The Endocrine Nurse career progression: The UK experience with endocrine nurse competencies, courses and further tertiary education

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Children’s Advanced Nurse Practitioner
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United Kingdom
Introduction

- History of Nursing in the UK
- Nursing Today
  - Autonomy and Advanced Practice
- Roles for Endocrine nurses
- Competency frameworks
- Further tertiary education
  - Endocrine Nurses education
  - MSc Advanced Nurse Practitioner
- The way forward
Background

Senior Lecturer in Children’s Nursing in London UK
Clinical Nurse Specialist in Paediatric Endocrinology – 16 years
Background

United Kingdom
- 65.5 million
- London – 8.2 million

Australia
- 24.13 million
- Adelaide – 1.2 million
- Melbourne – 4.2 million
- Sydney – 4.6 million
Nursing numbers

United Kingdom
• 690,773 (2017)
• 95 Nurses to 1 person

Australia
• 360,000 (2015)
• 67 Nurses to 1 person
History of nursing in the UK

• First school of nursing established in 1860
• 1940s
  – State Enrolled Nurse (SEN)
    • 2 years training
  – State Registered Nurse (SRN)
    • Registered General Nurse (RGN)
  – Launch of National Health Service (NHS)
• 1960s
  – First degree in Nursing
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
LONDON
- Capital of England
- Founded 43 AD
- 606 square miles
  - 1.2 square miles City
- Over 300 languages spoken
- Underground tube system the oldest in the world
The British National Health System

- Formed in 1948 to provide **FREE** healthcare for all
  - Antenatal, maternity, postnatal, immunisations, child health, screening, ER

- **Primary healthcare**
  - General Practitioners, Practice Nurses, Health Visitors, School Nurses
  - Day to day healthcare

- **Secondary healthcare**
  - Provided by medical specialists – ‘hospital care’
  - Referrals made by the patient’s GP

- **Tertiary healthcare**
  - More highly specialised healthcare
  - Referral made by a secondary healthcare professional
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
How to become....

• Clinical Nurse Specialist
  – Usually a few years experience
  – Now job descriptions say should have a MSc

• Advanced Nurse Practitioner
  – University courses at MSc level
  – RCN guidelines

• Nurse Consultant
  – Usually Doctoral level

• Very different roles / names compared to the USA

• NONE of them are regulated by the UK Nursing Midwifery Council (NMC)
What are these roles?

• Patient education
• Patient / parent / family support
• Hands on nursing care
• Dynamic function tests
• Liaising with community teams / GP
• Liaising with pharmaceutical industry
• Teaching
• Research
Clinical Nurse Specialist roles

- Consultant
- Educator
- Liaison
- Educator
- Patient advocate
- Change Agent
- Leader
- Collaborator
- Researcher

Clinical nurse specialist
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  

(Llahana, 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
Competency Frameworks

• Re-structure of NHS in 2004 ‘Agenda for Change’
  – A set of national job profiles were agreed to assist in the process of matching posts to pay bands
  – Designed to evaluate the job rather than the person in it

• Group of paediatric endocrine nurses
  – Formed to justify their roles
    • Not money makers
    • Mostly outpatient based
Why?

- There had been many drivers that had influenced nurses to take on advanced roles that had traditionally been the domain of doctors.
- Competency and career frameworks have been initiated successfully in other specialities but one had not been established within paediatric endocrinology.
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 (5)
  – Experienced practitioner (6)
  – Expert practitioner (7)
Benefit to three groups

- **Nurses**
  - Delivers high standards of care
  - Identifies practice level
    - Plan career in a structured way
  - Pinpoint personal educational needs
  - Realise potential
  - *Seize opportunities to influence the direction of nursing*

- **Employers**
  - A model for high care standards
  - Clearer insight into staff competence
  - Assistance in organisational planning

