The education of paediatric endocrine nurses and advanced level practice in the UK

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Introduction

• History of Nursing
• Nursing Today
  – Autonomy and Advanced Practice
• Clinical Nurse Specialist Roles
• MSc Advanced Nurse Practitioner
• Paediatric Endocrine Nurses education
  – MSc Children’s Nursing
  – Clinical Nurse Specialist
• Roles for Paediatric Endocrine Nurses
• Nurse Led Clinics
History of nursing in the UK

• **1990s**
  - Diploma 3 year training
  - Post graduate education introduced

• **2000s**
  - All graduate profession
  - Training university based
  - MSc level education
    - Doctorate/PhD
Nursing stereotypes
Nursing stereotypes

• **Doctor’s Handmaidens**
  - Do nurses actually work *for* doctors
    - Training and education
    - Recruitment
    - Management structure
  - Co-workers
  - Daily care of patients
    - Liaison between patients and doctors
  - Autonomous profession
Autonomy ➔ Advanced practice

- Clinical nurse specialists
- Advanced nurse practitioners
  - Advancing roles
  - Expanding skills
- Nurse Consultant
  - 50% clinical, 50% research / service development / education
Clinical Nurse Specialist roles

- Consultant
- Educator
- Collaborator
- Researcher
- Leader
- Change Agent
- Patient advocate
- Liaison
Clinical Nurse Specialist roles

• **Clinical Expert**
  – Clinical knowledge
  – How can your knowledge and skills within endocrinology be enhanced
    • Further training / development

• **Education**
  – Sub-role as Educator
    • Patients, families, staff
  – Evaluate and develop educational programmes
  – Build teaching packages for patient education
Clinical Nurse Specialist roles

• Consultant
  – Leading on case management
  – Becoming more involved in external forums
    • Society committees
    • Patient support groups
    • Advisory boards

• Research
  – Identifying gaps within your clinical service which could use research / audit
    • Explore shortfalls / Positive aspects
  – Patient questionnaires
  – Participation in clinical research
Clinical Nurse Specialist roles

• **Patient advocate**
  – Identify patient support groups not already utilised by your team
    • Develop and strengthen links
  – Enhance existing relationships
  – Develop own patient literature

• **Collaborator**
  – Enhance collaboration within the MDT and interdisciplinary teams
    • Ensure common purpose
  – Working with other endocrine nurses
  – Pharmaceutical companies
Clinical Nurse Specialist roles

• Leadership / Management
  – Lead in developing and attaining team goals
    • Contribute to practice development
    • Develop patient care pathways
      – Sharing patient literature

• Change Agent
  – Provide evidence where CNS intervention could be useful
    • Nurse led clinics
    • Telephone clinics
    • Innovative practice
CNS as Change Agent

- **Success of CNSs**
  - Depends on their ability to develop their own support system
    - Generate own job satisfaction
  - Motivation
    - Increased high output
  - Negotiation
    - = Change!
    - Occurs at a slow pace
    - ? Cost
      - Need evidence for need for change
        » ? Shortfalls in existing service
        » ? Decreased patient satisfaction

(LLLhana, 2005)
Advancing CNS roles

• Using Change Agent concept
  – Back up what you do
  – Use this evidence to change practice
  – Utilise frameworks to provide the evidence
  – Explore educational pathways

• See how nursing care can be advanced
Guidelines for practice

- Focus on knowledge, skills and interventions specific to endocrine nurses
- References local and national guidelines
- Adheres to Benner’s (1982) ‘Novice to Expert’ concept
  - Competent practitioner
  - Experienced practitioner
  - Expert practitioner

RCN Competences: an integrated career and competency framework for children’s endocrine nurse specialists. 2013
Available at: https://www2.rcn.org.uk/__data/assets/pdf_file/0006/544704/003_264.pdf accessed June 2016
Benefit to three groups

