. - US hip: Indicated [B]: US may identify hip pathology. In the initial evaluation, US has high sensitivity for the detection of hip effusion, but cannot distinguish reliably among the different causes. - NM: Moderately indicated [B]: NM is moderately indicated following a negative XR and US. NM bone scan has a higher radiation dose than the above combination of XR and US. Therefore, NM should be considered as a second-line investigation if XR and US fail to localize the pathology and symptoms persist. - MRI: Specialized investigation [C]: MRI may be used instead of NM or as an adjunct to NM at some centres, depending on availability and local expertise.
ACR 2018 [26] (Safdar et al)	ACUTELY LIMPING CHILD UP TO AGE 5 ▪ Variant 1. Child up to age 5. Acute limp. Nonlocalized symptoms. No concern for infection. Initial imaging. ▪ Variant 3. Child up to age 5. Acute limp. Nonlocalized symptoms. Concern for infection. Initial imaging.
RCR 2017 [17]	P35. LIMP (NO TRAUMA) IN CHILDREN - US [B] - MRI [B] - XR [B] - NM (bone scan) [B]

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD18. Developmental dysplasia of the hip

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
US: ultrasound; XR: radiograph	
CAR 2012 [16]	L30. SUSPECTED DEVELOPMENTAL DYSPLASIA OF THE HIP, NEWBORN WITH RISK FACTORS - US: Indicated [A]: US is the examination of choice in the newborn with risk factors for DDH (e.g. family history, primiparous mother, female gender, breech presentation, oligohydramnios, club foot, genu recurvatum, torticollis). US should be performed between 4 and 6 weeks of age to reduce the false positive rate resulting from physiological laxity in the newborn period. Treatment of DDH within 6 to 8 weeks after birth is associated with significantly improved outcomes. - XR: Not indicated [C]: US is the examination of choice in the newborn period. XR provides no significant added information and exposes infants to radiation. L31. CLINICAL EVIDENCE OF DDH, INFANT < 3 MONTHS OF AGE - US: Indicated [B]: US best depicts the relationship between the unossified femoral head and acetabulum. Alternatively, where clinical suspicion is strong, consideration should be given to direct referral to orthopaedics. - XR: Not indicated [C]: US is the examination of choice in the newborn period. XR provides no added information and exposes infants to radiation. L32. CLINICAL EVIDENCE OF DDH, INFANT 3-6 MONTHS OF AGE - US: Indicated [C]: US visualization may be compromised by ossification of the femoral head in some infants. - XR: Moderately indicated [C]: XR can depict ossification of the femoral head, contour of the acetabulum and alignment of the hip. L33. CLINICAL EVIDENCE OF DDH, INFANT > 6 MONTHS OF AGE - XR: Indicated [C]: XR can depict ossification of the femoral head, contour of the acetabulum and alignment of the hip. - US moderately indicated [C]: US visualization may be compromised by ossification of the femoral head in many infants.
ACR 2019 [27,28] (Nguyen et al)	DEVELOPMENTAL DYSPLASIA OF THE HIP – CHILD ▪ Variant 1. Child, younger than 4 weeks of age. Equivocal physical examination or risk factors for DDH. Initial imaging. ▪ Variant 2. Child, between 4 weeks to 4 months of age. Equivocal physical examination or risk factors for DDH. Initial imaging. ▪ Variant 3. Child, younger than 4 months of age. Physical findings of DDH. Initial imaging. ▪ Variant 4. Child, between 4 to 6 months of age. Concern for DDH. Initial imaging. ▪ Variant 5. Child, older than 6 months of age. Concern for DDH. Initial imaging. <i>Did not extract: Variant 6. Child, younger than 6 months of age. Known diagnosis of DDH, nonoperative surveillance imaging in harness.</i>
RCR 2017 [17]	P37. SUSPECTED DDH IN INFANTS - US [A]

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD19. Suspected Osgood-Schlatter disease

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
MRI: magnetic resonance imaging; US: ultrasound; XR: radiograph	
CAR 2012 [16]	L34. SUSPECTED OSGOOD-SCHLATTER DISEASE - XR: Not indicated [C]: Osgood-Schlatter disease is a clinical diagnosis. XR findings of Osgood-Schlatter disease overlap with normal findings. XR may be considered if the diagnosis is uncertain, or if more serious bone pathology is being considered.
RCR 2017 [17]	P38. SUSPECTED OSGOOD-SCHLATTER DISEASE IN CHILDREN - XR [B] - US/MRI [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD20. Scoliosis

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; NM: nuclear medicine; XR: radiograph	
CAR 2012 [16]	L35. IDIOPATHIC ADOLESCENT SCOLIOSIS, INITIAL EVALUATION - XR full spine: Indicated [C]: The presence of scoliosis should be established by physical examination. The purpose of radiographs is to quantify the scoliosis and to assess for malsegmentation. Frontal view should be performed in PA projection in all cases. Lateral view should be performed for scoliosis greater than 10 degrees. L36. SUSPECTED NON-IDIOPATHIC SCOLIOSIS - XR full-spine: Indicated [C]: PA and lateral views may be performed for initial localization and characterization of pathology in patients with suspected non-idiopathic scoliosis (e.g. onset before 11 years of age, rapid progression, curve > 45 degrees, apex left thoracic curve, apex right lumbar curve, short segment scoliosis, associated pain, neurological findings or midline cutaneous anomalies). - NM: Indicated [C]: Should be performed for initial localization if vertebral tumour is suspected. - CT: Indicated [C]: Should be targeted to focal bone pathology identified by XR or NM examinations. - MRI: Indicated [C]: Should include sequences targeted to the pathology, as well as sequences covering the whole spine for adequate assessment of cord, conus and cauda equina.
ACR 2019 [18] (Jones et al)	SCOLIOSIS – CHILD ▪ Variant 2. Child (0 to 9 years of age). Early onset idiopathic scoliosis. Initial imaging. ▪ Variant 3. Adolescent (10 to 18 years of age). Adolescent idiopathic scoliosis. No risk factors. Initial imaging. ▪ Variant 4. Adolescent (10 to 18 years of age). Adolescent idiopathic scoliosis. Risk factors. Initial imaging.