- **Patients**
  - Provide high standards of care
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
<table>
<thead>
<tr>
<th>Level</th>
<th>Competence</th>
<th>KSF</th>
<th>Performance criteria</th>
<th>Knowledge and understanding</th>
<th>Attributes &amp; behaviours</th>
<th>Core skill factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Assist the senior nurse or medical practitioner in carrying out tests.</td>
<td>HWB6 level 3</td>
<td>Support provided is applicable to the tests required.</td>
<td>• Knows protocols for endocrine function tests, including normal ranges and their role. Understands responsibilities in relation to assisting tests and investigations.</td>
<td>Observant.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Be able to explain the rationale behind protocols for endocrine function tests.</td>
<td>HWB6 level 3</td>
<td>An accurate explanation of the protocols is given to the child/young person, their families, and relevant health care professionals.</td>
<td>• Knows relevant anatomy and physiology, the normal functioning of the endocrine system, and common endocrine function tests.</td>
<td>Understanding.</td>
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<td></td>
<td>Have an understanding of limitations of tests.</td>
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<td>Safely and competency carry out shorter tests with minimal supervision.</td>
<td></td>
<td>Preparation, implementation, and completion of the test are undertaken in accordance with agreed protocol, and the child/young person and family are supported effectively throughout.</td>
<td>• Knows what shorter tests are available, why and how they are carried out, such as LIRH, TRH, short synacthen, and hCG tests.</td>
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<tr>
<td></td>
<td>Safely and competency carry out complex tests with supervision from a senior nurse or experienced medical practitioner.</td>
<td></td>
<td></td>
<td>• Knows what complex tests are available, why and how they are carried out, such as insulin tolerance test, glucagon and clonidine for growth hormone stimulation.</td>
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<td>Be able to identify results outside normal limits and liaise with medical personnel.</td>
<td>HK2 level 2</td>
<td>Prompt reporting is provided to the relevant member of the MDT. Patient records clearly show an accurate interpretation of results, and the actions taken.</td>
<td>• Identifies normal results and values applicable to the child/young person's age and gender.</td>
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</tr>
<tr>
<td>Level</td>
<td>Competence</td>
<td>KSF</td>
<td>Performance criteria</td>
<td>Knowledge and understanding</td>
<td>Attributes &amp; Behaviour</td>
<td>Contexual Factors</td>
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<tr>
<td>7</td>
<td>Develop and update evidence based protocols for endocrine function tests.</td>
<td>ICA level 3</td>
<td>Protocols clearly reference appropriate and timely research. Clear review dates are included in the protocols.</td>
<td>Knows how to critically appraise available research to inform the evidence base used to develop the protocols.</td>
<td>Organised, Critically analytical.</td>
<td>Skills for Health competences: Cl s 05, 06, 07.</td>
</tr>
<tr>
<td></td>
<td>Provide advice on all aspects of endocrine tests at local and regional level.</td>
<td></td>
<td>Records are kept of all advice given, including when and to whom. Advice provided is clear, accurate and within own local sphere of influence.</td>
<td>Knows relevant anatomy and physiology. Has in-depth knowledge of all aspects of endocrine tests, and potential adverse reactions.</td>
<td>Observe, listen,</td>
<td></td>
</tr>
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<td></td>
<td>Carry out endocrine tests adhering to organisational policies and procedures.</td>
<td>HWB level 4</td>
<td>Keep clear documentation of endocrine tests undertaken.</td>
<td></td>
<td>Empathetic with children and families.</td>
<td>Skills for Health competences: Cl s 04, 05.</td>
</tr>
<tr>
<td></td>
<td>Initiate new tests where indicated and appropriate using standard operational procedures.</td>
<td></td>
<td>Clear documentation is kept of referrals received.</td>
<td>Knows relevant local protocols, referral pathways and their own limitations.</td>
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<td></td>
<td>Accept direct referrals from other consultants as agreed by local protocols.</td>
<td></td>
<td>Evidence of supervision is provided to demonstrate continuing professional development.</td>
<td>Has in-depth knowledge of all aspects of endocrine tests.</td>
<td></td>
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<td></td>
<td>Supervise nursing and medical practitioners undertaking tests.</td>
<td></td>
<td>Discussions are held with the MDT of the need for further tests or to initiate/change treatment regimens.</td>
<td>Knows the normal values of endocrine biochemistry, treatment regimens and desired outcomes.</td>
<td>Skills for Health competences: Cl s 04, 05. NICE guidelines for growth hormone treatment in children. Day 5 heel prick: newborn blood spot screening.</td>
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</tbody>
</table>
Drawbacks?

- Lots of disagreement
- Took a LONG time
- Had to adhere to the RCN format
- Nurses thought they had to achieve everything within the framework
  - Had to make clear only use the competencies that are relevant
Competencies for paediatric endocrine nursing

The quality of services for children and young people with endocrine disorders is enhanced by specialist nurses. Kate Davies and colleagues explain.