<table>
<thead>
<tr>
<th><strong>Nurses</strong></th>
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<tbody>
<tr>
<td>• Delivers high standards of care</td>
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<tr>
<td>• Identifies practice level</td>
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<tr>
<td>– Plan career in a structured way</td>
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<tr>
<td>• Pinpoint personal educational needs</td>
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<tr>
<td>• Realise potential</td>
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<tr>
<td>• <em>Seize opportunities to influence the direction of nursing</em></td>
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<th><strong>Employers</strong></th>
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<tr>
<td>• A model for high care standards</td>
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<tr>
<td>• Clearer insight into staff competence</td>
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<td>• Assistance in organisational planning</td>
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<th><strong>Patients</strong></th>
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<td>• Provide high standards of care</td>
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Competencies

- During period where diagnosis is not yet reached
- Once diagnosis is confirmed
- Endocrine testing
- Transition
- Factors influencing growth
- Auxology
- Assessment of skeletal maturity
- Physiology and pathology
Education for advanced practice

- Post-graduate pathways
- BSc
- MSc
  - Children’s Advanced Nurse Practitioner
Children’s Advanced Nurse Practitioner

- 3 year MSc course
- Accredited by the RCN
- Specialising in specific fields
Course Content

Advanced clinical assessment

Children's advanced nurse practitioner

Principles of physiology

Non-medical prescribing

Managing the complex presenting child

Leadership

Research

Dissertation
Advanced assessment

- History taking
- Examination of the infant, child and adolescent
- Physical assessment techniques
  - Inspection, palpation, percussion and auscultation
- Principles of anatomy, physiology and pathology
  - Respiratory and CXR interpretation
  - Cardiac
  - Neurological
  - Abdominal
  - Neonatal
  - Head, Eyes, Ear, Nose and Throat
  - Pain
  - Mental health
  - MSK
  - Growth and development
Applied physiology

- Brain development
- Management of raised ICP
- Endocrine physiology and growth and development
- Paediatric oncology
- The immune system
- Embryology
- Respiratory physiology
- The liver and metabolism
- Haematology
- Maturation of the renal system
- Physiology of the GI system
Non medical prescribing

• Practical aspects of prescribing
  – Clinical portfolio
    • Practice log hours (75)
    • Reflection (650 words) on Domains:
      – The Consultation
      – Prescribing effectively
      – Prescribing in context
    • 72 competencies to achieve
    • Clinical management plan
    • Prescription

• Prescribing in clinical practice
  – Clinical conditions
    • History taking and differentials
  – Written case study (3500 words)
  – OSCE
    • History taking and differential diagnosis

• Pharmacology and applied therapeutics
  – Pharmacological management of common conditions in all body systems
    • Written exam
    • Drug calculation exam
    • OSCE
      – Omeprazole, paracetamol, salbutamol, simvastatin, hydrocortisone cream, amoxicillin
Managing the complex child

- Principles of A&P
- Physical examination
- Models of problem solving
- Clinical decision making
- Indications for referral / how to refer
- Pharmacological management
- Appropriate documentation of findings
- Managing clinical uncertainty and complexity
Furthering education in paediatric endocrinology

• Auxology course – St Bartholomew’s and The Royal London Hospitals
  – Growth measurement
  – Bone age reading
  – Growth clinic
• BSc module – Keele University
• BSc/MSc module – London South Bank University
Principles of care of the child and young person in endocrinology*

- Practice-based assessment
  - Competency-based booklet
- Formative assessment
  - Group work
- Summative assessment
  - Case study presentation
  - BSPED approved
  - January 2017

*University course to be launched at the London South Bank University in January 2017

BSPED, British Society for Paediatric Endocrinology and Diabetes
Module content

• The endocrine system
• The multidisciplinary team
• Growth and the IGF-1 system
• Puberty
• Adrenal disorders
• Disorders of sex development
• Thyroid disorders
• Disorders of salt and water balance
• Pancreas disorders
• Bone metabolism and bone health
• Late effects of childhood cancers
• Hormone replacement treatment
• Advanced nursing roles in paediatric endocrinology

