

Level 3 Certificate in Diabetic Retinopathy Screening (7359)

Centre Resource Pack

500/1422/5



About City & Guilds

City & Guilds is the UK's leading provider of vocational qualifications, offering over 500 awards across a wide range of industries, and progressing from entry level to the highest levels of professional achievement. With over 8500 centres in 100 countries, City & Guilds is recognised by employers worldwide for providing qualifications that offer proof of the skills they need to get the job done.

City & Guilds Group

The City & Guilds Group includes ILM (the Institute of Leadership & Management) providing management qualifications, learning materials and membership services and NPTC (National Proficiency Tests Council) which offers land-based qualifications. City & Guilds also manages the Engineering Council Examinations on behalf of the Engineering Council.

Equal opportunities

City & Guilds fully supports the principle of equal opportunities and we are committed to satisfying this principle in all our activities and published material. A copy of our equal opportunities policy statement *Access to assessment and qualifications* is available on the City & Guilds website.

Copyright

The content of this document is, unless otherwise indicated, © The City and Guilds of London Institute 2006 and may not be copied, reproduced or distributed without prior written consent.

However, approved City & Guilds centres and learners studying for City & Guilds qualifications may photocopy this document free of charge and/or include a locked PDF version of it on centre intranets on the following conditions:

- centre staff may copy the material only for the purpose of teaching learners working towards a City & Guilds qualification, or for internal administration purposes
- learners may copy the material only for their own use when working towards a City & Guilds qualification
- the *Standard Copying Conditions* on the City & Guilds website.

Please note: National Occupational Standards are not © The City and Guilds of London Institute. Please check the conditions upon which they may be copied with the relevant Sector Skills Council.

Publications

City & Guilds publications are available on the City & Guilds website or from our Publications Sales department at the address below or by telephoning +44 (0)20 7294 2850 or faxing +44 (0)20 7294 3387.

Every effort has been made to ensure that the information contained in this publication is true and correct at the time of going to press. However, City & Guilds' products and services are subject to continuous development and improvement and the right is reserved to change products and services from time to time. City & Guilds cannot accept liability for loss or damage arising from the use of information in this publication.

City & Guilds

1 Giltspur Street

London EC1A 9DD

T +44 (0)20 7294 2800

F +44 (0)20 7294 2400

www.cityandguilds.com

enquiry@cityandguilds.com

Level 3 Certificate in Diabetic Retinopathy Screening (7359)

Centre Resource Pack



www.cityandguilds.com
October 2006
Version 1.0

This page is intentionally blank

Contents

1	About this document	7
2	About the qualification	9
3	Learner entry and progression	10
4	Centre requirements	11
5	Roles and occupational expertise requirements	13
6	Course design and delivery	15
7	The qualification structure	17
8	Assessment requirements	19
9	Recording requirements	22
	Form VRQ 1	23
	Form VRQ 2	24
	Form VRQ 3	25
	Form VRQ 4	27
10	Links to National Occupational Standards	28
11	Key Skills signposting	29
12	The wider curriculum	31
13	Units	32
Unit 301	National Diabetic Retinopathy Screening Programmes, Principles, Processes and Protocols	33
Unit 302	Diabetes and its Relevance to Retinopathy Screening	40
Unit 303	Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance	45
Unit 304	Preparing the Patient for Retinopathy Screening	51
Unit 305	Measuring Visual Acuity and Performing Pharmacological Dilatation	57
Unit 306	Imaging the Eye for the Detection of Diabetic Retinopathy	67
Unit 307	Detecting Retinal Disease	73
Unit 308	Classifying Diabetic Retinopathy	79
Unit 309	Administration and Management Systems in a Retinopathy Screening Programme	84
14	Assignments	97
Unit 301	National Diabetic Retinopathy Screening Programmes, Principles, Processes and Protocols	98
Unit 302	Diabetes and its Relevance to Retinopathy Screening	101
Unit 303	Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance	103
Unit 304	Preparing the Patient for Retinopathy Screening	105
Unit 305	Measuring Visual Acuity and Performing Pharmacological Dilatation	107
Unit 306	Imaging the Eye for the Detection of Diabetic Retinopathy Screening	110
Unit 307	Detecting Retinal Disease	113
Unit 308	Classifying Diabetic Retinopathy	117
Unit 309	Administration and Management Systems in a Retinopathy Screening Programme	119

