

**A HANDBOOK FOR
EXAMINATIONS IN PAEDIATRICS**

HELEN M. NUTBEAM

MALCOLM I. LEVENE

A HANDBOOK FOR EXAMINATIONS IN PAEDIATRICS

HELEN M. NUTBEAM

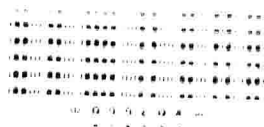
MB, ChB, MRCP, DCH
Former Lecturer in the
Department of Child Health
Charing Cross Hospital Medical School
and Paediatric Registrar
St Stephen's Hospital

MALCOLM I. LEVENE

MB, BS, MRCP
Research Lecturer, Institute of
Child Health,
Hammersmith Hospital, London
Formerly Registrar,
Department of Paediatrics,
Charing Cross Hospital

FOREWORD BY
LEONARD SINCLAIR

BSc, MB, FRCP, DCH
Consultant Paediatrician to
St Stephen's Hospital,
Westminster Hospital and the
Royal National Throat,
Nose and Ear Hospital



BLACKWELL SCIENTIFIC PUBLICATIONS
OXFORD LONDON EDINBURGH
BOSTON MELBOURNE

© 1981 by
Blackwell Scientific Publications
Editorial offices:
Osney Mead, Oxford, OX2 0EL
8 John Street, London, WC1N 2ES
9 Forrest Road, Edinburgh, EH1 2QH
52 Beacon Street, Boston
Massachusetts 02108, USA
214 Berkeley Street, Carlton
Victoria 3053, Australia

All rights reserved. No part of this
publication may be reproduced, stored
in a retrieval system, or transmitted,
in any form or by any means,
electronic, mechanical, photocopying,
recording or otherwise
without the prior permission of
the copyright owner

First published 1981

Set by Enset Ltd
Midsomer Norton, Bath, Avon
and printed and bound
in Great Britain by
Billing & Sons Ltd
Worcester and London

DISTRIBUTORS

USA

Blackwell Mosby Book Distributors
11830 Westline Industrial Drive
St Louis, Missouri 63141

Canada

Blackwell Mosby Book Distributors
120 Melford Drive, Scarborough
Ontario, M1B 2X4

Australia

Blackwell Scientific Book
Distributors
214 Berkeley Street, Carlton
Victoria 3053

British Library

Cataloguing in Publication Data

Nutbeam, Helen M.

A Handbook for Examinations
in Paediatrics

1. Paediatrics

I. Title II. Levene, Malcolm I.
618.92 RJ45

ISBN 0-632-00703-6

CONTENTS

FOREWORD, vii

PREFACE, x

INTRODUCTION, i

MULTIPLE CHOICE QUESTIONS, 7

Respiratory System, 7

Cardiovascular System, 10

Gastrointestinal System, 13

Genitourinary System, 16

Central Nervous System, 19

Metabolic and Endocrine Disorders, 22

Haematology, 25

Infections and Infectious Diseases, 28

Dermatology, 31

Poisoning, 32

Bone and Cartilage Disorders, 33

Surgical Paediatrics, 34

Neonatology, 38

Genetic and Chromosomal Disorders, 41

Nutrition, Growth and Development, 43

Community and Social Paediatrics, 46

Preventive Medicine, 48

Sample MCQ Paper, 49

DATA INTERPRETATION AND CASE HISTORIES

Group I, 60

Group II, 65

Data Interpretation Trial Examination, 71

Case Histories, 76-80

ANSWERS

Multiple Choice Questions, 81

Respiratory System, 81

Cardiovascular System, 83

Gastrointestinal System, 86

Genitourinary System, 89

Central Nervous System, 91
Metabolic and Endocrine Disorders, 94
Haematology, 96
Infections and Infectious Diseases, 99
Dermatology, 101
Poisoning, 102
Bone and Cartilage Disorders, 103
Surgical Paediatrics, 104
Neonatology, 107
Genetic and Chromosomal Disorders, 110
Nutrition, Growth and Development, 112
Community and Social Paediatrics, 114
Preventive Medicine, 116
Sample MCQ Paper, 117

Data Interpretation and Case Histories

Group I, 126
Group II, 128
Data Interpretation Trial Examination, 130
Case Histories, 132

FOREWORD

The speciality of paediatrics has become a popular one and in recent years more young doctors have decided to take it up. The patients are attractive, the prospect of working with them pleasing. The work itself may be both physically and emotionally demanding but rewarding nevertheless. There are two parallel stepladders to success in a career in paediatrics. These are the postgraduate examinations, and the appointments required before a permanent senior position is achieved. Once qualified, the aspiring graduate, will have to think very carefully about both, but certainly initially he will judge his future against the prospect and success of passing the postgraduate examinations in the specialist subject.

