

PROGRAMME SPECIFICATION



1	Awarding Institution	Newcastle University
2	Teaching Institution	Newcastle University
3	Final Award	Postgraduate Diploma
4	Programme Title	Conscious Sedation
5	UCAS/Programme Code	3383
6	Programme Accreditation	N/A
7	QAA Subject Benchmark(s)	N/A
8	FHEQ Level	Masters
9	Date written/revised	July 2007

10 Programme Aims

1. A systematic understanding of the theoretical principles which underpin conscious sedation and anxiety management in dentistry
2. A comprehensive practical understanding of clinical skills in techniques of intravenous and inhalational conscious sedation, as applicable to current UK practice in dentistry
3. An ability to critically evaluate the evidence-base and clinical issues involved in the safe independent practice of conscious sedation to the highest standard

11 Learning Outcomes

This programme has been designed to provide qualified dental practitioners with postgraduate education and training in the theoretical principles and clinical practice of conscious sedation to enable them to undertake the safe independent practice of conscious sedation for dentistry.

Knowledge and Understanding

On completing the programme students should demonstrate:

- A1 Knowledge of the aetiology and patho-physiology of anxiety in the management of anxious dental patients
- A2 Systematic understanding of the pharmacology of drugs used for conscious sedation
- A3 Critical evaluation of the selection and assessment of patients for conscious sedation
- A4 Practical understanding of the clinical skills and techniques used for conscious sedation in dentistry
- A5 Comprehensive understanding of the peri-operative care of sedation patients
- A6 Critical knowledge of the management of sedation-related and medical emergencies
- A7 Critical awareness of current guidelines which underpin and regulate the practice of conscious sedation in the UK
- A8 Originality in the application of principles of clinical audit and research appropriate to the investigation of an area of conscious sedation or anxiety control

Teaching and Learning Methods

A1-A8 are addressed through a mixture of lectures and small group discussion, augmented

by independent study and directed by the provision of reading lists and support by an individual supervisor. They are further developed by written assignments based on the topics of each section and exposure to clinical material during clinical sessions.

Assessment Strategy

Formative assessment of knowledge and understanding occurs during classroom activities and during clinical sessions. Knowledge and understanding are assessed summatively during the course by the completion of 5 written assignments relating to specific sections, by 3 multiple choice question papers, and by the production of a dissertation.

Intellectual Skills

On completing the programme students should be able to:

- B1 Critically evaluate the current evidence base on clinical techniques used for adult and paediatric conscious sedation
- B2 Critically appraise literature and guidelines on conscious sedation and apply these to clinical practice
- B3 Evaluate their own clinical management of patients undergoing sedation for dental procedures.
- B4 Critically evaluate their own clinical research or audit methodologies

Teaching and Learning Methods

B1-B2 are developed through the teaching and learning strategies as described above. Independent study and completion of written assignments requiring critical evaluation are particularly important. B3 is developed during the hands-on clinical attachments with support from the clinical supervisor. B4 is addressed during the production of the dissertation.

Assessment Strategy

These are assessed formatively by the completion of written assignments and a dissertation.

Practical Skills

On completing the programme students should be able to:

- C1 Critically evaluate and assess the suitability of patients for conscious sedation
- C2 Apply knowledge and skills to managing the peri-operative care of sedated patients
- C3 Apply clinical skills to manage anxious adult dental patients using intravenous midazolam
- C4 Apply clinical skills to manage paediatric dental patients using inhalational nitrous oxide/oxygen
- C5 Evaluate, monitor and manage the clinical condition of sedated patients
- C6 Develop management strategies to manage sedation-related emergencies
- C7 Apply knowledge and skills to provide a high quality sedation service for dental patients
- C8 Show originality in the application of knowledge to investigate an area of relevance to the practice of conscious sedation or anxiety control

Teaching and Learning Methods

C1-C7 are sedation-related skills which are developed through practical and clinical sessions which involve the hands on treatment of patients at hospitals across the North East. Practical and clinical teaching is overseen by a clinical supervisor and reinforced by individual feedback at the end of each session. C8 is addressed through lectures and small group discussion plus individual statistical and supervisor support.

