NSW Health

Paediatric Nephrology Statewide Referral Criteria for Public Outpatient Services

This document is to be used as a guide for referrers and clinicians in NSW public outpatient services

The aim of statewide referral criteria (SRC) is to facilitate safe, timely and effective referral and prioritisation of patients requiring access to NSW public specialist outpatient services.

This document contains Paediatric Nephrology SRC for paediatric nephrology emergencies, paediatric nephrology presentations out of scope, and the following presenting conditions:

Acknowledgements

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Notes

- Paediatric Nephrology SRC sets thresholds for referral, regardless of source, to NSW public paediatric nephrology and applicable allied health-led, nurse-led, medical-led or surgical-led outpatient services, and the expected clinical urgency category based on clinical need
- Paediatric Nephrology SRC supports patients to be managed by the most appropriate member(s) of the multidisciplinary care team in the most appropriate setting based on their presenting condition
- Paediatric Nephrology SRC are applicable to NSW Local Health Districts and Specialty Health Networks with public paediatric nephrology and applicable allied health-led, nurse-led, medical-led or surgical-led outpatient services that manage the identified presenting conditions
- Paediatric Nephrology SRC are applicable where the identified presenting conditions managed by paediatric nephrologists are delivered in private practice as part of public-private hospital arrangements
- Paediatric Nephrology SRC may also be used by a range of specialists in private practice at their own discretion
- Paediatric Nephrology SRC does not intend to change eligibility in terms of presenting conditions managed and referral sources accepted for NSW public paediatric nephrology and applicable allied health-led, nurse-led, medical-led or surgical-led outpatient services
- Some NSW Local Health Districts and Specialty Health Networks may have different eligibility based on local contextual factors and/or service availability
- Referring health professionals may consider local alternative care options, including private practice, Aboriginal Community Controlled Health Services and/or non-government organisations, where appropriate, for patients seeking to access specialist services

Glossary

The structure for SRC in NSW is divided into the following five criterion.

In some cases, component(s) may not be applicable to each presenting condition. This will be denoted by 'Nil'.

Criterion	Description
Emergency	• Clinical presentations or 'red flags' where referring health professionals should consider redirecting the patient to an Emergency Department or urgent care service, or seeking medical advice (e.g. phone on-call medical practitioner) • These criteria should not be used by referring health professionals to refer to an NSW public specialist outpatient service
Out of scope (not routinely provided)	• Symptoms, conditions and/or presentations that would not routinely be provided by NSW public specialist outpatient services (i.e. could be optimally and safely managed in primary care) • These criteria acknowledge and permit exceptions, where clinically appropriate
Access and prioritisation	• Symptoms, conditions and/or presentations that advise referring health professionals, clinicians, patients and carers suitability for management by NSW public specialist outpatient services • These criteria are classified by expected clinical urgency category and clinically recommended timeframes to be seen for a new outpatient appointment (i.e. Category 1: within 30 days, Category 2: within 90 days, Category 3: within 365 days) • These criteria are only applicable where NSW public specialist outpatient services exist and manage the identified presenting condition
Referral requirements	• Mandatory information that is to be supplied with referrals to NSW public specialist outpatient services for specific symptoms, conditions and/or presentations • These criteria support with the determination of an appropriate clinical urgency category
Additional information (if available)	• Optional information that can be supplied with referrals to NSW public specialist outpatient services for specific symptoms, conditions and/or presentations • These criteria may support with the determination of an appropriate clinical urgency category, however, are not required to continue referral processing

Paediatric nephrology emergencies

Notes:

i) These emergency criteria are not an exhaustive list of nephrology emergencies. Please refer to HealthPathways for more information.

ii) If there is any uncertainty regarding clinical status, please contact the Paediatric Nephrology team at Sydney Children's Hospitals Network for guidance.

