



# **DentEdEvolves**

## **UNIVERSITY OF LIVERPOOL SCHOOL OF DENTISTRY**

Self Assessment Document

and

**SITE VISIT REPORT**

**BY THE  
DENTED VISITORS**

28 October - 1 November 2000



## Section 1: Introduction and General Description

The University's School of Dentistry is closely integrated with the Liverpool University Dental Hospital (LUDH), part of the Royal Liverpool and Broadgreen University Hospitals NHS Trust. It offers courses for Bachelor of Dental Surgery (BDS) (5 years), taught postgraduate courses for the modular Master in Dental Science (MDentSci) (1 year full-time), postgraduate research degrees of MDS, MPhil and PhD, and training for the Diploma in Dental Therapy (2 years part-time). The LUDH offers courses for Dental Hygiene (2 years), Dental Nurses and Dental Technicians.

### **Mission Statement**

The Liverpool University Dental Hospital and School of Dentistry can be considered as a single institution which exists in order to:

- 1 Educate and train dental undergraduates.
- 2 Provide dental services to the Merseyside Community as follows:
  - (a) primary dental care to an extent necessary to provide dental undergraduate training;
  - (b) a complete range of secondary and tertiary dental care for patients referred for those purposes;
  - (c) the development of preventive dentistry commensurate with undergraduate training needs, in collaboration with the Community Dental Services throughout the Merseyside area.
- 3 Provide postgraduate training and clinical facilities for continuing education of dental practitioners, hospital dentists and community dentists.
- 4 Provide training for professions complementary to dentistry, including:
  - (a) Dental Hygienists - through the School of Dental Hygiene;
  - (b) Dental Nurses - through the School for Dental Nurses;
  - (c) Dental Technicians - by training posts in the production laboratories of the Dental Hospital.
  - (d) Dental Therapists - through the School for Dental Therapists.
- 5 Actively promote dental research at laboratory, clinical and community levels, and closely integrate this as far as possible with local research programmes in the Health Service and University.
- 6 Contribute through its core of expertise to the development and conduct of the work of the University of Liverpool, the Royal Liverpool and Broadgreen University Hospitals NHS Trust, and the Health Authorities; and to collaborate with these Authorities in the promotion of oral health throughout the Merseyside area.
- 7 Contribute to the national and international promotion of oral science, oral health and the dental profession.

## **Visitors Comments**

**Note: Visitors Comments appear at the end of appropriate sections.**

**Where there are no Visitors Comments, the section was deemed satisfactory. The Visitors, for the most part, used the original assessment document prepared by The Liverpool University Dental Hospital as the format for this report. Visitors Comments are italicised, whereas, the original text is not.**

*Recommend inclusion in Mission Statement of reference to student exchange programmes, such as Socrates, and involvement of undergraduate dental students in research.*

*Mission Statement in general places the University of Liverpool School of Dentistry at the forefront of contemporary dentistry.*

## Section 2: Physical Facilities

(including Library, Lecture Theatres, Seminar Rooms etc.)

### 2.1 Clinical Facilities

**General:** The Hospital has 161 dental units, an operating theatre and associated day ward, a large and well-equipped x-ray department, its own pathology laboratories, six 20-unit teaching clinics, consultation and teaching suites for oral medicine and oral surgery, and a ground floor extension which houses the Hospital's own accident and emergency department, alongside surgeries for dental extraction and minor oral surgery. There is a newly designed general anaesthetic extractions suite and work has recently been completed to upgrade the operating and day-stay facilities for patients requiring minor oral surgery, either by general anaesthesia or intravenous sedation.

There are approximately 85,000 patient attendances per year, 12-15,000 as self-referrals through the A&E department. 30 full-time, part-time and honorary Consultants receive secondary and tertiary referrals from throughout the area of the former Mersey Health Region, as well as participating in the dental educational programmes. Specialist departments include Restorative Dentistry (Conservation, Prosthetics, Periodontology), Paediatric Dentistry, Orthodontics, Oral Surgery and Oral Medicine. Recently a consultant-led dental sedation unit has been introduced. There are strong links with the Regional Maxillofacial Unit at the Aintree Hospitals Trust, a leading centre nationally for the treatment of oral cancer, all of whose consultants hold sessions in the Dental Hospital. The Regional Cleft Palate Unit is located jointly between the Liverpool University Dental Hospital and Alder Hey Children's Hospital.

**Strengths:** Well equipped hospital with structured capital replacement programme allowing generally 1 x 20-unit clinic to be refurbished per year. Covers the range of dental treatment for special needs patients, including theatre suite and day-bed unit.

### 2.2 Teaching Facilities

**General:** Two linked lecture theatres with state-of-the-art IT and videoconferencing facilities. Accessible high quality teaching and computing facilities, the latter provided by a custom built suite earmarked solely for students' use. Range of tutorial rooms of various sizes. University's Medical and Science Library (Cohen Library) at 200m distance. University-wide provision of IT facilities for students at several locations across the campus, including at Cohen Library. Museum and reading room - facility for quiet study in Edwards Building.

### 2.3 Teaching Laboratories

**General:** Science laboratory teaching is now much reduced. Some support courses for PBL requiring this are still in place in Year 1 (eg

Biochemistry, Physiology) and facilities are adequate. A small 20 seated wet laboratory has been installed in the School for pigs head practical and oral pathology practicals. There is access for dental students to laboratories in other Faculty Departments concerned with dental teaching. Especially, the Human Anatomy Resource Centre (HARC) is a recently developed facility for teaching Anatomy and Histology (see Section 6.1). This facility is currently still being developed at a total cost of £1.3 million. There is access to clinical skills laboratory in the Medical School. State-of-the-art operative techniques laboratory (33 manikins) has just been installed in the School at a cost of £200K. This is equipped with the Edunet system providing customised IT support and allowing versatile access and distribution of several sources simultaneously. The school has a Prosthetics techniques laboratory.

## **2.4 Research Laboratories**

**General:** The School is fortunate in having the Edward's building with 26 well equipped research laboratories and 13 offices located on 4 floors. This dedicated building maximises our resources and enables staff within the four research groups (see Section 20) to collaborate. Furthermore one of the research teams in the MOMPS group is situated in the Roy Castle International Centre, next to the Dental School, which has state of art molecular and epidemiological facilities. Transmission and scanning electron microscope, are located in the dental hospital building.

Each of the School's four research groups (see Section 20) has well appointed laboratories, a number of which have been recently renovated. The molecular laboratories have state-of-the-art sequencing, electrophoresis and PRC facilities, as well as a GMAG facility. The Oral Microbiology facility has been refurbished in the last 12 months. The Cariology group have state of art equipment involved in the assessment of in situ caries models, ie quantitative light induced florescence (QLF), which is unique in England as well as Capillary electrophoresis, for plaque work. The school has recently purchased an atomic absorption spectrophotometer. The Oral Medicine and Oral microbiology Group have excellent patch-clamp facilities. The common user facilities include: two refurbished tissue culture rooms; a radioactive (<sup>32</sup>P) facility; freezer room for tissue samples as well as bacterial stocks, (-80°C) as well as autoclave and wash-up facility.

### **Weaknesses**

Due to constraints upon the University's income in relation to dentistry, there has been a tremendous drop in research income from Central resources to the School of Dentistry cumulatively over the past years and thus the purchasing of new equipment and rebuilding of dedicated facilities is only made possible from external research grants

### **Best Practices and Innovations**

The quantitative light induced fluorescence (QLF) system has allowed us to assess quantitatively mineral loss and gain in enamel and dentine in vivo. To date all the work has been in situ or in vitro, QLF has allowed us to reflect in vitro the clinical situation.

We also have state of art electro-physiology equipment which is used to make Patch Clamp measurements simultaneously with micro-fluorimetric measurements of intracellular calcium. The innovative use of this equipment is in conjunction with our tissue culture facilities, to investigate chronic effects of upregulation of the immune system in fluid secretion in salivary glands (Sjogrens syndrome).

We have recently installed a Licor sequencing set-up in the Molecular Oncology Group laboratories to sequence familial oesophageal cancer candidate genes. We have also purchased state of art software program which aligns sequence data from the international gene data bases with our own data. This approach will enable use to identify the familial gene and then analyse it in sporadic aero-digestive tract cancers.

## **Visitors Comments**

*This is a well-equipped facility with good strategy for replacement of worn equipment. Lecture theatres state-of-the-art with excellent IT equipment. The building of small seminar rooms to support the new PBL curriculum was well planned during refurbishment.*

*The Visitors, however, recommend that more care should be taken to reinforce infection control procedures, especially the dress code in the clinic should be evaluated.*

*The Visitors also congratulate the School on acquiring a first rate IT teaching facility, the Srivastava Teaching Suite.*

*The Human Anatomy Resource Centre facility is excellent and a wonderful asset to the teaching programmes in dentistry.*



## Section 3: Organisational and Administrative Structures

- 3.1 The Liverpool Dental School is part of the University of Liverpool. It is one of four Schools within the Faculty of Medicine. Funding is through the national university system (Higher Education Funding Council for England - HEFCE) which provides formula-based allocations to Universities with weighting according to research performance. No HEFCE funding is available for clinical activity save for the clinical responsibilities of academic staff whose salaries (mostly) are wholly HEFCE-derived. Funding of the Dental Hospital is from NHS mechanisms, mostly from two sources - service agreements (contracts) between the Trust (within which LUDH is a Directorate) and the local Health Authorities whose populations we serve, and a special element that recognises the teaching role and its inherent excess cost over service-only provision. This element is Dental SIFT (Service Increment for Teaching) and it is administered via a detailed, closely monitored contract with the National Purchasing Unit (NPU).
- 3.2 The complex relationship between School and Hospital is illustrated in the diagram. The key element is the combination of Dean of Dental Studies (University appointment) with Clinical Directorship of the Dental Hospital (Trust appointment). In general in the UK, Deans and Clinical Directors are chosen from existing academic staff and Hospital Consultants. This function is additional to, rather than replacement of, existing duties. After serving for usually a fixed term of a few years, the individuals revert to their former status of professor or consultant.
- 3.3 We are part of a Trust-wide Patient Administration System which records patient details, clinics, appointments etc. The information is recorded routinely and collected automatically by the Trust Information Department. This then generates a variety of statistics concerning patient throughput, waiting lists etc, which is then presented and circulated for the information of managers and referring practitioners. The figures are also used to supply information to the National Purchasing Unit which enables them to provide feedback to us about costs, performance etc and serves as a basis for comparison between Schools for the purposes of national benchmarking.

Students have access to the following functions on the PAS:

- They can cancel their own appointments and send out cancellation letters.
- 5th years can book their own appointments and chairs.
- 4th years can book chairs but have to go through clerks to book patients in.

- All students can view their own clinics.
- Clerks can send messages to students via the PAS and vice versa.
- Students can look to see where a case note is booked out to (case note loan enquiry), but cannot book case notes out themselves.

The finance system is held centrally by the Trust and is not accessible by Directorate Managers at this stage.

### **Visitors Comments**

*The Visitors commend the organisational and administrative structure of the School and also thank the Administration for its patience in explaining these facilities to us. We were especially impressed by the leadership of Dean John Scott in dealing so effectively with the complex interrelationships of the University, NHS and Hospital.*

*The Visitors further support the efforts of the Dean to develop greater integration of the academic and clinical enterprises which will reduce overlapping and redundancy in both.*

Diagram from MVC available by direct application to the School.

## Section 4: Staffing

### 4.1 Staffing Levels

<b>Clinical Academic Staff</b>	<b>WTE</b>
Professors	5.0
Other Senior Non-Professorial Staff	9.0
Non Senior Full-time Staff	15.0
Part-time Whole-time Equivalent Staff	4.4
<b>Other Non-Clinical Academic Staff</b>	
Professors (wef 1.1.01.)	1.1
Senior	3.0
Non-Senior	4.0
Administrative/secretarial	6.5
Nursing staff	0.5
Dental Technicians	7.0
Research Technicians	6.3
Other (MLSO)	4.0
Remaining Staff (Dental Instructors)	4.00

#### Notes:

#### 1 **Honorary Staff**

75 honorary part-time clinical staff holding contracts elsewhere, eg with the Trust or the Community Dental Service, also have an honorary (ie unpaid) contract with the University for their contribution to the undergraduate course. Such input is expected as part of the NHS contract of employment. The range of contribution ranges from small eg 1 contact per year to a full teaching clinical session per week.

#### 2 **PBL Tutors**

19 PBL Tutors are contracted and paid for a fixed number of tutorial hours with the undergraduate students. These are professionals from outside the School's own staffing levels. The average contribution is 16 x 2 hour sessions per year, equivalent to 0.25 fte.

#### 3 **Production Laboratories**

The Production Laboratories are manned by Dental Technicians who are either Trust or University employees. Although both the Trust and the University contribute to the funding of the posts to varying degrees, most posts are funded 72.4% by the Trust and 26.7% by the University irrespective of where the employment contract is held. The Technicians produce laboratory work for both students and academic and hospital staff. A small amount of work is contracted out to commercial laboratories. The table shows only those with University contracts. In addition there are 14 technician posts with NHS contracts.

#### 4 **New Chair Appointment**

An agreement has recently been concluded to appoint to an additional Chair of Dental Science, together with two supporting academic posts by direct recruitment as part of the University's initiative to strengthen the research base of the Dental School.

#### 5 **Staff Associated with the Postgraduate Dean's Office**

Although holding University contracts and published in the School's staffing list, these staff do not contribute to the undergraduate course. They are functionally NHS appointments and the Unit is located elsewhere than LUDH. They are not therefore included in the Table or in the student/staff ratio below.

Student / Academic ratio: 7.0 : 1

## **Profile of Academic Staff Qualifications**

(list below)

### Dean of Dental Studies

J Scott, BDS, PhD, FDSRCS, FDSRCSEd, FRCPath

### Head of Department of Clinical Dental Sciences

M A Lennon, BDS, MDS, DPD, FDSRCSEd, Hon MFPHM

### Hospital Manager and University Administrator

M V Culkin, MA

### Chairman of the Board of Dental Studies

R S Ireland, BDS, M Phil, MFGDP(UK)

### Senior Tutor

E Varga, DMD, MDS, LDSRCS

### Course Directors:

BDS Course:	J Cunningham, BDS, MDS, FDSRCSEd
MDentSci Course:	R S Ireland, BDS, MPhil, MFGDP(UK)
Diploma in Dental Therapy Course:	R S Ireland, BDS, MPhil, MFGDP(UK)

### Admissions Tutor

G T R Lee, BDS, MDS, FDSRCPS

### Research Adviser

J Appleton, BSc, PhD, JP

### Dean of Postgraduate Dental Education and Training

J D Lilley, PhD, MSc, LDS, FDSRCPS, FDSRCS

### Regional Adviser in Vocational Training in General Dental Practice

C Parnell, BDS, DGDPRCS

### V.T. Advisers in General Dental Practice

M J R Williams, BDS, DGDPRCS  
G R Brown, MGDSRCS, LDSRCS

### Regional Adviser in General Professional Training

C Parnell, BDS, DGDPRCS

### Museum Curators (part-time)

J E M Cooper, LDSRCS, LDS  
S Cooper, BDS

## **DEPARTMENT OF CLINICAL DENTAL SCIENCES: ACADEMIC UNITS**

## **Academic Unit of Oral Biology and Biochemistry**

### Professor of Dental Science (with effect from 1.1.01)

G Embery, BSc, PhD, DSc

### Senior Lecturer in Oral Anatomy and Head of Unit

J Appleton, BSc, PhD, JP

### Senior Lecturer in Oral Biology

S M Higham, BSc, PhD, CBiol, MIBiol

### Senior Lecturer in Dental Science (with effect from 1.2.01)

R Hall, BDS, PhD

### Lecturers in Dental Science

J W Smalley, BSc, PhD  
Appointment in progress

### Lecturers in Oral Biology

P M Smith, BSc, PhD

### Senior Research Fellow (part-time) (Professor)

W M Edgar, BDS, BSc, PhD, DDDSc, FDSRCS

### Honorary Research Fellow

G S Ingram, FRSC, PhD

## **Academic Unit of Oral Diseases (Oral Medicine and Oral Surgery)**

### Louis Cohen Professor of Oral Diseases and Head of Unit

J Scott, BDS, PhD, FDSRCS, FDSRCSEd, FRCPath

### Professor of Molecular Oncology (Administrative Head of Oral Surgery)

J K Field, MA, BDS, PhD, MRCPPath

### Senior Lecturer in Oral Microbiology

M V Martin, BDS, BA, PhD, FRCPath, FFGDPRCS

### Senior Lecturer in Oral Medicine

E A Field, BDS, MDS, DDDSci, FDSRCS

### Senior Lecturer in Oral Pathology

J A Woolgar, BDS, PhD, FDSRCS, FRCPath

### Lecturer in Oral Pathology

A Triantafyllou, DipDS, PhD, MRCPPath

### Lecturer in Molecular Oncology



J M Risk, BSc, PhD

Lecturer in Oral Medicine

To be appointed

Lecturers in Oral Surgery

D J Holt, BDS, FDSRCPS

L J Dawson, BSc, BDS

Lecturer (part-time) in Oral Radiology and Consultant in Dental Radiology

P P Nixon, BDS, FDSRCS, DRRRCR

Clinical Lecturers (part-time)

