National Unit specification: general information

Unit title: Pharmaceutics: Preparation and Use of Pharmaceutical Dosage Forms

Unit code: FH29 12

Superclass: PE

Publication date: August 2012

Source: Scottish Qualifications Authority

Version: 03

Summary

This Unit is designed to develop knowledge, understanding and practical skills in relation to the preparation of extemporaneous medicines and the use of other dosage forms. This Unit is a mandatory Unit of the National Certificate in Pharmacy Services but can also be taken as a free-standing Unit.

It is designed primarily for staff working within the pharmacy sector. However it may also be suitable for somebody with an interest in the subject area.

Outcomes

1   Demonstrate knowledge and understanding of the correct use of different dosage forms to ensure their safe and effective use.
2   Demonstrate knowledge and understanding of the principles and processes underlying the preparation of extemporaneous medicines.
3   Prepare, package, label and issue extemporaneous medicines.

Recommended entry

While entry is at the discretion of the centre, candidates would normally be expected to have some knowledge, understanding and skills relating to Chemistry and Mathematics. This could be demonstrated by attainment of the following, or equivalent:

♦   Standard Grade Chemistry at a minimum of Grade 3 or equivalent.
♦   Standard Grade Mathematics at a minimum of Grade 3 or Intermediate 2 Mathematics or equivalent.
♦   Standard Grade English at a minimum of Grade 3 or equivalent.

National Unit specification: general information (cont)

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Credit points and level

1.5 National Unit credit(s) at SCQF level 6: (9 SCQF credit points at SCQF level 6*)

SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes of this Unit specification.

There is no automatic certification of Core Skills or Core Skill component in this Unit.

National Unit specification: statement of standards

Unit title: Pharmaceutics: Preparation and Use of Pharmaceutical Dosage Forms

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Outcome 1

Demonstrate knowledge and understanding of the correct use of different dosage forms to ensure their safe and effective use.

Performance Criteria

(a) Dosage forms are defined correctly.
(b) The advantages and disadvantages of different dosage forms are described correctly.
(c) The use of dosage forms is described correctly.

Outcome 2

Demonstrate knowledge and understanding of the principles and processes underlying the preparation of extemporaneous medicines.

Performance Criteria

(a) The reason for the inclusion of ingredients in extemporaneous medicines is explained correctly.
(b) The methods of incorporating ingredients into extemporaneous medicines are explained correctly.
(c) Factors which may adversely affect the preparation of extemporaneous medicines are described correctly.

Outcome 3

Prepare, package, label and issue extemporaneous medicines.

Performance Criteria

(a) The extemporaneous medicine is prepared appropriately/correctly.
(b) Packaging is appropriate for the type of preparation.
(c) Labelling of the preparation is correct.
(d) Demonstration and provision of instruction on the use of a dosage form is undertaken appropriately.
(e) Issue of the preparation is appropriate.

National Unit specification: statement of standards (cont)

Unit title: Pharmaceutics: Preparation and Use of Pharmaceutical Dosage Forms

Evidence Requirements for this Unit

Evidence is required to demonstrate the candidates have achieved all Outcomes and Performance Criteria.

Outcomes 1 and 2 should be assessed under controlled conditions by a single holistic closed-book assessment of one hour duration covering all of the above Performance Criteria.

Outcome 1

♦ Candidates must correctly define dosage forms.
♦ Candidates must correctly describe at least one advantage and one disadvantage from three out of four dosage forms.
♦ Candidates must correctly describe uses of dosage forms.

Outcome 2

♦ Candidates must correctly explain reasons for the inclusion of ingredients in extemporaneous medicines.
♦ Candidates must correctly explain methods of incorporating ingredients into extemporaneous medicines.
♦ Candidates must correctly describe factors which may adversely affect preparations of extemporaneous medicines.

Outcome 3 must be assessed by the candidates preparing, packaging, labelling and issuing a selection of extemporaneous medicines.

Outcome 3

♦ Candidates must correctly and appropriately prepare, package, label and issue one from each type of the following: topical; oral liquid; suppository and solid oral unit dosage form.
♦ Candidates must be assessed by directly observed practical exercises and a checklist of the candidate's work must be produced including appropriate instruction and demonstration on the use of dosage forms/devices.