Presenting condition	Emergency criteria
Congenital and other structural anomalies of the kidney and urinary tract	• Acute kidney injury in association with congenital anomalies of the kidney and urinary tract (CAKUT) • Febrile urinary tract infections with underlying CAKUT • Obstructed stone in association with CAKUT Note: referral to paediatric urology is strongly indicated • Poor urinary stream or suspected lower urinary tract obstruction in a neonate Note: referral to paediatric urology is strongly indicated
Elevated serum creatinine	• Serum creatinine ≥ 2 times above normal range for age and any one of the following features: ○ Elevated creatine kinase ○ Hypertension (i.e. blood pressure > 95th centile for age and height) Note: refer to the American Academy of Pediatrics 2017 guideline ○ Low urine output ○ Serum potassium above normal range ○ Significant peripheral oedema (e.g. scrotal oedema, ascites, pleural effusions) ○ Signs of pulmonary oedema ○ Systemically unwell
Haematuria or glomerular disease	• Suspected glomerular disease (i.e. haematuria and proteinuria) with any of the following features: ○ Hypertension (i.e. blood pressure > 95th centile for age and height) Note: refer to the American Academy of Pediatrics 2017 guideline ○ Pre-existing conditions (e.g. lupus, other autoimmune conditions) ○ Serum creatinine above normal age-related range ○ Where the patient is systemically unwell (e.g. rash, joint swelling and/or pain, breathlessness, haemoptysis, oedema or neurological impairment)

Hypertension	• Hypertension (i.e. blood pressure > 95th centile for age and height) with any of the following features:
	  ○ Absence of femoral pulses
	  ○ Acute kidney injury
	  ○ Blurred vision
	  ○ Chest pain
	  ○ Headache
	  ○ Proteinuria ≥ 2+ on urinalysis
	  ○ Reduced level of consciousness or altered mentation
	  ○ Retinal haemorrhage or papilloedema
	  ○ Seizures
	  ○ Signs of heart failure
	
	Note: refer to the American Academy of Pediatrics 2017 guideline

Proteinuria or nephrotic syndrome	• Proteinuria with any of the following features:
	  ○ Acute abdominal pain with tenderness and guarding (i.e. peritonitis)
	  ○ Elevated serum creatinine
	  ○ Hypertension (i.e. blood pressure > 95th centile for age and height)
	  Note: refer to the American Academy of Pediatrics 2017 guideline
	  ○ Macroscopic haematuria
	  ○ Significant peripheral oedema (e.g. scrotal oedema, ascites, pleural effusions)
	  ○ Signs of pulmonary oedema
	  ○ Signs of venous thromboembolism
	  ○ Systemic infection
	  ○ Systemically unwell

Paediatric nephrology presentations out of scope

Presenting condition	Out of scope (not routinely provided) criteria
Congenital and other structural anomalies of the kidney and urinary tract	• Isolated, unilateral renal pelvic dilatation ≤ 10 mm • Uncomplicated duplex kidney (i.e. no dilatation of renal pelvis or ureter and normal bladder)
Elevated serum creatinine	• Nil out of scope criteria
Haematuria or glomerular disease	• Haematuria with a urological cause (i.e. stones, trauma, urinary tract infection, cystitis) • Isolated microscopic haematuria (i.e 2 urine assessments in 6 months)
Hypertension	• Transiently elevated blood pressure in the context of acute distress or illness
Proteinuria or nephrotic syndrome	• Orthostatic proteinuria (i.e. first morning urine protein / creatinine ratio in normal range) • Transient proteinuria in the presence of a urinary tract infection or another febrile illness

Presenting conditions

Note: if there is any uncertainty regarding clinical status, please contact the Paediatric Nephrology team at Sydney Children's Hospitals Network for guidance.

Congenital anomalies of the kidney and urinary tract (CAKUT)

Emergency

If any of the following are suspected, please seek emergency medical advice or refer the patient to the emergency department (via ambulance if necessary).

- Acute kidney injury in association with congenital anomalies of the kidney and urinary tract (CAKUT)
- Febrile urinary tract infections with underlying CAKUT
- Obstructed stone in association with CAKUT
  Note: referral to paediatric urology is strongly indicated
- Poor urinary stream or suspected lower urinary tract obstruction in a neonate
  Note: referral to paediatric urology is strongly indicated

Out of scope (not routinely provided)

- Isolated, unilateral renal pelvic dilatation ≤ 10 mm
- Uncomplicated duplex kidney (i.e. no dilatation of renal pelvis or ureter and normal bladder)

Access and prioritisation

Category 1
(clinically recommended to be seen within 30 calendar days)
	• Congenital anomalies of the kidney and urinary tract (CAKUT) associated with any of the following features:
	  ○ Elevated serum creatinine
	  ○ Hypertension
	  ○ Kidney stone(s)
	  ○ Proteinuria
	• Neonate or infant with ureteric dilatation
	  Note: paediatric urology may be more appropriate. Refer to local HealthPathways for more information.
	• Neonate or infant with ureterocoele
	  Note: paediatric urology may be more appropriate. Refer to local HealthPathways for more information.
	• Significant neonatal renal pelvic dilatation (i.e. > 15 mm if unilateral or > 10 mm if bilateral)
	  Note: paediatric urology may be more appropriate. Refer to local HealthPathways for more information.
	• Single kidney with any pelvic dilatation or with any other anomalies