Paediatric endocrinology covers various illnesses and disorders related to children's hormones, ranging from minor disorders to more life-threatening conditions. The most common disorder is short stature, particularly growth hormone deficiency, but the specialty also covers other conditions such as congenital hypothyroidism, early and delayed puberty, adrenal disorders, salt and water balance conditions, calcium and bone disorders, and also obesity (Raine et al 2006). With the assistance of hormone-replacement and expert care, most children with an endocrine disorder can maintain a normal, healthy lifestyle.

Access to specialist nurses with specific knowledge and skills in managing children and young people with endocrine disorders is essential. To support the development of these nursing roles, a competency framework has been constructed by a group of paediatric endocrine nurses from across the UK (RCN 2008). Specific roles...
Implementing the Royal College of Nursing Competency Framework for Paediatric Endocrine Nurse Specialists


Background

There have been many differences that have influenced nurses to make an accelerated role that have traditionally been the domain of doctors. Competency has been seen as a key way to ensure that nurses are prepared to face the challenges of the modern nursing role. The aim of this study is to explore the challenges and successes that nurses have faced in implementing the Royal College of Nursing Competency Framework in their own practice.

Methods

In 2016, a working group of nine nurses and one main stakeholder was formed to examine the Royal College of Nursing Competency Framework for Paediatric Endocrine Nurse Specialists. The framework includes a competency-based approach to the delivery of nursing care that is tailored to the needs of children and young people with endocrine disorders. The study aimed to evaluate the implementation of the framework in practice.

Results

The study found that nurses reported a wide range of challenges and successes in implementing the framework. Challenges included difficulties in accessing relevant resources and training, and a lack of support from other healthcare professionals. However, nurses also reported significant successes, such as improved communication between healthcare professionals and increased awareness of endocrine disorders among patients and their families.

Conclusions

It is important that all healthcare professionals involved in the care of children with endocrine disorders are competent in their roles. The Royal College of Nursing Competency Framework provides a useful tool for nurses to develop their skills and knowledge in this area. Further research is needed to evaluate the long-term impact of the framework on patient outcomes and healthcare delivery.

Acknowledgements

We would like to thank the following pharmaceutical companies for their generous support: Novo Nordisk UK, Lilly UK, Sanofi France, and Takeda Pharmaceutical Company. We would also like to acknowledge the contribution of the clinical nurses and the Royal College of Nursing in the development of the framework.

For Nurses

- Helps to deliver consistently high standards of care
- Identifies the needs of patients and their families
- Provides structured education and development needs
- Evaluates and monitors performance effectively

For Employers

- Provides a model to ensure high standards of care
- Helps in the establishment of new roles and responsibilities
- Can be modified to the organisational structure to meet the needs of the organisation

For Patients and the Public

- Makes it possible to deliver high standards of care
- Increases awareness of the importance of endocrine disorders
- Improves access and choice for care

Benefits of the Framework are Multifaceted

- Enhanced patient care
- Improved nurse-patient relationships
- Increased awareness of endocrine disorders
- Enhanced knowledge and skills of nurses
Adult Endocrinology – 2013

- Acromegaly
- Cushing’s Syndrome
- Endocrine dynamic function tests
- Growth hormone deficiency
- Hypogonadism
- Hypopituitarism
- Steroid replacement therapy
- Thyroid disease
- Transition
- Benign adrenal tumours
- Hypo and hyperparathyroidism
- Osteoporosis
- PCOS
• New competencies added
  – Benign adrenal tumours, hypo- and
  – Hyperparathyroidism
  – Osteoporosis
  – Polycystic ovary syndrome
## Acromegaly