15	Candidate Guidance	122
Unit 301	National Diabetic Retinopathy Screening Programmes, Principles, Processes and Protocols	123
Unit 302	Diabetes and its Relevance to Retinopathy Screening	126
Unit 303	Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance	128
Unit 304	Preparing the Patient for Retinopathy Screening	130
Unit 305	Measuring Visual Acuity and Performing Pharmacological Dilatation	133
Unit 306	Imaging the Eye for the Detection of Diabetic Retinopathy	135
Unit 307	Detecting Retinal Disease	138
Unit 308	Classifying Diabetic Retinopathy	140
Unit 309	Administration and Management Systems in a Retinopathy Screening Programme	142

1 About this document

This document contains the specific details that centres will require to offer the Level 3 Certificate in Diabetic Retinopathy Screening (7359).

This document includes

- centre resource requirements
- learner entry requirements
- information about progression to other qualifications
- unit specifications
- assessment requirements
- assessing learners
- quality assurance
- links to other useful information

Level 3 Certificate in Diabetic Retinopathy Screening

City & Guilds qualification number **7359**

QCA accreditation number **500/1422/5**

This document includes details and guidance on:

- centre resource requirements
- learner entry requirements
- information about links with, and progression to, other qualifications
- qualification standards and specifications
- assessment requirements
- evidence recording forms

Other relevant publications

There are also other City & Guilds documents which contain the latest information regarding the assessment of vocationally related qualifications (VRQs):

- Providing City & Guilds qualifications (PCGQ) – a guide to centre and scheme approval
- Ensuring quality - containing updates on assessment and policy issues
- City & Guilds centre toolkit – additional information on running City & Guilds qualifications is given in a CD-ROM, which links to the internet for access to the latest documents, reference materials and templates
- City & Guilds Directory of Qualifications – provides details of general regulations, registration and certification procedures and fees. This information also appears on the online qualification administration service for City & Guilds approved centres – The Walled Garden at **www.walled-garden.com**.

Details of general regulations, registration and certification procedures, including fees, are included in the City & Guilds Directory of Qualifications. This information appears on the online qualification administration service for City & Guilds approved centres - The Walled Garden at **www.walled-garden.com**.

2 About the qualification

Introduction

This qualification is intended to be a response to the UK Four Nations requirements to provide systematic quality assured screening for diabetic retinopathy.

In order to fulfil required standards there has to be a competent workforce which can provide evidence of skills and knowledge. This can be achieved by setting a UK wide syllabus and assessment standard, so that all providers of training are working towards a nationally accredited qualification. This qualification will enable those involved in diabetic retinopathy to demonstrate competence and thereby safeguard patients.

It is anticipated that this will encourage the recruitment of more staff for diabetic retinopathy screening and so meet training targets and aid retention of staff.

Aims of the qualification

The qualification recognises the development of knowledge and practical skills with the aim of improving people's practice in whatever form that might take. It aims to provide a clear, coherent framework that relates to the type of complex, practical issues encountered by people screening for diabetic retinopathy.

This Certificate has been developed to assess learning outcomes which map to National Occupational Standards. Further information is available on the English National Screening Programme for Diabetic Retinopathy website at www.nscretinopathy.org.uk.

3 Learner entry and progression

Target group

This qualification is designed to meet the learning needs of all personnel involved in the identification of sight threatening diabetic retinopathy. It is designed to encourage a multi-disciplinary and interprofessional focus for learners from a diverse range of backgrounds.

This qualification has been specifically developed to meet policy requirements, for new and existing workers, for example those contained in the English National Service Framework (NSF) for Diabetes.