Studying for the postgraduate examination for a young doctor who has recently qualified and is perhaps busily engaged as a resident, is somewhat different from the sort of study that is undertaken pre-qualification when the days were full, lecturers and lectures were readily available, courses were structured, and there were sufficient numbers of colleagues and friends around to keep one up to scratch. Unless he is attending a full-time or part-time course, the postgraduate often has to work alone and in particular, an aspiring paediatrician who works in a general hospital, might find himself in a division or unit where there are few colleagues with whom to discuss problems, apparently insufficient time to study, and possibly an insufficiency of numbers or variety of patients to enable him or her to expand clinical experience. There is some comfort that all study for examinations is essentially a lonely process. The books have to be read, clinical acumen has to be developed and perfected, and one must remember that all examinations set a norm which allows every candidate to achieve an appropriate goal if he is to pass. Passing usually involves a lot of common sense, basic knowledge and understanding of the subject and a certain capacity for self-development and self-criticism.

Practice makes perfect, and the hard-working resident who cares for his patients and studies them is bound to learn a great deal. One of the best ways of learning is to write good notes and reports. Time taken to do this is time well spent, as is the time taken to look at the results of the

investigations and interpret them and discuss them before the formal ward rounds. It is to be hoped that ward rounds are opportunities for teaching and discussion and those in training should, as far as possible, use this time to ask questions about difficult points. Case presentations at departmental meetings are extremely valuable opportunities and should be used to sharpen and polish one's ability, not only to comprehend the subject and be prepared for questions, but also to present the information in a clear and interesting fashion. Journal clubs and local junior staff meetings act as other opportunities for developing such abilities and talents and advancing one's knowledge.

Nevertheless there will be gaps in one's knowledge and after having read up all the interesting cases he has admitted, the young resident will often have to painfully sit down and look up and try to assimilate facts about conditions which he has never seen, and may never see. He will also have to study basic subjects such as nutrition, growth, genetics, neonatal physiology, a certain amount of embryology, child psychology and psychiatry.

Opportunities for attending courses are made available to most and well ahead of time the future candidate for a postgraduate examination will have to decide which courses will benefit him most. Some last a week and cover a lot of ground in specialist subjects. There are also day release courses and weekend courses such as the pre-DCH course which I have been running at St Stephen's Hospital Postgraduate Centre for the past twelve years. To those who do not work in specialised centres, it is very important to try to visit places where specialist work is being undertaken; these will include a neonatal unit of high standing, an assessment centre, and remedial centres for children with handicaps e.g. those with visual handicaps, deafness or cerebral palsy. It is also very important to gain some insight and experience with those who work in the community and the Social Services. The latter is best understood and studied on a practical basis. An afternoon with the health visitor, a half-day at a Juvenile Court or a short session with the school doctor and a short discussion are very effective ways of learning about activities within the community and stimulate a further interest to read up the subject.

Nevertheless after all this the examination has to be passed, and a certain amount of technique is required. Familiarity can breed more confidence and this handbook is written with the aim of being a guide and a testing ground. As the authors note, multiple choice questions are here to stay. They have their advantages both to the examiners and

the examinees. To the latter they do engender a very critical approach and allow for a fine modulation and tightening of the intellectual strings. A book such as this read during the course of a period of study for a postgraduate examination will allow the interested reader to be more alert to the nuances of knowledge and will in effect allow him also to see his deficiencies in the unembarrassed silence of his own study so that he may repair to the text and read further, if not to patch up holes, perhaps to generate a new pathway of knowledge and practice.