Category 2
(clinically recommended to be seen within 90 calendar days)
	• Congenital anomalies of the kidney and urinary tract (CAKUT) associated with any of the following features:
	  ○ Anomalies in other organ systems
	  ○ Atypical organisms identified in proven urinary tract infections (UTIs)

	○ Daytime enuresis in a child aged > 5 years ○ Recurrent proven UTIs Note: paediatric urology may be more appropriate. Refer to local HealthPathways for more information. • CAKUT in an Aboriginal and/or Torres Strait Islander person, if otherwise not listed in Category 1 • Neonate or infant with unilateral renal pelvic dilatation 11-15 mm
Category 3 (clinically recommended to be seen within 365 calendar days)	• Uncomplicated ectopic kidney • Uncomplicated horseshoe kidney • Uncomplicated single kidney • Unilateral multicystic dysplastic kidney

Required information

- Reason for referral
- Details of the presenting condition, including symptoms and their duration, and impact on activities of daily living and school attendance
- Provisional diagnosis
- Patient health summary (such as relevant medical history including perinatal history, relevant investigations, current medications and dosages, immunisations, allergies and/or adverse reactions), including specifically:
  - Perinatal history, including birth weight (where available)
  - Developmental history
  - Family history of any renal tract abnormalities
  - Growth parameters
  - Renal ultrasound and other renal imaging
  - Results of any previous urine cultures
  - Urine dipstick result

Additional information (if available)

- Details of antenatal ultrasounds
- Details of antibiotics prescribed for urinary tract infections
- Serial blood pressure measurements (where available)
- Use of prophylactic antibiotics

Elevated serum creatinine

Emergency

If any of the following are suspected, please seek emergency medical advice or refer the patient to the emergency department (via ambulance if necessary).

- Serum creatinine ≥ 2 times above normal range for age and any one of the following features:
  - Elevated creatine kinase
  - Hypertension (i.e. blood pressure > 95th centile for age and height)
    Note: refer to the American Academy of Pediatrics 2017 guideline
  - Low urine output
  - Serum potassium above normal range
  - Significant peripheral oedema (e.g. scrotal oedema, ascites, pleural effusions)
  - Signs of pulmonary oedema
  - Systemically unwell

Out of scope (not routinely provided)

- Nil

Access and prioritisation

Category 1
(clinically recommended to be seen within 30 calendar days)
	• Previously diagnosed chronic kidney disease stage 3-5
	• Serum creatinine up to 2 times above normal range for age on ≥ 2 occasions and any of the following features:
	  ○ Electrolyte disturbance
	  ○ Faltering growth
	  ○ Metabolic acidosis
	  ○ Microscopic haematuria
	  ○ Proteinuria
	  ○ Rickets
	  ○ Unexplained anaemia

Category 2 (clinically recommended to be seen within 90 calendar days)	• Previously diagnosed chronic kidney disease stage 1-2 who require ongoing specialist follow up • Elevated serum creatinine on ≥ 2 occasions and family history of chronic kidney disease in a 1st degree relative, if otherwise not listed in Category 1 • Elevated serum creatinine in an Aboriginal and/or Torres Strait Islander person, if otherwise not listed in Category 1 • Serum creatinine up to 2 times above normal range for age on ≥ 2 occasions without features listed in Category 1
Category 3 (clinically recommended to be seen within 365 calendar days)	• Nil

Required information

- Reason for referral
- Provisional diagnosis
- Details of the presenting condition, including symptoms and their duration, and impact on activities of daily living and school attendance
- Patient health summary (such as relevant medical history, relevant investigations, current medications and dosages, immunisations, allergies and/or adverse reactions), including specifically:
    - Perinatal history, including birth weight (where available)
    - Developmental history
    - History of supplement or over-the-counter medication use
    - Serial blood pressure measurements (where available)
    - Growth parameters
    - Renal ultrasound
    - Pathology:
        - Calcium, magnesium, phosphate (CMP)
        - Full blood count (FBC)
        - Liver function test (LFT)
        - Urea, electrolytes, creatinine (UEC)
        - Urinalysis or M/C/S results
        - Urine Protein-to-Creatinine Ratio (UPCR)

Additional information (if available)