### Competency 1: Acromegaly

<table>
<thead>
<tr>
<th>Competent</th>
<th>Proficient</th>
<th>Expert</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️ Understands the pathophysiology of acromegaly including signs, symptoms and diagnosis and is able to explain this to the patient</td>
<td>✔️ Recognises abnormal test results and escalates appropriately&lt;sup&gt;A&lt;/sup&gt;&lt;sup&gt;B&lt;/sup&gt;&lt;sup&gt;C&lt;/sup&gt;</td>
<td>✔️ Uses biochemical evidence to design and implement clinical pathways, including prescribing as appropriate&lt;sup&gt;D&lt;/sup&gt;&lt;sup&gt;E&lt;/sup&gt;</td>
</tr>
<tr>
<td>✔️ Has knowledge and understanding of investigations required according to national evidence-based guidelines&lt;sup&gt;F&lt;/sup&gt;</td>
<td>✔️ Provides disease-specific education to the patient regarding the long-term effects of the diagnosis and management</td>
<td>✔️ Is able to assess the effectiveness of treatment</td>
</tr>
<tr>
<td>✔️ Has awareness and knowledge of local GH and IGF1 reference ranges</td>
<td>✔️ Initiates medical therapies including self-injection techniques and monitors appropriately; advises patient of the potential side effects and when to seek advice</td>
<td>✔️ Initiates additional necessary biochemical and radiological investigations&lt;sup&gt;G&lt;/sup&gt;</td>
</tr>
<tr>
<td>✔️ Knows local and national policies, protocols and shared care guidelines</td>
<td>✔️ Incorporates research and evidence-based practice into clinical service</td>
<td>✔️ Assesses cost implications and effectiveness of treatment options, including ability to facilitate access to funding</td>
</tr>
<tr>
<td>✔️ Knows appropriate investigations and treatment modalities and is able to explain these to the patient&lt;sup&gt;H&lt;/sup&gt;</td>
<td>✔️ Adheres to local and national policies, protocols and shared care guidelines</td>
<td>✔️ Develops advanced practice through leadership and consultancy</td>
</tr>
<tr>
<td>✔️ Acknowledges the role of patient support services and is able to guide the patient on how they may be accessed</td>
<td>✔️ Provides teaching and support to colleagues within the primary care setting</td>
<td>✔️ Identifies service shortfalls and develops strategies to address them</td>
</tr>
<tr>
<td>✔️ Acknowledges psychological aspects of the condition</td>
<td>✔️ Has knowledge of current clinical trials and referral pathways</td>
<td>✔️ Takes responsibility for integration of national and local policies</td>
</tr>
<tr>
<td>✔️ Supports the patient and family by listening to their concerns, offering access to further support as needed</td>
<td>✔️ Recognises condition-specific psychological issues and provides support to patients and family</td>
<td>✔️ Supports, teaches and assesses junior staff</td>
</tr>
<tr>
<td>✔️ Accurately documents and communicates with members of the wider team</td>
<td>✔️ Acts as a role model for junior staff</td>
<td></td>
</tr>
</tbody>
</table>

<sup>A</sup>Endocrine dynamic function testing competency.  
<sup>B</sup>Endocrine biochemistry competency.  
<sup>C</sup>Endocrine replacement therapy for disorders of the pituitary and adrenal glands competency.  
<sup>D</sup>Endocrine hypopituitarism competency.
Moving up the levels

• Competent
  – Nurses new to endocrinology should have reached a competent level within six months

• Expert
  – Some years of experience in the speciality
  – Working autonomously
  – Independent Nurse Prescriber
  – Should hold, or be working towards, a Masters degree
Courses for Adult Endocrine Nurses

• Nationally run annual updates
  – Pharmaceutical companies
• Certificate in Endocrine Nursing
  – Society of Endocrinology
• University MSc module (20 credits at Level 7)
  – Oxford Brookes University
Tertiary Education
Work based learning module in Endocrine Nursing – OBU

- A reflective portfolio
  - Reflective work utilizing Reflective models, and engagement with the Framework
  - Three attendances at the Society of Endocrinology Endocrine Nurse Update
  - Oral / poster communication at national / international meeting where the nurse is the first author
  - One attendance at the Society of Endocrinology British Endocrine Society conference

- Reflective essay (2500 words)
  - Addressing each of the competencies
  - Identify key areas of learning and development, and
  - Areas of nursing research, service development and practice development
    - Nurse led clinic
    - Patient information sheet
    - Developing outreach services
Courses for Paediatric Endocrine Nurses

- 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
  (20 credits at Level 6 / 7)
Tertiary Education:
Principles of care of the child and young person in endocrinology - LSBU

- Practice-based assessment
  - Competency-based booklet
- Formative assessment
  - Group work
- Summative assessment
  - Case study presentation
  - BSPED approved
  - January 2017, January 2018, January 2020
Assessment - 1