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists

Table PD21. Short stature/growth failure

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
XR: radiograph	
CAR 2012 [16]	L39. SHORT STATURE/GROWTH FAILURE, CHILD AGED < 1 YEAR - XR knee: Indicated [A]: XR knee is more precise than XR of the hand and wrist for assessment of bone age in a child aged < 1 year. L40. SHORT STATURE/GROWTH FAILURE, CHILD AGED ≥ 1 YEAR - XR hand and wrist: Indicated [A]: A single PA view of the non-dominant hand and wrist should be obtained and compared to published standards.
RCR 2017 [17]	P33. SHORT STATURE, GROWTH FAILURE - XR for bone age [A]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD22A. Uncomplicated pneumonia

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CXR: chest radiograph; POCUS: point of care ultrasound; US: ultrasound	
CAR 2012 [16]	L43. CHEST INFECTION, UNCOMPLICATED PRESENTATION - CXR: Not indicated [A]: Routine CXR does not improve clinical outcome in children with uncomplicated pneumonia in the ambulatory care setting. Follow-up CXR is not indicated for uncomplicated pneumonia that responds to treatment.
ACR 2020 [30] (Chan et al)	PNEUMONIA IN THE IMMUNOCOMPETENT CHILD ▪ Variant 1. Child. 3 months of age and older. Immunocompetent. Suspected uncomplicated community-acquired pneumonia in a well-appearing child who does not require hospitalization. Initial imaging ▪ Variant 3. Child. 3 months of age and older. Immunocompetent. Suspected hospital-acquired pneumonia. Initial imaging.
European Society of Paediatric and Neonatal Intensive Care 2020 [31]	POCUS FOR CRITICALLY ILL NEONATES AND CHILDREN - POCUS
Polish Guideline 2020 [32] (Jaworska et al.)	APPLICATION OF LUNG ULTRASOUND IN PNEUMONIA AND BRONCHIOLITIS - Lung US
RCR 2017 [17]	P01. ACUTE COMMUNITY-ACQUIRED CHEST INFECTION IN CHILDREN - CXR [A]

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD22B. Pneumonia with complications, including recurrent pneumonia

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; CXR: radiograph; MRI: magnetic resonance imaging; NM: nuclear medicine; UGI: upper gastrointestinal series; US: ultrasound	
CAR 2012 [16]	L44. CHEST INFECTION, NON-SPECIFIC CLINICAL FINDINGS OR SEVERE DISEASE - CXR: Indicated [B]: CXR can confirm pneumonia in children with a non-specific presentation and demonstrate complications of bacterial pneumonia (e.g. lung abscess, empyema) in severely ill children. L45. CHEST INFECTION, RECURRENT OR PERSISTENT PNEUMONIA - CXR: Indicated [C]: Evaluation of CXR should include review of any prior films. Spirometry should be considered if asthma is suspected, as this is the most common cause of recurrent pneumonia in North America. - CT: Specialized investigation [C]: High resolution CT of the lung is helpful for the confirmation and evaluation of suspected bronchiectasis. CT may be helpful when CXR raises suspicion of a congenital lung malformation, tracheobronchial structural anomaly or vascular ring. The strength of the clinical indication must be weighted against the risks of radiation exposure. Alternatively, consideration may be given to bronchoscopy at the discretion of a pediatric respirology specialist. - MRI: Specialized investigation [C]: MRI may be helpful when CXR raises suspicion of a vascular ring. The strength of the clinical indication must be weighted against the risks of sedation. - US: Echocardiography specialized investigation [C]: Echocardiography may be an alternative to MRI depending on local expertise when CXR raises suspicion of a vascular ring. - UGI: Moderately indicated [C]: UGI may be helpful if chronic aspiration is suspected, particularly with involvement of multiple lobes. Alternatively, consideration may be given to esophagoscopy or esophageal pH probe. - NM reflux scan: Moderately indicated [C]: Reflux scan may be helpful if chronic aspiration is suspected, particularly with involvement of multiple lobes. Alternatively, consideration may be given to esophagoscopy or esophageal pH probe.
ACR 2020 [30] (Chan et al)	PNEUMONIA IN THE IMMUNOCOMPETENT CHILD ▪ Variant 2. Child. 3 months of age and older. Immunocompetent. Community-acquired pneumonia that does not respond to initial outpatient treatment or requires hospital admission. Initial imaging ▪ Variant 4. Child. Immunocompetent. Pneumonia complicated by suspected moderate or large parapneumonic effusion by chest radiograph. Next imaging study ▪ Variant 5. Child. Immunocompetent. Pneumonia complicated by suspected bronchopleural fistula by chest radiograph. Next imaging study. ▪ Variant 6. Child. Immunocompetent. Pneumonia complicated by suspected lung abscess by chest radiograph. Next imaging study ▪ Variant 7. Child. 3 months of age and older. Immunocompetent. Recurrent nonlocalized pneumonia by chest radiograph. Next imaging study ▪ Variant 8. Child. 3 months of age and older. Immunocompetent. Recurrent localized pneumonia by chest radiograph. Next imaging study.
European	POINT OF CARE US FOR CRITICALLY ILL NEONATES AND CHILDREN