E Varga, DMD, MDS, LDSRCS

R K Bennett, BDS

M P Forde, BDS, DGDP

N Kemp, BDS

C Whitworth, BDS, DGDP

Honorary Lecturer and Consultant in Dental Surgery

P Hardy, BDS, MScD, FDSRCPS

Honorary Lecturer and Associate Specialist in Dental Surgery

E Varga, DMD, MDS, LDSRCS

Honorary Lecturers and Visiting Consultants in Oral & Maxillofacial Surgery

J S Brown, BDS, FRCS, FDSRCS

J I Cawood, BDS, FDSRCS

J C Cooper, BDS, FDSRCSEd

D Richardson, BDS, FRCS, FDSRCS

S Rogers, BDS, MBChB, FDSRCS, FRCS

E D Vaughan, BDS, MBChB, FDSRCS, FRCSI, FRCS

Honorary Lecturer in Oral Surgery

C Balmer, BSc, BChD, FDSRCS

Honorary Clinical Tutor

P G Fitzsimons, BDS

Honorary Lecturer in Dental Anaesthesia and Consultant in Anaesthesia

M Davies, BSc, MBChB, FRCA, DA

**Academic Unit of Restorative Dentistry including Periodontology**

Professor of Restorative Dentistry and Head of Unit

A Watts, BDS, PhD

Senior Lecturer and Head of Periodontology, Deputy Head of Unit

K S Last, BDS, MSc, PhD, FDSRCS

Senior Lecturers in Conservative Dentistry

J Cunningham, BDS, MDS, FDSRCSEd  
L H Mair, BDS, PhD, FDSRCS, FADM

Senior Lecturer in Dental Prosthetics

D Adams, BDS, MDS, FDSRCSEd

Lecturer in Periodontology

E M Theil, BDS, MDS, MSc, FDSRCSEd

Lecturers in Conservative Dentistry

M J Gregory, BDS  
N M Jedynekiewicz, BDS, PhD  
N Martin, BDS, PhD (joint lectureship with Clinical Engineering)  
D K Urbanska, TD, BDS

Lecturer in Dental Prosthetics

P J Farrelly, BSc, BDS

Clinical Lecturer (part-time) in Periodontology

S Seddon, BDS, PhD, BSc

Clinical Lecturers (part-time) in Conservative Dentistry

C E Dewhurst, BDS, DGDPRCS  
J M Fletcher, LDSRCS  
C Hopkins, BDS, MGDSRCS  
K Kiely, BDS  
J W Lamb, BDS  
B S Marsden, BDS  
G Peers, BDS  
S E Rimmer, BDS, MSc, DGDP  
J B K Rose, BDS  
N V Steen, BDS  
J S T Willasey, BDS

Honorary Senior Lecturer and Consultant in Restorative Dentistry

A Milosevic, BDS, PhD, FDSRCSEd, DRDRCSSEd

Honorary Lecturers and Consultants in Restorative Dentistry

D G Hillam, BDS, MDS, FDSRCS  
R A Howell, BDS, FDSRCSEd  
L P Longman, BSc, BDS, PhD, FDSRCSEd  
T Nisbet, BDS, FDSRCSEd, DRDRCSSEd

Honorary Lecturer in Periodontology

C M Antrobus, BDS

Honorary Research Fellow (Professor)

R C Paterson, BDS, MDS, PhD

Honorary Clinical Tutors

P F Bardsley, BDS, FDSRCS

E L Boyle, BSc, BDS, PhD, FDSRCS

A J Summerwill, BDS, FDSRCS, MRDRCSEd

Dental Instructors

M G Duff (Laboratory Superintendent)

H Babakhan

L Blundell

C S Jones

**Academic Unit of Dental Public Health and Primary Dental Care**

Professor of Dental Public Health and Head of Unit

M A Lennon, BDS, MDS, DPD, FDSRCS, Hon MFPHM

Professor of Primary Dental Care

R S Ireland, BDS, MPhil, MFGDP(UK)

Senior Lecturer in Primary Dental Care (part-time)

R Harris, BDS, PhD

Lecturer in Primary Dental Care

Y-M Dailey, BDS, DGDPRCS, FDSRCS

Lecturer in Dental Public Health

C Ketley, BDS, MSc

Clinical Lecturers (part-time) in Primary Dental Care

C L Dailey, BDS, MDentSci

R Furness, BDS, DGDP

N O A Palmer, BDS, DGDPRCS

S D Speechley, BDS

Honorary Lecturer (Senior Lecturer in Clinical Psychology)

G M Humphris, BSc, PhD, M ClinPsychol

Honorary Lecturers in Dental Public Health

A M Jenner, BDS, MSc, DDPHRCS

B K Klause, BDS, MSc

K M Milsom, BDS, MSc, FDSRCS

E Rooney, BDS, MSc, DDPHRCS

C Temple, BDS, MSc, DDPHRCS

### Honorary Clinical Tutors

M Adam, BDS  
C Antrobus, BDS  
L M Arch, BDS, MDentSci  
C Arnold, BDS, MCDH, DDPHRCS  
S Cheater, MSc  
S F Clugston, BDS  
R A Cooper, BDS, MSc, FDSRCS  
C L Dailey, BDS, MDentSci  
F M Daley, BDS, MPH  
A E Dennison, LDS  
S Edge, BDS  
K M Fell, BDS, DOrth, FDS  
C D Flenley, BDS  
B Gallagher, BDS  
J Griffiths, BDS, MSc  
L Gough, BDS, MA, MSc  
A M Harte, BDS  
S Hassan, BDS  
C H Johnston, BDS, MSc  
D J Knott, BDS, MSc  
N J Marshall, BDS  
D C S Mills BDS, MSc.  
R S Moore, BDS, MSc  
T S Mysorekar, BDS, MDS  
S M O'Brien, BDS  
H Parsley, BSc(Hons), DipHP  
A J Riley, BDS, MSc  
J C Riley, BDS, MDentSci  
H M Sayer, BDS, MPH  
N J Steen, BDS  
S M Stewart, BDS  
M L Thayer, BChD, FDSRCS  
M N Thomas, BDS, BA  
M C Williams, BDS, MDS  
S Wood, BDS  
S M Woodward, MPH  
J M Wyatt, BDS  
D Young, BDS  
P J Young, BDS, MCDH, DDPHRCS

### Tutor Therapists

H Fraser, EDT, EDH, CertEd, FETC  
T F Sandom, DipDT

## **Academic Unit of Orthodontics and Paediatric Dentistry**

### Senior Lecturer in Paediatric Dentistry and Head of Unit

G T R Lee, BDS, MDS, FDSRCPS

Senior Lecturer in Orthodontics

N Pender, BDS, MScD, PhD, FDSRCSEd, DDORCPS

Lecturer in Children's Dentistry

S A Hibbert, BDS, FDSRCSEd

Lecturer in Orthodontics

Vacant

Honorary Lecturer and Consultant in Children's Dentistry

D R Llewelyn, BDS, FDSRCS

Honorary Lecturers and Visiting Consultants in Orthodontics

D E J Bowden, BDS, MDS, DDORCPS, FDSRCS

J E Harrison, BDS, MDentSci, FDSRCPS, MOrthRCS

J W Jones, BChD, FDSRCS, DOrthRCS, MOrthRCS, FDSRCS

T A Morris, BDS, FDS(Orth)RCS, MOrthRCS, MSc

S J Rudge, BDS, LDSRCS, MOrthRCS, FDSRCS

J I Russell, BDS, PhD, FDSRCPS, MOrth

Honorary Clinical Tutor in Orthodontics

J Husain, BDS, MSc, FDS(Orth)RCS, DOrth, MOrthRCS

**UNIVERSITY AND NHS STAFF INVOLVED IN THE BDS COURSE**

Department of Human Anatomy and Cell Biology

Dr C V Howard, MBChB, PhD, FRCPath

Dr R V Lynch, BSc, PhD

Dr C Richards, BSc, PhD

Department of Physiology

Professor G J Dockray, BSc, PhD (Head of Department)

Mr D V Gallacher, BSc, BDS

Department of Biochemistry

Dr R Barraclough, BSc, PhD

Dr J M Haslam, BA, DPhil

Department of Clinical Psychology

Professor P Salmon, BA, MSc, DPhil (Head of Department)

Dr G M Humphris, BSc, PhD, MClinPsychol

Ms S Kaney, BA(Hons), MClinPsychol

Department of Primary Care

Ms M Ling, MA, PGCE

Department of Medical Microbiology

Professor C A Hart, BSc, MB, BS, PhD, FRCPath (Head of Department)  
Dr D Baxby, BSc, PhD, FRCPath, FRSA  
Dr T J Neal, MBChB, MSc, DipRCPPath

Department of Immunology

Dr S E Christmas, MA, DPhil (Acting Head of Department)  
Dr C J Darroch, BSc, MBChB, MD, MRCP, MRCPath  
Dr B Flanagan, BSc, PhD  
Dr P J McLaughlin, BSc, PhD  
Dr P Vijayadurai, MB, BS, MRCP, MRCPath  
Dr G S Vince, BSc, PhD

Department of Medicine

Professor M J Jackson DSc, PhD, MRCPath (Head of Department)  
Dr S L Bloom, BA, MB, BS, MRCP  
Dr E S K Chua, BSc, MSc, MBChB, MRCP  
Dr R J Moots, BSc, MB, BS, PhD, MRCP  
Professor J M Rhodes, MA, MD, FRCP  
Professor G Williams, MA, MB, BChir, MD, FRCP  
Professor A Watson, MD, FRCP

Department of Surgery

Professor J P Neoptolemos, MA, MD, FRCS (Head of Department)  
Mr J Slavin, MBBS, BSc, FRCS, MS

Department of Pharmacology

Dr M G Barry, BSc, MBChB, BAO, BSc, PhD, PA  
Dr M Pirmohamed, MBChB, PhD, MRCP  
Dr P A Winstanley, MD, DTM&H, MRCP

RLBUHT Department of Anaesthesia

Dr D D Brice, MB, BS, MRCS, LRCP, FRCA  
Dr M Davies, BSc, MBChB, DA, FRCA  
Dr P D Jarvis, MBChB  
Dr G Lamplugh, MBChB, FRCAI  
Dr R Wenstone, MBChB, FFARCS

Department of Psychiatry

Professor D G Wilkinson, BSc, MPhil, MBChB, FRCP, FRCPsych  
(Head of Department)

Department of Pathology

Professor C S Foster, BSc, MD, PhD, MRCPath (Head of Department)  
Dr F Campbell, MBChB, MRCPath  
Dr L Forsyth, MBChB  
Dr T R Helliwell, MA, MD, FRCPath  
Dr C P Johnson, MBChB, MRCPath

Dr P A Smith, MBChB, FRCPath

RLBUHT Department of Nuclear Medicine

Dr M L Smith, BSc, MBChB, FRCP

Department of Clinical Chemistry

Dr E Manning, MB, BCh, BAO, MRCP, MRCPPath

Department of Haematology

Dr C H Toh, MD, MRCP, MRCPPath

Clatterbridge Hospital Oncology Unit

Dr P Clark, MA, MD, FRCP

Dr R D Errington, BSc, DCH, DMRT, FRCR

## **Visitors Comments**

*The Visitors see the staff of the Dental School as highly motivated, devoted and highly qualified educators. Team work in the introduction of the new curriculum was readily apparent and very healthy for future innovations planned for the School. In addition, the collaboration with the Medical School Faculty for the first year PBL course was appreciated. The Visitors commend the level of communication between the staff and the practitioners and suggest that these groups meet more frequently as the outcomes appear to be very productive.*

*The Visitors noted, after several conversations with junior faculty and postgraduate registrars and trainees, the complex nature of academic progress in this system.*

*It was also very clear to the visitors that there is a significantly reduced work force very seriously over-stretching the capacity of the faculty. In fact, the visitors were to deliver the programmes at such a high level of competency and at the same time meet the high intensity research goals of the institution.*



## Sections 5 - 16: The Dental Curriculum

### Structure and Content of the BDS Course

The BDS course has five principal aims:

- Aim 1** The acquisition and understanding of core theoretical knowledge.
- Aim 2** Awareness and understanding of the clinical and technical aspects of dental practice.
- Aim 3** The development of skills associated with the clinical and technical aspects of dental practice.
- Aim 4** Awareness and understanding relating to the professional practice of dentistry.
- Aim 5** The development of attitudes and skills necessary to cope with the changing demands of professional practice.

The aims and objectives are given in detail in Chapter 3 of the School of Dentistry Handbook. Copies will be available to Visitors in the base Room in the Dental Hospital.

To achieve the aims specified above, the BDS Course provides a broadly-based programme of instruction in basic medical/dental sciences, related medical clinical disciplines, preventive dentistry and clinical dental subjects which will adequately prepare the new graduate for modern dental practice as it evolves over the next several decades.

The course established in 1990 is given in Table 1.

From October 1997 the Dental School changed the style of teaching for the first three years of the BDS course. This makes the course more learner-oriented and embraces the method of Problem-Based Learning. The overall structure of the new course is given in Table 2.

The curriculum is governed by reference to the General Dental Council's (GDC) publication "The First Five Years". The course and its examinations are examined at regular intervals by the GDC and also by the QAA (Quality Assurance Agency for Higher Education). There is a comprehensive system of external examinations whereby all degree examinations include the presence of an examiner from a different (usually UK) dental school. This ensures fairness to candidates and adherence to accepted national standards.

There is a close relationship with the Faculty of Medicine whereby responsibility for teaching basic sciences (Anatomy, Physiology, Biochemistry) and medical subjects (Medicine, Surgery, Pharmacology etc) rests with the appropriate Faculty Departments. There is a strong emphasis on Behavioural Sciences which are taught in every year of the course, beginning with a Communication Skills Course in year 1. Students spend significant time including one day per week for the whole of the final year treating patients within the Community Dental Services (ie outside the Dental Hospital, under the supervision of Community Dental Officers) as part of the Health Centre Programme.

A compulsory elective study occurs at the end of Year 4. This is supported by the DENK Course (Development and Evaluation of New Knowledge) and takes the form of a research project for which a formal Report is mandatory.