- Family history of any kidney disease
- Other available blood results

Haematuria or glomerular disease

Emergency

If any of the following are suspected, please seek emergency medical advice or refer the patient to the emergency department (via ambulance if necessary)

- Suspected glomerular disease (i.e. haematuria and proteinuria) with any of the following features:
  - Hypertension (i.e. blood pressure > 95th centile for age and height)
    Note: refer to the American Academy of Pediatrics 2017 guideline
  - Pre-existing conditions (e.g. lupus, other autoimmune conditions)
  - Serum creatinine above normal age-related range
  - Where the patient is systemically unwell (e.g. rash, joint swelling and/or pain, breathlessness, haemoptysis, oedema or neurological impairment)

Out of scope (not routinely provided)

- Haematuria with a urological cause (i.e. stones, trauma, urinary tract infection, cystitis)
- Isolated microscopic haematuria (i.e 2 urine assessments in 6 months)

Access and prioritisation

Category 1 (clinically recommended to be seen within 30 calendar days)	• Diagnosed post-infectious glomerulonephritis with persisting low C3 for > 8 weeks after initial presentation • Newly diagnosed glomerular disease where patient is stable and not able to be managed in primary care or general paediatrics • Persistent or recurrent macroscopic haematuria or persistent microscopic haematuria with co-existing significant proteinuria (e.g. > 2+ protein on urinalysis) • Proteinuria and evidence of unexplained poor growth • Creatinine above normal range and < 2 x upper limit of normal (ULN)
Category 2 (clinically recommended to be seen within 90 calendar days)	• Haematuria and family history of glomerular disease and/or chronic kidney history disease in a 1st degree relative, if otherwise not listed in Category 1 • Haematuria in an Aboriginal and/or Torres Strait Islander person, if otherwise not listed in Category 1 • Previously diagnosed chronic glomerular disease who requires ongoing specialist follow up • Recurrent macroscopic haematuria without persistent proteinuria
Category 3 (clinically recommended to be seen within 365 calendar days)	• Asymptomatic, persistent microscopic haematuria for > 6 months without proteinuria or other signs of kidney disease, where a urological cause is considered unlikely

Required information

- Reason for referral
- Provisional diagnosis
- Details of the presenting condition, including symptoms and their duration, and impact on activities of daily living and school attendance
- Patient health summary (such as relevant medical history, relevant investigations, current medications and dosages, immunisations, allergies and/or adverse reactions), specifically including:
    - Developmental history
    - Family history
    - Growth parameters
    - Preceding or precipitating illnesses
    - Presence of symptoms or co-morbidities (e.g. oedema, hypertension, autoimmune conditions, hearing impairment)
    - Serial blood pressure measurements (where available)
    - Serial blood tests, including urea and creatinine results (where available)
    - Urine albumin creatinine ratio (ACR) or protein creatinine ratio (PCR) (ideally first morning sample) and calcium creatinine ratio
    - Urine midstream M/C/S (testing for red cell morphology and casts preferable)
    - Ultrasound of kidney, ureters and bladder
    - Other renal imaging results (where available)
- If persistent microscopic or macroscopic haematuria with co-existing significant proteinuria (e.g. UA 2+ protein or more) or recurrent haematuria present, include ANA, anti-DNA antibodies, complement factors C3/C4, ANCA, ASOT and coagulation studies

Additional information (if available)

- Biopsy or genetic results of affected family members
- Urinalysis results of parents

Hypertension

Emergency

If any of the following are suspected, please seek emergency medical advice or refer the patient to the emergency department (via ambulance if necessary).

- Hypertension (i.e. blood pressure > 95th centile for age and height) with any of the following features:
  - Absence of femoral pulses
  - Acute kidney injury
  - Blurred vision
  - Chest pain
  - Confusion
  - Headache
  - Proteinuria ≥ 2+ on urinalysis
  - Reduced level of consciousness or altered mentation
  - Retinal haemorrhage or papilloedema
  - Seizures
  - Signs of heart failure

Note: refer to the American Academy of Pediatrics 2017 guideline

Out of scope (not routinely provided)

- Transiently elevated blood pressure in the context of acute distress or illness

