

SPIN Module curriculum in

Paediatric Nephrology

SPIN Version 1.0
Approved for use from September 2021

This document outlines the curriculum and Assessment Strategy to be used by Paediatricians completing the RCPCH SPIN module in Paediatric Nephrology.

This is Version 1.0. As the document is updated, version numbers will be changed, and content changes noted in the table below.

Version number	Date issued	Summary of changes

This information is correct and up to date at time of publication. @RCPCH 2021

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Section 1

Introduction and purpose

Introduction to SPIN modules

Special Interest (SPIN) modules are the additional training/experience a paediatrician completes so that they can be the local lead and part of the clinical network providing for children who

statement.

Purpose statement

This purpose statement demonstrates the need for clinicians to undertake a SPIN module in in this area.

This SPIN module meets the current and future anticipating requirements of the

Paediatricians increasingly work as part of wider clinical networks. By supporting them in

home, rather than having to travel to a major paediatric unit.

Children with rare and complex kidney diseases are largely managed by paediatric nephrologists, with those that need renal replacement therapy being cared for at one of the 13 paediatric tertiary

numbers of infants and children who attend secondary care hospitals with other nephrology conditions, such as those diagnosed with congenital abnormalities of the kidney and urinary tract (CAKUT), nephrotic syndrome, glomerulonephritis, acute kidney injury (AKI), and pre-renal replacement chronic kidney disease (CKD). Short and long-term management of a majority of these children within secondary care must involve specialists input from a regional tertiary unit, and should ideally be led locally by skilled paediatricians who are trained and or have a specialist interest in Paediatric Nephrology.

The British Renal Society (BRS) workforce document in 2002 and most recently in 2020, acknowledged workforce and multidisciplinary resources as key challenges facing paediatric these 8 (wledged)0.6 (1.4 Tdct recen (ky 0 ertiUKrm PINor ha)6 (v iry 0 J-0.077 Tw 0 yaing UKfn)7 errors.

Training in nephrology SPIN is aimed at developing paediatricians to be competent at clinical management of children and young people with kidney and urinary tract disease. It offers the opportunity to gain relevant experience in services such as continence (bedwetting and daytime wetting), bladder and other urology problems affecting children, and transition to adult services. The training also targets acquisition of skills required to enable trainees to work collaboratively within renal networks and contribute to regional multidisciplinary teams in all areas relevant to clinical governance (education, research and quality improvement).

This SPIN module considers interdependencies across related specialties and

This SPIN module has been developed by the Nephrology SPIN lead with the support of paediatric nephrology CSAC, British Association for Paediatric Nephrology (BAPN) Assessment Advisor, and in conjunction with other stakeholders that include other BAPN representatives, SPIN Paediatricians and general paediatricians with nephrology interest, nephrology SPIN trainees and British Association of Paediatric Urologists (BAPU).

A number of skills involved in the management of children with nephrology conditions are similar to other specialities; in particular rheumatology, endocrine, and oncology. Cross cover

trainees in acquisition of knowledge and understanding of inter-specialty co-ordination for some complex patients. There is also wide application of nephrology skills within paediatric intensive care, high dependency and neonatal unit settings.

patient centred process.

- Develop and contribute to local education activities that promote management of children with kidney disease at secondary care centres.
- Be the local liaison at a DGH for the regional renal network.
- A local nephrology lead with oversight of all services associated with nephrology including continence and urology.
- Collaborate with local, regional and national research projects.

To continue their ongoing development following completion of the SPIN, it is recommended that clinicians:

- Engage with regional educational and research activities.
- Undertake regular continuing professional development meetings at regional and national levels.
- · Be an active member of BAPN.

During SPIN training, it is recommended that clinicians identify a children and young people's

Requirements to undertake this SPIN module

Applicant requirements

requirements of the SPIN curriculum.

This SPIN module is available to Level 3 trainees and all post-CCT paediatricians with an interest

Trainees who are interested in undertaking this SPIN module should approach their Head of

would be available and request support in undertaking this extra training. SPIN applicants are required to demonstrate that they have support of their Training Programme Director and have an appropriate Educational and Clinical Supervisor in place. Further guidance for post-CCT applicants is available on the RCPCH website.