National Unit specification: support notes

Unit title: Pharmaceutics: Preparation and Use of Pharmaceutical Dosage Forms

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 60 hours.

Guidance on the content and context for this Unit

Outcome 1

(a) Dosage forms are defined correctly.
(b) The advantages and disadvantages of different dosage forms are described correctly.
(c) The use of dosage forms is described correctly:
    (i) Oral preparations: tablets, capsules, internal liquids, sublingual sprays/tablets.
    (ii) Topical preparations: creams, ointments, patches, lotions, eye/ear/nasal preparations.
    (iii) Rectal and vaginal preparations: creams, ointments, tablets, suppositories and pessaries.
    (iv) Inhalers and devices.

Outcome 2

(a) The reason for the inclusion of ingredients in extemporaneous medicines is explained correctly.
    (i) Topical preparations: bases, preservatives, anti-oxidants.
    (ii) Oral liquid preparations: vehicles, preservatives, anti-oxidants, colouring, flavouring, suspending agents.
    (iii) Suppositories: bases.
    (iv) Solid oral unit dose forms: diluents, powder papers, capsule shells.

(b) The methods of incorporating ingredients into extemporaneous medicines are explained correctly.
    (i) Dissolution, heat, doubling up, titration, displacement, dilutions and reconstitutions.
(c) Factors which may adversely affect preparations of extemporaneous medicines are described correctly.
    (i) Heat, light, moisture, oxygen, microbiological contamination

Outcome 3

(a) The extemporaneous medicine is prepared appropriately/correctly.
(b) Packaging is appropriate for the type of preparation.
(c) Labelling of the preparation is correct.
(d) Demonstration and provision of instruction on the use of a dosage form is undertaken appropriately.
    (i) Learning environment and learning styles.
    (ii) Instructional techniques and checking understanding.
    (iii) Structuring demonstrations.
(e) Issue of the preparation is appropriate.

National Unit specification: support notes (cont)

Unit title: Pharmaceutics: Preparation and Use of Pharmaceutical Dosage Forms

Guidance on learning and teaching approaches for this Unit

The learning and teaching of pharmaceutics is most effective when concepts, principles, and theories are set in a relevant context e.g. by making reference to applications of pharmaceutics in healthcare situations.

Background information could be introduced by exposition, re-enforced by hand-outs, supported by the use of models, diagrams, videos and demonstration of practical techniques to enable the student to describe the use of different dosage forms and prepare, package, label and issue examples of different preparations.

This Unit must be taught by either a pharmacist or pharmacy technician.

Opportunities for developing Core Skills

Although there is no automatic certification of Core Skills components, there may be the opportunity to gather evidence towards the following Core Skills: *Numeracy* at SCQF level 5.

Guidance on approaches to assessment for this Unit

It is recommended that Outcomes 1 and 2 are assessed under controlled conditions by a single holistic closed-book assessment of one hour duration covering all of the Performance Criteria.

Achievement of Outcomes 1 and 2 could be demonstrated by use of a cut-off score. Any cut-off score must be commensurate with the minimum evidence requirements of the Unit specification.

It is recommended that Outcome 3 is assessed by the candidates preparing, packaging, labelling and issuing a selection of extemporaneous medicines from appropriate prescriptions. Extemporaneous sheets should be completed and the outcome assessed using checklists.

Opportunities for the use of e-assessment

Outcomes 1 and 2 should be assessed under controlled conditions by a single holistic closed-book assessment of one hour duration covering all of the above Performance Criteria.

Outcome 3 must be assessed by the candidates preparing, packaging, labelling and issuing a selection of extemporaneous medicines.

National Unit specification: support notes (cont)

Unit title: Pharmaceutics: Preparation and Use of Pharmaceutical Dosage Forms

♦ Candidates must correctly and appropriately prepare, package, label and issue one from each type of the following: topical; oral liquid; suppository and solid oral unit: dosage form.
♦ Candidates must be assessed by directly observed practical exercises and a checklist of the candidate's work must be produced.

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003), SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**.

History of changes to Unit

Version	Description of change	Date
02	Amendments to wording within the 'Guidance on learning and teaching approaches in this unit', bottom paragraph.	10/10/2011
03	Inconsistency across units in Recommended entry Clarification of the wording to avoid ambiguity and over/under assessment. Correction of typos and editing (cut and paste) errors in text.	10/08/2012