Assessment Strategy	
Practical and clinical skills are assessed formatively through observed practical and clinical sessions with feedback from a clinical supervisor. Summative assessment is undertaken by the completion of a clinical portfolio.	
Transferable/Key Skills	
On completing the programme students should be able to:	
D1	Communicate effectively in writing by means of well-prepared and presented grammatically correct written documents
D2	Utilise paper and electronic information resources skilfully and appropriately
D3	Plan, organise and prioritise work activities in order to meet deadlines
D4	Learn how to solve problems independently
D5	Undertake effective oral communication with patients, nursing staff, supervisors and peers
D6	Perform practical skills relating to clinical sedation care
D7	Maintain a reflective portfolio of clinical training and achievement
Teaching and Learning Methods	
D1-D4 are developed with the requirement to research and produce written assignments for each section. Feedback on assignments reinforces learning in this area. D5-D7 are addressed through practical and clinical attachment sessions, with debriefing after each session by the clinical supervisor, plus an oral presentation to the peer group.	
Assessment Strategy	
Transferable skills are formatively assessed from the completion of written assignments, an oral presentation, a clinical portfolio and a dissertation.	

12 Programme Curriculum, Structure and Features	
Basic structure of the programme	
<p>The programme, which is part time, extends over one academic year and has a value of 120 credits. It consists of a formal taught component, directed self study, clinical practice and a project. The curriculum consists of 12 sections (10 credits per section) which are taught using a range of methods including lectures, seminars, clinical instruction and a substantial amount of self-directed learning. All sections are compulsory.</p>	
Section 1	Basic Sciences and Pharmacology
<p>The aim of this section is to provide a systematic understanding of the scientific principles which underpin techniques of conscious sedation and the control of anxiety and pain in dentistry</p> <p>By the end of this section students should:-</p>	
1.	Have a comprehensive knowledge of applied cardiovascular and respiratory anatomy and physiology relevant to conscious sedation
2.	Have a systematic understanding of the pharmacology of intravenous, inhalational and oral sedation agents
3.	Be able to critically evaluate the impact of sedation agents on cardio-respiratory physiology and how their effects are influenced by systemic disease
4.	Have a sound understanding of the actions of agents used for analgesia, anxiety control and general anaesthesia in dentistry

Section 2

Anxiety and Pain

The aim of this section is to provide a systematic knowledge of the physiological and psychological foundation for dental anxiety and pain and to critically evaluate the range of techniques that are used in dental anxiety and pain control.

By the end of this section students should:-

1. Have a comprehensive understanding of the psychological basis for dental anxiety and phobia
2. Have a systematic knowledge of behavioural methods available to manage anxiety and phobia in dentistry
3. Be able to apply the physiology and mechanism of pain perception to clinical scenarios
4. Be able to develop management strategies to control pain in the oro-facial region
5. Have an comprehensive understanding of the role of local anaesthesia and systemic analgesics in pain control
6. Be able to critically evaluate the range of sedation techniques available for the provision of dental care in anxious adult and paediatric patients
7. Be able to evaluate the complex issues required for the use of general anaesthesia in the management of anxious dental patients

Sections 3-4

Intravenous Sedation

The aim of this section is to provide a comprehensive practical understanding of the principles of intravenous sedation and the practical skills of intravenous sedation technique as applicable to current UK sedation practice

By the end of this section students should:-

1. Have a comprehensive understanding of the principles of intravenous sedation
2. Have a practical understanding of the safe function and use of equipment for intravenous sedation
3. Be able to independently undertake the skill of venous cannulation
4. Be able to safely prescribe and administer the intravenous sedation drug midazolam
5. Have a systematic understanding of how to safely sedate a patient with midazolam to an appropriate end-point
6. Be able to critically evaluate and monitor the clinical condition of a sedated patient
7. Be able to recognise and manage sedation-related problems and emergencies
8. Be able to perform the complex role of operator-sedationist and undertake operative dentistry safely on sedated patients
9. Be able to determine the fitness of a patient for discharge following sedation
10. Be able to critically evaluate the limitations and risks of intravenous sedation

Each student will undergo supervised clinical attachments in intravenous sedation. These provide the opportunity to gain experience in intravenous sedation skills using midazolam and in operating on sedated patients. A clinical portfolio of patients treated will be maintained during the course.