The postgraduate course at St Stephen's Hospital has been using multiple choice questions for the past eight years, as part of the programme. In the examination they will be a test of knowledge. In our course, and in this book you must take it that they are an aid to self-assessment and advancement. I am sure this book will prove to have an invaluable place in preparation both for the Diploma in Child Health of the different Colleges and for the MRCP examination in Paediatrics.

Leonard Sinclair

PREFACE

At present there is very little information available to the candidate about paediatric postgraduate examinations, particularly the type and style of question one may encounter. This book was written to fill this gap and to help the candidate prepare usefully for his examinations.

The book is composed of two sections, a multiple choice section and a data interpretation and case history section.

This book is intended to be an aid to passing paediatric examinations and should not be thought of as a textbook. The answers we have given are skeletal and if you are not sure of the information consult an appropriate textbook.

Properly used, this book will help to improve your examination technique, and will assist with effective revision. We trust that you will find it of value and help in the preparation for your examinations.

We would like to thank Dr H. Jolly, Department of Child Health, Charing Cross Hospital and Mr Per Saugman of Blackwell Scientific Publications for their help and encouragement in the preparation of this book. We would also like to acknowledge the help of the departments of medical illustration, electrocardiology and encephalography of Charing Cross Hospital.

INTRODUCTION

At present the doctor who plans a career in paediatrics in Great Britain has to clear two major hurdles. These are the Diploma in Child Health (DCH) and the Membership of the Royal College of Physicians of the United Kingdom diploma (MRCP(UK)). In the latter one may elect to take the second part of the examination in paediatrics. The DCH examination is designed to indicate the knowledge that might be expected of a doctor who intends to make the care of children a special interest in general practice or community medicine. The MRCP examination is intended for the candidate who seeks higher specialist training in paediatrics and at present is accepted as an entrance examination to this.

Several different bodies examine for the DCH. The DCH (London) is awarded by the Conjoint Board (England). In order to take this examination the candidate has to be registrable or a graduate of a recognised university; to have been qualified two years, and to have spent six months as a medical officer in residence in a recognised children's hospital or children's department of a recognised general hospital. The DCH (Glasgow) is awarded by the Royal College of Physicians and Surgeons of Glasgow. The same conditions apply but one must also supply evidence of personal character and professional status and have attended not less than twenty special clinics (child welfare clinics, school clinics, child guidance clinics, residential or day nurseries). One can also enter for this examination if one has attended for six months full-time or twelve months part-time, at a recognised hospital and received clinical instruction in paediatrics. Except by special permission the period of instruction or residency must have been undertaken in the British Isles. The DCH of the Royal College of Physicians and Surgeons of Ireland is awarded by the Irish Conjoint Board. The conditions are the same as for the London DCH and again one must be registrable or recognised by the board. A DCH is also awarded by University College Dublin, the details of the examination are under review and they will be available from November 1980. A Diploma in Tropical Child Health is awarded by the University of Liverpool. To qualify for entry one must have spent at least one year in an approved

hospital post in paediatrics and have attended a course of instruction for eighteen months in the University Department of Child Health and the Liverpool School of Tropical Medicine. Registration with the General Medical Council is also required. Senior Paediatricians may be excluded the clinical course and take the six month course in school only.

The DCH (London) examination consists of a written section comprising a multiple choice paper and a paper where notes have to be written on a series of topics. This is followed by a practical examination consisting of long and short cases and a viva.

The DCH (Glasgow) consists of two written papers of essay type questions followed by a practical examination very similar to that described above. The Diploma in Tropical Health will not be discussed further as it is a special examination taken after an organised course.

The MRCP (UK) diploma examination may be taken at several centres but the examination is now common to all. It consists of two sections. The MRCP (Part I) is common to all specialities. The multiple choice paper contains questions on many different aspects of medicine. These range from questions on the scientific basis of clinical practice, which is now receiving more emphasis, and include physiology, biochemistry, pharmacology, pathology and microbiology as well as advanced physical medicine. There are a few paediatric questions in this paper. The MRCP (Part II) may be taken in general medicine or paediatrics. The paediatric examination comprises a written section consisting of a case history section, a data interpretation section, and a slide interpretation section. The practical section comprises long and short cases and an oral examination.