- Competency based booklet
  - Practice based assessment
  - Specific skills
    - Ward
    - Community
  - Based on RCN competency framework (2013)
Principles of Care for the Child and Young Person in Endocrinology

Competency 1

The student is required to demonstrate competence by reflecting on a patient they have cared for and demonstrating their ability to:

Performance Criteria:

1. Assess the impact/potential impact of diagnosis on the child or young person and family.
2. Articulate knowledge of the specific endocrine disorder of this patient.
3. Effectively assess the child or young person and family's needs, and implement appropriate action/care.
4. Identify the wider multi-disciplinary team involved in the child or young person and families care. Show an understanding of their own professions role in this treatment journey.

Level Indicators:

<table>
<thead>
<tr>
<th>Advanced Beginner</th>
<th>Competent Practitioner</th>
<th>Proficient Practitioner</th>
</tr>
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<td>With supervision, the student can effectively and safely care for a child / young person and their family, assessing, planning, prioritising and evaluating care. The student has begun to develop the ability to articulate the evidence base underpinning their care.</td>
<td>The student can effectively and safely care for a child / young person and their family, assessing, planning, prioritising and evaluating care. The student demonstrates the ability to identify changes or abnormalities in the child’s / young person’s condition and is able to seek appropriate advice and support from the inter-professional team. The student is able to articulate the research and evidence based findings which underpin their care. The student demonstrates an adequate understanding of the principles of hormone replacement and rationale for treatment.</td>
<td>The student can effectively and safely care for a child / young person and their family, assessing, planning, prioritising and evaluating care. The student is able to anticipate potential complications and can plan ahead using knowledge and previous experience to respond efficiently to rapidly changing situations, in order to provide intuitive, adaptable and skilled care. Leadership skills are demonstrated through the co-ordination of care with members of the inter-professional team. The student's practice is underpinned by research and evidence based findings and they are able to critically evaluate care delivery. The student demonstrates a comprehensive understanding of the principles of hormone replacement &amp; rationale for treatment.</td>
</tr>
</tbody>
</table>
**Principles of Care for the Child and Young Person in Endocrinology**

**Competency 2**

The student is required to demonstrate competence by: Reflecting on the same patient as in competency 1 and demonstrate the ability to...

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**Performance Criteria:**

1. Identify any immediate endocrine emergencies this patient may be at risk of, and the appropriate management. This can include: adrenal insufficiency, hypoglycaemia or hypothyroidism.

2. Identify the appropriate management of the specific endocrine treatment, detailing which modalities this will incorporate and the rationale for this.

3. Show knowledge of the most common side effects this patient is at risk of and their role in managing these.

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**Level Indicators:**

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1 2 3 4 5 6 7 8 9
Assessment - 2

- Formative assessment
  - Group work (in pairs)
  - Given scenario
  - Endocrine condition
    - Medical management
    - Pharmacological intervention
    - Nursing care
  - Feedback and present to the group 4 weeks later

Which GH device would you feel is best for the child in your scenario?
Problem based learning and the flipped classroom

• Problem based learning
  – Can be used to solve patients’ problems
  – Problem solving then discussed by the students
  – Apply their prior knowledge and experiences from similar problems to the one in question

• Flipped classroom
  – Instructional content is delivered outside the classroom
    • Online
  – Actual time in class is dedicated to problem solving activities
  – Discussion – group feedback
GH devices
Different growth hormone delivery devices

- **Pfizer**
  - Genotropin – Pen, GoQuick, Miniquick

- **NovoNordisk**
  - Norditropin Simplexx – Pen, PenMate, Nordiflex, Nordiflex PenMate

- **Merck Serono**
  - Saizen – Easypod, Coolclick

- **Ipsen**
  - Nutropin Aq – Pen

- **Eli Lilly**
  - Humatrope – Pen

- **Sandoz**
  - Omnitrope – SurePal Pen

- **Ferring**
  - Zomacton – Zomajet Vision X
UK Licenses for growth hormone

- Growth Hormone Deficiency
- Adult GHD
- Turner Syndrome
- Small for Gestational Age
- Prader Willi Syndrome
- Chronic Renal Insufficiency
- SHOX deficiency
## GH licenses held in the UK