Sections 5-6

Inhalational Sedation

The aim of this section is to provide a comprehensive understanding of the principles of inhalational sedation and practical experience in relative analgesia (nitrous oxide/oxygen) sedation technique.

By the end of this section students should:-

1. Have a systematic understanding of the principles of inhalational sedation
2. Have a comprehensive knowledge of the correct and safe functioning of machines used to administer relative analgesia (nitrous oxide/oxygen) sedation
3. Be able to critically evaluate the health and safety recommendations regarding anaesthetic gas scavenging
4. Be able to apply the principles of relative analgesia sedation to paediatric behaviour management strategy
5. Be able to undertake pre-operative preparation of dental patients for relative analgesia sedation
6. Be able to apply knowledge to safely administer relative analgesia sedation to dental patients
7. Be able to demonstrate the complex role of operator-sedationist and undertake operative dentistry on patients undergoing relative analgesia sedation
8. Be able to terminate the administration of sedation and discharge the patient safely
9. Be able to evaluate and manage sedation-related complications and emergencies

Each student will undergo supervised clinical attachments in relative analgesia (nitrous oxide/oxygen) sedation. These provide the opportunity to gain experience in inhalational sedation skills and in operating on sedated patients. A clinical portfolio of cases treated will be maintained during the course.

Sections 7-8 Sedation Patient Care

The aim of this section is to provide a systematic understanding of the complex issues involved in the selection and assessment of patients for sedation, the management of clinical care and safety of the patient during sedation and in the peri-operative period. This section also aims to provide a critical evaluation of guidelines on sedation and medico-legal implications that can arise from sedation practice.

By the end of this section students should:-

1. Have a critical awareness of the importance of patient assessment prior to sedation
2. Be able to critically evaluate the complex issues of medical status and drug therapy in assessing patients for sedation
3. Be able to apply knowledge on patient assessment to evaluate the suitability of patients for out-patient and day-case/in-patient sedation
4. Be able to undertake practical monitoring of vital signs both clinically and electro-mechanically
5. Be able to evaluate the safe and correct function of monitoring equipment
6. Be able to manage the recovery of sedated patients and determine fitness for discharge
7. Have a systematic understanding of the medico-legal implications of using sedation
8. Be able to critically evaluate national guidelines on sedation practice
9. Be able to manage the complex issues required in obtaining consent
10. Have a comprehensive understanding of the rules of consent in children and patients with disabilities
11. Understand the pivotal role of the sedation team in providing safe patient care

Each student will attend a sedation assessment clinic which will provide the opportunity to assess the suitability of patients for sedation and undertake treatment planning. Students will also attend an anaesthetist-led day-case/in-patient sedation session to observe the management of more complex sedation cases, including those which are unsuitable for out-patient sedation.

Section 9

Emergencies and Life Support

The aim of this section is to provide a systemic theoretical understanding and practical application of knowledge in the recognition and management of medical emergencies and in the delivery of immediate life support. The training will provide Immediate Life Support certified by the Resuscitation Council of the UK.