**TABLE 1**

<b>BDS: Post-1997 (first 3 years)</b>		
	<b>Programme of study</b>	<b>Degree examinations</b>
<b>1<sup>st</sup> Year</b>	Introduction to basic medical sciences Communications skills Introduction to preventive dentistry Special dental module Introduction to operative dentistry	<u>1<sup>st</sup> BDS</u> Paper 1 - Knowledge based assessment - MCQ, extended matching items Paper 2 - Critical reasoning Paper 3 - OSCE/OSVE - Clinical dental skills incl. preventive dentistry & oral health, Communication skills
<b>2<sup>nd</sup> Year</b>	Oral science and medicine Core anatomy for dental students Clinical dentistry Intro to ethics and professionalism Local anaesthesia Intro to conservative dentistry Intro to periodontology Intro to children's dentistry Behavioural sciences Dental technology and prosthetics Preventive dentistry	<u>2<sup>nd</sup> BDS Part I</u> Oral biology, head & neck anatomy, Oral science & medicine Behavioural Science Paper 1 - core knowledge Paper 2 - critical reasoning Paper 3 - OSCE Oral - selected candidates
<b>3<sup>rd</sup> Year</b>	Oral science and medicine Clinical dentistry Conservative dentistry (Incl. operative dentistry) Periodontology Prosthetic dentistry Children's dentistry Orthodontics Oral surgery Preventive dentistry Oral radiography and radiology Materials science Intro to oral diseases	<u>2<sup>nd</sup> BDS Part II</u> Oral science and medicine Paper 1 - core knowledge Paper 2 - critical reasoning Paper 3 - OSCE Oral - selected candidates
<b>Opportunity to intercalate for a year to read for BSc Hons</b>		
<b>4<sup>th</sup> Year</b>	Oral diseases - integrating: Oral pathology and microbiology Oral medicine Oral surgery Oral radiology Clinical dentistry All specialties including integrated treatment planning, community practice, operative dentistry and dental technology Intro to implantology Materials science Sedation and general anaesthesia Development and evaluation of new knowledge Law and ethics	
<b>Period of elective study taken within period - July, August, September</b>		
<b>5<sup>th</sup> Year</b>	Clinical dentistry All specialties including integrated treatment planning and community practice Dental public health Forensic dentistry Special topic symposia General consolidation	<u>Final BDS</u> (a) Oral Health (b) Oral Diseases (c) Restorative Dentistry

Name of course Year One Integrated PBL Course Number: 5, 6.2, 6.3

## 1 INTRODUCTION

In September 1997 a new, integrated, PBL curriculum was introduced as the major element of Year One of the five year BDS course at the University of Liverpool. This first year course embraces the basic medical sciences and extends over two semesters, during which tutorial groups explore aspects of 11 modules that are common to the first year MB ChB course. Each module presents a clinically-relevant topic in a short case-scenario which students themselves investigate by determining learning objectives for four curriculum themes: structure and function; individuals, groups and society; population perspectives; and professional values and personal growth. Learning is supported by attendances at plenary sessions, resource centres, practical sessions and a study guide containing suggested reading and relevant web-based material. The PBL modular course is shared with first year medical students and occupies 80% of the first year course for dental students. In the first year, dental students also have courses in Communication Skills; an Introduction to Oral Health; and Clinical Dental Skills. The Special Dental Module (SDM) is a novel four week PBL module for dental students held at the beginning of the 2<sup>nd</sup> semester. The format of the SDM is similar to other PBL modules but includes practical sessions in conservative dentistry on manikins in the Operative Techniques Laboratory.

## 2 PRIMARY AIMS

- (a) Integration of the introductions to the basic medical sciences (including Anatomy, Biochemistry, Physiology, Genetics, Molecular Biology and Histology) in a way that fosters a spirit of enquiry and problem-solving.
- (b) Promotion of an holistic approach, with curriculum themes addressing public health, social and ethical issues as well as basic medical sciences.

## 3 MAIN OBJECTIVES

The main objectives of the Year One PBL Modular Course are to acquire core knowledge, to develop critical reasoning skills and to foster attitudes leading to:

- (a) an understanding of normal human structure, function, development and biological development
- (b) an appreciation of the scientific basis of the practice of dentistry

- (c) an awareness of the scope of practice of a healthcare professional, including social and public health issues and health promotion
- (d) an appreciation of professional qualities and behaviour in relation to ethics, multidisciplinary team-work, accountability and responsibility for continuing learning

#### **4 HOURS IN THE CURRICULUM**

In an integrated PBL course the hours in the curriculum spent on individual subjects cannot be determined accurately. Approximately 70% of the time in the Year One PBL Course is devoted to the basic medical sciences in the Structure and Function curriculum theme. The construction of the case-scenarios and the monitoring of structured feedback from students and tutors allows an appropriate and balanced content of the various subjects in the basic medical sciences to be maintained. In addition, revisitation of these subjects, as part of a spiral curriculum, is incorporated into other courses eg the Oral Sciences and Medicine course occurring after Year One.

#### **5 METHOD OF LEARNING / TEACHING**

Each of the 11 modules of the Year One PBL course presents a clinically-relevant topic in a short case scenario which prompts students to generate learning objectives related to the four curriculum themes. For each 2-3 week module, students must attend three PBL tutorials, chaired by a student, to share and discuss their learning experiences as progress is made on exploring the case scenario. The role of the tutor is largely to observe the working of the group and, informed by the content of the Tutor Study Guide, the opportunity is taken to guide and interact with the 6-8 dental students in the tutorial group. Learning is supported by a series of plenary sessions, activating interest in the topic as much as providing factual information; attendances at resource centres eg Human Anatomy Resource Centre (HARC); some practical sessions eg in Biochemistry and Physiology; and relevant web-based learning resources eg virtual posters.

#### **6 ASSESSMENT METHODS**

Formative Assessments, held at the end of the first semester, and Summative Assessments, held at the end of the year of study, have a similar format. In common with first year medical students, two written papers are sat. Paper I is a core knowledge-based assessment, including MCQs and EMIs, and Paper II assesses critical-reasoning skills by a series of problem solving questions. The results of the Formative Assessment are communicated to individual students privately to provide personal feedback and guidance. In the Summative Assessments (including Communication Skills and Clinical Dental Skills components) a pass or fail grade only is determined for each candidate for the complete

examination. Limited compensation is currently allowed between the components of the Summative Assessment.

## 7 **STRENGTHS**

The new curriculum incorporates a number of desirable features, including student-centred contextual learning and small group activities related to problem based learning within an integrated modular course. Furthermore, it enabled a measure of decongestion of the curriculum, with the intention of reducing the overload of detailed factual knowledge in favour of deeper understanding. Student perceptions are broadened by the inclusion, at an early stage of the degree course, of curriculum themes additional to the biological sciences relating to structure and function. A first year course shared by medical and dental students also has educational advantages by promoting the perception of membership of a healthcare team whose individual contributions have a common foundation in the biological sciences. The novel Special Dental Module embraces clinical dental skills but presents this early introduction to practical dentistry alongside the structure and function of dental tissues and the properties of restorative materials in a PBL format.

## 8 **WEAKNESSES**

This type of PBL course requires considerable commitment from school staff to undertake extensive and continual monitoring of the course, with the collation and dissemination of the outcomes of student and tutor feedback by questionnaires and meetings. This monitoring is necessary to determine that course objectives are met and to support students in their initial uncertainties about the PBL process and the depth of knowledge they require.

## 9 **INNOVATIONS AND BEST PRACTICES**

- (a) The particular model of PBL introduced at the University of Liverpool – which includes certain features eg plenary sessions that ‘support’ student learning.
- (b) The extent of the course monitoring and feedback processes – which promote course development.
- (c) The high level of close collaboration of medical and dental colleagues in course development and in the Assessment process.
- (d) The dissemination and publication of reports on aspects of the first year course for critical appraisal by colleagues involved in education.

## 10 PLANS FOR FUTURE CHANGES

Greater use of internet and intranet-based learning resources

### **Visitors Comments**

*The innovative approach to a supported PBL curriculum is commended. The methodology is well designed and parallels the medical curriculum for the first year. First educational research outcomes demonstrate that there is no difference in student knowledge between the traditional and PBL curricula. The students in the PBL curriculum also displayed superior communication skills.*

*The four objectives of the PBL curriculum supported the mission statement of the School.*



Name of course Anatomy Number: 6.1

## 1 INTRODUCTION

Responsibility for this teaching rests with the University's Department of Human Anatomy and Cell Biology (HACB). Timetabled classes in Anatomy and associated Histology occur in Years 1 and 2 of the course. In Year 1, students attend Phase 1 of the Human Anatomy Resource Centre (HARC) to study material relating to the PBL Modules of the Year 1 curriculum. This material introduces them to the major regions/systems of the human body and to general principles of anatomy. In Year 2, students focus their attention specifically on the structure and function of the Head and Neck, of the Thorax and of the Nervous System.

Additionally, further attention is paid to the anatomy of the abdomen and of the superficial venous system of the upper limb. Although the Anatomy Course in Year 2 currently stands alone and alongside the PBL course, the intention is to absorb its content into the PBL programme gradually over the next few years.

## 2 PRIMARY AIMS

The acquisition and understanding of core knowledge leading to:

- (a) An understanding of normal human structure, development, variation and function.
- (b) An appreciation of the importance of the scientific basis of clinical practice.

## 3 MAIN OBJECTIVES

To ensure that students gain a sound working knowledge of the functional anatomy of:

- the skull.
- the head and neck.
- the cranial nerves.
- the brain and spinal cord.
- the thorax.
- the superficial venous drainage of the upper limb.

#### 4 HOURS IN THE CURRICULUM

YEAR 1: Two hours per fortnight attendance in the HARC throughout Semesters 1 and 2

YEAR 2: Four hours per week throughout Semester 1; two hours per week in Weeks 1 - 2 of Semester 2, and four hours per week in Weeks 3 - 11 of Semester 2

#### 5 METHOD OF LEARNING / TEACHING

In Year 1, students develop their own learning objectives through the Problem-Based Learning process. Phase 1 of the HARC is designed to assist them in achieving objectives generated in the "Structure and Function" curriculum theme. The content of HARC aims to provide a "hands on" experience of anatomy rather than comprehensive, didactic instruction. It allows students directly to examine anatomical, histological and radiological material. This experience supplements and informs their learning from other resources ( eg paper-based; electronic media etc). All material presented in Phase 1 is supported by brief, but informative, text which seeks to ensure that students derive maximum benefit from examination of the specimens.

In Year 2 Semester 1 students receive two plenary sessions per week covering the structure and function of the Head and Neck. In addition, each student attends HARC Phase 2 each week for a two-hour practical session devoted to the region. Examination of material presented in these practical classes is supported by comprehensive instruction sheets which aim to assist students in the identification and understanding of relevant structures. Students are aware that supplementary self-learning is required and, to guide them in this, three "updates of learning outcomes" are issued during the Semester. Self-assessment questions are provided within the "updates". In Year 2 Semester 2 students undertake study of the Thorax and build upon knowledge gained in Year 1. Each student attends HARC Phase 2 for four two-hour practical sessions in Semester 2. Here their work is more obviously self-directed. Students are issued with instruction sheets for each class, but these essentially detail the competencies which should be achieved by the conclusion of the session (e.g. structures which should be identified; concepts which should be understood; mechanisms/processes which must be explained). A final two-hour practical session in Semester 2 covers the anatomy of the abdomen, building on knowledge gained in Year 1, and of the superficial venous drainage of the upper limb. Academic staff are present and available to students during all practical sessions. A plenary-based course in Neuroscience runs throughout Semester 2, each student attending two one-hour plenaries per week.

Ab initio, students are encouraged to use the HARC at times other than their timetabled slots. This allows further study of particular regions/topics, revisiting of topics and revision. All material in HARC Phase 2 is accompanied by comprehensive explanatory text.

## 6 **ASSESSMENT METHODS**

Year 1 students are assessed in common with Year 1 MBChB students via MCQ/EMI questions

Year 2 students are formally assessed within the Part 1 OSM examination. This tests core knowledge (Paper 1A), OSCE (Paper 1B) and Critical Reasoning (Paper 1C).

## 7 **STRENGTHS**

- (a) The mixture of teaching/learning methods employed in delivery of the course. Plenary sessions are popular with students as a vehicle for "scene-setting" and identification of major issues while the more student-directed practical classes allow individuals to progress (within limits) at their own pace.
- (b) The opportunity which the HARC provides for students to rehearse and revise topics in their own time. The existence of the HARC must be seen as a central strength of both the Year 1 and 2 courses.
- (c) The course is set within the Department of Human Anatomy and Cell Biology (HACB), rated 23/24 in the recent QAA (SPR) review. Dental students are served by highly experienced, dedicated members of the academic and technical staff
- (d) The generally excellent rapport generated between staff and students is a positive element, as is the good relationship between staff of HACB and colleagues in the Dental School

### **Visitors Comments**

*The Human Anatomy Resource Centre is used well to integrate the anatomy curriculum into the PBL programme and is a model for anatomy teaching and learning.*

Name of course Oral Sciences and Medicine Number: 7-8

## 1 INTRODUCTION

Following the introduction of a modular PBL course for the first year dental students, which is shared with the first year medical students, the Dental school wished to extend the PBL approach and continue the alignment of Medicine and Dentistry in the later years of the course. Thus a new, two year Oral Sciences and Medicine (OSM) course was implemented which integrated basic sciences as applied to Dentistry, including Oral Biology, Anatomy, Biochemistry and Physiology, with General Medicine, Surgery, Pathology, Immunology and Pharmacology and Microbiology. The delivery of this new OSM course closely parallels the experience of students in the first year modular PBL course. The course was introduced in September 1998 and occupies three days per week in the second year and two days per week in the third year of study.

## 2 PRIMARY AIMS

- (a) To integrate all the disciplines which formed a basis for the previously separate courses in Oral Sciences and Human Disease.
- (b) To allow students to study through the medium of PBL the scientific basis of Oral Diseases within the context of Human Diseases as a whole, and to build on the students' experience of PBL in the first year course.
- (c) Provide a foundation for the subsequent integrated ODC, including Oral Surgery Course

## 3 MAIN OBJECTIVES

The main objectives of the OSM course are to acquire core knowledge, develop critical reasoning skills and foster attitudes which will:

- (a) Promote an understanding of the structure and function of the tissues of the oral region in health and disease.
- (b) Produce an awareness of the interface and the inter-relationships between systemic and oral diseases.
- (c) Promote a broad knowledge of the clinical features and the management of systemic diseases and conditions particularly relevant to the practice of Dentistry.

## 4 HOURS IN THE CURRICULUM

In the integrated modular PBL OSM course the hours in the curriculum devoted to individual subjects are difficult to calculate accurately. However, in the second year the OSM course occupies three full days and

in the third year two full days of the week. Careful construction of the case scenarios and the monitoring of feedback from the PBL tutors facilitates the maintenance of an appropriate balanced curriculum embracing the individual Oral Science and Medicine disciplines referred to in the introduction.

## **5 METHOD OF LEARNING / TEACHING**

Each module of the OSM PBL course presents a clinically-relevant topic in a short case scenario which enables the students to determine learning objectives which are related principally to the themes of structure and function. In the second year OSM course students in groups of 6-8 attend three PBL tutorials chaired by a student. The first tutorial, in which the students explore the scenario, discuss their existing knowledge and determine their learning objectives, is observed by the Tutor. The second tutorial takes place after a suitable interval of days for information gathering and reflection and without the presence of the Tutor. The third tutorial, which takes place in the presence of the Tutor, is used to consolidate and share information gathered by the group and to deal with any outstanding issues. In the third year OSM course, as the students mature in the PBL process, only the first of the three tutorials is attended by the tutor and for the third tutorial all the groups gather in the presence of the course compilers to share their learning objectives and experiences and obtain immediate feedback concerning their approach to the module.

## **6 ASSESSMENT METHODS**

Formative assessments held at the end of the first semester in the second and third year OSM course have a similar format to the summative assessments held at the end of each year of the course. Two written papers and an objective structured clinical examination (OSCE) are set. Paper one assesses core knowledge and consists of questions in multiple choice (MCQ) and extended matching item (EMI) format, and for which the results are graded pass or fail. Paper two is an assessment of deeper knowledge and critical reasoning and requires the student to apply their knowledge and understanding of a text taken from the scientific or medical literature to provide short answers to a number of questions. The answers to these questions are double marked by the examiners. Candidates are graded pass, fail, merit or distinction and a viva voce examination may be used to determine the final mark. In the OSCE, a series of questions relating to core knowledge are set with respect to a series of projected images and the results are graded pass or fail. The results of formative assessments are communicated to students privately on an individual basis and provide an opportunity to discuss progress.

## **7 STRENGTHS**

The strengths of the PBL OSM course are that it:

- (a) Enjoys the educational advantages and opportunities offered by PBL.
- (b) Results from a fundamental revision of all the components of an earlier didactic course.
- (c) Instills in the student the perception of dental disease as part of the spectrum of human disease.
- (d) Utilises trained personnel from a wide range of educational backgrounds to contribute as PBL-trained tutors.
- (e) Emphasises the importance of critical reasoning skills by the use of relevant original and contemporary literature in its assessments.
- (f) Provides a variety of learning supports through a combination of tutorials, plenaries, clinico-pathological conferences and web-based materials.