Learner entry requirements

The UK Four Nations specifications, although varying in detail, require that all staff involved in the respective National Screening Programmes are properly trained and accredited. Learners will normally be engaged to work in retinopathy screening and will be referred by the organisation contracted by the NHS to provide screening. This will presuppose the necessary literacy, numeracy and care skills required to undergo the training.

Progression

Learners may take further optional units for a wider breadth of knowledge within diabetic retinopathy screening.

4 Centre requirements

Centre and scheme approval

City & Guilds qualifications may only be offered by approved organisations, called centres. This section provides an outline of the process of applying for approval. Centres must meet a set of quality criteria which include

- Provision of adequate resources, both physical and human
- Clear management information systems
- Effective assessment and quality assurance procedures including learner support and reliable recording systems

An organisation that has not previously offered City & Guilds qualifications will have to apply for approval to become a centre. This is known as centre approval. They will also need approval to offer the specific qualification. This is called scheme approval. Organisations which are not already centres, must apply for centre and scheme approval at the same time. Existing City & Guilds centres will only need to apply for scheme approval for the specific qualification.

Full details of the procedures and forms for applying for centre and scheme approval are given in Providing City & Guilds qualifications – a guide to centre and scheme approval. Providing City & Guilds Qualifications (PCGQ) is available on the City & Guilds centre toolkit, or downloadable from the City & Guilds website www.cityandguilds.com.

Regional/national offices will support new centres and appoint a Quality Systems Consultant to guide the centre through the approval process. They will also provide details of the fees applicable for approvals.

Assessments must not be undertaken until centre approval and scheme approval have been obtained.

City & Guilds reserves the right to withdraw scheme or centre approval for reasons of debt, malpractice or non-compliance with City & Guilds' policies, regulations, requirements, procedures and guidelines, or for any reason that may be detrimental to the maintenance of authentic, reliable and valid qualifications or that may prejudice the name of City & Guilds.

Further details of reasons for suspension and withdrawals, procedures and timescales, are contained in PCGQ.

Time Constraints

All assignments must be completed and assessed within the learners' period of registration. Centres should advise learners of any internal timescales for the completion and marking of each assignment.

Administration

Administrative details for Vocationally Related Qualifications (VRQs) are provided in the Directory of Qualifications and Assessment, the VRQ Centre Guide and on the Walled Garden section of the City & Guilds website. Centres should follow this guidance, particularly noting the registration and certification end dates for the qualification.

The City & Guilds scheme number for this qualification is 7359.

Registration and Certification

Learners must be registered at the beginning of their programme using Form S or via the Walled Garden using the appropriate scheme /complex number.

City & Guilds will despatch a copy to the centre of the relevant learner guide, which will contain all information relevant to the learner.

When assignments have been successfully completed, learners' results should be submitted on Form S or via the Walled garden. Centres should note that results will not be processed until verification records have been completed.

Full details on the above can be found in the Directory of Qualifications published annually by City & Guilds. This is also available on our website **www.cityandguilds.com**

Supporting information

Learners have the responsibility to understand the requirements for the qualification and to collect the evidence to meet these requirements.

In order to fully support learners, centres are required to retain copies of assessment records for a period of 3 years after completion of the qualification and certification. All evidence must be signed and dated by the assessor.

Learner support

The learner should meet with a mentor appointed by their local screening programme (e.g. line manager or programme manager within the workplace) regularly on an individual or group basis to review learning and progress needs. The mentor will direct and support the learner and engage experts to act as assessors. The mentor may also act as an assessor for some units.

5 Roles and occupational expertise requirements

Occupational expertise requirements for centre staff

It is important that centre staff meet the criteria for delivering, assessing and internally verifying qualifications set out in PCGQs. There are also additional requirements for the delivery of qualifications, with which centres must comply (see PCGQs).

Internal Quality Assurance

It is important that approved centres have effective quality assurance systems to ensure optimum delivery and assessment of qualifications. Centres are responsible for internal quality assurance and City & Guilds is responsible for external quality assurance.

Full details and guidance on internal and external quality assurance requirements and procedures are provided in the Centre toolkit. The guidance also explains the tasks, activities and responsibilities of quality assurance staff.