Applicants with relevant recent experience may use some retrospective evidence towards their SPIN module in some cases. Please see the applicant guidance at www.rcpch.ac.uk/spin for more details on how to apply to undertake a SPIN module.

Training duration

SPIN training should be feasible within 12 months for full time training, or pro-rata for Less Than Full Time (LTFT) training. It is expected that to achieve the necessary learning outcomes, a clinician will need to train in the following clinical settings:

- It is recommended that the person completing SPIN has at least 6 months Full Time Equivalent (FTE) experience in a paediatric nephrology centre under the supervision of a named paediatric nephrologist.
- It is important the clinician participates and engages in clinical management (admissions, ward rounds, case discussions) of patients in paediatric intensive care and neonatal intensive care settings.
- The clinician should attend joint or separate specialty clinics (rheumatology, vasculitis, oncology, endocrine), and antenatal counselling meetings lead by tertiary unit specialists to gain experience of communication, multidisciplinary approach and shared care principles.
- The clinician needs to have an understanding of the principles and processes involved in kidney biopsy, dialysis and transplant, but is not required to have the practical or clinical skills required in those areas.
- Another 6 months Full Time Equivalent (FTE) experience at a secondary care hospital under the supervision of a SPIN Paediatric Consultant or general paediatric consultant with renal interest.
- The clinician should attend local nephrology clinics including shared clinics that have both paediatric nephrologist and SPIN paediatrician in attendance.
- The clinician should attend continence and urology clinics run by a paediatric urologist or urology nurse, or both.

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A suitable training centre is one which is currently approved for higher specialist training (see sub-specialist training section of the RCPCH website for more detail).

Out of Programme (OOP) training

Trainees should not need to take out of programme (OOP) to complete a SPIN module. Undertaking a SPIN will NOT be considered as a basis for an OOP except in exceptional circumstances and where both deaneries/Local Education Training Boards (LETBs) agree and approve the SPIN module programme. These exceptional circumstances include applications from trainees where approved training in a particular special interest is not available in their current deanery/LETB. Permitting OOP for these exceptional circumstances provides a positive contribution to workforce planning in regions where limited approved SPIN modules are available. For example, smaller sub-specialties such as Nephrology or Immunology & Infectious Diseases (IID) may only be available in a limited number of deaneries/LETBs. In order for applications utilising OOP to be considered by the RCPCH, both deaneries/LETBs must agree and approve the SPIN module

trainee's current deanery/LETB.

Post requirements

When applying to undertake a SPIN, applicants must demonstrate that they will be able to access the necessary learning opportunities and placements, and an appropriate Educational and Clinical Supervisor in place. Additional requirements for delivering this SPIN module are

the human or physical resource experiences the trainee will need to be able to access in order for the curriculum to be delivered successfully. Please contact the SPIN Lead (usually the relevant CSAC) if further guidance is required.

Meeting GMC training requirements

All training must comply with the GMC requirements presented in Promoting excellence: standards for medical education and training (2017). This stipulates that all training must comply with the following ten standards:

- S1.1 The learning environment is safe for patients and supportive for learners and educators. The culture is caring, compassionate and provides a good standard of care and experience for patients, carers and families.
- S1.2 The learning environment and organisational culture value and support education and training, so that learners are able to demonstrate what is expected in Good Medical Practice and to achieve the learning outcomes required by their curriculum.
- S2.1 The educational governance system continuously improves the quality and outcomes of education and training by measuring performance against the standards, demonstrating accountability and responding when standards are not being met.
- S2.2 The educational and clinical governance systems are integrated, allowing organisations to address concerns about patient safety, the standard of care, and the standard of

- education and training.
- S2.3 The educational governance system makes sure that education and training is fair and is based on the principles of equality and diversity.
- S3.1 Learners receive educational and pastoral support to be able to demonstrate what is expected in Good Medical Practice, and to achieve the learning outcomes required by their curriculum.
 - training responsibilities.
- S4.2 Educators receive the support, resources and time to meet their education and training responsibilities.
- S5.1 Medical school curricula and assessments are developed and implemented so that medical students are able to achieve the learning outcomes required for graduates.
- S5.2 Postgraduate curricula and assessments are implemented so that doctors in training are able to demonstrate what is expected in Good Medical Practice, and to achieve the learning outcomes required by their curriculum.