*University course to be launched at the London South Bank University in January 2017
Assessment - 1

- Competency based booklet
  - Practice based assessment
  - Specific skills
    - Ward
    - Community
  - Based on RCN competency framework (2013)
Assessment - 2

• Formative assessment
  – Group work
  – Given scenario
  – Endocrine condition
    • Medical management
    • Pharmacological intervention
    • Nursing care
  – Feedback and present to the group at the end of the day
Assessment - 3

• 20 minute case study presentation
  - Module lead
  - Clinical expert
  - Examiner

• Patient of your choice
  - Demonstrating emphasis
    • Knowledge of endocrine condition
    • Pharmacological knowledge
    • Nursing care
    • Nursing intervention
    • Reflection
On completion..

- **BSc in children’s nursing**
  - Old style training
- **Pg Diploma in children’s nursing**
  - Already have a degree
- **MSc in children’s nursing**
  - Clinical Nurse Specialist
Paediatric endocrine nurse roles

• Patient education
• Patient / parent / family support
• Hands on nursing care
• Dynamic function tests
• Liaising / principle key worker within multidisciplinary team
• Liaising with community teams / General Practitioners
• Liaising with pharmaceutical industry
• Teaching
• Research
Advanced skills for paediatric endocrine nurses

- **Practical skills**
  - Venepuncture/cannulation
    - Dynamic function tests
  - Physical assessment
  - Bone age assessment
- **Managing own patient caseload**
- **Nurse-led clinics**
Nurse-led care

• Nurse-led clinics
  – Outpatients
  – Telephone

• Day care
  – Nurse led investigations
  – GH choice and training
  – Emergency hydrocortisone training
Nurse-led clinics

• Aims:
  – Decreases patients’ waiting times
    • Including the nurse-led clinic
    • GH prescribing process
  – Increases consultants’ time for more complex patients
  – Build stronger relationships with patients and their families
  – Enhances patient satisfaction

• Documented evidence for multiple benefits of nurse-led clinics
Nurse Led Clinic

• **Aims**
  – To support intermediate care after the acute phase of disease and/or diagnosis
  – Integrate patient into the care pathway
  – Deliver holistic care
    • Person centered and evidence based
  – Promote self care and enhance patient autonomy and concordance

*Supporting the child and the family*
Clinic 1

Nurse led general paediatric endocrine clinic in a general hospital – specialist centre
Aims of NLC

- Specific follow up for long term management
- More general patient education
- GH choice and start up
- Sick day management
- Patient education / compliance issues
- Alternate consultant appointments for less complex patients
- Precocious puberty management

- Appointment slots
  - 20 minutes
  - 40 minutes for new GH / sick day management training x2
    - 8 appointments in one clinic session
Growth Hormone prescribing process:

- **Consultant decides to initiate GH →**
  - Nurse Led clinic
    - Go through understanding of condition
    - Side effects / adverse events
    - Demo of GH devices
    - ? Indecisive
      - DVDs / literature
      - Family to call CNS back
      - Another appointment offered
  - Consultant writes to GP asking them to prescribe GH under a shared care protocol – copy also to the parents
  - Once have decision of GH device from family, CNS contacts appropriate homecare team with patient info
    - Community nurse goes to patient’s home at a time convenient to them
    - Prescriptions through GP → homecare
    - Medication and equipment delivered to home

- **GP discusses prescription with practice manager**
  - Decides to prescribe or not
  - If no, prescribe from hospital → CCG

- **Whole process**
  - Approximately one month
Proformas for clinic

- CAH
- CPP
- Congenital hypothyroidism
- GH administration training
- GH choice
- IM HC training
- Panhypopituitarism

- Premature adrenarche
- Premature thelarche
- PWS
- Turners syndrome
Clinic 2
Nurse led adrenal clinic in a paediatric tertiary hospital
Diagnosis of CAH

