Introduction to paediatric pharmaceutical care

A distance learning course for pharmacists and other health professionals
Foreword

Recent decades have brought huge advances in life-enhancing therapies and life-saving technologies for adults and children alike. The antithesis is that a significant number of medicines are still being used in children on an ‘unlicensed’ or ‘off-label’ basis. The safety and efficacy of these drugs in children is often not researched or is unproven.

However, children are not little adults and their response to medicines is not simply a scaled down adult response! It is therefore incumbent upon us, as pharmacists, to ensure that we have a good understanding of the issues and dilemmas that arise, and the skills to offer solutions.

This distance learning course aims to help practitioners acquire and develop the necessary knowledge and skills needed to deliver excellent pharmaceutical care to babies, children and young people.

It has been produced by the Scottish Neonatal and Paediatric Pharmacists Group in conjunction with NHS Education for Scotland (NES) Pharmacy. Many hours have been invested by members of these organisations in writing, editing and peer review to ensure the content is factually correct and matches current best practice. By applying this learning to your practice, you will add significant value to the pharmaceutical services you offer children and their parents/carers. I therefore highly commend this distance learning course to you!

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About this package

This package has been written by paediatric pharmacists throughout Great Britain and produced by NHS Education for Scotland (Pharmacy). The pack was designed, in the first instance, to help fulfil the requirement within the National Strategy document *The Right Medicine* for all paediatric pharmacists in Scotland to be accredited to provide pharmaceutical care to babies, children and young people.

It simultaneously aims to meet the education and training needs of all pharmacists who deliver services to children and their parents/carers, as well as other health professionals who require to have a broad knowledge of the use of medicines in children. To this extent, the activities, case studies and examples given throughout the package vary in setting, between hospital and community.

In addition, the content of this package reflects the elements necessary to fulfil the level 1 competencies of the College of Pharmacy Practice Faculty of Neonatal and Paediatric Pharmacy (CPP FNPP) as an introduction to paediatric pharmacy.

Aim

The overall aim of the pack is to help you to develop your knowledge and skills while achieving a predetermined level of competency in the delivery of pharmaceutical care to the young. The package is designed to equip you to deliver care that is evidence based and up-to-date, while providing you with many additional sources of useful information.

Format

The pack is organised into 14 chapters plus an appendix section.

The initial three chapters (printed on pale green background) form the legal, ethical and professional framework around which the rest of the package is built. While it is tempting to begin studying this package at therapeutic topics of interest, such as asthma or diabetes, it is imperative that you understand the principles explained in this introductory section.

Chapter 1 introduces the differences in pharmacokinetics and pharmacodynamics in children, and the dosage dilemmas these raise.

Chapter 2 discusses the all important issues of unlicensed and off-label medicines use in children. The following chapter then briefly introduces you to important and valuable sources of information, which are examined in detail within the Appendix on page 198.

Chapter 4 begins the journey into childhood by looking at medicine use in pregnancy and shortly after birth.

The following seven chapters then explore pharmaceutical care in specific conditions and diseases e.g. from constipation and infections to epilepsy and pain management.

Chapters 12, 13 and 14 expand in detail on issues very specific to children, including metabolic disorders, adverse drug reactions and nutrition.

The appendix section contains some background material as well as a list of acronyms and abbreviations, and a glossary. Entries to the glossary are marked throughout the text with a ‘dagger’ symbol (†).
Workbook
Inserted at the back of the folder you will find a separate workbook. This workbook is intended to assist your own professional development by allowing you to:

- record your responses to exercises
- apply your learning through completion of the case studies
- compare your answers with suggested responses contained at the back of the workbook
- note down any new learning needs arising during this course.

Activities
When you see the pencil icon in the main text, you are being asked to complete an activity. When you turn to the relevant page in your workbook, you will find the activity repeated, with space below to record your response. By completing these activities, you will find that the practical tips and learning points from them will prove extremely valuable in your day to day work as they allow you the opportunity to put your learning into practice. Unless you are being asked to reflect on your own practice, you will find suggested responses to most of the activities.

The workbook provides a cross reference system of page numbering, to allow you to find suggested responses easily, and to return to the main text quickly.

Case studies
There are several case studies in the workbook beginning on page 31 which allow you to apply your learning to practice in a structured way. It introduces the concept of pharmaceutical care of a young patient in a holistic way. Completing the case studies will encourage you to think in terms of pharmaceutical care planning as you process the information given, and how you would document this approach to care.

Multiple choice questionnaire
On completion of the package, the multiple choice questionnaire should then be attempted and returned to the NES Pharmacy Office, either as a paper copy or electronically online (see the instructions on page 60 of the workbook).

If you are not resident in Scotland, you should return your completed MCQ to the appropriate centre for pharmaceutical postgraduate education.

Website resources
The NES website contains links to the following:

- Key documents
The key documents related to pharmaceutical paediatric care that are repeatedly mentioned in the text can be accessed as PDF documents via the website. PDFs require that Adobe Reader is installed on your computer. If you don’t have this program, you can download it from the Adobe website. A full list of the key documents can also be found in the Appendix on page 222.

- Chapters
All the chapters of Introduction to paediatric pharmaceutical care are available as PDF files.
Activity links and weblinks
Some of the activities require that you look at a document or access a particular website. The links for these exercises, as well as the links for all the web addresses listed throughout the text, can be accessed via the NES website.

Electronic workbook
An electronic version of the workbook is included on the website. Those pharmacists seeking accreditation may be required in the future to demonstrate that they have completed this knowledge based course by completing and submitting their workbook. The electronic version would allow this to be done electronically.

How to work through the distance learning pack
On completion of the pale green introductory section, you can complete the chapters in any order you wish. However, there are several sections within a few chapters which are particularly aimed at specialist paediatric pharmacists in hospital practice. They are:

Chapter 9 Epilepsy
Section 3 – Convulsive status epilepticus (page 114)

Chapter 10 Pain and sedation
Section 2.4 – Patient/nurse controlled analgesia (page 124)
Section 3 – Sedation (page 126)

Chapter 14 Nutrition
Section 3.2 – Total parenteral nutrition (page 186)
Appendix – Paediatric information sources (page 198). Some refer to specialist centres.

If you are a community or primary care pharmacist, you may decide to simply scan these particular sections on this occasion.

Whichever route you choose, we would suggest that you still work through all the activities and case studies since they will provide you with practical knowledge and skills, as well as relevant points or issues to reflect on during your daily practice.

This course should take about 21 hours to complete (1-1.5 hours per chapter).

How this package can assist your CPD
At the beginning of each chapter the objectives describe what you should be able to do when you complete that particular chapter. This is designed to help you monitor how you are progressing through the pack. We suggest you also note down in the workbook (on page 59 onwards) or on your personal CPD record, any specific future learning needs which arise as you study each chapter. If you find the information you need is not in the package, you can use the References section in the Appendix, or check the websites listed throughout the package to see if there are any listed which might help you fill these gaps.
Keeping up to date
The information is accurate at time of publication but you may wish to keep up to date with completed and ongoing current research by checking websites of organisations such as NHS Scotland or the Neonatal and Paediatric Pharmacists Group.

You may even wish to obtain the additional references or look up websites listed from time to time throughout the pack for further study.

Disclaimer
While every precaution has been taken in the preparation of these materials, neither NHS Education for Scotland nor external contributors shall have any liability to any person or entity with respect to liability, loss or damage caused or alleged to be caused directly or indirectly by the information therein.
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