### **Visitors Comments**

*This supported PBL programme extends through the second and third years of the course and has over 400 hours of content time. The Visitors commend the comprehensive nature of the programme.*

*The close collaboration between dental and medical colleagues in the management and development of the course in the assessment process is appreciated.*



Name of course Orthodontics Number: 9.1

## 1 INTRODUCTION

The purpose of the course in orthodontics at undergraduate level is to educate the qualifying dentist to be able to recognise the nature of a malocclusion and to refer that condition on to the appropriate source of specialist care. Accordingly, there is a period of academic input ahead of clinical application so that the student on arrival in the clinic, is equipped to understand the complex clinical issues involved in management of a growing patient with a malocclusion. The course at Liverpool requires students to undertake straightforward orthodontic treatments using both removable and fixed appliances.

## 2 PRIMARY AIMS

- (a) Recognise a malocclusion.
- (b) Make appropriate referral of a patient to a specialist treatment source. This would include being capable of avoiding making inappropriate referrals.

## 3 MAIN OBJECTIVES

- (a) an understanding of the effects of growth and development on the aetiology and management of a malocclusion.
- (b) an ability to conduct a structured relevant clinical examination.
- (c) an ability to conduct relevant diagnostic tests.
- (d) an ability to formulate a cogent policy for clinical management.
- (e) an awareness of the importance of provision of care on the basis of need.
- (f) an understanding of the risks and benefits attached to any management strategy.

## 4 HOURS IN THE CURRICULUM

55 hours of programmed academic teaching and, in addition, 24 hours across the course of personal clinical experience with a further 4 hours of observation of complex treatment at the chairside.

## 5 METHOD OF LEARNING / TEACHING

Academic teaching: a plenary in the second year introduces the concept of the effects of growth on a developing malocclusion. There is an introductory course in orthodontic techniques which includes discussions in groups of fifteen students on technical and clinical problems. The course lasts one week at the end of the second year. It also includes some lectures and sessions of individual guided computer assisted learning. During the third year, nine lectures cover the basic syllabus, which is revisited as a consolidation of five larger themes during the final year. There is a course on advanced techniques during the third year which deals with fixed and functional techniques. The course is similar in style to the introductory course.

Clinical teaching: this normally commences in the third year and concludes during the fifth year. Teaching is at the chairside on an individual basis and allows students to participate in the longitudinal management of more than one patient. Each student also has the opportunity to view and report upon the treatment of a complex case by a specialist trainee member of the hospital staff.

## **6 ASSESSMENT METHODS**

Assessment is by OSPE (Objective Structured Practical Examination), essay and assessment of written case reports.

Each orthodontic technique course is completed by a formative OSPE concerned with a diagnosis of clinical situations from case material. During both the third and fourth year there is a formative written examination. Orthodontics questions are included in the Final BDS examination part (a) (Oral Health) which comprises a written examination and a summative clinical test of diagnosis and treatment planning.

## **7 STRENGTHS**

- (a) The course covers all education aspects across the range of orthodontics including the most severe and complex conditions.
- (b) Students' experience continuity of care through their allocation to patients whose treatment extends over a period of more than 2 years with regular attendance at Orthodontic clinics. Thereby students come to appreciate the totality and variety of orthodontic treatment in a number of cases.
- (c) The participation in the undergraduate teaching programme by visiting consultants as well as by advanced NHS trainees on the specialist training programme provides a diverse richness of teaching input.

### **Visitors Comments**

*The Visiting Committee believes that the major aims and main objectives of this programme are minimally met, yet the anticipated acquisition of additional staff should improve this situation.*

Name of course Paediatric Dentistry Number: 9.2

## 1 INTRODUCTION

Whilst many of the principles in preventive dentistry will have been introduced during the first year preventive course, these themes are further developed in relation to paediatric dentistry in the later years. The course in paediatric dentistry commences at the end of second year with a short phantom head course in the care of the primary dentition. Clinical experience together with lectures and tutorials are maintained in years 3, 4, and 5 with increasing exposure to patient treatment particularly during the latter period where students are allocated to local community clinics. Also during this period students gain experience in nitrous oxide sedation.

## 2 PRIMARY AIMS

- (a) Awareness and understanding of clinical and technical aspects of dental practice.
- (b) The development of skills associated with the clinical and technical aspects of dental practice.

## 3 MAIN OBJECTIVES

To provide students with the skills required for:

- (a) history taking, clinical examination, diagnosis and treatment planning.
- (b) ability to advise patients (and parents) effectively on prevention.
- (c) the clinical and technical aspects of treatment sufficient to provide routine care for children.
- (d) the administration in all forms of local and regional analgesia in paediatric dentistry.
- (e) patient behavioural management.
- (f) effective communication with patients, parents and other professionals.

## 4 HOURS IN THE CURRICULUM

Hours treating patients:

one and a half hours per week in 3rd year  
one and a half hours per week in 4th year

four hours per week in 5th year

## **5 METHOD OF LEARNING / TEACHING**

The 3rd and 4th year students have a series of lectures covering paediatric dentistry. This is supplemented in 3rd year by having ten problem-based learning scenarios which expand on the lecture themes. Students will see patients in years 3, 4, and 5, and chairside teaching on a one-to-one basis is an important feature. In addition in year 4 and 5, students are taught to use nitrous oxide sedation alongside non-interventionist behavioural management techniques and each student will have treated approximately eight patients requiring nitrous oxide sedation by the end of the course.

## **6 ASSESSMENT METHODS**

Students are continuously assessed in their clinical activity and for each clinical attendance they are graded in aspects of professionalism, clinical skills, and knowledge. At the end of 3rd year there is a written examination and at the end of 4th year there is an OSCE covering all aspects of paediatric dentistry. The Final Examination in Oral Health always consists of at least one question in paediatric dentistry and the clinical examination also has a paediatric dentistry component.

## **7 STRENGTHS**

- (a) There is close integration with behavioural science teaching at the early stage of the course. In addition the problem-based learning during 3rd year provides consolidation of knowledge gained through didactic teaching.
- (b) There is also a close collaboration with the Community Dental Services through the Health Centre Programme (see Section 10) where the students have further opportunities to treat child dental patients under the supervision of Community Dental Officers.
- (c) Opportunity for treating patients under Relative Analgesia (N<sub>2</sub>O sedation).

### **Visitors Comments**

*The Visiting Committee appreciated the close co-operation between the intramural and extramural paedo programmes and the sharing of experiences by the students between them.*

*Closer co-operation between Paediatric Dentistry and Orthodontics, especially in maintenance programmes, is recommended.*

Name of course Public Oral Health and Preventive Dentistry Number: 10

## 1 INTRODUCTION

Preventive dentistry and dental public health appear in all three phases of the undergraduate course. In phase I there is close collaboration with the behavioural science course. In phase II clinical preventive dentistry appears in periodontology, children's dentistry and conservative dentistry. There is a major collaboration of both preventive and public health teaching in phase III via the Health Centre Programme.

The Health Centre Programme extends student's practical experience of dentistry within a primary care setting. Community dental officers supervise the students at the centres. The community dental service is a salaried service, which provides dental care to priority groups. In addition there is an intimate working relationship with dental public health practitioners.

## 2 PRIMARY AIMS

To enable the students to acquire core theoretical knowledge, leading to knowledge of the social, behavioural, environmental and economic influences on oral and dental health.

To develop an awareness and understanding of:

- (a) The practice of preventive care, including dental health education.
- (b) The concept of the profession's responsibility for the dental health of the whole community.
- (c) The changing patterns of health care delivery, particularly primary dental care.

## 3 MAIN OBJECTIVES

To understand the basic principles of dental public health and their application to measurement, prevention and control of the important oral and dental disease.

To understand the principles of primary care including its relationship to the primary health care team.

To understand the differences between Health Education for a community and that for the individual.

To experience the practical implementation of the principles of behavioural science and preventive dentistry.

#### 4 HOURS IN THE CURRICULUM

Phase I	(Year 1)	0.5 days per week
Phase II	(Years 2-4)	Integration with clinical teaching (see # section 5)
Phase III	(Years 5)	1 day per week over 30 weeks

#### 5 METHOD OF LEARNING / TEACHING

Five methods are employed

Lectures

Small groups

Problem Based Learning

Project reports

Clinical Practice # (In **Phase II**, 3 to 4.5 days per week are spent in clinical activity, during which skills are developed in preventive dentistry).

#### 6 ASSESSMENT METHODS

Formative assessments are undertaken during **Phase I** these include:

Short answer paper

Presentations

Summative assessments are undertaken:

At the end of Phase I in:

Behavioural Sciences written paper

OSCE (objective structured clinical examination)

During Phase II in:

Communication Skills Examination.

During Phase III

Assessment of Health Centre projects, together with a viva.

End of Phase III final BDS

Written examination paper

#### 7 STRENGTHS

The Health Centre Programme: this provides a real working environment to encourage professional development. It enables the student to consolidate and develop skills in the provision of dental care for a range of



patients, whilst giving an insight into the responsibilities of practice management.

### **Visitors Comments**

*The Committee complements the commitment of the Department to the philosophy of Dental Public Health and the mission expanding the involvement of the Dental School in these activities.*

*The Visitors were concerned about the lack of the application of Preventive Dentistry principles throughout the School's clinical programmes.*

Name of course Conservative Dentistry Number: 11.1

## 1 INTRODUCTION

There are three laboratory based didactic teaching courses as follows:

1<sup>st</sup> Year: Clinical Dental Skills course – plastic restorations and endodontics (Spring and Summer term) 34 days includes Special Dental Module.

3<sup>rd</sup> Year: Intermediate Operative Dentistry course (Crown work) (Summer term) 10 days.

4<sup>th</sup> Year: Senior Operative Dentistry course (Bridgework) (Summer term) 10 days.

From the 2<sup>nd</sup> Year onwards, students engage in clinical practice, undertaking dental treatment for NHS patients of LUDH under supervision.

## 2 PRIMARY AIMS

- (a) To develop in students an awareness and understanding relating to safe and effective patient care.
- (b) To develop in students the skills necessary for the clinical and technical aspects of dental practice.

## 3 MAIN OBJECTIVES

By the end of the course, students should:

- (a) Be able to take a medical and dental history in relation to the practice of restorative dentistry.
- (b) Be able to diagnose commonly encountered oral and dental lesions and be able to plan their management and treatment in an integrated fashion.
- (c) Be able to advise patients of their oral and dental health needs and explain this to them.
- (d) Be able to restore teeth with plastic restorations, crowns, post crowns, veneers and inlays in the context of total oral care.
- (e) Understand the principles of simple bridgework and be able to undertake the provision of simple bridges.

- (f) Understand the relationships between the clinical and technical aspects of restorative dentistry and be able to prescribe to the technician.
- (g) Understand the properties and behaviour of materials used in the provision of restorative dentistry.
- (h) Appreciate their limitations in relation to the practice of restorative dentistry and the need for further study and training within a more general programme of continuing education.

#### **4 HOURS IN THE CURRICULUM**

The didactic courses have already been listed. Clinical practice is integrated in the course, but an average of two sessions (half days) per week will be spent treating patients in conservative clinics over each of the clinical years of the course.

#### **5 METHOD OF LEARNING / TEACHING**

Throughout the course teaching is by lectures, practical and clinical demonstrations, and use of audio-visual material (CAL, videos *etc*), but overwhelmingly the emphasis is on one-to-one teaching at the chairside as students undertake treatment of patients. In the first year problem based learning techniques are used to introduce the students to the essential knowledge and understanding which underpins the provision of dental conservation and thereby to enable them to commence the 4 week practical course in operative techniques that comprises the clinical dental skills component of the Special Dental Module.

#### **6 ASSESSMENT METHODS**

Continuous assessment is used to assess practical work both in the clinics and in the Operative Techniques laboratory. Competency based assessment is now used. Each item is graded and entered on the computer records. At the end of the 1<sup>st</sup> Year, students undergo a manual dexterity test to confirm safety and suitability to go forward to treat patients on clinics. In the 3<sup>rd</sup> Year clinical practical test are undertaken on patients and a written test is set in the 4<sup>th</sup> Year. The diagnostic and treatment planning abilities of students are tested in the Finals BDS examinations.

#### **7 STRENGTHS**

The students have considerable experience in treating patients during the course to prepare them for independent practice. The continuous assessment processes are thorough and work well generally. Vocational trainers report that our students entering practice have developed high standards in their abilities for operative treatment and patient care.

### **Visitors Comments**

*The Committee was impressed with the new clinical and laboratory facilities and the evidence-based nature of the course. There appears to be no rationale for interrupting the pre-clinical experiences into three separate courses. The Visitors recommend that the staff review the concept of comprehensive patient care throughout the students' clinical experience.*

Name of course Endodontics Number: 11.2

## 1 INTRODUCTION

There is not a specific course to teach endodontics in the curriculum as teaching is integrated with Restorative Dentistry. Simple endodontics is taught in the 1<sup>st</sup> Year Clinical Dental Skills course and molar endodontics is taught for six days in the autumn term of the 2<sup>nd</sup> Year. From the 2<sup>nd</sup> Year onwards the students engage in clinical practice in which they gain experience of endodontics on NHS patients at the LUDH whom they treat under supervision.

## 2 PRIMARY AIMS

- (a) To develop in students awareness and understanding relating to safe and effective patient care.
- (b) To develop in students skills relating to the clinical and technical aspects of practice.

## 3 MAIN OBJECTIVES

By the end of the course, students should be able to:

- (a) Understand the anatomy of teeth and root canals.
- (b) Diagnose commonly encountered endodontic lesions and be able to plan their management and treatment in an integrated fashion.
- (c) Provide relief of symptoms for symptomatic endodontic lesions.
- (d) Undertake pulp capping procedures.
- (e) Carry out suitable access preparations for endodontic treatment.
- (f) Carry out appropriate root canal debridement and preparation techniques.
- (g) Carry out appropriate root canal obturation techniques.
- (h) Restore endodontically treated teeth.
- (i) Understand the principles of new sophisticated techniques such as rotary preparation and thermoplastic obturation.
- (j) Understand the principles of endodontic surgery and retrograde root fillings.

#### **4 HOURS IN THE CURRICULUM**

The didactic courses have already been listed. Clinical practice is integrated in the course but an average of two sessions (half days) per week will be spent treating patients in conservative clinics, some of which will involve endodontics.

#### **5 METHOD OF LEARNING / TEACHING**

Teaching is by lectures, practical and clinical demonstrations and use of audio-visual material (CAL, videos *etc*).

#### **6 ASSESSMENT METHODS**

As in Restorative Dentistry generally, continuous assessment is used to assess practical work. Competency based assessment is now used.

#### **7 STRENGTHS**

The students have extensive patient treatment contact during the course. Many suitable endodontic patients are available. A new endodontic surgery with full facilities is now available.

### **Visitors Comments**

*The Visitors believe the course in Endodontics is integrated too early in pre-clinical training and as part of an integrated clinical experience. We recommend that Endodontics be integrated into a comprehensive dental care programme at a later time in the curriculum.*



Name of course Prosthodontics Number: 11.3

## 1 INTRODUCTION

Removable prosthodontics is taught in two courses in this School. Removable partial prosthodontics is taught in the second year whilst complete denture prosthodontics is taught in the fourth year.

## 2 PRIMARY AIMS

- (a) To develop a thorough understanding of removable partial dentures and their interactions and relationship with the other aspects of restorative dentistry.
- (b) To provide the student with the academic and clinical knowledge to provide a complete denture prosthodontic service for their patients.

## 3 MAIN OBJECTIVES

By the end of the courses the student will have:

- (a) The requisite academic knowledge and understanding to develop their clinical skills in removable denture prosthodontics in order to provide a prosthodontic service for their patients.
- (b) The knowledge to assess and refer those patients for whom a higher level of specialist prosthodontics is needed.
- (c) The knowledge to assess and refer appropriately those patients who may benefit from an oral and maxillo-facial surgical consultation prior to prosthodontic treatment.
- (d) Familiarity with the laboratory stages necessary for the construction of removable prostheses, the ability to understand the problems faced by the dental technician and the ability to communicate with the dental laboratory.
- (e) Expertise in prosthodontics integrated within other disciplines in dentistry.
- (f) An integrated approach to treatment planning in restorative dentistry.
- (g) A problem solving approach to patient treatment.
- (h) The communication skills necessary to relate to patients with removable prosthodontic problems.

#### **4 HOURS IN THE CURRICULUM**

Academic instruction (lectures, practicals, demonstrations etc):

Second year - 22 days (154 hours).

Fourth year - 8 days (56 hours).

Clinical experience:

Overall, total hours providing prosthodontic treatment for NHS patients under supervision - 160 hours.