From June 1981, entry to the Part II will not be accepted until 30 months after qualification, of which twelve months must have been spent in acute medicine. Candidates will have to produce evidence from two sponsors testifying to the adequacy of their training programme and experience. From June 1981, candidates who have irrevocably failed the written section of the Part II examination will not be permitted to take the clinical and oral sections of the examinations.

We will now briefly discuss the type of questions and practical examinations you might encounter.

MULTIPLE CHOICE QUESTIONS

The multiple choice questions found in paediatric examinations are of the 'determinate' type preceded by a stem in which about five questions

are asked. It is obviously important to read the stem carefully as the questions follow on from this. Each question should be answered 'true' or 'false' or 'don't know'. Positive marks are awarded for correct answers but a mark is deducted for a wrong response. It is therefore possible to score anything from -5 to +5 on each question and it is clearly advisable to leave doubtful questions blank. A certain number of questions need to be answered in order to pass and therefore be brave rather than risk failure. In all multiple choice papers most people have ample time to finish and time is not a worry. There is no point in writing on the answer sheet in these examinations as no notice is taken of additional comments. Nowadays most MCQ papers are marked by computer. Make sure you fill your answer sheet in correctly by following the instructions given which are usually precise. In the DCH there are sixty MCQ's and subjects range from immunisation and preventative and community medicine to acute medical and surgical hospital paediatrics. There are also questions in relation to anatomy, physiology and pathology.

Obviously MCQ's invite continuous debate especially about those ambiguities of experience in clinical practice that crop up so often in these papers. However MCQ's seem here to stay. Candidates seem to find MCQ papers difficult and the failure rate in the MRCP Part I is high. In the DCH candidates seem to come to grief on other sections and the pass rate in the MCQ is comparatively high.

In this book the MCQ's have been divided into subjects in order to help in revision with a mixed section at the end. The last five questions in each section have tended to be of a higher standard and candidates for the MRCP (Paediatrics) will find the MCQ useful for revision purposes. Work through a section of questions before looking at the answers.

SHORT NOTES

In these papers you are asked to write 100 words on each of twenty subjects. It is usually requested that the answers are written in the order of the questions. Attempt all questions even if you know little about the subject as every attempt will score whereas a blank sheet will mean no marks. The subjects requiring discussion are usually common paediatric problems ranging from community paediatrics to surgery and pathology. There is the occasional difficult subject e.g. primary ammenorrhoea, alopecia, the clumsy child.

Write in note form as an essay is not required. Neatness and legibility will attract the examiner and hopefully score more.

ESSAYS

The subjects for discussion in these papers range from acute paediatric problems to community paediatrics. On the whole the ability to discuss common problems and common sense is required rather than knowledge of small print paediatrics. Answer the required number of questions as again it is difficult not to score. Quality is important rather than quantity and legibility, paragraph heading and underlining may help.

CASE HISTORIES

In the MRCP (Part II Paediatrics) this is the first section of the written examination. Four long case histories are given each with a detailed history, examination and laboratory reports. You are often asked for a number of likely diagnoses and you will need to give concise answers after considering all information supplied. Maximum marks are awarded for the answers thought most likely by the examiners but credit is given for other possible answers. However, marks may be deducted for ill-considered answers. There is usually plenty of time to finish this section.

DATA INTERPRETATION

This is the next written section of the MRCP (Part II Paediatrics). It is attempted after the case histories have been collected. It consists of ten questions and may include haematology, pathology or microbiology results for interpretation. In addition electrocardiograms, electroencephalograms and other investigations (for example cardiac catheter or lung function tests) may be presented. For many candidates this is the most difficult part of the examination.

SLIDE INTERPRETATION

A series of twenty coloured slides are projected and a question or questions asked concerning each slide. Each slide is projected for a short

time only and unless the condition can be recognised at once there is little time for thought. It is useful to look at colour atlas books prior to this exam including pictures of blood and bone marrow films. Slides may include pictures of patients, pathological specimens and X-rays.

The Data Interpretation and Case Histories in this book are divided into three sections. Section I and II consist of twenty mixed questions useful for revision purposes both for the DCH and the MRCP. Section III is a sample paper.