#VoiceMatters

RCPCH &Us is a children, young people and family network, working with over 2,000 young patients, their families and friends across the UK each year. Through the work of RCPCH &Us we keep children and young people at the centre of everything we do, supporting their voice to

RCPCH is guided by	y the United Natio	ns Convention	on the Rights o	of the Child, pa	articularly
article 12 which enco	ourages children and	d young people's	s voice in decisi	on making and	article 24,
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RCPCH &Us

Sometimes there are things going on at home that might be making our conditions worse, but it might be hard for us to talk about them if our families are there, or we might be embarrassed or frustrated that things aren't changing. You might be able to help us by getting us help for what

diversity

The RCPCH has a duty under the Equality Act 2010 to ensure that its curriculum and assessments do not discriminate on the grounds of age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion and belief, sex or sexual orientation.

Care has been taken when authoring the SPIN module curricula to ensure as far as is reasonable and practicable that the requirements for those undertaking the module do not unnecessarily discriminate against any person on the basis of these characteristics, in line with the requirements of the Act.

The RCPCH seeks to address issues of equality, diversity and fairness during the development of SPIN curriculum in a range of ways, including:

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Quality assurance and continual improvement

A robust quality assurance and improvement framework is required to support an effective curriculum and assessment strategy. The purpose of this is to promote the improving quality of the trainee experience, and to ensure that the curriculum content, delivery, assessment and implementation is monitored and reviewed in a planned, systematic and appropriate manner.

The RCPCH quality infrastructure for training and assessment is based on the Plan, Do, Check, Act (PDCA) cycle, introduced by Deming. In the context of the Programme of Assessment, this means planning for effective assessment processes, executing those processes, review and

required changes.

The framework to support this curriculum will comprise a number of quality improvement tools and processes that impact on the overarching aspects of assessment. These will include:

- The SPIN application process ensures trainees will have the necessary capacity, supervision, and access to the breadth and depth of experience needed to meet the requirements of the SPIN module.
- 2. **Gathering and responding to feedback**. RCPCH gathers feedback in a structured way from SPIN module completers, and uses this and feedback from employers to support the regular review of SPIN modules.
- 3. . CSACs (or another designated SPIN Lead) review all completed SPIN portfolios prior to sign-off, ensuring consistency.
- 4. Quality assurance of assessments. This takes a variety of forms during the development, delivery and monitoring of assessment tools, as outlined in the RCPCH Progress Assessment Strategy.
- 5. Quality of assessors and supervisors. All SPIN applicants are required to have a suitable Educational Supervisor to support their SPIN training. RCPCH supports this through the Effective Educational Supervision course and a variety of guidance and resources available on the College website.
- 6. All SPINs are subject to review every three years, although they may be updated more regularly where required.

By applying the framework processes outlined above, the College will ensure that SPIN modules are monitored and reviewed in a structured, planned and risk-based manner.

SPIN governance

The RCPCH's Education and Training Quality Committee (ETQC) has overall responsibility for the RCPCH SPIN curricula, working closely with the SPIN Lead. The ETQC will monitor the performance of the SPIN through the relevant CSAC/SPIN Lead, and receive scheduled reviews of feedback from SPIN users.

Section 2

Paediatric Nephrology SPIN curriculum

This table contains the generic Learning Outcomes required for all trainees undertaking the RCPCH SPIN in Paediatric Nephrology. Within the curriculum and throughout the syllabi they are mapped to the GMC's Generic Professional Capabilities (GPCs).

More information on the GPC framework is available from the GMC website: https://www.gmc-uk.org/education/postgraduate/GPC.asp.

Please note, trainees will also be required to complete their generic and General Paediatric Level 3 undertaking a SPIN will already have demonstrated the required generic skills, knowledge and Outcomes for the stated focus, purpose and extent of remit stated for this SPIN module, and can not be used to indicate competence in any other aspect of paediatrics.