- Confirmed by a raised 17OHP level after day 3 of life
- Short synacthen test
- Urine steroid analysis
- Salt wasting confirmed by:
  - Low plasma sodium
  - High potassium
  - Increased urinary sodium excretion
  - Virilised girls
    - Chromosome analysis
    - Pelvic ultrasound
Medical management

• Hydrocortisone 10mg tablets
  – 10 – 15 mg/m2/day
  – Total dose spread 3 – 4 times throughout the day
• Fludrocortisone 100 mcg tablets
  – 150 mcg / m2/ day
• Salt supplements
  – Oral salt supplements (until one year of age) in the
    5mmol/ml 30% Sodium Chloride solution –
    5mmols/kg/day, in 4 divided doses = ........mls per dose
    four times a day
  – Can stop when fully weaned
Holistic management

Education

Resources

Safety at home
Great Ormond Street Hospital for Children
NHS

Cortisol deficiency (hyperplasia) - steroid replacement

This protocol has been formally reviewed by the Great Ormond Street Hospital Specialist Team. All members of the multi-disciplinary team have reviewed this protocol and are responsible for updating it as necessary.

This leaflet explains how to deal with illness in a patient with cortisol deficiency (hyperplasia) and how to safely give replacement steroids.

To find information on the care of a patient with cortisol deficiency (hyperplasia) please refer to the printed/digital patient information leaflets produced by the Great Ormond Street Hospital.

Reason for protocol

- Diagnosis: Hydrocortisone replacement required

Specific treatment

- Medications: Hydrocortisone (oral)
- Fludrocortisone (oral)
- NaCl supplements 30% solution

Instructions for Hospital Doctor

In the event of a patient's cortisol deficiency, if this patient is brought to hospital the following management is advised:

- If patient drowsy and unresponsive give IM hydrocortisone immediately (8 yr - 25 mg/IV, 15 yr - 50 mg). If no response give IM hydrocortisone as above again after 1h.
- If patient is hypotensive and hypoglycaemic give IV fluids and then change to oral steroid. Ensure that IV fluids are administered.
- If there is any doubt about this patient's management, advice can be obtained via Great Ormond Street Hospital switchboard (0207 406 9200, asking for the Endocrine Registrar on Call).
Adrenal nurse led clinic

- **First appointment**
  - One month after diagnosis / discharge from hospital
  - Discuss
    - Compliance
    - Management of medication
    - Re-educate sick day and emergency management
      - Teach injection technique
  - Follow up on any queries the family have
  - Liaise with Urology if female
  - Liaise with local teams for recent blood results
  - Discuss patient support groups
Adrenal nurse led clinic

- Subsequent appointments...
  - Alternate clinic appointments with medical consultations
  - Compliance issues
  - Re-education
  - Any prescription problems
    - Hydrocortisone tablets
    - Salt supplements
    - Emergency hydrocortisone
  - Arranging annual reviews in readiness for medical appointment
    - 24 hr profile
    - Bone age
    - Clinical examination for under / over dosing of hydrocortisone
  - Transition discussions
    - Transfer for adolescence
Professional Issues

- Non medical prescribing course
  - Case study – Infant with CAH
  - Bioequivalence of hydrocortisone tablets and suspension (Merke, 2001)

- Led on to further modules:
  - Advanced assessment of the presenting child
    - Children’s Advanced Nurse Practitioner

- Continuing CPD
Nurse Led Clinics

- **Managerial support**
  - Huge issue
  - **Positive**
  - Increase revenue into the hospital
  - Increased profile of nursing expertise / department
  - **Negative**
  - Room
  - Admin
  - Support
  - Team issues

- **Team support**
  - Smooth liaison between medical and nursing personnel
    - Consultants and junior Doctors
Conclusion

• Focus
  – Education
  – Advanced Practice
  – Nurse led clinics

• Varied roles
  – Paediatrics
  – Adults
  – Internationally