Appendix 4. Evidence tables

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; CXR: radiograph; MRI: magnetic resonance imaging; NM: nuclear medicine; UGI: upper gastrointestinal series; US: ultrasound	
Society of Paediatric and Neonatal Intensive Care 2020 [31] (Singh et al)	- Recommendation 13 (<i>quality of evidence B</i>).
Polish Guideline 2020 [32] (Jaworska et al.)	APPLICATION OF LUNG ULTRASOUND IN PNEUMONIA AND BRONCHIOLITIS - Lung US

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists

Table PD23. Bronchiolitis

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
US: ultrasound	
CAR 2012 [16]	This scenario was not covered in the 2012 guideline.
European Society of Paediatric and Neonatal Intensive Care 2020 [31] (Singh et al)	POCUS FOR CRITICALLY ILL NEONATES AND CHILDREN - Recommendation 16 (<i>quality of evidence C</i>).
Polish Guideline 2020 [32] (Jaworska et al.)	APPLICATION OF LUNG ULTRASOUND IN PNEUMONIA AND BRONCHIOLITIS - Lung US

Abbreviations: CAR: Canadian Association of Radiologists

Table PD24A. Suspected foreign body: Gastrointestinal

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
ABX: abdominal radiograph; CXR: radiograph	
CAR 2012 [16]	L58. SWALLOWED FOREIGN BODY - XR chest and abdomen: Indicated [C]: For a suspected sharp or potentially poisonous foreign body (e.g. battery), XR should cover the aerodigestive tract from the pharynx to the rectum.
Italian Society of Pediatric Gastroenterology, Hepatology and Nutrition 2020 [33] (Oliva et al)	FOREIGN BODY AND CAUSTIC INGESTION IN CHILDREN - Recommendation 2.2 (Moderate recommendation; high quality of evidence)
RCR 2017 [17]	P22. INGESTED FOREIGN BODY IN CHILDREN - CXR & lateral neck XR [B] - AXR [C]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD24B. Suspected foreign body: Airway

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; CXR: chest radiograph; XR: radiograph	
CAR 2012 [16]	L46. SUSPECTED INHALED FOREIGN BODY, INITIAL INVESTIGATION - CXR (inhalation/exhalation): Indicated [B]: CXR can demonstrate radio-opaque foreign bodies, focal atelectasis and focal air trapping on expiration. Right and left decubitus views may offer higher diagnostic yield than inspiration/expiration views in young, uncooperative children. L47. SUSPECTED INHALED FOREIGN BODY, CXR NEGATIVE - XR, airway fluoroscopy: Moderately indicated [B]: Airway fluoroscopy is a dynamic study that can visualize the entire tracheobronchial tree, identify focal air trapping or multiple sites of obstruction, and evaluate relative movement of the hemidiaphragms. Airway fluoroscopy does not replace bronchoscopy, which is mandatory in a child with history, physical findings and CXR consistent with inhaled foreign body.
RCR 2017 [17]	P03. INHALED FOREIGN BODY IN CHILDREN - CXR [B] - CT [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD25. Asthma

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; CXR: radiograph; HRCT: high resolution computed tomography	
CAR 2012 [16]	L48. ASTHMA - CXR: Not indicated [B]: CXR is normal or shows features of airways inflammation in most children with wheezing. CXR is only helpful if a complication of asthma (e.g. pneumothorax, lobar collapse) is suspected clinically, or if another cause for recurrent wheezing (e.g. aspiration) is suspected clinically.
CHEST 2020 [34] (Chang et al)	MANAGING CHRONIC COUGH AS A SYMPTOM IN CHILDREN - Recommendation 6 (Grade 1B) - Recommendation 8 (Grade 1B) - Recommendation 20 (Grade 1B)
European Respiratory Society 2020 [35] (Morice et al)	CHRONIC COUGH IN ADULTS AND CHILDREN Question 1: should chest CT scan be routinely performed on chronic cough patients with normal chest radiograph and physician examination? (Conditional, very low).
RCR 2017 [17]	P02. RECURRENT PRODUCTIVE COUGH IN CHILDREN - CXR [C] - CT (HRCT) [C] P04. WHEEZE IN CHILDREN - CXR [B]
SFMU/ SRLF/ FGPICE 2019 [36] (Le Conte et al)	MANAGEMENT OF SEVERE ASTHMA EXACERBATION - R1.2: Expert opinion

Abbreviations: CAR: Canadian Association of Radiologists; CHEST: American College of Chest Physicians; RCR: Royal College of Radiologists; SFMU/SRLF/FGPICE: Société Française de Médecine d'Urgence, the Société de Réanimation de Langue Française and the French Group for Pediatric Intensive Care and Emergencies

Table PD26. Stridor

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; CXR: chest radiograph; GI: gastrointestinal; MRI: magnetic resonance imaging; XR: radiograph	
CAR 2012 [16]	L49. ACUTE STRIDOR, UNSTABLE CHILD - Imaging: Not indicated [C]: Emergency airway management takes precedence over imaging. L50. ACUTE STRIDOR, STABLE CHILD - XR neck: Indicated [C]: Frontal and lateral XR of the neck allows evaluation of the epiglottis, glottis and subglottic airway and may be of value to confirm suspected obstructing foreign body or retropharyngeal abscess. L51. PERSISTENT STRIDOR, INITIAL INVESTIGATION - CXR: Indicated [C]: CXR may be used as an initial screen for evidence of recurrent aspiration or a vascular ring. - XR airway fluoroscopy: Indicated [B]: Airway fluoroscopy may be considered if CXR is negative, or if a vocal cord abnormality, laryngomalacia, tracheomalacia or airway compression is considered most likely. Airway fluoroscopy is a safe, quick and noninvasive method for evaluating the entire airway dynamically. Endoscopy is an alternative consideration, depending on local expertise. - XR upper gastrointestinal series: Moderately indicated [C]: Upper gastrointestinal series is most appropriate if recurrent aspiration secondary to gastroesophageal reflux or tracheoesophageal fistula is considered most likely. Upper gastrointestinal series can also identify a vascular ring, but CT/MRI is preferred for this diagnosis. L52. PERSISTENT STRIDOR, FURTHER INVESTIGATION - CT chest: Specialized investigation [C]: CT chest can evaluate the mediastinum, hila, tracheobronchial tree and lung parenchyma. CT should be considered after pediatric respirology consultation to weigh the clinical indication against the risks of radiation exposure. - MRI chest: Specialized investigation [C]: MRI can evaluate vascular rings and other compressive mediastinal lesions well. MRI may require sedation, which is problematic in a child with stridor. MRI should therefore be considered after pediatric respirology consultation to weigh the clinical indication against the risks of sedation.
RCR 2017 [17]	P05. ACUTE STRIDOR IN CHILDREN - Lateral XR soft tissue neck [B] - CXR [B] - MRI/CT/Upper GI contrast studies [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologists

Table PD28A. Bilious vomiting, suspected proximal obstruction or uncertain level of obstruction

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
AXR: abdominal radiograph; UGI: upper gastrointestinal series; US: ultrasound; XR: radiograph	
CAR 2012 [16]	L60. BILIOUS VOMITING IN AN INFANT OR YOUNG CHILD, INITIAL INVESTIGATION - XR abdomen: Indicated [C]: Bilious vomiting in an infant or young child is an emergency. AXR is needed immediately to rule out perforation and to distinguish proximal obstruction from distal obstruction. Normal findings on AXR do not rule out malrotation/volvulus. Further imaging is needed, as outlined below. L61. BILIOUS VOMITING IN AN INFANT OR YOUNG CHILD, SUSPECTED PROXIMAL OBSTRUCTION - UGI: Indicated [B]: UGI should be performed emergently to assess for malrotation/volvulus. If UGI is negative or equivocal, further imaging investigations should be considered. This may include small bowel follow-through, contrast enema and/or US. - Contrast enema: Moderately indicated [B]: Contrast enema has lower sensitivity and specificity than UGI for malrotation and is no longer considered the preferred first-line investigation. Contrast enema should be considered as an ancillary investigation, if UGI is negative or equivocal. - US: Moderately indicated [B]: US has a high false positive rate for malrotation, compared to UGI. Therefore, positive findings on US require confirmation by UGI.
ACR 2020 [38] (Alazraki et al)	VOMITING IN INFANTS ▪ Variant 1. Vomiting within the first 2 days after birth. Poor feeding or no passage of meconium. Initial imaging. ▪ Variant 2. Vomiting within the first 2 days after birth. Radiographs show classic double bubble or triple bubble with little or no gas distally (suspected proximal bowel obstruction or atresia). Next imaging study. <i>Did not extract: Variant 5. Bilious vomiting in an infant older than 2 days (suspected malrotation). Initial imaging.</i>

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists

Table PD28B. Suspected distal obstruction

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CAR 2012 [16]	L62. BILIOUS VOMITING IN AN INFANT OR YOUNG CHILD, SUSPECTED DISTAL OBSTRUCTION - Contrast enema: Indicated [B]. Contrast enema should be performed emergently to determine the site and etiology of distal obstruction.
ACR 2020 [38] (Alazraki et al)	VOMITING IN INFANTS ▪ Variant 3. Vomiting within the first 2 days after birth. Radiographs show a distal bowel obstruction. Next imaging study. ▪ Variant 4. Bilious vomiting within the first 2 days after birth. Radiographs show a nonclassic double bubble with gas in the distal small bowel, or few distended bowel loops, or a normal bowel gas pattern. Next imaging study. <i>Did not extract: Variant 5. Bilious vomiting in an infant older than 2 days (suspected malrotation). Initial imaging.</i>

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist

Table PD28C. Suspected hypertrophic pyloric stenosis (HPS)

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
UGI: upper gastrointestinal series; US: ultrasound	
CAR 2012 [16]	L63. NON-BILIOUS VOMITING IN AN INFANT, SUSPECTED HYPERTROPHIC PYLORIC STENOSIS - US pylorus: Indicated [B]: US is the preferred modality to identify HPS in term infants as well as preterm infants. US screening for associated urinary tract anomalies in children with proven HPS is not worthwhile. - UGI: Moderately indicated [B]: May be used to assess for HPS when US is non-diagnostic, or when US is not available.
ACR 2020 [38] (Alazraki et al)	VOMITING IN INFANTS ▪ Variant 7. Infant older than 2 weeks and up to 3 months old. New onset nonbilious vomiting (suspected hypertrophic pyloric stenosis). Initial imaging. <i>Did not extract: Variant 5. Bilious vomiting in an infant older than 2 days (suspected malrotation). Initial imaging.</i>
RCR 2017 [17]	P24. NON-BILIOUS PROJECTILE VOMITING (SUSPECTED PYLORIC STENOSIS) - US [A]

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist

Table PD28D. Suspected uncomplicated gastroesophageal reflux (GER)

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
NM: nuclear medicine; UGI: upper gastrointestinal series	
CAR 2012 [16]	L64. NON-BILIOUS VOMITING IN AN INFANT, SUSPECTED GER - UGI: Not indicated [B]: History and physical examination should be sufficient to diagnose uncomplicated GER and initiate therapy in most infants. However, UGI is appropriate for GER with the following features: failure to resolve with medical management by 18-24 months; associated with poor weight gain; any child > 2 years of age; any child with dysphagia or odynophagia. UGI has lower sensitivity for GER than pH monitoring and lower sensitivity for esophagitis than endoscopy. - NM reflux scan: Moderately indicated [B]: An NM reflux scan may be used in tandem with UGI to document reflux, if pH monitoring is not available.
ACR 2020 [38] (Alazraki et al)	VOMITING IN INFANTS ▪ Variant 6. Infant with nonbilious vomiting, and otherwise healthy (suspected uncomplicated esophageal reflux). Initial imaging. <i>Did not extract: Variant 5. Bilious vomiting in an infant older than 2 days (suspected malrotation). Initial imaging.</i>
North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition 2018 [39] (Rosen et al)	PEDIATRIC GASTROESOPHAGEAL REFLUX - Recommendation 3.1 (Weak recommendation) - Recommendation 3.2 (Weak recommendation) - Recommendation 3.3 (Weak recommendation) - Recommendation 3.4 (Weak recommendation) - Recommendation 3.11 (Opinion)