#### **5 METHOD OF LEARNING / TEACHING**

The second year course is taught by a combination of lectures, clinical tutorials and clinical and technical demonstrations followed by the students carrying out technical procedures themselves. In third year they undertake the treatment of patients requiring removable partial dentures supported by the clinical teaching staff.

The fourth year course is a series of lectures/tutorials and the undertaking of technical procedures related to complete denture construction. Self-access videotapes and Computer Assisted Learning (CAL) programmes are part of the departments facilities. Final year students attend consultation clinics in removable prosthodontics and implant assessment.

#### **6 ASSESSMENT METHODS**

An OSCE is undertaken at the end of each course.

Students are required to complete the treatment of 12 patients requiring removable prosthodontics for eligibility to the Final BDS examination. Prosthodontics is examined in Final BDS part (c), Restorative Dentistry, which includes written papers, clinical examination of a patient and oral examinations.

#### **7 STRENGTHS**

- (a) Clinical demonstration in small group (10) tutorials of real patients with the students carrying out technical exercises on prepared casts related to similar removable partial denture scenarios.
- (b) Patient based scenarios run throughout the course.
- (c) Small group (10) technical instruction.

### **Visitors Comments**

*The Visitors understand that students are not responsible for the professional laboratory work. It is recommended that prosthetics be integrated into a more prevention-oriented comprehensive patient care philosophy.*

Name of course Periodontology Number: 12

## 1 INTRODUCTION

The course in Periodontology is integrated into Restorative Dentistry. Lectures are delivered in Second, Third and Fourth Years. Scaling techniques are taught at the beginning of Third Year and students then attend the clinic to treat patients for one session per week for two terms, concentrating on initial periodontal therapy. Tutorials are held throughout the first two terms. During the remainder of their course students attend the clinic on a selective basis to treat patients requiring more major periodontal treatment such as periodontal surgery, occlusal therapy and maintenance treatments. Treatment planning for these patients takes place in a dedicated Restorative Dentistry Treatment Planning Clinic. Before sitting their Final BDS Examination students are required to have completed treatment for three such patients.

## 2 PRIMARY AIMS

- (a) The acquisition and understanding of core theoretical knowledge in periodontology sufficient to practice in the primary care sector.
- (b) The development of skills associated with the clinical and technical aspects of dental practice in relation to periodontics.

## 3 MAIN OBJECTIVES

To enable students to acquire core theoretical knowledge, leading to:

- (a) an appreciation of the importance of the scientific basis of clinical periodontics.
- (b) an understanding of the structure and function of the periodontium.
- (c) a broad knowledge of the processes, clinical features and principles of the management of periodontal diseases.

To develop in students skills relating to the clinical and technical aspects of dental practice in relation to periodontics:

- (a) the acquisition of skills in history-taking, clinical examination, diagnosis and treatment planning.
- (b) the ability to advise patients effectively on prevention.
- (c) the acquisition of skills in the clinical and technical aspects of periodontics sufficient for routine treatment.

(d) the acquisition of patient management skills.

To develop in students awareness and understanding relating to professional practice:

(a) an awareness of the dental team approach.

(b) an understanding of the practice of preventive care, including dental health education

#### 4 **HOURS IN THE CURRICULUM**

- 30 hours lectures
- 20 hours tutorials
- 10 hours practical classes
- clinical practice: approx. 3 hours (ie 1 x ½-day session) per week throughout 3<sup>rd</sup>, 4<sup>th</sup> & 5<sup>th</sup> years, each of which extend over 42-44 weeks.

#### 5 **METHOD OF LEARNING / TEACHING**

Periodontology is taught by a range of teaching and learning methods. Lectures cover core topics and are delivered at times in the course appropriate to the clinical needs of the students. Tutorials permit further exploration of difficult topics or those that are not well covered in undergraduate textbooks. Students are expected to be proactive in reading textbooks and references to original articles are provided when appropriate.

Much of the teaching of periodontics is carried out in the clinic on a one-to-one basis and is centred around patient treatment. Students also attend diagnosing clinics for referred patients to expose them to a wide range of complex patients.

#### 6 **ASSESSMENT METHODS**

Formal formative assessment (case presentation) occurs towards the end of both 3<sup>rd</sup> and 4<sup>th</sup> years and a written terminal examination is held in 4<sup>th</sup> year. Progress towards the acquisition of clinical requirements is monitored, on an individual basis, throughout 4<sup>th</sup> and 5<sup>th</sup> years. The summative assessment of periodontology is incorporated into the Final BDS Examination in Restorative Dentistry.

#### 7 **STRENGTHS**

The course in Periodontology is integrated into Restorative Dentistry whilst at the same time presenting the subject as a distinct clinical entity. This is achieved by having enthusiastic and committed full-time academic staff,

who are Specialists in Periodontics, organising and delivering the didactic teaching. The course is organised in such a way that the acquisition of knowledge is tailored to the clinical needs of the students at various stages of their undergraduate course. Where possible, total patient care is encouraged and students usually treat their patients over many months, if not years. There are good clinical facilities and an adequate supply of patients.

### **Visitors Comments**

*The programme is well structured and integrated into the Restorative Dentistry treatment programme. The Visitors encourage the inter-action of dental students and dental hygiene students in the management of patient care.*

Name of course Oral Surgery Number: 13.1

## 1 INTRODUCTION

The Oral Surgery course is closely linked to the integrated Oral Diseases course in the School of Dentistry in Liverpool. The Oral Surgery course is taught over four years, commencing with lectures in local anaesthesia in the second year. In the third year, the students are tutored on extraction techniques and attend a short 'hands on' course on alveolar surgery (pigs head course). In the fourth year, the students build on the experience of the 3<sup>rd</sup> year. The 4<sup>th</sup> year students have two weeks dressership, one week at the LUDH, undertaking 20 extractions and MOS's (two as assistant and two as operator). In addition they attend maxillofacial clinics, daybeds, IV sedation and a Dental A&E session. In week two, the students attend the Maxillofacial Unit (MFU) at Aintree Hospital for MOS sessions, clinics and major theatre cases. On separate rotations these students attend GA sessions. In the 5<sup>th</sup> year, the students consolidate their experience in Oral surgery with 10 extractions, 2 MOS's (assistant and as operator). The students are rotated through 2 weeks of Dental A&E, four days in casualty at the RLUH and one week at the MFU in Aintree.

## 2 PRIMARY AIMS

The aim of this course is to provide sufficient tuition and experience for the students to carry out dental extractions and simple dental-alveolar surgery. In addition we wish to provide students with experience in chair GA, IV sedation, Dental Hospital A&E and casualty at the RLUH, as well as attending maxillofacial clinics and theatre sessions.

## 3 MAIN OBJECTIVES

- (a) Competency in giving Local Anaesthetics.
- (b) Competency in taking a medical history, examination of a patient, taking consent, setting up a surgery and cross-infection techniques.
- (c) Competency in extracting teeth under LA or GA and in removal of uncomplicated roots.
- (d) Competency in assisting in MOS.
- (e) Competency in the management of simple post-operative complications.
- (f) Competent knowledge and experience of IV sedation, especially patient assessment and dealing with emergencies.



- (g) Awareness of the range of maxillo-facial surgery and the modern principles of trauma management.
- (h) Awareness of which cases should be referred to secondary care sector.

#### 4 **HOURS IN THE CURRICULUM**

Year 2 - None  
Year 3 3hrs/ fortnight  
Year 4 1hr / week  
Year 5 2 hrs/ week

#### 5 **METHOD OF LEARNING / TEACHING**

- (a) Formal lectures
- (b) Tutorials on clinics
- (c) Demonstrations (ie Extraction techniques)
- (d) Short courses (MOS –hands on Pigs head)
- (e) Chair side teaching
- (f) Recommended Texts
- (g) Web based learning / self assessment
- (h) Lecture handouts – available on the Web ([WWW.liv.ac.uk/~luds](http://WWW.liv.ac.uk/~luds))
- (i) Log Books - involves recording all patients seen / treated on the Oral Diseases Course.
- (j) Electives in 4<sup>th</sup> year
- (k) Special Topic Symposium in 5<sup>th</sup> year
- (l) Attachment to the MFU at Aintree for experience of Maxillofacial Surgery.
- (m) Attachment to the A & E Department at the Royal Liverpool and Broadgreen University Hospital for experience of general emergencies (4 days plus 2 evenings).

#### 6 **ASSESSMENT METHODS**

- (a) 3rd year OSCE and written MCQ and Short answer paper

- (b) 4<sup>th</sup> year Two Oral diseases Assessments
- (c) 5<sup>th</sup> year Oral diseases Assessment and Final BDS exam.

## 7 **STRENGTHS**

The Oral Surgery teaching is closely co-ordinated with the integrated course in Oral Diseases (ODC). This involves considerable patient contact time. The students have a readily available Web based learning resource. The students have excellent opportunities to practise their diagnostic skills in Dental A&E and also are exposed to one of the leading maxillofacial units in the country where they see a large number of H & N cancer patients at pre- and post-operative stages. The students gain considerably from the clinical experience of our part-time clinical staff and all of the full time oral surgery staff are research active. Thus the students have excellent academic and clinic teachers, including direct input by a Consultant Maxillofacial Surgeon who co-ordinates the teaching on the MFU.

### **Visitors Comments**

*The Oral Surgery programme is well organised and well integrated with the MFU in Aintree. The students are well experienced upon graduation in extractions and simple MOS. It is recommended that appropriate staff discuss the efficacy of the use of IV sedation.*

Name of course Oral/Dental Radiology and Number: 13.2  
Radiography

## 1 INTRODUCTION

The course involves teaching in radiation protection, practical radiography and radiological interpretation. It is spread over the 2<sup>nd</sup>-5<sup>th</sup> years to complement the teaching in other parts of the curriculum. The teaching begins at the end of the 2<sup>nd</sup> year with a one day course in radiation protection given by a specialist medical physics department. The students then move on to a radiography block attachment in the 3<sup>rd</sup> year and tutorials in radiological interpretation in the 4<sup>th</sup> and 5<sup>th</sup> years.

## 2 PRIMARY AIMS

- (a) To achieve an understanding of the principles of radiation protection.
- (b) The development of safety and competence in dental radiographic techniques and radiological interpretation.

## 3 MAIN OBJECTIVES

- (a) To be aware of the concept of “justification” with regard to the prescription of radiographs.
- (b) To achieve a level of competence in radiographic techniques.
- (c) To be aware of the concept of “ optimisation”, to minimise the risk to the patient.
- (d) To be able to evaluate the quality and diagnostic value of radiographs and be able to suggest remedial action where this is required.
- (e) To achieve a level of competence in radiological interpretation appropriate to general dental practice.

## 4 HOURS IN THE CURRICULUM

Lectures	13 x 1 hour
Radiology Tutorials	5 x 1 hour
Radiography Clinical Practice	23 x 3 hours

## 5 METHOD OF LEARNING / TEACHING

The principles of radiation protection, radiographic technique and radiological interpretation are given in a series of lectures. This teaching

is then consolidated by practical radiography sessions and film-viewing tutorials.

Students attend a block radiography practical session in groups of three. The various radiographic techniques are first demonstrated by one of the radiographers, following which the students then practise the techniques themselves under close supervision. During the block attachment it is expected that the student will have gained experience in all the common dental radiographic techniques. Following this they are then able to consolidate their knowledge by taking any radiographs required during the treatment of their restorative patients. These films are usually taken on the restorative clinic under the supervision of the clinical lecturer in charge.

Radiological film interpretation is taught in groups of four, starting with radiographic anatomy and progressing through common dental diseases to maxillofacial pathology and trauma.

## **6 ASSESSMENT METHODS**

Students have log books to record the number and variety of films taken. They also have assessment sheets on which a grade and comments are given following the radiography practical sessions and radiology tutorials. No targets are given for the number of films to be taken during the course, but evidence of a sound experience in the range of projections commonly used in general dental practice would be expected together with an indication, from the radiographers' gradings, that these had been carried out successfully.

## **7 STRENGTHS**

The students have a one week block attachment to the Radiography Department in the 3<sup>rd</sup> year to enable them to get a good understanding of radiographic techniques. The block nature of this attachment is a particular advantage as it allows students to gain a thorough understanding of the basic radiographic techniques which they can then go on to use during the treatment of their patients in other departments.

Tutorials in radiographic interpretation are given later in the 4<sup>th</sup> and 5<sup>th</sup> years to parallel the teaching of oral pathology in the oral disease course. These tutorials aim to develop the student's diagnostic skills and aim to be student centred in their approach.

### **Visitors Comments**

*The Committee noted the appointment of a new Consultant who should help to improve the access of students to Radiology teaching, especially through a more integrated approach.*

Name of course Oral Medicine Number: 14.1

## 1 INTRODUCTION

The Oral Medicine course forms part of the integrated Oral Diseases course in the School of Dentistry in Liverpool. The Oral Diseases course is mainly in Year 4 and comprises lectures and practicals in Oral Pathology and Microbiology, Oral Medicine and Oral Radiology. The Oral Diseases Course also includes an introductory module (Year 3).

## 2 PRIMARY AIMS

The aim of this course is to enable students to understand diseases of the orofacial region ie their causes, mechanisms, sequelae and principles of management.

## 3 MAIN OBJECTIVES

- (a) The acquisition of skills in history-taking, clinical examination, diagnosis and management planning.
- (b) The diagnosis, prevention and treatment of orofacial disease and disorders.
- (c) The oral manifestations of systemic disease.
- (d) The influence of systemic disease and therapeutics on dental treatment.
- (e) The principles of prevention, diagnosis and management of oral cancer and pre-cancer.

## 4 HOURS IN THE CURRICULUM

Academic instruction in Oral Medicine cannot be dismembered from the ODC which occupies approximately 2 hours per week over 4<sup>th</sup> and 5<sup>th</sup> Years. Attendance at Oral Medicine Clinics is as follows:

- (a) Year 4: 12 hours.
- (b) Year 5: 12 hours (includes at least 3 hours at an elective Special Clinic - Dry Mouth, Liaison Psychiatry or Renal Transplant).

## 5 METHOD OF LEARNING / TEACHING

- (a) Formal lectures.
- (b) Tutorials on clinics.

- (c) Chairside teaching.

## 6 **ASSESSMENT METHODS**

- (a) Assessments on the clinic during dresserships and three compulsory written assessments in Years 4 and 5, as part of the integrated ODC course.
- (b) Progress and attendance are monitored by use of a logbook for the whole ODC (including Oral Surgery).
- (c) Written papers and clinical examination of patients in the Oral Diseases section of Final BDS.

## 7 **STRENGTHS**

The Oral Medicine Course is part of an integrated course in Oral Diseases. Thus the underlying pathology and microbiology are studied in direct relation to the clinical application of oral medicine. Students are given the opportunity to see and examine patients with a wide range of orofacial conditions in the Liverpool Oral Medicine Unit, which has an exceptionally large case mix and volume and is recognised as a leading centre in the UK. They also have an opportunity to attend specialist multidisciplinary clinics.



### **Visitors Comments**

*Oral Medicine appears to be a well-organised programme with a modern curriculum based upon research. The programme is well integrated with Oral Pathology and Oral Surgery.*

Name of course Oral Pathology Number: 14.2

## 1 INTRODUCTION

The Oral Pathology Course forms part of the integrated Oral Diseases Course (ODC). The ODC comprises lectures and practicals in Oral Pathology, Oral Microbiology, Oral Medicine and Oral Radiology and begins towards the end of Year 3 with an introductory module covering caries and periapical pathology and periodontal disease. The main part of the Course runs throughout the 4<sup>th</sup> Year and covers developmental anomalies, odontogenic cysts and tumours, mucosal and dermatological diseases, infections, oral cancer and precancer, diseases of bones and salivary glands. Knowledge is consolidated in the Final Year by a series of clinical attachments and seminars. The course builds on the knowledge base established in the OSM course of Year 2-3.

## 2 PRIMARY AIMS

The aim of the Oral Diseases Course is to enable students to acquire core theoretical knowledge leading to an understanding of diseases of the oral region, their causes, mechanisms and sequelae.