Access and prioritisation

Category 1 (clinically recommended to be seen within 30 calendar days)	• Aged ≥ 13 years with hypertension (i.e. systolic blood pressure ≥ 130 mmHg or diastolic blood pressure ≥ 80 mmHg) on ≥ 2 occasions at least 1 week apart* • Aged < 13 years with blood pressure > 95th centile for age and height on ≥ 2 occasions at least 1 week apart* *Note: lifestyle interventions should be trialled prior to referral for a child with a weight above the healthy range*
Category 2 (clinically recommended to be seen within 90 calendar days)	• Existing diagnosis and management with anti-hypertensive medication who remains hypertensive on > 2 occasions at least 1 week apart
Category 3 (clinically recommended to be seen within 365 calendar days)	• Nil

Required information

- Reason for referral
- Provisional diagnosis
- Details of the presenting condition, including symptoms and their duration, and impact on activities of daily living and school attendance

- Patient health summary (such as relevant medical history, relevant investigations, current medications and dosages, immunisations, allergies and/or adverse reactions), including specifically:
    - Developmental history
    - Growth parameters
    - History of blood pressure measurements, including 24-hour or home measurements (where available)
      Perinatal history, including birth weight (where available)
    - Note: if there is uncertainty about diagnosis of hypertension, a 24-hour ambulatory blood pressure monitor is recommended in children aged > 7 years
    - Protein creatinine ratio (first morning sample)
    - Renal ultrasound

Additional information (if available)

- Family history of hypertension or early cardiovascular disease
- Any investigations relevant to co-morbidities or where results exclude other secondary causes (e.g. sleep study, endocrine tests, echocardiogram)
- Relevant blood tests, including urea, electrolytes, creatinine (UEC), renin, aldosterone, thyroid function test (TFT), metanephrines (if performed)
- Renal duplex report

Proteinuria or nephrotic syndrome

Emergency

If any of the following are suspected please seek emergency medical advice or refer the patient to the emergency department (via ambulance if necessary).

- Proteinuria with any of the following features:
  - Acute abdominal pain with tenderness and guarding (i.e. peritonitis)
  - Elevated serum creatinine
  - Hypertension (i.e. blood pressure > 95th centile for age and height)
    Note: refer to the American Academy of Pediatrics 2017 guideline
  - Macroscopic haematuria
  - Significant peripheral oedema (e.g. scrotal oedema, ascites, pleural effusions)
  - Signs of pulmonary oedema
  - Signs of venous thromboembolism
  - Systemic infection
  - Systemically unwell

Out of scope (not routinely provided)

- Orthostatic proteinuria (i.e. first morning urine protein / creatinine ratio in normal range)
- Transient proteinuria in the presence of a urinary tract infection or another febrile illness

Access and prioritisation

Category 1
(clinically recommended to be seen within 30 calendar days)
	• Idiopathic nephrotic syndrome who has not responded within 4 weeks of adequate steroid treatment
	• Persistent (i.e. at least 1 month), asymptomatic sub-nephrotic proteinuria (i.e. urine protein creatinine ratio > 50 mg/mmol or albumin creatinine ratio > 10 mg/mmol) with any of the following features:
	  ○ Known and/or suspected auto-immune disease (e.g. lupus)
	  ○ Low serum albumin or oedema
	  ○ Other evidence of kidney disease (e.g. haematuria)

Category 2 (clinically recommended to be seen within 90 calendar days)	• Frequent relapsing or steroid dependent after previously responding to steroids • Persistent (i.e. at least 1 month), asymptomatic sub-nephrotic proteinuria (i.e. urine protein creatinine ratio > 50 mg/mmol or albumin creatinine ratio > 10 mg/mmol) with no other evidence of kidney disease
Category 3 (clinically recommended to be seen within 365 calendar days)	• Albuminuria in diabetes mellitus where patient is stable and not able to be managed in primary care or general paediatric setting

Required information

- Reason for referral
- Provisional diagnosis
- Details of the presenting condition, including symptoms and their duration, and impact on activities of daily living and school attendance
- Patient health summary (such as relevant medical history, relevant investigations, current medications and dosages, immunisations, allergies and/or adverse reactions), including specifically:
    - Developmental history
    - Family history
    - Growth parameters
    - Presence of symptoms or co-morbidities (e.g. oedema, hypertension, auto-immune conditions, known structural kidney disease)
    - Serial blood pressure measurements (where available)
    - Blood tests including urea, creatinine and albumin, ANA, ENA, anti-DNA Abs, C3/C4 and Hepatitis B/C serology (for Category 1 presentations)
    - Urine albumin creatinine ratio or protein creatinine ratio (ideally first morning sample)

Additional information (if available)

- Other available renal imaging results
- Timeline of symptoms
- Ultrasound of kidney, ureters and bladder