<table>
<thead>
<tr>
<th>Company</th>
<th>GHD</th>
<th>TS</th>
<th>SGA</th>
<th>PWS</th>
<th>CRI</th>
<th>SHOX</th>
<th>AGHD</th>
</tr>
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<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
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<tr>
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<td>✓</td>
<td>x</td>
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<td><em>NutropinAq</em></td>
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<tr>
<td>Novo – Nordisk</td>
<td>✓</td>
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<td>✓</td>
<td>x</td>
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<td><em>Norditropin Simplex</em></td>
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<td>Pfizer</td>
<td>✓</td>
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<tr>
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<td>✓</td>
<td>✓</td>
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<tr>
<td><em>Omnitrope</em></td>
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<tr>
<td>Merck – Serono</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td><em>Saizen</em></td>
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</table>
Sample scenarios

• **Small for Gestational Age**
  – Jamie is 5 years old and is in Year 1 at school, and is the smallest in his class. Dad works full time and is usually home around 6pm, and Mum helps out at the school at lunchtime, and knows that Jamie hardly touches his lunch, which is a concern as he doesn’t eat much at dinner time either. Jamie remembers his pre-school vaccinations and reacted very badly to having the injections. Dad is very concerned on how they are all going to manage with injections every day, as they all hate needles. He is to start on 0.3 mg daily.

• **Growth Hormone Deficiency**
  – Robert, 3 weeks. Has been diagnosed with Septo-Optic Dysplasia. Currently on hydrocortisone, thyroxine and desmopressin. Due to be discharged home from hospital and needs to commence growth hormone 0.1mg daily. First baby, Mum is 19 and Dad 20. Currently living with her parents whilst they try to find their own accommodation. They are both struggling with the diagnosis and Robert’s blindness.
Knowing our patients

• What is the CNS role in patient choice of growth hormone product?
  – Relationships with families
  – In depth knowledge about the condition
  – In depth knowledge regarding the product
Patient choice – what are the issues?

- Ease of use
- Needle free
- Colour
- Quietness
- Size
- Needle guard
- ‘Feel’
- Automatic needle insertion
- Reduced time holding device against the skin post injection

Wickramasuriya, 2005
How well do we know our patients?

• Need to understand parental perceptions and beliefs concerning illness and treatment

• Discussions of the patients’ view of the disease and their expectations of the treatment
  – Shown to increase concordance

*Spoudeas, 2014; Van Dongen, 2012; Cutfield, 2011; Haverkamp, 2008; Kapoor, 2008*
But how does this work in practice?

- Children with learning difficulties
  - Septo Optic Dysplasia
    - Need for quick injection → Zomajet
    - Visual problems → Easypod, digital pen devices
  - Teenagers
    - Something small, discreet, disposable → Miniquick
  - Girls with Turner syndrome
    - Manual dexterity issues → Easypod, Zomajet
    - Larger doses needed → Easypod, Humatropen (20.24mg)
  - Travelling families / children with more than one home
    - Think about non-refrigeration → Easypod, Miniquick, Norditropin

- SGA
  - Reduced s/c fat →
    - Want more control over administering the injection
      - No autoinjectors
    - Smallest needle, small vial sizes (4mg, 5mg, 5.3mg)
  - Control taken away → Easypod
  - Post oncology patients → Zomajet
  - Fear of needles
    - Needle free → Zomajet
    - Needle covers / hidden needle → Easypod, Nutropin Aq, Genotropin pen and Miniquick, Nordipenmate, SurePal
Emerging themes

• Nurses clinical judgement and prior knowledge of the patient and family’s needs

• Big factor to consider when implementing patient choice for growth hormone delivery devices

• Patient choice of growth hormone delivery device

• Used to be widely practiced throughout the UK
  – Reducing products in the choice discussion
  – Cost
Assessment - 3

• Summative assessment
• 20 minute case study presentation
  – Module lead
  – Clinical expert
  – Examiner
• Patient of student’s choice
  – Demonstrating emphasis
    • Knowledge of endocrine condition
    • Pharmacological knowledge
    • Nursing care
    • Nursing intervention
    • Reflection
Variety of case studies