## 3 MAIN OBJECTIVES

To develop in students:

- (a) an understanding of the pathogenetic mechanisms of the common dental and orofacial diseases and disorders and knowledge of their presentation, diagnosis, natural history, sequelae and prevention.
- (b) an appreciation of the importance of the scientific study of diseases as the basis of clinical practice.
- (c) an awareness of how systemic diseases may present in the oral region or influence the progress of dental / oral diseases.
- (d) an understanding of the principles of prevention, diagnosis, natural history and management of oral cancer and precancer.
- (e) knowledge of the macroscopic and microscopic features of the common lesions submitted to an oral pathology routine diagnostic service.
- (f) understanding the normal oral flora, the factors which change it, and principles of infection and treatment in compromised patients..

- (g) understanding of the natural defence systems, their relationship to oral infection and the range of oral micro-organisms that cause oral disease.
- (h) understanding of the principles and practicalities of aseptic technique, cross infection and its control in the dental surgery.
- (i) understanding of the microbiological rationale for the use of antimicrobial therapy for therapy and prophylaxis.
- (j) knowledge of the social, behavioural and environmental influences on dental and orofacial diseases.

#### **4 HOURS IN THE CURRICULUM**

Academic instruction in Oral Pathology cannot be dismembered from the Oral Diseases Course which occupies approximately 2 hours per week in the 3<sup>rd</sup>/4<sup>th</sup> years. Attachment of students, in pairs, to the routine Oral Pathology Diagnostic Service in the 5<sup>th</sup> year occupies approximately 15-18 hours and the Clinicopathological conferences occupy approximately 6 hours.

#### **5 METHOD OF LEARNING / TEACHING**

- (a) Formal lectures.
- (b) Tutorials / practicals
- (c) Clinicopathological conferences
- (d) Attachment to the routine Oral Pathology Diagnostic Service
- (e) Recommended textbooks and scientific papers and lecture summaries.
- (f) Web-based learning
- (g) Essay project (Microbiology)

#### **6 ASSESSMENT METHODS**

Assessments are held in December and June/July of the 4<sup>th</sup> year, and in January of the 5<sup>th</sup> year. These include short answer papers, MCQs, examination of clinical material including photographs, radiographs and histological slides, and short essay/management questions. Viva voce examinations are held for candidates who do not reach a satisfactory standard in the written examination. During their oral pathology attachment, students are required to write up a case report and receive

and respond to constructive criticism. Although these assessments are predominantly formative, providing feedback to students and staff, there is a summative element in that it is a requirement for entry to Final BDS that all assessments have been satisfactorily completed.

## 7 **STRENGTHS**

- (a) The Final BDS includes an Oral Diseases section in which oral microbiology and oral pathology are specifically included.
- (b) The integration of oral pathology, oral microbiology, oral medicine and oral radiology into a single course is a paramount feature making for a realistic learning experience.
- (c) Good use of material submitted to the Oral Pathology Diagnostic Service which includes diverse conditions ranging from samples taken by general dental practitioners and local oral & maxillofacial surgeons to major resection specimens from the Regional Centre for Maxillofacial Surgery

### **Visitors Comments**

*This programme is very well organised and led by a very devoted and dedicated staff. The quality of the components of the programme is very high and subject students to several productive experiences.*

Name of course Integrated (Comprehensive) Number: 15.1  
Patient Care

## 1 INTRODUCTION

The School of Dentistry supports the philosophy of integrated patient care, bringing together, where possible, all aspects of oral health care in the context of patients' general health. It does not deliver a stand-alone course in this area but seeks to embrace the principles at every reasonable opportunity. The new Oral Science and Medicine Course delivered in 2<sup>nd</sup> and 3<sup>rd</sup> Year has been designed to emphasise those aspects of human disease that are of particular relevance to the practising dentist. In 4<sup>th</sup> and 5<sup>th</sup> Years students undertake periods of clinical practice in community clinics away from the hospital where they engage in whole patient care. In the dental hospital the planning of treatment for most of their patients is undertaken in an integrated Treatment Planning Clinic supported by a multi-disciplinary staff team. Many of the clinical teachers in the School are general dental practitioners who bring their broad experience to the teaching of students.

## 2 PRIMARY AIMS

- (a) To develop in students an understanding of the principles and value of integrated patient care, not only in relation to the establishment and maintenance of oral health, but also in relation to the patient's health more generally.
- (b) To provide students with experience of clinical practice in a number of settings that employ an integrated approach to the planning and delivery of oral health care.

## 3 MAIN OBJECTIVES

These objectives apply to the BDS course generally. Students' education and training in whole patient care contributes to their achievement.

On completion of the course students should be able to:

- (a) understand broadly the processes, clinical features and management of human diseases.
- (b) understand the diseases of the oral region, their causes and sequelae together with the principles of their management.
- (c) understand the relationship between systemic disease and therapeutics, and oral disease and its management.

- (d) collect and record clinical information effectively and be able to use such information in the management of clinical problems.
- (e) demonstrate the acquisition of knowledge and skills that will enable them to manage, and treat safely and effectively, the commonly encountered oral and dental diseases.
- (f) demonstrate awareness of medical emergencies that may arise in dental practice together with the knowledge and skills necessary for their most effective management in that setting.
- (g) communicate well with patients and be able to work effectively with colleagues, members of the dental team and allied health professions.

#### **4 METHOD OF LEARNING / TEACHING**

The Oral Science and Medicine Course is delivered over 2 years (2 and 3) using PBL supported by plenary sessions. Basic principles of integrated patient care are taught by tutorials in 2<sup>nd</sup> Year before students treat their first patients. Many lectures and tutorials embrace the principles of whole patient care. Clinical practice - during 4<sup>th</sup> and 5<sup>th</sup> Years students plan treatment for the majority of their patients through a process of case presentation and discussion on the Integrated Treatment Planning Clinic involving a multi-disciplinary team of three teachers. During these years students engage in whole patient care in community dentistry clinics (Health Centre Programme) and provide all the treatment required by a number of patients.

#### **5 ASSESSMENT METHODS**

Sections of the 2<sup>nd</sup> BDS Parts 1 and 2 Examinations (Oral Science and Medicine) are designed to assess students' holistic approach to the management of health issues. The examination is by written paper with an option for an oral examination.

The Final BDS Examination, while designed to allow coverage of all the major specialty areas, allows an integrated approach to the examination of students. The examination employs written papers, clinical examinations and potentially an oral examination. Patients used in clinical examinations usually present problems requiring multi-disciplinary management.

### **Visitors Comments**

*The Visiting Committee supports the importance of the integrated TP Clinic and considers this as a good beginning to further course-wide integration of comprehensive patient care.*



Name of course Medical Emergencies Number: 15.2

## 1 INTRODUCTION

Instruction in dental emergencies occurs in several different areas within the overall BDS course. The main focus for this instruction is through the CPR (Cardiopulmonary Resuscitation) Programme which begins in first year and is repeated each year with increasing elaboration and expertise by students in each of the subsequent years of the BDS course. This course is delivered by a dedicated team of CPR-trained practitioners and includes instruction and practical experience by training on manikins. Other aspects of medical emergencies, apart from loss of consciousness, are dealt with in the OSM and in the Oral Surgery Course. Specifically dental emergencies (pain, swelling, post-operative bleeding) are dealt with as components of other dental clinical courses including Oral Surgery.

## 2 PRIMARY AIMS

To enable students to:

- (a) acquire core and theoretical knowledge in the prevention and management of medical emergencies that may occur in dental practice.
- (b) be competent in CPR.

## 3 MAIN OBJECTIVES

- (a) A sound understanding of the causes of loss of consciousness in the dental surgery.
- (b) Knowledge of and practical competence in basic life support.
- (c) Ability to deal with sudden loss of consciousness in patients in the dental surgery.
- (d) Ability to deal with emergencies related to dental conditions and minor oral surgery.
- (e) Knowledge and competence in the administration of drugs in the treatment of medical emergencies.
- (f) Knowledge and experience of general medical emergencies.

## 4 HOURS IN THE CURRICULUM

Each student will receive a minimum of 8 hours training in CPR during their undergraduate course. Cardiopulmonary resuscitation is taught in

every academic year. In addition, a formal lecture on the prevention and management of medical emergencies in dental practice will be given in the oral diseases course. The aetiology and management of medical emergencies is covered in the OSM course (Section 7).

## **5 METHOD OF LEARNING / TEACHING**

Small group teaching, using seminars, practical demonstrations and manikin practice are the main teaching methods for CPR. Lectures are also used.

## **6 ASSESSMENT METHODS**

The student is individually assessed, on a yearly basis, for their competence in carrying out CPR. In addition it is intended to further assess their theoretical knowledge and practical skills in their 3<sup>rd</sup> and 5<sup>th</sup> years, using skill stations (OSCE), MCQs and short questions. Satisfactory attendance at CPR is mandatory for entry to Final BDS.

### **Visitors Comments**

*The visitors are convinced that the students are competent in delivering CPR.*

Name of course Care of special needs Number: 15.3  
patients

## 1 INTRODUCTION

Students are introduced to the management of special needs patients during their 4th and 5th years. There is no specific course, patients with special needs are seen in most specialties within dentistry.

## 2 PRIMARY AIMS

- (a) To enable students to acquire core theoretical knowledge leading to an appreciation of the influences of social, behavioural, environmental, economic and systemic disease on orodental health.
- (b) An understanding of the special knowledge required for the diagnosis, prevention and treatment of orodental disease in patients with special needs.

## 3 MAIN OBJECTIVES

- (a) Observe the assessment, treatment planning and treatment of patients with special needs.
- (b) To treat patients with dental anxiety/phobia using
  - (i) behavioural management only;
  - (ii) behavioural management with the assistance of inhalation (nitrous oxide) sedation;
  - (iii) behavioural management with the assistance of intravenous (midazolam) sedation.
- (c) To observe the management of patients with special needs who require treatment in the secondary care (hospital) environment.

## 4 HOURS IN THE CURRICULUM

It is difficult to stipulate hours given to the management of special needs patients because students will observe the assessment and management of such patients in many disciplines of dentistry, especially in the Clinics of the Community Dental Services which they attend as part of the Health Centre Programme.

Students are expected to treat, in the paedodontic department, 5 patients under inhalation sedation (approximately 7.5 hours) in their final year and

3 adult patients (requiring extractions or minor oral surgery) under IV sedation (approximately 4.5 hours) in their 4th year and 2 patients (approximately 3 hours) in 5th year.

## **5 METHOD OF LEARNING / TEACHING**

Students will learn by observing the assessment and treatment of special needs patients in a variety of departments in the Dental Hospital and also in the Community Dental Service. Lectures and chair-side teaching are also given in the management of special needs patients.

## **6 ASSESSMENT METHODS**

Formative and summative assessment of students' abilities in the treatment of children with special needs is dealt with in the paedodontic course. The "hands-on" clinical management of anxious/phobic adult patients is a new course commencing Autumn 2000. This will involve both formative and summative assessments.

## **7 STRENGTHS**

The strength of the undergraduate course is in the multi-disciplinary teaching of the management of special needs patients and also in the strong emphasis of behavioural management.

### **Visitors Comments**

*The clinic for care of the special needs patients is excellently equipped and the programme thoughtfully delivered. The Visitors applaud the development of the new course which should help in organising the students' experiences in special patient care delivery.*

Name of course Behavioural Sciences Number: 16.1

## 1 INTRODUCTION

The dental graduate needs to be aware of the influence of social and psychological circumstances on an individual's oral health. This course consists of two components: Clinical Psychology and Dental Sociology. A large input of the behavioural science course occurs in Phase I and Phase III where there is close collaboration with the preventive dentistry course and the Health Centre Programme.

## 2 PRIMARY AIMS

To enable students to:

- (a) Acquire knowledge of the social and psychological aspects of patient care.
- (b) Understand psychological and sociological concepts important in the provision of dental care and maintenance of dental health.

## 3 MAIN OBJECTIVES

- (a) To be aware of a number of psychological processes which aid our understanding of human behaviour.
- (b) To understand key concepts and theoretical frameworks in sociology and apply them to dental practice.
- (c) To critically evaluate dental literature that incorporates behavioural science concepts and issues of behavioural science relevance.
- (d) To increase awareness of changing attitudes and behaviour of special groups towards dental health and dentistry.
- (e) To recognise the major features of psychological dysfunction and be aware of the role of making appropriate referral to specialist health services.
- (f) To understand the development and features of dental anxiety and the techniques to alleviate and manage anxious patients.
- (g) To critically evaluate cultural issues in relation to dental health and the provision of dental health care.
- (h) To understand those pressures of work likely to increase stress and be aware of mechanisms to help recognise and manage occupational stress during an individual's working life.

#### 4 HOURS IN THE CURRICULUM

Phase I 0.5 days per week  
Phase II Integration with clinical teaching (see # section 5)  
Phase III Integration with the Health Centre Programme (1 day per week over 30 weeks)

#### 5 METHOD OF LEARNING / TEACHING

Five methods are employed:

Lectures  
Small groups (which include, focused discussion and case studies)  
Problem Based Learning  
Project Reports  
Clinical Practice #  
(In **Phase II** 3 to 4.5 days are spent in clinical activity. The students learn to appreciate the relationship between theoretical aspects of behavioural science and practical application in a clinical setting. These skills are consolidated during **Phase III** at the Health Centre Programme )

#### 6 ASSESSMENT METHODS

**Formative** assessments

Phase 1 Short answer questions  
Presentations  
OSCE (objective structured clinical examination)

**Summative** assessments are undertaken:

At the end of Phase I in:

OSCE (objective structured clinical examination)  
OSVE (objective structured video examination)  
Written paper

During Phase III

Assessment of Health Centre projects, together with a viva.

End of Phase III final BDS

Written examination paper

#### 7 STRENGTHS



Behavioural sciences are taught throughout the dental course. Collaboration of the teaching by behavioural scientists and clinical dental teachers allows the student to gain knowledge and understanding of its relevance to patient care.

Name of course Communications Number: 16.2

## 1 INTRODUCTION

The Communication Skills course is closely linked to the problem based learning and clinical dental skills courses taught in the first year of the BDS at Liverpool. The Communication Skills course is taught mainly in the first year. A special workshop on difficult aspects of communication is taught in the final year. In the first year students are tutored in the basics of communication skills, including, listening skills, giving information to patients, written communication, questioning, reflection, summarising and presentation skills. The course is ten sessions in length, each session is two hours long. In sessions five, eight and ten students are introduced to simulated patients to practice their skills. In year five students are given the opportunity to attend a special symposium on communication skills. This half-day workshop consists of dealing with bad news and handling emotional, aggressive or difficult patients.

## 2 PRIMARY AIMS

The aims of the course are to provide sufficient tuition so students can develop listening skills and an ability to recognise psychological distress in patients. In addition we wish to produce graduates who can communicate diagnosis and prognosis and explain treatment in terms which patients and relatives can understand. Included in this aim is the ability to convey bad news sympathetically and handle emotion generated.

## 3 MAIN OBJECTIVES

- (a) Working in groups.
- (b) Starting a face-to-face interaction.
- (c) Listening – non trivialisation of non-verbal behaviour.
- (d) Questioning.
- (e) Reflection, Summarising and Checking.
- (f) Giving Information.
- (g) Written Communication with patients.
- (h) The importance of words in conveying meaning (symptoms).
- (i) Presenting Information to others.
- (j) Setting the scene for the future: identifying strengths and weaknesses.

## 4 HOURS IN THE CURRICULUM

Year 1 10 x 2 hour sessions. Groups meet once every two weeks.  
Year 5 Half-day workshop/special symposium.

## 5 METHOD OF LEARNING / TEACHING

Students learn in small groups of 8 or 9 students per group. The students are tutored by general dental practitioners from around the Mersey Region.

A variety of methods are employed including:

- working in trios and pairs
- simulated patients
- handouts
- audio tape exercises
- self-assessment material
- log-books
- recommended text books
- role-plays
- scenarios

## 6 **ASSESSMENT METHODS**

Students are assessed at the end of their first year with an Objective Structured Video Exam (OSVE) which forms part of their clinical dental OSCE exam. In the OSVE students have to watch a video tape of a patient and clinician interacting. They watch the tape three times and make notes throughout the recording. They then have 30 minutes to note the communication skills used in the tape and the consequences of such skill for the interaction. They should also try to suggest alternative skills that they would employ in that clinical situation.

## 7 **STRENGTHS**

The Communication Skills course gives the students an opportunity to link PBL and clinical skills with the practice of communication skills. Students also have the chance to practice their communication skills in a safe environment where feedback is closely controlled. The use of simulated patients is novel and much enjoyed by the students. The communication skills course also benefits from the expert input of practising dentists who bring case material and dental scenarios to the small groups they are teaching thus enhancing the learning experience for the students.