SPIN

Assesses and manages a range of disorders affecting the urinary tract and	GPC 1, 2, 3, 4, 6,
recognises where long-term management is required, facilitates follow-up	
with other specialists and surveillance as necessary.	
with other specialists and surveillance as necessary.	

Key Capabilities

Demonstrates understanding of normal development and physiology of kidneys, recognises range of congenital abnormalities of the kidney and urinary tract (CAKUT), and requirement for long term management.	GPC 2, 3, 4
Understands the diagnostic criteria, complications, and management of urinary tract infections in children of all age groups, recognising the role of nephro-urological imaging techniques, and the indications for involvement of a paediatric urologist and nephrologist.	GPC 1, 2, 3, 4
Assesses children and young people with renal stone disease and initiates treatment, recognising the involvement of multi-disciplinary teams where necessary.	GPC 2, 3, 4
Demonstrates understanding of the different disorders of micturition and their impact on childhood development, and initiates management with relevant investigations and treatment using pharmacological and non-pharmacological approaches.	GPC 1, 2, 3, 4, 6

Ilustrations

- 1. Explains to parents about a renal dysplasia disorder diagnosed antenatally, the postnatal plans that are indicated, and the structural and functional adaptation of the kidney where there is reduced renal mass.
- appropriate radiological and imaging investigations used for diagnosis and surveillance, and understands the role of prophylactic antibiotics.
- Manages or reviews the management steps in an infant diagnosed with posterior urethral
 valves (PUV), recognises principles of management that include urgent intervention for
 lower urinary tract obstruction, salt loss, kidney function monitoring, surveillance scans,
 and role of paediatric urologist.
- 4. Develops or contributes to a local audit or care pathway bundle on the investigation and management of urinary tract infection, applying knowledge of NICE guidelines.
- 5. Manages a child or young person with recurrent urinary tract infection, explaining the indications for relevant investigations, their interpretation and limitations, explores appropriate differentials including safeguarding, antibiotic prophylaxis and role of paediatric urologist or nephrologist where necessary.
- Appropriately investigates a child or young person with renal stone disease, demonstrating knowledge of metabolic and genetic aetiology factors and association with renal tubular disease; and initiates appropriate management including medical treatment and urology referral where required.
- 7. Applies knowledge of normal micturition and bladder control to explain to a family or

- intake and positive reinforcement techniques.
- 8. Manages a child or young person with primary or secondary nocturnal enuresis demonstrating knowledge of pharmacological and non-pharmacological treatment approaches.
- 9. In an outpatient setting, reviews a child or young person with refractory daytime wetting, acknowledges potential psychological impact and need for tailored support and MDT involvement where appropriate, and demonstrates knowledge of alternative treatment modalities such as biofeedback and neuromodulation.
- 10. Investigates a child or young person diagnosed with renal cystic disease, and in the process demonstrate knowledge of inheritance pattern and multisystemic involvement in some conditions; arranges relevant investigations including genetic screening, and discusses need for long term surveillance and transition to adult services where indicated.
- 11. Applies knowledge of upper and lower urinary tract development and physiology to appropriately investigate a child with CAKUT, bladder disorder, or neurological and

problems, recurrent urine tract infection, and multidisciplinary team involvement.

Recognises and assesses a number of common kidney disease presentations including haematuria, proteinuria and hypertension, and manages a range of glomerulonephritic conditions and tubular disorders including those associated with multisystemic involvement.

- a paediatric nephrologist in complex cases.
- 7. Manages or follows an investigative pathway towards diagnosis of glomerulonephritic disease in a child or young person who presents with relevant symptoms and signs; recognises the variable acute, rapidly progressive and chronic presentations, knows the indications for referral to a paediatric nephrologist, and acknowledges the role of other specialties in management of some cases.
- 8. Reviews or contributes to a clinic consultation on a child diagnosed with interstitial nephritis or tubulo-interstitial disease, recognising the disease association with systemic illness, treatment modalities and need for surveillance of kidney function.