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists

Table PD29. Persistent neonatal jaundice

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
MRCP: magnetic resonance cholangiopancreatography; MRI: magnetic resonance imaging; NM: nuclear medicine; US: ultrasound	
CAR 2012 [16]	L65. PERSISTENT NEONATAL JAUNDICE - US: Indicated [B]: Abdominal US must be performed within the first 10 weeks of life. - NM: Indicated [B]: Hepatobiliary scan with Tc-99m labeled IDA derivatives must be performed within the first 10 weeks of life.
RCR 2017 [17]	P26. PERSISTENT NEONATAL JAUNDICE - US [A] - MRI (MRCP) [B] - NM (Tc-99m-HIDA) [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist

Table PD30. Rectal bleeding

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
AXR: abdominal radiograph; CT: computed tomography; MRI: magnetic resonance imaging; NM: nuclear medicine; US: ultrasound; XR: radiograph	
CAR 2012 [16]	L66. SUSPECTED NECROTIZING ENTEROCOLITIS - XR abdomen: Indicated [C]: AXR must include a decubitus or cross-table lateral view for free air. - US: Moderately indicated [C]: US can detect bowel thickening, intramural air and lack of peristalsis, but small amounts of free air may be missed. L67. SUSPECTED MECKEL'S DIVERTICULUM OR DUPLICATION CYST - NM: Indicated [C]: Meckel's scan can identify a Meckel's diverticulum or duplication cyst with gastric mucosa. SPECT or premedication with ranitidine may increase sensitivity. L68. SUSPECTED JUVENILE POLYP OR POLYPOSIS - Double contrast enema: Specialized investigation [C]: Contrast enema should be considered in consultation with a gastroenterologist or surgeon, as colonoscopy with snare polypectomy may be the preferred first-line investigation/therapy.
RCR 2017 [17]	P27. GI BLEEDING (PER RECTUM) IN CHILDREN - US [C] - Endoscopy (including video capsule endoscopy) [B] - CT [B] - NM (Tc-99m-labelled RBCs/pertechnetate) [C] - MRI [B] - AXR [C] - Angiography (including CT angiography) [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist

Table PD31. Abdominal pelvic pain

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
AXR: abdominal radiograph; CT: computed tomography; MRI: magnetic resonance imaging; NM: nuclear medicine; US: ultrasound; XR: radiograph	
CAR 2012 [16]	L54. ACUTE ABDOMINAL PAIN, SUSPECTED APPENDICITIS - US: Indicated [B]: US has very good sensitivity and specificity for the diagnosis of appendicitis. It is also the preferred investigation if the differential diagnosis includes gynaecological causes of abdominal pain. It imparts no radiation. US should therefore always be the first line investigation for suspected appendicitis in children. - CT: Moderately indicated [B]: CT has higher sensitivity for the diagnosis of appendicitis than US. However, it imparts a significant radiation dose. It is therefore not recommended as the first imaging study, except in obese children. - XR abdomen: Not indicated [C]: Appendicitis can be diagnosed or ruled out in many children by clinical evaluation alone. Good evidence that XR improves the accuracy of clinical diagnosis is lacking. L55. SUSPECTED APPENDICITIS, US NEGATIVE OR EQUIVOCAL - CT: Indicated [B]: US followed by CT has been shown to be the most effective strategy, although it is also the most costly strategy. When US is negative and clinical suspicion is low, consideration might be given to observation/follow-up without further imaging. When US is equivocal and clinical suspicion is high, consideration might be given to surgery without further imaging. L56. SUSPECTED INTUSSUSCEPTION, IMAGING DIAGNOSIS - US: Indicated [B]: US has very high sensitivity and specificity for the diagnosis of intussusception. US may predict reducibility of an intussusception. Although imperfect, US remains the gold standard for non-invasive diagnosis of pathologic lead points. US is therefore the investigation of choice for suspected intussusception. - CT: Not indicated [C]: US should be sufficient to rule out intussusception. In patients with a negative or equivocal US, a broader differential diagnosis must be considered, and any further imaging should be guided by this differential diagnosis. Patients with a positive US should proceed to image-guided therapy or surgery. - XR abdomen: Not indicated [B]: XR is not indicated for the diagnosis of intussusception, due to poor interobserver agreement and poor overall diagnostic performance. L67. SUSPECTED MECKEL'S DIVERTICULUM OR DUPLICATION CYST - NM: Indicated [C]: Meckel's scan can identify a Meckel's diverticulum or duplication cyst with gastric mucosa. SPECT or premedication with ranitidine may increase sensitivity.
ACR 2019 [41] (Koberlein et al)	SUSPECTED APPENDICITIS – CHILD ▪ Variant 1. Child. Suspected acute appendicitis, low clinical risk. Initial imaging. ▪ Variant 2. Child. Suspected acute appendicitis, intermediate clinical risk. Initial imaging. ▪ Variant 3. Child. Suspected acute appendicitis, high clinical risk. Initial imaging.