PRACTICAL EXAMINATIONS

These consist of two parts in all the exams, a clinical section and a viva or oral examination. In the clinical section the candidate is introduced to a patient or if the child is an infant to his parents also. He is expected to take a full history, perform a full examination and prepare the case for presentation to the examiner. Urine may be available for testing—do not forget to ask. The usual time allowed for this is half an hour although some candidates may find they have more time. The examiner will then go through various aspects of the case with the candidate and ask additional questions. Other data, for example X-rays may be available for interpretation. The candidate will then be taken to see a series of short cases, the number varying according to time. A diagnosis may be required or demonstration of clinical examination, for example of an abdomen or a fundus. Beware of the normal patient as these may be included in the exam. A simple diagnosis or description is usually required. Above all do not argue with the examiner! Very occasionally a pathological specimen or perhaps a tin of a special milk preparation may be handed to the candidate and questions asked.

The viva examination is usually short and the standard of question usually relates to one's performance in the preceding sections. Again be precise in your answers and do not, by your answers, lead the questions to an area you know little about.

The pass rate in all these examinations is not high and even the best prepared candidate may come to grief. When the results of the MRCP examinations are issued you will be told in which sections or section you have failed but further information is not supplied. In the DCH examinations candidates may write to the examination office and may be able to obtain further information on the sections failed.

We suggest you use this book by choosing a particular section and working through this, looking up the answers after the section is completed. Your marks and the information provided will indicate the areas you are not familiar with and need to study in greater depth.

MULTIPLE CHOICE QUESTIONS

RESPIRATORY SYSTEM

- 1 The following are recognised causes of stridor in the newborn;
 - 1 congenital diaphragmatic hernia.
 - 2 laryngomalacia.
 - 3 a vascular ring.
 - 4 cystic hygroma.
 - 5 sternomastoid tumour.

- 2 In croup;
 - 1 the parainfluenza virus can be isolated in more than 70% of cases.
 - 2 the majority of children affected are under three.
 - 3 laryngoscopy is necessary for diagnosis.
 - 4 the mortality is about 1%.
 - 5 recurrence is common.

- 3 In bronchiolitis;
 - 1 the peak incidence is at one year of age.
 - 2 there is a seasonal incidence.
 - 3 the respiratory syncytial virus can be isolated in more than 90% of cases.
 - 4 chest X-ray is normal, in the majority of cases.
 - 5 there is an increased incidence of obstructive airway disease (in later life) in children who have had this condition.

- 4 In mycoplasma pneumoniae pneumonia;
 - 1 the upper lobes of the lungs are more often involved than the lower.
 - 2 chest X-ray changes are usually unilateral.
 - 3 the organism is easily isolated from the sputum.
 - 4 cold agglutinins can be found in the peripheral blood in about half of the children with this condition.
 - 5 resolution occurs rapidly once adequate therapy is commenced.

- 5 Well recognised causes of bronchiectasis include;
- 1 chronic asthma.
 - 2 measles.
 - 3 foreign body.
 - 4 cystic fibrosis.
 - 5 Kartagener's syndrome.
- 6 The following are recognised long term complications of oxygen therapy in the newborn;
- 1 bronchiectasis.
 - 2 cerebral palsy.
 - 3 retrolental fibroplasia.
 - 4 atelectasis.
 - 5 high tone deafness.
- 7 Congenital diaphragmatic hernia;
- 1 is more common in males.
 - 2 is more common on the right side of the chest.
 - 3 usually protrudes into the chest through the Foramen of Morgagni.
 - 4 is due to hypoplasia of the diaphragm.
 - 5 is associated with lung hypoplasia.
- 8 In childhood asthma;
- 1 the usual cause is a type III hypersensitivity reaction.
 - 2 IgE is increased in the serum of over 90% of cases.
 - 3 allergic rhinitis is an important antecedent.
 - 4 there is characteristically a family history of atopy.
 - 5 the incidence is about 1 in 500 at school age.
- 9 The following statements are correct concerning the treatment of asthma.
- 1 sodium cromoglycate acts at the respiratory centre.
 - 2 sympathomimetics and theophyllines are synergistic in action.
 - 3 beta sympathomimetics are effective under the age of one year.
 - 4 inhaled steroids are useful in the management of status asthmaticus.
 - 5 oxygen therapy should not be given in concentrations greater than 30%.