### **Visitors Comments**

*The Visitors believe that this is a very important course and its early inclusion in the curriculum is appreciated.*

Name of course Ethics and Jurisprudence Number: 16.3

## 1 INTRODUCTION

Aspects of professional behaviour are considered during 1<sup>st</sup> Year, where one of the four learning themes is "Professional Values and Personal Growth". Students are next introduced to some fundamental principles of law and ethics relating to dentistry as they prepare to treat their first patients in 2<sup>nd</sup> Year. The main course in course in Law and Ethics is delivered in the Summer Term of 4<sup>th</sup> Year. Throughout the 5 years, ethical and legal aspects of the practice of dentistry are considered in context at appropriate points within the course.

## 2 PRIMARY AIMS

- (a) To develop students' knowledge and attitudes with respect to the ethical delivery of high quality dental care.
- (b) To introduce students to the law as it affects the practice of dentistry (in the UK).

## 3 MAIN OBJECTIVES

The following have been selected from 30 defined objectives.

On completion of the course students should:

- (a) Understand the principles that underpin the ethical practice of dentistry.
- (b) Understand the need for confidentiality in the dentist/patient relationship and have an appreciation of the exceptional circumstances where this might be appropriately breached.
- (c) Appreciate the characteristics of the professional relationship that should exist between colleagues and others working in the field of healthcare.
- (d) Appreciate the legal basis of the dental profession and of the professions complementary to dentistry.
- (e) Understand the need for the continuing education of dentists and be prepared to participate in it.
- (f) Understand the need to be aware of their own limitations as clinicians and not to exceed them during the care of patients.
- (g) Appreciate the criteria necessary for the successful prosecution of a case of alleged negligence and have a basic understanding of such concepts as duty of care, standard of care, damage, causation and burden of proof.
- (h) Understand the characteristics of valid consent and be able to acquire such consent in relation to procedures practised commonly in dentistry.

- (i) Understand the need for safety in the workplace and be aware of the legislation that provides for it.
- (j) Appreciate the concept and principles of risk management.

#### **4 HOURS IN THE CURRICULUM**

The formal course elements occupy 15 hours.

#### **5 METHOD OF LEARNING / TEACHING**

Tutorials on basic ethical issues relating to the management of patients, such as confidentiality and consent, are delivered during 2<sup>nd</sup> Year prior to students treating their first patients. The main course in 4<sup>th</sup> Year takes the form of a series of 8 or 9 interactive lectures in which student participation and debate is facilitated by the use of a study guide constructed around a series of scenarios. The course concludes with a one-day symposium that adopts a similar presentational format but using a multi-disciplinary team of facilitators, including a general dental practitioner, a senior dento-legal adviser from a medical defence organisation and a lawyer.

#### **6 ASSESSMENT METHODS**

Students are at risk of examination in ethical or legal issues at any point in the Final BDS Examination. Written questions on these subjects are frequently set and are usually of an applied nature.

#### **7 STRENGTHS**

- (a) The use of scenarios taken from everyday practice – “real life” – highlights the relevance of the course
- (b) The interactive approach to teaching/learning
- (c) The style and use of the study guide
- (d) The multi-disciplinary symposium
- (e) The broad experience of the course facilitator
- (f) Weekly use of new developments appearing in the professional press and media more generally

Name of course Practice Management Number: 16.4

Practice management is not taught in most UK Dental Schools. It is not a requirement of the "First Five Years". Virtually all dental students go onto VT or GPT (which includes VT) immediately after initial qualification. Practice management is better taught in this environment.

## **Section 17: Examinations, Assessments and Competences**

The School's approach to examination and assessment seeks to confirm that the aims and objectives of the course have been achieved. Examinations are designed to reflect the teaching/learning methods employed during the course.

### Summative Assessment

For the award of the degree of BDS, students must pass a series of examinations that are summative in nature. They are sometimes referred to as professional examinations.

- 1<sup>st</sup> BDS – end of 1<sup>st</sup> Year
- 2<sup>nd</sup> BDS Part 1 – end of 2<sup>nd</sup> Year
- 2<sup>nd</sup> BDS Part 2 – end of 3<sup>rd</sup> Year
- Final BDS – end of 5<sup>th</sup> Year

Students may not progress to the next stage of the course without passing the 1<sup>st</sup> and 2<sup>nd</sup> BDS examinations and repeated failure in degree examinations may result in termination of studies. Additional information is available in Chapter 3 of the Handbook.

### Formative Assessment

Students engage in a series of assessments throughout the 5-year course. For the most part, these are subject specific and are formative in nature. Although not part of the BDS examination structure (above), students must be successful in certain assessments if they are to be permitted to progress with the course and in this way may have a summative effect. A particular example of this occurs towards the end of 1<sup>st</sup> Year when assessment of manual dexterity is undertaken to confirm that it is safe to allow students to progress to the treatment of patients. In-course assessments contribute to the marks of the Final BDS examination in Oral Health and thus make a summative contribution. Elements of students' clinical work are the subject of continuous assessment.

The schedule of formative assessments is given in Table 2.



**TABLE 2**

<b>BDS – Formative assessments</b>		
	Subject	Type of assessment
<b>1<sup>st</sup> Year</b> pre-1997	Conservative dentistry Communication skills	Practical
<b>1<sup>st</sup> Year</b> post-1997	Conservative dentistry Basic medical sciences Communication skills Oral health	Practical Same structure as summative assessment  Short answer
<b>2<sup>nd</sup> Year</b>	Prosthetic dentistry Orthodontics	OSPE OSPE
<b>3<sup>rd</sup> Year</b>	Human disease Orthodontics Conservative dentistry Oral diseases - tooth extraction Paediatric dentistry Periodontology Orthodontics	MCQ OSPE Clinical practical OSCE & written  Clinical review & written case report Written
<b>4<sup>th</sup> Year</b>	Conservative dentistry Oral health – communication skills <sup>(1)</sup> Oral diseases I Oral diseases II Periodontology Prosthetic dentistry Paediatric dentistry Orthodontics	Short answer written paper  Written: short answer, case management Written: short answer, case management Terminal, clinical review & written case report OSCE Written Written
<b>5<sup>th</sup> Year</b>	Oral health <sup>(1)</sup> Orthodontics Oral diseases	Written report Two written reports Written: short answer, case management
(1) Contribute to marks in Final BDS. The detailed form of assessments may vary from year to year but details are made clear to students.		

The Head of Department operates a Student Appraisal System for all students in their clinical years (2-5). At the end of each term staff in all the clinical departments in which students work are asked to comment on students' performance by using a system of grades (A = excellent, B = satisfactory, C = cause for concern). Students are assessed in relation to their practical skill, academic ability and professionalism. Attendance and progress with requirements are also assessed, simply as "satisfactory" or "unsatisfactory". Students who are graded C in more than one category, or by more than one department, are interviewed by the Head of Department with a view to resolving the difficulty identified.

Students are clearly motivated by the need to be successful in examinations and assessments that have an immediate effect on their progress within the course. This is especially true as students approach Final BDS. However, attempts are made at the stage of student selection to recruit individuals who demonstrate evidence of motivation towards a career in dentistry. Thereafter, the providers of course components attempt to develop this motivation by the content and style of delivery of the particular element of the course. This is easier to achieve in some subject areas than in others. Formative assessments are designed to inform students of their progress and thereby motivate them to remedy deficiencies in their learning.

## Strengths:

Examination style matches learning style

Intention marking

Double, anonymous marking

External examiner system

Carefully documented protocols and processes for examination management

Capacity to review and change

There are no fundamental changes planned in respect of the BDS examination structure. However, the process remains under constant review facilitated by the regular meetings of boards of examiners and the external examiner reporting system.

In-course assessments undergo periodic development with the School's academic units. Consideration is being given to the enhancement of in-course clinical assessments in restorative dentistry.

It is a requirement of the University and of the General Dental Council that external examiners are involved in all the BDS Examinations. In this context external examiners are able to advise over the form, content and conduct of examinations. External examiners exercise a moderating role throughout the examining process, including written, clinical and oral examinations and take part in the direct examination of candidates in clinical and oral examinations. External examiners are also invited to comment on the appropriateness of the course and the performance of the candidates in comparison with that achieved in other dental schools.

An external examiner is present for the 1<sup>st</sup> Year assessment of manual dexterity where, in some circumstances, the outcome may require a student to leave the course. The School has the facility to invite an external examiner to adjudicate in other assessments if there are particular reasons for so doing.

The BDS course at Liverpool delivers education and training that will enable students to acquire the competences recommended by the EU Advisory Committee on the Training of Dental Practitioners. It does not employ a structured approach to the assessment of each and every recommended competence, although within current arrangements it does assess some particular competences. In making this general response, the School believes that, in a few cases, the recommendations may be inappropriate or unachievable, for example, in the UK, full conformity with Prerequisite (j) would be inconsistent with the GDC's guidance on general anaesthesia, although Prerequisite (h) is noted.

### **Visitors Comments**

*The Committee believes that the inclusion of External Examiners and review of their comments at the requisite times is a significant asset to the assessment of the course.*

## **Section 18: Other Influences**

### **18.1 Regional oral health needs**

It is assumed regional refers to the situation within the UK. The course has a strong emphasis on preventive dentistry and primary dental care and makes full use of extended attachments by the students to the Community Dental Services so that they are made aware of the demands and difficulties of establishing appropriate oral health care services within socio-economically deprived inner city urban areas such as may be found on Merseyside.

### **18.2 Evidence based treatments**

All treatments are under the aegis of the NHS. They are therefore subject to the controls throughout the NHS which stresses, through its programme of clinical governance, adherence to established national guidelines. An example would be recommended protocols for removal of wisdom teeth.

### **18.3 Involvement in other university activities and sport**

#### **18.4 Recreation**

There is a flourishing Dental Students' Society with a full programme of social and sports activities. Recreational facilities provided by the University of Liverpool for student use (sports centre, gymnasium, swimming pool, indoor and outdoor athletics, playing fields, pitches and changing rooms for football and other outdoor team events) are available. Because of the demands of the clinical course medical and dental students are less able to participate mid-week in these events than are other students. There is a University Students Union that has a full range of bars and social rooms and is the focus of political and social life for all students of the University.

### **18.5 Student selection procedures**

Undergraduate applications are submitted through the central organisation, Universities and Colleges Admission Service (UCAS). We normally receive in excess of six hundred applications for our 57 places (50 home/EC; 7 overseas). The initial selection is based on the academic achievements usually in terms of the General Certificate of Secondary Education where we are seeking high grades in a broad range of subjects. Other factors taken into account at this stage are the candidates' personal statements, referees' reports and examination predictions. Candidates who are satisfactory in terms of these criteria are then invited for interview where other factors are assessed, e.g. motivation, knowledge of dentistry, communication skills etc. Those that perform adequately are given a conditional offer usually based on A level grades. Typically this is ABB in

the main Advanced Level subjects. The Advanced Level results are published in August and those candidates who have achieved the conditions of the offer will be admitted. At this stage it is usual to have five or six places unfilled and the quota is completed by accepting good candidates whose first choice is Liverpool and who have interviewed well and are slightly below the conditional offer. In addition to A level candidates, there are others who present with other qualifications, e.g. International Baccalaureate, Access Courses, Degrees etc. In recent years the proportion of places offered to graduates has been approximately 16%.

## **18.6 Labour Market Perspectives**

The number of dentists trained is controlled by Government quotas to each of the dental schools. For Liverpool this is 57 students including a maximum of 7 non-EU. Employment opportunities for dental graduates throughout the UK are high and few, if any, are unable to obtain employment within a few months of graduation. Particularly significant is the Vocational Training Scheme which is mandatory for all new graduates wishing to practise in the National Health Service. This involves a year's placement in a training practice with an approved trainer following a programme of study for one whole day a week and with supervised practice the other four days. There is a guaranteed salary and additional remuneration for the training practitioner.

## **Student Reflection**

It is realised the BDS course is extremely time-consuming and demanding. The 3½ clinical years each run over 44 weeks. Within the PBL timetables for the first 3 years, there is scheduled space for thought development and private study. Also, the PBL course makes specific provision for reflection at the end of each module.

## Section 19: Student Affairs

### 19.1 Basic Data from Dental Schools

- a) Average number of dental students qualifying per year: **51**
- b) Average number of dental students admitted to the first year: **57**
- c) Length of course in years and/or semesters: **5 years**
- d) There is a separate period of vocational training following graduation as a dentist, this is not organised by the University Dental School.

The Vocational Training Year is followed by all UK dental graduates wishing to enter dental practice in the NHS. The scheme is nationally organised and co-ordinated by the Committee on Vocational Training. At a local level, its administration and direction is the ultimate responsibility of the Regional Postgraduate Dental Deans (a joint NHS-University appointment) to whom the Regional VT Director reports. Each Region has several schemes each comprising 12 VT practitioners and 12 Trainers and lead by a VT Adviser, co-ordinated by a Regional CT Adviser. Many of the officers of the scheme are dentists in general practice but have courtesy University affiliation. Effectively, however, the control and direction are outside the responsibility of the Dental School. However, each Dental School is required to appoint a VT Liaison Tutor to enable the "seamless" transition from undergraduate learning to beginning graduate learning. A more recent development is to extend the scheme by a further year to include hospital and community dental service experience to the VT practitioner. This is the General Professional Training Scheme. Throughout both schemes the VT practitioners (ie the recent graduates) are fully salaried.

### 19.2 The School currently offers the following research degrees:

#### Research Degrees

M Phil  
MDS  
PhD

#### Taught Postgraduate Courses

Master of Dental Science (MDentSci)

This is delivered in a modular format so that students can study on a full or part-time basis. Modules can be selected to meet the academic and clinical needs of the students.

Students may study individual modules for which they receive Credit Accumulation and Transfer (CATS) points. They may also study for a Postgraduate Certificate in Dental Science (4 modules) or Postgraduate Diploma in Dental Science (8 modules).

Approximately 12 students per year graduate with the MDentSci Degree.

Continuing Professional Development short courses for General Dental Practitioners.

Two courses (Complete Dentures and Adhesive Dentistry) will be offered in the academic year 2000/2001. These courses will have a maximum attendance of 10 dentists. These courses are non credit bearing.

### 19.3 Diploma in Dental Therapy

Dental Therapists are a type of professional complementary to dentistry (PCD) permitted by UK law to undertake limited dental restorative work on adults and children, working to the prescription and supervision of a dentist. These workers are registered with the GDC which is responsible for educational standards and fitness to practise.

This is a two year part-time course for dental hygienists. A maximum of 8 students qualify each year.

Continuing Professional Development short courses for Dental Therapists. A two day course is offered on an annual basis. The maximum attendance is 16 students. This course is non credit bearing.

### Diploma in Dental Hygiene

Dental Hygienists are trained in accordance with the requirements of the General Dental Council. The course is full-time of two years duration and there are eight students on each course. Funding is provided from the National Health Service Non Medical Education and Training (NMET) levy via the Regional Purchasing Consortium. Training is based at the Dental Hospital with some student placements elsewhere and is managed by the Director of the School of Dental Hygiene within the Royal Liverpool and Broadgreen University NHS Trust.

Students are prepared for the examination of Diploma in Dental Hygiene of the General Dental Council. Although the School of Hygiene is administratively separate from the University of Liverpool School of Dentistry, the two schools work in co-operation with some of the teaching staff working in both establishments. The hygiene students gain their clinical experience, similar to BDS students, by carrying out treatment for patients of the LUDH.

Future developments: Although arrangements already exist for dental students and dental hygiene students to work together, this will be formalised and enhanced from November 2000 when 4<sup>th</sup> and 5<sup>th</sup> year dental students will be able to refer some of their patients to dental hygiene students for initial therapy.

Dental hygiene students starting their courses from October 2000 will be entered for a new University of Liverpool Diploma in Dental Hygiene examination, although the course itself will still remain under the auspices of the NHS Trust, at least for the time being.

Funding has been agreed with the Purchasing Consortium which will enable the number of student hygienists trained to be increased from eight to sixteen per year. This will be effected by having an additional intake in April/May each year.