By the end of this section students should:-

1. Be able to critically evaluate and diagnose the cause of collapse
2. Be able to competently provide practical emergency care including adult and paediatric basic life support
3. Have a comprehensive understanding of how to maintain a patient's airway using basic and advanced techniques
4. Be able to critically evaluate the indications for the use of emergency drugs
5. Be skilled in the safe practical administration of parenteral emergency drugs
6. Have an systematic understanding of the principles and practice of immediate life support
7. Be able to recognise and apply cardiac arrest treatment algorithms
8. Be able to play an effective role as part of an emergency team
9. Be capable of critically evaluating and change protocols for emergency care used in a clinical environment

Sections 10-12

Project and Dissertation

The aim of these sections is to enable the student to critically evaluate current research in the field of pain and anxiety control, to propose a new audit or research question, to develop skills in audit and research methodology and to apply these skills in the design and implementation of a project leading to the production of a written dissertation.

By the end of these sections students should:-

1. Have an systematic understanding of the principles and methodologies used in clinical audit or research
2. Have a working knowledge of the regulatory procedures required to perform clinical research or audit
3. Be able to critically evaluate the literature and interpret current issues on a specific aspect of pain and anxiety control
4. Be able to formulate a clinical audit question or research hypothesis
5. Be able to apply audit and research skills to design, organise and undertake an original clinical audit or pilot research project
7. Be able to apply basic statistic methods to analyse data
8. Be able to draw accurate conclusions and recognise the limitations of an investigation
9. Be able to write an original piece of literature in the form of a comprehensive and structured dissertation
10. Have developed an independent learning ability required for continuing professional development

The main component of self-directed study is the design and implementation of a project which, upon completion, will form the basis for a 10,000 word dissertation. The project must involve the collection of data and be substantially the students own work. It will take the form of a clinical audit or pilot research study.

Key features of the programme (including what makes the programme distinctive)
<p>The programme is one of the few in the UK that provides dentists with a Diploma-level postgraduate training in sedation. The most recent External Examiner endorsed the programme as “Gold Standard in the UK”. The course provides students with the key knowledge base and skills in conscious sedation that are required to practice conscious sedation safely as an independent practitioner. Students develop the ability to critically evaluate the evidence-base so that they can provide sedation to the highest standard and apply these skills in their continuing professional development.</p>
Programme regulations (link to on-line version)
http://www.ncl.ac.uk/regulations/programme/2007-2008/programme/3383p.php

13 Criteria for admission
<p><i>Entry qualifications</i></p> <p>This part-time programme is open to registered dental practitioners who have an interest in or experience of practising conscious sedation. Applicants must:-</p> <ol style="list-style-type: none"> Hold a primary dental qualification which is recognised by the (UK) General Dental Council Hold full registration with the (UK) General Dental Council by the commencement of the programme Have obtained their primary dental qualification at least one year prior to commencement of the programme <p><i>Admissions policy/selection tools</i></p> <p>Prospective students must submit a completed application form with an associated pro-forma statement detailing their prior qualifications and experience, together with two references. Selection is by short-listing against specific criteria and interview. Candidates should be able to demonstrate the necessary academic and clinical ability to be able to cope with the course. They should also show evidence of previous core training or experience in sedation and a demonstrable need for the use of sedation in their own working environment.</p> <p><i>Non-standard Entry Requirements N/A</i></p> <p><i>Additional Requirements N/A</i></p> <p><i>Level of English Language capability</i></p> <p>A minimum overall score of 7.0, with no individual sections lower than 6.5</p>

14 Support for Student Learning
<p><i>Induction</i></p> <p>As all of the students on this programme will be studying on a part-time basis with full-time professional responsibilities elsewhere, the usual University pattern of induction is not practical. Information is given in the Diploma Programme Handbook to introduce students to the sources of information/advice available. The students attend a Library introduction session. Any students who need help or guidance with any aspect of becoming/being a postgraduate student are advised to contact the Programme Co-ordinator in the first instance.</p>

Study skills support

Students will learn a range of Transferable Skills, including Study Skills, as outlined in the Programme Specification. Students are provided with details of how to search the medical literature using on-line facilities. They have access to the Library, Journal and interlibrary loan facilities. Students can use the University computing and IT facilities although many live at a distance from the University and prefer to access local libraries and IT facilities. Further individual support is provided by supervisors as necessary.