	GPC 1, 2, 3, 4, 5, 6
and assesses or leads on the acute and long term management of children	
and young people with acute kidney injury (AKI).	

Key Capabilities

and initiates appropriate proactive management through knowledge of pathophysiology.	GPC 2, 3, 4
Leads or coordinates the management of children with acute kidney injury (AKI) from a wide range of aetiologies and liaises with tertiary renal specialists in all severe cases.	GPC 1, 2, 3, 5
Screens and manages children of all age groups at risk or with history of acute kidney disease, and formulates surveillance plans for those at risk of chronic kidney disease.	GPC 2, 3, 4, 6

llustrations

1.

- 2. Assesses a neonate or child with electrolyte and acid-base abnormality, conducts appropriate investigations to rule out differentials, including metabolic and endocrine diseases, and co-ordinates referral or follow up by relevant specialist.
- 3. Understands acute kidney injury (AKI) staging and the important role of a warning score. Acutely manages AKI in a child or young person and its complications, and demonstrates
- 4. Manages an inpatient at risk of AKI such as a child with sepsis, cardiac or liver function impairment, underlined nephro-urological disease, malignancy or bone marrow transplant,
- 5. Manages a child diagnosed with haemolytic uraemic syndrome (HUS) and demonstrates knowledge of complications; and is able to explain and investigate cases of atypical HUS.
- 6. Manages or follows up in clinic a child diagnosed with acute tubular necrosis or acute tubulointerstitial nephritis; demonstrates knowledge of pathophysiology, and initiates or discusses relevant investigations.
- 7. Understands the normal adaptive response of kidneys to AKI in children, including neonates diagnosed with hypoxic ischaemic encephalopathy (HIE); and manages appropriate follow up of such children.
- 8. Recognises the role of paediatric nephrologists in the management of severe cases of AKI, and understands indications to escalate care for consideration of dialysis and renal replacement therapy.
- 9. Initiates or supports the management of a child or neonate admitted with AKI in a local paediatric high dependency or neonatal unit.

Recognises and leads on the acute and long term management of children	GPC 1, 2, 3, 4, 5,
and young people with chronic kidney disease (CKD), and liaises with	6, 7, 8
tertiary care specialists and primary care physicians to deliver appropriate	
non-hospital treatments.	

Key Capabilities

Recognises, assesses and manages children and young people with chronic kidney disease (CKD), and undertakes relevant investigations depending on stage of CKD.	GPC 2, 3
Recognises the problems associated with CKD, including bone metabolic disease, anaemia, growth and pubertal delay, and cardiovascular disease.	GPC 2, 3, 4, 6

- recognises good clinical practice in all aspects including dosage and compliance with immunosuppressive medication, puberty and growth monitoring, attention to educational development, and transition arrangements.
- 7. Recognises the possible impact of renal disease on the emotional and physical well-being of the child and family, and on their later life, including the potential for reduced independence, educational and employment opportunities.
- intermittent catheterisation in a young person or supplemental feeding on parents of an infant; and be able to demonstrate or contribute to skills and strategies used to ameliorate this impact.
- 9. Understands that experimental adolescent behaviour can lead to clinical problems in renal disease, including an increase in transplant rejection and loss. The trainee discusses a relevant case to identify management strategies that can be used to minimise such issues, including the importance of an effective transition process.

Section 3

Assessment Strategy

Nephrology SPIN

The assessment strategy for this SPIN module is aligned with the RCPCH Progress Programme of Assessment, utilising a range of different formative and summative assessment tools.

The Programme of Assessment comprises a wide range of assessment tools which must be used in conjunction with the Blueprint to develop skills and assess capability. The assessments are knowledge, skills and capability-based, capturing a wide range of evidence which can be integrated to reach a judgement as to the trainee's achievement of the SPIN module learning outcomes. The assessments also provide trainees with the opportunity to obtain developmental feedback. Further information on all assessment instruments can be found within the RCPCH Progress Programme of Assessment.

5.

Assessment blueprint

This table suggests assessment tools which may be used to assess the Key Capabilities for these Learning Outcomes.