#### 19.4 **University Counselling Service (UCS)**

The University Counselling Service helps students with personal and emotional problems. The counsellors are professionally qualified and experienced and enable students to talk over their difficulties in confidence. Students turn to the Counselling Service with a wide range of worries including personal, home and family relationships, depression, anxiety and loneliness.

##### **Consultation Service of the UCS**

The permanent staff of the UCS offer a consultation service Monday to Friday between 9.00 am and 10.00 am (times may vary in the vacation). This service offers members of the University an opportunity to discuss concerns, receive information and advice about managing difficult situations, eg where they are supporting a colleague or student in distress. The duty counsellors have substantial experience of working in NHS Trusts and Social Services.

##### **Personal Tutoring Scheme**

##### **Practice carried out within the Dental School**

This is a pastoral scheme whereby every student is allocated to a member of staff who acts as a personal tutor. The aim is to provide support for those students experiencing personal, emotional, social, health or financial difficulties that may interfere with their ability to cope with the academic and clinical demands of the course. The essentials of the scheme are as follows:



- (a) Every student and member of staff receives a copy of the Code of Practice on Personal Tutoring at the beginning of the BDS Course (Freshers' Conference).
- (b) On registration, every student receives the name and home and work telephone numbers of the Senior Tutor.
- (c) All students meet their individual personal tutor at the Freshers' Conference in small groups in their tutor's room. Each tutor defines the mode of interaction between the tutor and tutee which after discussion is considered to be most appropriate.
- (d) All tutees receive the personal contact telephone number of their tutor.
- (e) Students' progress is reviewed each term by the Head of Department and the Senior Tutor (Student Appraisal System). Students causing concern are interviewed and any social or welfare problems identified and dealt with.
- (f) At Clinical Assessment Panel (CAP) meetings, students who are identified as having academic problems, are drawn to the attention of the senior tutor who is proactive in making contact with the student's personal tutor.
- (g) The Senior Tutor interviews all of these students. If personal problems are identified by the Senior Tutor, they are discussed with the student and further action is initiated. The student progress is monitored monthly.

There is also a Student Health Service permanently open with a staff of 4 general practitioners and 6 nurses.

### **Student Mentoring Scheme**

This is a scheme organised by the student body whereby students in 1<sup>st</sup> Year are allocated individually to a more senior student who can act as a guide and mentor, able to give advice about numerous aspects of the course and reassurance in adjusting to student life.

### **Visitors Comments**

*The Committee was impressed by the attitude of the students towards the staff, the School and the course. The students felt comfortable with the support systems available to them and confident about their futures.*

## Section 20: Research and Publications

### Introduction

There are four research groups in the School of Dentistry: (I) Dental Public Health Group (DPHG) which has been successful in extending its remit from Community based studies to include research within the Primary Care setting. (II) The Cariology Research Group (CRG) which reflects one of our major laboratory research areas. (III) The Molecular Oncology & Maxillofacial Surgery and Pathology (MOMSP) Group, which now also encompasses research undertaken by the Maxillofacial Oncology unit at the Aintree Hospital site as well as the molecular genetics and oncology laboratories in the Edward building, Roy Castle International Center and the pathology laboratories. (IV) The Oral Medicine & Microbiology Group (OMM) which has two major sub-groups; Sjogrens Syndrome & Salivary Studies and Oral & Infectious Diseases.

The research of all four groups is enhanced by our postgraduate students, currently we have 16 Ph.D. students, 12 M Phil students (3 of whom are thesis pending) and 12 have graduated since 1996. The postgraduates are funded by the Research Councils, Charities, industry and the NHS. We are supported by 6 permanent technicians, 9 technicians on research grants and 15 research assistants and research fellows. All grants from 1998 to August 2000 total £2,826,808 and we have 138 publications and 9 books or contributions to books from the whole School of Dentistry for the same period.

### Strengths

The DPH group has developed its research base into the primary care setting as well as producing the first Cochrane report in evidence based orthodontics. The Cariology group have developed *in situ* models to study coronal caries which are now accepted for industrial and BDA accreditation purposes, which was supported by a Medical Research Council ROPA award. The Cariology group have also purchased ICPMS equipment on a national JREI award. The MOMPS group has attracted funding from the Medical Research Council, Cancer Research Campaign and North West Cancer Research Fund to identify the familial oesophageal cancer gene as well as forming part of a trans-Faculty MRC Co-operative. This group has developed an internationally renowned molecular genetic and epidemiological early detection study into lung cancer in the Roy Castle International Center for Lung Cancer Research. Furthermore this group has developed a pathological assessment of oral cancer patients which is now considered a bench mark as well as undertaking major quality of life (QOL) studies in these patients. The OMM group has made an important contribution to the field of immunopathogenesis of Sjogrens Syndrome. In addition the OMM group, funded by NHS R&D grants, have surveyed prescribing practices of GDP's and demonstrated serious deficiencies. This group has also made

significant progress in understanding the role of oral streptococcal mucin sulphatase in health and disease funded by Wellcome.

There has been a tremendous drop in research income from Central resources to the School of Dentistry over the past 5-10 years and thus the purchasing of new equipment and rebuilding of dedicated facilities is only made possible from external research grants. In addition we have lost a number of senior full-time non-clinical researchers due to retirement or individuals taking up external appointments, which have not been replaced, thus our research base of full time staff has diminished over the past eight years. The conflicting demands on clinical academics' time of teaching, service commitment and research often restricts severely the time available for research. This is a national problem.

The School's research committee reflects the new group structure and has redefined our research strategy. It routinely monitors (3 monthly) the quality of research output as well as planning research grants.

The School has a Safety Committee which monitors all Safety regulations throughout the School , including a Genetic Manipulation Committee.

- |    |  |                                    |
|----|--|------------------------------------|
| A. | Dental Public Health Group                                       |                                    |
|    | Representative: Professor MA Lennon                              | e-mail: malen@liverpool.ac.uk      |
| B. | Cariology Research Group   |                                    |
|    | Representative: Dr S Higham                                      | e-mail: suehigh@liverpool.ac.uk    |
| C. | Molecular Oncology and Maxillofacial Surgery and Pathology Group |                                    |
|    | Representative: Professor JK Field                               | e-mail: j.k.field@liverpool.ac.uk  |
| D. | Oral Medicine and Microbiology Group (Salivary)                  |                                    |
|    | Representative: Dr EA Field                                      | e-mail: e.a.field@liverpool.ac.uk  |
| E. | Oral Medicine and Microbiology Group (Infectious Diseases)       |                                    |
|    | Representative: Dr MV Martin                                     | e-mail: m.v.martin@liverpool.ac.uk |

## 20.1 Publications in refereed journals and monographs

See homepage of the Liverpool Dental School.

### **Visitors Comments**

*The Visiting Committee is impressed by the research activities of the four research groups and believes that the re-establishment of the Chair in Dental Sciences will further enhance research activity.*

## **20.2 GRANTS RECEIVED**

### **2000**

15 Grants totaling over £820,000 in support

### **1999**

20 Grants totaling over £1,00,0000 in support

### **1998**

13 Grants totaling over £740,000 in support

## Section 21: Quality Development

The School is constantly required to respond to external quality review through visitations from the HE sector and from the NHS - details are given in the following pages.

### *Faculty and staff development:*

The University operates a policy of staff appraisal. This has two components, the first, conducted by the Head of Department and centered on a Portfolio of Activity summarises the total contribution of the staff member under Teaching, Research, Administration and Clinical Service. This scheme is still in its development stage (introduced in 1999-2000) and has not fully resolved the difficulty of addressing equitably the complexities of teaching in a clinical context. The second component involves direct appraisal by the Head of Department and is built upon a former scheme dormant in recent years but scheduled for relaunch in the current academic year.

### *Student Evaluation*

Students participate in many of the committees dealing with Quality of Teaching. Several subject courses use student feedback in a range of formats including questionnaires.

### *Internationalisation*

The BDS course admits approximately 10-12% foreign students. The % is higher for MDS. The University provides a range of support/counselling services specifically directed at this group and institutionally and individually provides the School with feedback. Examples include formal meetings with Kuwait Embassy Officials.

### *International Contacts – Undergraduate Programme*

SOCRATES/ERASMUS - Two incoming students from Milan for each of last 3 years. No Liverpool students participating. Elective projects: approximately 25% involve foreign visits by Liverpool Students. We also receive foreign students on electives here: this can only be accommodated in summer term. Two to four students received on average each year.

## **The quality of teaching and learning**

The quality of the course and its delivery is subject to evaluation and development at three levels:

- departmental

- institutional
- external

### Departmental

Within the School the delivery of the BDS course is ultimately the responsibility of the **Board of Dental Studies**. Much of this role is devolved to other groups, primarily the **Curriculum Development Committee** and **Dental Academic Committee**. The former adopts a strategic view of the curriculum, its broad content and delivery and addresses significant issues in relation to it. The latter, which is representative of the academic units within the School, advises the Head of Department on many matters, including quality issues.

There is a **Teaching and Learning Group**, with equal representation from staff and students. Its role is to identify factors that enhance or hinder effective teaching and learning and to make recommendations. The Group reports to the Board of Dental Studies.

The **Staff/Student Committee** offers a forum to consider wide-ranging issues of concern to both staff and students, some of which may bear on the quality of teaching and learning, but more usually the environments in which these activities take place.

Beyond this, at Unit level, those responsible for the delivery of elements of the course utilise student feedback to gain insight into the quality of educational provision. The outcome informs the development of the course. Feedback methods range from informal conversation to the use of structured meetings and questionnaires.

### Institutional

The University employs a system of annual course monitoring that is applied to every certificate, diploma or degree course. For this purpose, Faculties are allocated to groups that have common features. Dental courses, including BDS, are grouped with Medicine, Veterinary Science and a range of complementary health care professions and the process is conducted by a **Course Monitoring Group**.

Course monitoring is based on an annual report prepared for each course by a nominated **Course Director**. The report is prepared to a standard format and is obliged to address the following areas.

- Aims and objectives
- Successful aspects of the course
- Problematic aspects of the course and consequential actions taken
- Actions taken in response to previous year's Course Monitoring Group Report
- Significant changes to course



- Recruitment market and achievements
- Confirmation of student data held by University
- Problems with student progression
- Internal audit of the course
- Student feedback – mechanisms, outcomes and action
- Staff and employer feedback
- External examiners' reports (copies to be provided)
- Outcome of any external visitation
- Resourcing issues

The Course Monitoring Group considers the reports of Course Directors, identifies and reports upon general issues arising and more specifically in relation to each course (including BDS). The Group may require departments to take specific actions in respect of the issues identified.

### External

The outcomes of the course, as determined by the examination process, are under continuous external evaluation through the **external examiner system**. The School has clearly defined protocols for the management of external examiners' reports to ensure that they are considered fully and appropriate actions taken.

The **General Dental Council** as the professional statutory body in the UK sets minimum curricular requirements and undertakes periodic visitations to confirm that the course and the examination structure are sufficient to ensure that those graduating possess the requisite knowledge and skill necessary for the efficient practice of dentistry. The Council's reports carry great weight as ultimately it can decline to recognise a particular dental degree for registration purposes. Its current curriculum guidelines for BDS are published as "The First Five Years". This document is available to Visitors in the Board Room.

The **Quality Assurance Agency** operates on behalf of the Higher Education Funding Council for England (HEFCE) that is substantially responsible for funding higher education in the UK. The Agency conducts a process of **Subject Review** that involves the production of a report by a subject peer group based on extensive documentation and an extended visitation. The process is undertaken for all subject areas (including dentistry) and occurs approximately every 5 years. The process is designed to examine, assess and report upon the quality of the student learning experience and the outcome is made public. It thus informs potential dental students in their choice of dental school.

The process of Subject Review is evolving to include Benchmarking. This process will be undertaken jointly with the General Dental Council.

### **Staff Development**

Newly appointed staff participate in an induction course in teaching methodology. Increasingly staff will be expected to engage in a fuller (certificate/diploma/masters) programme in this area leading to membership of the new **National Institute of Learning and Teaching**. A number of more experienced staff from the School have already been involved in this programme which involves peer review of teaching and the evaluation of staff by students.

The University offers a programme of staff development courses and these are available to, and taken up by, staff from the School. The University is moving towards the universal application of peer review of teaching. At present this is employed especially in association with promotion procedures although the School also undertakes this for newly appointed staff during their initial probationary period.

All clinical staff are obliged to fulfil a programme of continuing professional development to meet statutory requirements within the National Health Service. The Royal Colleges of Surgeons have operated similar schemes for some years and over the next few years evidence of continuing professional development will become a requirement of the General Dental Council as part of a periodic recertification process for all dentists on the UK Dentists Register.

### **The quality of research**

Research within, and in association with, the Department is managed by a **Research Committee** chaired from outside the School. The School participates in the national **Research Assessment Exercise** that requires the submission of a detailed account and justification of research activity at 5-year intervals. The current round has a completion date of March 2001. The outcome is a scored grade which is used to determine part of the funding of Universities, and hence of dental schools. In the last RAE (1996), the School scored 3a which is the midpoint of the scale (1, 2, 3b, 3a, 4, 5, 5\*).

## Section 22: Overall Comments on the School

### Executive Summary

The Visitors thank the Dean, administration, staff and students for their first class generosity in welcoming us to your Dental School. We especially thank you for your willingness in providing us with helpful information during our visit and for your patience in explaining to us the many complexities involved in the daily operations of the University, Dental School, Hospital Trust and Community partnerships which form the basis of your organisation.

We also thank you for providing us with excellent documentation in the format provided by DentEd and additional documents during our visit.

We realise that this visit is but one of several evaluation visits to your institution over a short space of time. We therefore greatly appreciate the commitment of Dean Scott in preparing for this visit and for his leadership in joining with DentEd in its efforts to discover the broad range of characteristics of dental education programmes in the EU and beyond.

In general we found the programmes at LUDH to be of the highest quality and were especially impressed by the following strengths, innovations and best practices:

- The unique “supported” PBL curriculum which has clearly earned the support of the staff leadership and student participants.
- Fine staff at all levels of academic rank and hospital consultants.
- A very motivated and committed staff.
- A highly motivated, confident and loyal student body.
- A student-centred learning environment.
- Provision of patient centred services.
- Community centred outreach.
- The activities in the School mirror the mission statement.
- Well equipped physical facility and a well-planned replacement strategy to upgrade remaining clinical and preclinical areas in due course.
- Good collaboration with Medical School in PBL curriculum development and the use of the Human Anatomy Resource Centre.

- Adequate patient resources to give students appropriate experiences in patient care.
- Value-added experiences in patient care through the Health Centre Programme.
- Focused and highly regarded research programmes with a commitment to expansion.
- Availability of state-of-the-art research equipment supporting all levels of research.
- A senior research staff willing to collaborate in an interdisciplinary fashion with all departments at the University and which encourages participation of staff and students in research endeavours.

As with all highly complex programmes with broad mission and daily challenges, there are some areas where continued discussion is needed to bring out best practices. Some areas, as we discussed during our visit, are undergoing ongoing re-evaluation and others we are suggesting further dialogue with subsequent actions as appropriate:

- Infection control, clinic dress code and overall hygiene regime should be monitored to be in compliance with universal precautions.
- Consideration given to increased integration in the principles and practices of preventive dentistry throughout all clinical disciplines.
- Increased integration between all preclinical laboratory programmes.
- Discussion continued on the re-evaluation of the system of patient care from entry to exit, including recall, with the implementation of appropriate quality control measures.
- Visitors would like to suggest that staff initiate discussions to re-evaluate the clinical patient care programmes in the context of state-of-the-art comprehensive patient care underscoring the patient centered approach.
- Support the ongoing discussions to evaluate the organisational structure of the School to include departments and academic units and consolidation of academic units with hospital entities in the context of delivering the highest quality curriculum and patient care.
- Further, the Visitors support the ongoing discussions related to the value and appropriateness of the students' extramural health centre experience in their overall education.

- And finally, the Visitors noticed that many activities in the School appear to be conducted under intense pressure and suggest that times for reflection be considered. An example might be to reduce the number of specified procedure requirements for students and increase the amount of time spent in evaluating the outcomes of fewer procedures more thoroughly.

The Visiting Committee realises that some of the above discussion points have external constraints associated with them, finances GDC mandates, patient backlogs, etc. The Visitors also believe that the current high quality of the staff is sufficient to meet the challenges which could result from their discussions. Even though, as previously stated, the small staff base is severely over stretched due to the reduced work force.