Academic support

Each student is provided with a project supervisor who provides general advice and guidance with the project work. The network of supervisors is overseen by the Programme Director who provides Tutor support for students as required. Issues relating to the programme may be raised at the Curriculum Committee, and/or at the Board of Studies.

Pastoral support

Students are informed of appropriate sources of support in the Degree Programme Handbook. In practice, students usually consult the Programme Co-ordinator in the first instance. If necessary the Programme Co-ordinator will consult with the Degree Programme Director or individual supervisors for specific support for the student. In addition the University offers a range of support services, including the Student Advice Centre, the Counselling and Wellbeing team, the Mature Student Support Officer, and a Childcare Support Officer

Support for students with disabilities

The University's Disability Support Service provides help and advice for disabled students at the University - and those thinking of coming to Newcastle. It provides individuals with: advice about the University's facilities, services and the accessibility of campus; details about the technical support available; guidance in study skills and advice on financial support arrangements; a resources room with equipment and software to assist students in their studies. For further details see <http://www.ncl.ac.uk/disability-support/>

Learning resources

The University's main learning resources are provided by the Robinson and Walton Libraries (for books, journals, online resources), and Information Systems and Services, which supports campus-wide computing facilities as well as off-campus access to library resources. The programme guide provides comprehensive and prioritised self-study material/reading lists. Enthusiastic and committed staff provide a staff/student ratio of 1:10 for taught components, 1:5 for practical components and 1:2 for clinical teaching. Lecturers provide hard copy handouts as well as details of web resources.

All students admitted to the programme must have sufficient proficiency in English language at determined for full registration by the General Dental Council. However, new students whose first language is not English and who require further language training can access in-session language training See <http://ncl.ac.uk/langcen/index.htm>

15 Methods for evaluating and improving the quality and standards of teaching and learning

Section reviews

Sections are reviewed annually by the Degree Programme Director using students' evaluations, staff reflection on practice and the external examiners report. Changes in clinical practice are also taken into account to ensure that the content remains fit for purpose.

Student opinion is sought at the Staff-Student Committee and/or the Board of Studies.

Programme reviews

The programme is reviewed regularly by the Curriculum Committee which includes course teachers. The aim is to enhance the programme by regular feedback and review. The Curriculum Committee also takes into account the comments from the Board of Examiners. The Board of Examiners deals with issues of assessment structure, format and grading and is composed of course teachers plus an external examiner.

External Examiner reports

External Examiner reports are considered by the Board of Studies. The Board responds to these reports through Faculty Teaching and Learning Committee. External Examiner reports are shared with institutional student representatives, through the Staff-Student Committee.

Student evaluations

All study days are evaluated with a written questionnaire, gathering opinion on lectures, course teachers and at what level learning outcomes for the day have been achieved. Students are also advised that they can provide feedback directly to the Degree Programme Director and course teachers, either verbally or in writing. On completion of the Diploma programme overall student feedback is assessed by a course evaluation questionnaire. Informal student evaluation is also obtained from student representatives on the Curriculum Committee. Feedback from student evaluation is fed into the Board of Studies.

Mechanisms for gaining student feedback

Student evaluations are summarised by the Programme Co-ordinator and discussed at the Curriculum Committee. Feedback is channelled via the Curriculum Committee and the Board of Studies.

Faculty and University Review Mechanisms

The Curriculum Committee reports and is accountable to the Board of Studies (Graduate School Committee) for all taught programmes in the Faculty of Medical Sciences. The Board of Studies is responsible for monitoring and evaluating quality and standards and reports to the Faculty Teaching and Learning Committee and through them to the University Teaching and Learning Committee. The programme is subject to the University's Internal Subject Review process, see http://www.ncl.ac.uk/aqss/qsh/internal_subject_review/index.php

Accreditation reports

The UK General Dental Council has inspected the programme. A report of the most recent visitation is available at www.gdc-org.uk

Additional mechanisms N/A

16 Regulation of assessment

Pass mark

The pass mark is 50% in all assessments.