This is not an exhaustive list, and trainees are permitted to use other methods within the RCPCH Assessment Strategy to demonstrate achievement of the Learning Outcome where they can demonstrate these are suitable.

Appendices

resources

training. Please note, there is no mandatory requirement to use any or all of these resources, and RCPCH cannot be held responsible for the quality or content of any external materials.

Assessment

RCPCH Assessment web pages www.rcpch.ac.uk/assessment www.rcpch.ac.uk/assessment www.rcpch.ac.uk/assessment www.rcpch.ac.uk/progress www.rcpch.ac.uk/progress

Recommended reading

- · Relevant Textbooks on Paediatric Nephrology
- Relevant Journals including Archives of Disease of Childhood, Paediatric Nephrology Journal (IPNA)
- Published Guidelines including those from NICE, Think Kidneys, Renal Association (RA), and Kidney Disease Improving Global Outcomes (KDIGO)
- Websites for relevant organisations such as BAPN, EMESSY, Infokid, Think Kidneys, Renal Association (RA), and KDIGO

Training events or courses

- British Association for Paediatric Nephrology (BAPN): Sponsored training and education
- · SPIN and GRID trainees Study days
- Great Ormond Street Hospital (GOSH) Nephro-urology Course
- · Regional Network Study days such as EMESSY
- · Renal Conditions: Moving on up together
- · RCPCH: Annual conference
- European Society for Paediatric Nephrology (ESPN): Annual conference and Best Clinical Practice Webinars

Other useful resources

- https://www.infokid.org.uk
- https://kdigo.org
- https://www.thinkkidneys.nhs.uk
- https://www.kidneycareuk.org/about-kidney-health

The following requirements should be met when designing a training programme for a SPIN module trainee. Adherence to these criteria will help ensure the trainee will have the necessary support and access to experiences which they will require in order to successfully complete this SPIN module. These criteria are framed against the standards set out in Excellence by Design: standards for post graduate curricula (GMC 2017).

Purpose

- Access to regular supervised clinics
- achievement of the curriculum e.g. Day case facilities, imaging.
- Opportunities to work with shared care networks in primary and secondary care.
- Opportunities to work with shared care clinical quidelines and protocols.
- The learning environment is safe for patients and supportive for learners and educators. The culture is caring, compassionate and provides a good standard of care and experience for patients, carers and families. (Taken from GMC Promoting Excellence)
- At least six months training post in a Paediatric Renal Unit.
- At least another six months training post in a secondary level hospital (DGH) with local nephrology lead or nephrology interest paediatrician.
- The posts are in units which participate in a Paediatric Critical Care Clinical Network

Governance and strategic support

- The Site must ensure that Supervisors and trainers can effectively deliver the RCPCH Assessment Strategy.
- The trainee will be able to participate in leadership and management activities.
- Supervisor at tertiary renal hospital should be a paediatric Nephrologist.
- Supervisor during secondary care hospital rotation should be a paediatrician with nephrology interest or paediatric nephrologist from renal unit within network.
- Trainee should be offered opportunities to lead clinical management with adequate supervision

Programme of learning

- opportunities.
- Exposure within the clinical environment will
 - requirements of the curriculum.
- Access to multidisciplinary teams consisting of a minimum of nurses, physiotherapists, occupational therapists.
- The post should provide a training experience that enables completion of the trainees' PDP.
- Access to local and tertiary Paediatric nephrology and urology clinics.
- Opportunities to access MDT team meetings, regional network study days and transitional clinics.

Programme of assessment

- The site has adequate levels of Educational Supervisors.
- Consultants with either General Paediatric or Sub Specialty expertise can be matched to the requirements of the trainee. It is important that Educational supervisors can provide supervision and have the required remission to facilitate this, i.e. 1 PA per week per 4 trainees.
- Supervision must ensure patient safety. Support for trainers and supervisors must be available within the Trust.

None – as in line with generic

Quality assurance and improvement

- The post will allow the trainee to participate in audits and clinical improvement projects.
- The post will allow the trainee to actively engage with the teaching, assessing and appraising of junior staff
- The post will allow opportunity for the trainee to engage in research activities.
- None as in line with generic