Appendix 4. Evidence tables

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
AXR: abdominal radiograph; CT: computed tomography; MRI: magnetic resonance imaging; NM: nuclear medicine; US: ultrasound; XR: radiograph	
	- Variant 4. Child. Suspected acute appendicitis, equivocal or nondiagnostic right lower quadrant ultrasound. Next imaging study. - Variant 5. Child. Suspected acute appendicitis with clinical suspicion or initial imaging suggestive of complication (eg, abscess, bowel obstruction). Next imaging study.
Canadian Urological Association 2021 [42] (Lee et al)	MANAGEMENT OF URETERAL CALCULI Ultrasound, KUB X-ray, low-dose NCCT (level 3, strong recommendation)
European Crohn's and Colitis Organization and the European Society of Paediatric Gastroenterology, Hepatology and Nutrition 2018 [43] (Turner et al)	PEDIATRIC ULCERATIVE COLITIS Radiography and Toxic Megacolon - Recommendation: Abdominal x-ray (AXR) [EL4, adults EL4] - Practical Point: Abdominal CT-scan or MRI
European Pancreatic Club and the Hungarian Pancreatic Study Group 2018 [44] (Parniczky et al)	PANCREATITIS - AP-IV.1. Transabdominal ultrasonography (GRADE 1/B) - AP-IV.2. Contrast-enhanced abdominal computed tomography (CT) (Adult evidence level: GRADE 1/C) - AP-IV.3. contrast-enhanced abdominal CT or MRI (Adult evidence level: GRADE 1/B) - AP-IV.4. ERCP (GRADE 1/C) - AP-IV.5. Endoscopic ultrasonography (EUS) (GRADE 2/C) - AP-IV.6. MRCP (GRADE 2/C)
Italian Polispécialistic Society of Young Surgeons 2021 [45] (Guaitoli et al)	ACUTE APPENDICITIS IN INFANTS CT (EL 2C)
North American Society for Pediatric Gastroenterology, Hepatology and Nutrition & Society for Pediatric Radiology 2021 [47] (Trout et al)	ACUTE PANCREATITIS - Transabdominal ultrasound (1B) - CT or MRI (1B), (1C) - Ultrasound (2C) - CT or MRI (1C) ACUTE RECURRENT PANCREATITIS - MRI (1C) - US, CT (2C)
NASPGHN 2018 [46]	ACUTE PANCREATITIS IN PEDIATRIC POPULATIONS

Appendix 4. Evidence tables

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
AXR: abdominal radiograph; CT: computed tomography; MRI: magnetic resonance imaging; NM: nuclear medicine; US: ultrasound; XR: radiograph	
(Abu-El-Haija et al)	- transabdominal ultrasonography, CT, MRI
RCR 2017 [17] (see also G11, G12, G17)	P21. INTUSSUSCEPTION IN CHILDREN - US [A] - AXR [B] - US-guided or fluoroscopy-guided hydrostatic/pneumatic reduction [B] P28. ACUTE ABDOMINAL PAIN IN CHILDREN - US [B] - CT [B] - AXR [C] - MRI [B]
World Society of Emergency Surgery 2020 [48] (Di Saverio et al)	ACUTE APPENDICITIS - Recommendation 1.7 [QoE: Moderate; Strength of recommendation: Strong; 1B]. - Recommendation 1.8 [QoE: Moderate; Strength of recommendation: Weak; 2B]. - Recommendation 1.9 [QoE: Moderate; Strength of recommendation: Weak; 2B]. - Recommendation 1.10 [QoE: Moderate; Strength of recommendation: Strong; 1B]. - Recommendation 1.11 [QoE: High; Strength of recommendation: Strong; 1A]. - Recommendation 1.14.1 [QoE: Moderate; Strength of recommendation: Weak; 2B]. - Recommendation 1.14.2 [QoE: Moderate; Strength of recommendation: Weak; 2B].

Abbreviations: CAR: Canadian Association of Radiologists; NASPGHN: North American Society for Pediatric Gastroenterology, Hepatology and Nutrition; RCR: Royal College of Radiologist

Table PD32. Palpable abdominal or pelvic mass

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; US: ultrasound; XR: radiograph	
CAR 2012 [16]	L70. PALPABLE ABDOMINAL OR PELVIC MASS, INITIAL EVALUATION - US abdomen and pelvis: Indicated [C]: Recommended as the first investigation to confirm the presence of a mass. If positive, the patient should be referred to a specialist centre. All further imaging for diagnosis and staging should be performed at the specialist centre. - XR abdomen: Moderately indicated [C]: XR may confirm a large mass suspected on physical examination; however, it lacks sensitivity compared to cross sectional imaging. XR may be used to confirm calcification suspected on US. - CT: Specialized investigation [C]: CT may be required for surgical planning and staging. These investigations must be performed in accordance with current pediatric oncology protocols. - MRI: Specialized investigation [C]: MRI may be required for surgical planning and staging. These investigations must be performed in accordance with current pediatric oncology protocols.
RCR 2017 [17]	P30. PALPABLE ABDOMINAL/PELVIC MASS IN CHILDREN - US [C]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist

Table PD33. Constipation

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
AXR: abdominal radiograph; MRI: magnetic resonance imaging; NM: nuclear medicine; US: ultrasound; XR: radiograph	
CAR 2012 [16]	L69. CONSTIPATION - XR: Abdomen not indicated [A]: The diagnosis of constipation should be made on the basis of history and physical examination. XR interpretation is highly variable, and the correlation between constipation and stool burden on XR is poor. - Contrast enema: Indicated [B]: For children who have failed initial medical management, contrast enema may distinguish those who require referral for rectal manometry and/or biopsy to rule out Hirschsprung disease from those who can continue to be managed medically and referred only if their constipation proves refractory to therapy.
RCR 2017 [17]	P29. CONSTIPATION IN CHILDREN - AXR [C] - NM (colonic transit studies) [B] - Contrast enema [B] - US [B] - MRI [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist

Table PD34. Undescended testes

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
CT: computed tomography; MRI: magnetic resonance imaging; US: ultrasound	
CAR 2012 [16]	L73. IMPALPABLE TESTES - US: Indicated [B]: US is the best initial imaging modality. - MRI: Specialized investigation [B]: If US fails to reveal testes in the inguinal canal, MRI can be used to locate intra-abdominal testes. MRI should be considered in consultation with a surgeon, because laparoscopy without further imaging is a reasonable alternative. - CT: Specialized investigation [B]: If US fails to reveal testes in the inguinal canal, CT can be used to locate intra-abdominal testes. CT should be considered in consultation with a surgeon, because laparoscopy without further imaging is a reasonable alternative.
RCR 2017 [17]	P40. IMPALPABLE TESTES IN CHILDREN - US [B] - MRI [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist

Table PD35. Fetal renal pelvic dilatation, initial postnatal evaluation

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
US: ultrasound	
CAR 2012 [16]	L74. FETAL RENAL PELVIC DILATION, INITIAL POSTNATAL EVALUATION - US: Indicated [B]: US of kidneys and bladder should be performed no sooner than 72 hours post-partum to avoid a false negative examination, unless there is strong suspicion of bladder outlet obstruction on prenatal ultrasound. Mild pyelectasis should be followed at 4-6 weeks to ensure resolution.
ACR 2020 [49] (Brown et al)	ANTENATAL HYDRONEPHROSIS – INFANT ▪ Variant 1. Antenatal diagnosis of hydronephrosis. Initial neonatal imaging. ▪ Variant 2. Antenatal diagnosis of hydronephrosis with normal neonatal ultrasound.

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists

Table PD36A. Urinary incontinence: Enuresis

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
	CT: computed tomography; IVP: intravenous pyelogram; IVU: intravenous urography; MRI: magnetic resonance imaging; NM: nuclear medicine; US: ultrasound; XR: radiograph
CAR 2012 [16]	L71. TYPICAL ENURESIS - Imaging: Not recommended [B]: History, physical examination and urinalysis should take precedence over imaging, especially in children with monosymptomatic night-time enuresis. An anatomical abnormality is unlikely in the absence of unusual clinical features. L72. ATYPICAL ENURESIS - US kidneys and bladder: Indicated [C]: In toilet trained girls with continuous dribbling or wetting, US of kidneys and bladder should be used initially to search for a duplex kidney and to assess the urinary bladder in conjunction with video urodynamics. US may also be considered to screen for urinary tract anomalies or bladder trabeculation in children with refractory night-time enuresis, daytime enuresis or symptoms of dysfunctional voiding. Consideration should be given to urological consultation with a view to urodynamic assessment. - NM renal scan: Indicated [B]: DMSA scan is useful to confirm or locate a dysplastic kidney or the upper moiety of a duplex system, suspected on the basis of US findings. - IVP: Specialized investigation [B]: IVP may be considered in consultation with a urologist if it is necessary to confirm an infrasphincteric ectopic ureter in a girl with a duplex system identified on US and/or DMSA. - CT abdomen and pelvis: Specialized investigation [B]: If US and NM renal scan fail to locate a dysplastic kidney or a dysplastic renal moiety, CT with delayed images may demonstrate a suspected infrasphincteric ectopic ureter. - MRI urography: Specialized investigation [B]: If US and NM renal scan fail to locate a dysplastic kidney or a dysplastic renal moiety, MR urography may demonstrate a suspected infrasphincteric ectopic ureter. - MRI spine: Specialized investigation [B]: In children with abnormal neurological or musculoskeletal examination, bladder wall thickening or trabeculation on US or neuropathic vesicoureteral dysfunction on urodynamics, MRI is the imaging examination of choice for spinal dysraphism and tethered cord. - XR lumbosacral spine: Not indicated [C]: XR may show spinal dysraphism; however, MRI is ultimately required to assess cord, conus and cauda equine in addition to the spinal column.
RCR 2017 [17]	P39. CONTINUOUS WETTING IN CHILDREN (NOCTURNAL ENURESIS) - US [B] - XR lumbosacral spine [B] - MRI (including MR urography) [B] - IVU [B] - NM (DMSA) [B] - CT [B] - Video-urodynamics [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist

Table PD36B. Urinary incontinence: Continual incontinence

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
	CT: computed tomography; IVP: intravenous pyelogram; IVU: intravenous urography; MRI: magnetic resonance imaging; NM: nuclear medicine; US: ultrasound; XR: radiograph
CAR 2012 [16]	L71. TYPICAL ENURESIS - Imaging: Not recommended [B]: History, physical examination and urinalysis should take precedence over imaging, especially in children with monosymptomatic night-time enuresis. An anatomical abnormality is unlikely in the absence of unusual clinical features. L72. ATYPICAL ENURESIS - US kidneys and bladder: Indicated [C]: In toilet trained girls with continuous dribbling or wetting, US of kidneys and bladder should be used initially to search for a duplex kidney and to assess the urinary bladder in conjunction with video urodynamics. US may also be considered to screen for urinary tract anomalies or bladder trabeculation in children with refractory night-time enuresis, daytime enuresis or symptoms of dysfunctional voiding. Consideration should be given to urological consultation with a view to urodynamic assessment. - NM renal scan: Indicated [B]: DMSA scan is useful to confirm or locate a dysplastic kidney or the upper moiety of a duplex system, suspected on the basis of US findings. - IVP: Specialized investigation [B]: IVP may be considered in consultation with a urologist if it is necessary to confirm an infrasphincteric ectopic ureter in a girl with a duplex system identified on US and/or DMSA. - CT abdomen and pelvis: Specialized investigation [B]: If US and NM renal scan fail to locate a dysplastic kidney or a dysplastic renal moiety, CT with delayed images may demonstrate a suspected infrasphincteric ectopic ureter. - MRI urography: Specialized investigation [B]: If US and NM renal scan fail to locate a dysplastic kidney or a dysplastic renal moiety, MR urography may demonstrate a suspected infrasphincteric ectopic ureter. - MRI spine: Specialized investigation [B]: In children with abnormal neurological or musculoskeletal examination, bladder wall thickening or trabeculation on US or neuropathic vesicoureteral dysfunction on urodynamics, MRI is the imaging examination of choice for spinal dysraphism and tethered cord. - XR lumbosacral spine: Not indicated [C]: XR may show spinal dysraphism; however, MRI is ultimately required to assess cord, conus and cauda equine in addition to the spinal column.
RCR 2017 [17]	P39. CONTINUOUS WETTING IN CHILDREN (NOCTURNAL ENURESIS) - US [B] - XR lumbosacral spine [B] - MRI (including MR urography) [B] - IVU [B] - NM (DMSA) [B] - CT [B] - Video-urodynamics [B]