Course requirements

Progression is subject to the University's Masters Degree Progress Regulations, Taught and Research (<http://www.ncl.ac.uk/calendar/university.regs/tpmdepr.pdf>) and Examination Conventions for Taught Masters Degrees (<http://www.ncl.ac.uk/calendar/university.regs/tpmdeprexamconv.pdf>).

The Diploma in Conscious Sedation is awarded after satisfactory completion of a two-part assessment:

Part I: In-Course Assessment

- | | |
|----------------------------|--|
| 1. Written/oral assessment | Five written assignments
Three multiple choice question papers
One oral seminar presentation |
| 2. Clinical assessment | Completion of a reflective portfolio of clinical experience (based on course attachments and personal practice)

2 structured clinical operative tests (1 adult intravenous sedation case and 1 paediatric inhalational sedation case) |

Satisfactory completion of Part I is required before the student will be permitted to sit Part II (the Final Examination). An equal weighting of marks is given to the 9 component written and oral assessments and students must obtain an overall mark of 50% to pass the written/oral part I assessment. Students must also demonstrate satisfactory performance in two structured clinical operative tests, in adult intravenous sedation and paediatric inhalational sedation respectively. In addition, students will be expected to produce a reflective portfolio of clinical experience based on 14 supervised clinical attachments and personal work-based experience.

Part II : Final Examination

The Final Examination consists of:

1. Written multiple choice and short answer question papers (90 minutes)
2. Sedation viva voce (30 minutes)
3. Resuscitation practical (30 minutes)
4. Dissertation viva voce (30 minutes)

Each section of the Final Examination carries an equal weighting of marks. A candidate must pass every section (50%) to pass the Final Examination. The award of the Diploma will be dependent on the candidate attaining a pass (50%) in all four components of Part II of the examination. All components of the Diploma Part II examination are designated core and compulsory. Should a candidate achieve a borderline fail (normally more than 45% but less than 50% in one component of Part II, they will be required, at the discretion of the Board of Examiners, to re-sit that component only. A borderline fail in more than one section of the Part II examination or a bad fail (45% or less) in any one section will require the candidate to re-sit the whole Part II examination. The Diploma may, at the discretion of the Board of Examiners, be awarded with merit (aggregate in final examination above 60%) or distinction (aggregate in final examination above 70%)

Common Marking Scheme

The University employs a common marking scheme, which is specified in the Taught Postgraduate Examination Conventions, namely:-

Summary description applicable to postgraduate Masters programmes

< 50	Fail
50-59	Pass
60-69	Pass with Merit
70 or above	Pass with Distinction

Role of the External Examiner

The external examiner is selected as a senior academic/clinician with expertise in sedation for dentistry. He/she is appointed by the Faculty Teaching and Learning Committee. The external examiner's role is that of moderator. In order to do this the external examiner:-

1. Samples assignments and portfolios from across the range of grades and comments upon standards of marking
2. Moderates marking where there has been any discrepancy between internal markers
3. Scrutinises all provisional fail or borderline dissertations
4. May participate in or observe viva/oral/practical components of the Final Examinations
5. Attends Board of Examiners meetings
6. Reports to the University regarding standards and comparability of standards

In addition, information relating to the programme is provided in:

The University Prospectus (see <http://www.ncl.ac.uk/postgraduate/>)

The University Regulations (see <http://www.ncl.ac.uk/calendar/university.regs/>)

The Degree Programme Handbook

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided. The accuracy of the information contained is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

Mapping of Intended Learning Outcomes onto Curriculum/Modules

Either

Intended Learning Outcome	Module codes (Compulsory in Bold)
A1	ABC1001 , XYZ2002
A2	
A3	
A4	
B1	
B2	
B3	
B4	
C1	
C2	
C3	
C4	
D1	
D2	
D3	
D4	

Or

Module	Type	Intended Learning Outcomes			
		A	B	C	D
XYZ1001	Compulsory	1	1, 2, 3	4	2, 3