<table>
<thead>
<tr>
<th>January 2017 group</th>
<th>January 2018 group</th>
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</thead>
<tbody>
<tr>
<td>• Hyperthyroidism</td>
<td>• Graves disease</td>
</tr>
<tr>
<td>• SGA</td>
<td>• Congenital Hyperinsulinism x2</td>
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<tr>
<td>• Congenital Hypopituitarism</td>
<td>• Prader Willi Syndrome</td>
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<tr>
<td>• Congenital Hyperinsulinism x 2</td>
<td>• GHD</td>
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<tr>
<td>• Precocious Puberty</td>
<td>• Precocious Puberty</td>
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<tr>
<td>• CAH (late presenting)</td>
<td>• DSD x2</td>
</tr>
<tr>
<td>• Craniopharyngioma</td>
<td>• Congenital Hypothyroidism</td>
</tr>
<tr>
<td>• Hypothalamic Hamartoma</td>
<td>• Diabetes Insipidus</td>
</tr>
<tr>
<td></td>
<td>• Septo Optic Dysplasia</td>
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</tbody>
</table>
Formative v Summative

• Formative
  – Informal assessment partway through the module
  – Does not count towards the final mark

• Summative
  – Final assessment of what has been learned in the module
  – Final mark

*Formative assessment can be said to serve as assessment *for* learning, whereas summative is assessment *of* learning (Duers and Brown 2009)*
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
    • ‘Expert’ Benner level

• Leading case study
  – Invited to speak at BSPED
MSc Advanced Nurse Practitioner

- Clinical Assessment skills
- Physiological Principles for Advanced Clinical Practice
- Non Medical Prescribing
- Advanced Assessment of the Presenting Child
- Children's Advanced Nurse Practitioner
- Research in Health and Social Care
- Non-medical prescribing
- Clinical Reasoning in Advanced Practice

Dissertation
- Advanced Assessment of the Presenting Child
- Applied Clinical Physiology
- Managing the complex presenting child

Research in Health and Social Care
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
  - Assessment of Growth and Puberty
Diagnostic approach

- History
- Physical examination
  - Auxology
    - Height, weight, BMI, height velocity
    - Parental heights
    - Birth weight
    - Gestational age
- Exclusion of any dysmorphic features
- Pubertal examination
- Full systematic examination
- General investigations
- Endocrine investigations
Taking a history

- Birth history, weight, length, gestation
- Heights of parents, grandparents and siblings
- Parental consanguinity?
- Origin of short stature, nutrition, psychological disturbance
- Appetite, gastrointestinal symptoms, stool frequency, stool features, abdominal pain, mouth ulcers
- Hypoglycaemia, chronic infections
- Respiratory symptoms, urological symptoms
- Motor, intellectual development milestones, school performance, learning difficulties
- Headache, visual disturbances
Take home messages

• Look at the whole child during physical assessment
• Growth disorders / short stature
  – Clinical sign in many paediatric disorders
• Accurate auxology
  – Red book / clinical notes
  – Effective height screening virtually non existent
    • National child measurement programme UK – Reception / Year 6
    • Finland – 20 height measurements from post birth – 12 years
• Some children with pathological disorders
  – May not have been referred for investigations into growth
• Earlier diagnosis is optimal
  – Can then potentially identify underlying disease
• REMEMBER
  – Subtle features can be important!
Applied Clinical Physiology

- Brain development
- Management of raised ICP
- **Endocrine physiology**
- 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 – Paediatric from June 2018

- 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, Vitamin D, hydrocortisone cream, amoxicillin
Managing the Complex Presenting 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

- Blood gases
- Interpreting X-rays, Ultrasounds
- Complex paediatric presentations
  - Cardiology
  - Respiratory
  - Neurology
  - Endocrinology
    - DSD
    - DKA
    - Adrenal crisis
The way forward...

- More autonomous roles for endocrine nurses
  - Clinical Nurse Specialist
  - Advanced Nurse Practitioner
  - Nurse Consultant
- Expert practice
- Professional leadership
- Education and training
- Clinical practice
- Service development
  - 50% clinical
  - 50% research / service development / education

McSherry et al, 2005

- Nurse Led Clinics
  - 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
  - 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
Conclusion

• Insight into the varied role of the Endocrine Nurse
• Advancing endocrine nursing roles
  – Competency frameworks
  – Education
    • Tertiary education
    • Advanced Nurse Practitioner
    • Nurse Consultant
• Discussion..
Further reading