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist

Table PD37A. Urinary tract infection: First episode

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
DMSA: dimercaptosuccinic acid; NM: nuclear medicine; US: ultrasound; VCUG: voiding cystourethrography; XR: radiograph	
CAR 2012 [16]	L76. FEBRILE UTI IN A CHILD < 24 MONTHS – UNCOMPLICATED - US kidneys and bladder: Indicated [C]: US of kidneys and bladder should be performed to rule out anatomical anomalies and hydronephrosis, to assess renal parenchyma and renal size. The yield of US for significant abnormalities in this setting is low, but non-invasiveness and lack of radiation exposure argue in favour of performing the test. US should not be performed during the acute illness, as transient dilation of the renal collecting system and swelling of the renal parenchyma may be misleading. - DMSA renal scan: Not indicated [A]: Renal DMSA scan does not contribute to management decisions in uncomplicated UTI and should be reserved for cases of complicated or recurrent UTI, where the risk of renal parenchymal scarring is higher. - VCUG: Not indicated [A]: Antibiotic prophylaxis has not been shown to prevent recurrent UTI or pyelonephritis in infants without vesicoureteral reflux (VUR) or with grade I-IV VUR. L77. FIRST EPISODE OF FEBRILE UTI IN A CHILD < 24 MONTHS – COMPLICATED - US kidneys and bladder: Indicated [A]: UTI is considered complicated if any of the following apply: very ill child, evidence of sepsis, low urine output, raised serum creatinine, abdominal/pelvic mass, infection with organisms other than E. coli and/or failure to respond to appropriate antibiotics within 48 hours. In such cases, urgent US is indicated to assess for pyonephrosis, renal abscess or perirenal abscess. - DMSA renal scan moderately: Indicated [C]: DMSA renal scan is the most sensitive modality for the detection of pyelonephritis and renal scarring. - VCUG: Moderately indicated [C]: VCUG may be considered to rule out high grade VUR in this setting. VCUG should be performed after the active infection has settled.
Egyptian Clinical Practice Guidelines 2021 [50] (Moustafa et al)	URINARY TRACT INFECTIONS IN INFANTS AND CHILDREN - Imaging studies - Renal bladder US - US
Indian Society of Pediatric Nephrology 2023 [51] (Hari et al)	IMAGING FOLLOWING UTI - Recommendation: acute-phase DMSA scan (Weak recommendation; +ooo) - Clinical Practice Point: Ultrasound - Clinical Practice Point: micturating cystourethrography - Clinical Practice Point: late-phase DMSA scan
RCR 2017 [17]	P41. PROVEN UTI IN CHILDREN - US [C] - NM (DMSA) [A]

Appendix 4. Evidence tables

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
	DMSA: dimercaptosuccinic acid; NM: nuclear medicine; US: ultrasound; VCUG: voiding cystourethrography; XR: radiograph
	- Cystography; XR/NM (MAG3)/US [A]/[B]/[C] - MR urography [C]
Swiss consensus recommendations 2021 [52] (Buettcher et al)	URINARY TRACT INFECTIONS The role and timing of urinary tract imaging in pyelonephritis - Recommendation 8: US (evidence quality: moderate; recommendation: weak). Micturition cystourethrogram (evidence quality: moderate; recommendation: weak)

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist

Table PD37B. Urinary tract infection: Recurrent

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered (Note: Recommendations are not included, except for the 2012 CAR guideline)
DMSA: dimercaptosuccinic acid; NM: nuclear medicine; US: ultrasound; VCUG: voiding cystourethrography; XR: radiograph	
CAR 2012 [16]	L78. RECURRENT UTI, OR FIRST EPISODE OF UTI WITH ABNORMAL US, IN A CHILD YOUNGER THAN 24 MONTHS - Nuclear medicine renal scan: Indicated [C]: The type of renal scan (e.g. DMSA, MAG3) should be determined in consultation with a pediatric nephrologist/nephrologist/nuclear medicine physician. - VCUG: Indicated [C]: VCUG is indicated to identify high grade VUR in children with recurrent UTI and in children with US findings of hydronephrosis and/or scarring.
Egyptian Clinical Practice Guidelines 2021 [50] (Moustafa et al)	URINARY TRACT INFECTIONS IN INFANTS AND CHILDREN - Imaging studies - Renal Bladder US - US
RCR 2017 [17]	P41. PROVEN UTI IN CHILDREN - US [C] - NM (DMSA) [A] - Cystography: XR/NM (MAG3)/US [A]/[B]/[C] - MR urography [C]
Swiss consensus recommendations 2021 [52] (Buettcher et al)	URINARY TRACT INFECTIONS The role and timing of urinary tract imaging in pyelonephritis - Recommendation 8: US (evidence quality: moderate; recommendation: weak). Micturition cystourethrogram (evidence quality: moderate; recommendation: weak)

Abbreviations: CAR: Canadian Association of Radiologists; RCR: Royal College of Radiologist