Workplace Assessor requirements

Workplace Assessors must be occupationally competent in the areas of expertise that they will be assessing in this qualification. They will observe, record, discuss, provide constructive criticism, advise and guide the learner in order to confirm that the assessment criteria have been met.

The following professions should be able to assess each of the units. This information is for guidance only and individual Curricula Vitae (CVs) will be scrutinised for applicability.

Unit 301	Experienced clinical lead, public health consultant
Unit 302	Diabetologist, diabetes specialist nurse
Unit 303	Ophthalmologist, optometrist, ophthalmic trained nurse
Unit 304	Ophthalmologist, optometrist, ophthalmic trained nurse
Unit 305	Ophthalmologist, optometrist, ophthalmic trained nurse
Unit 306	Ophthalmic photographer, experienced photographer in retinal screening
Unit 307	Ophthalmologist, senior diabetic retinopathy grader
Unit 308	Ophthalmologist, senior diabetic retinopathy grader
Unit 309	Senior administrator from a retinopathy screening programme

In addition, anyone who has achieved a unit will then be able to become an assessor for that unit, further to a decision made by the employer.

An understanding of training and assessment will also be necessary to assess learners. Assessor guidance will be provided but evidence of relevant training qualifications will be an advantage.

Internal verifier requirements

Approved centres must have effective quality assurance systems to ensure optimum delivery and assessment of qualifications.

To meet the quality assurance criteria for this qualification, the centre must ensure that the following internal roles are undertaken:

- quality assurance co-ordinator
- trainer/tutor
- assessor
- internal verifier
- examinations secretary

For this qualification centres internal verifiers must have a health and social care background.

Full details and guidance on the internal and external quality assurance requirements and procedures, are provided in *Providing City & Guilds qualifications* and in the *Centre toolkit* together with full details of the tasks, activities and responsibilities of quality assurance staff.

In order to fully support learners, centres are currently required to retain copies of learners' assessment and verification records for three years after certification

External quality assurance

City & Guilds appoints External Verifiers who have the appropriate occupational knowledge and experience in addition to knowledge and understanding of the qualification structure and its associated assessment requirements.

Further details of the role of external verifiers are given in *Providing City & Guilds qualifications*.

External verifiers are appointed:

- to make centre and qualification approval commendations to City & Guilds
- to monitor that approved centres continue to meet the centre and qualification approval criteria
- to ensure the quality and consistency of assessments within and between centres by the use of systematic sampling
- to provide feedback, support and guidance as necessary to ensure the integrity of the qualification

External quality assurance for the qualification will be provided by the usual City & Guilds external verification process. This includes the use of an electronically scannable report form which is designed to provide an objective risk analysis of individual centre assessment and verification practice.

A/V Units (Assessor/Verifier Units)

While the A/V units are valued as qualifications for centre staff, they are not currently a requirement for assessors and verifiers to carry out their respective roles for this qualification.

6 Course design and delivery

Notional learning hours

Notional learning hours are the estimated time taken by the learner to achieve the learning outcomes of the qualification. Notional learning hours include:

- Formal learning (classes, seminars, tutorials)
- Practical work
- Information retrieval in libraries
- Expected private study and revision
- Work based activities leading to assessment
- All forms of assessment

Guided learning hours

The Learning Skills Council (LSC) definition of guided learning hours is defined as all times when a member of staff is present to give specific guidance towards the learning aim being studied on a programme. This includes lectures, tutorials, and supervised study, in for example, open learning centres and learning workshops. It does not include time spent by staff in the day-to-day marking of assignments or homework where the learner is not present. It does not include hours where supervision or assistance is of a general nature and is not specific to the study of the learners.

Duration of programme

This programme is an in-service, work-based qualification. The duration of the programme will be determined, to some extent, by the number of clinics in which the learner can work to gain the learning outcomes. It is anticipated that the qualification will take no longer than 2 years to achieve for a new-entrant worker and a shorter period for an existing, experienced worker.

Recommended delivery strategies

In terms of delivering the qualification, the emphasis is on learner learning by doing, and on building and accrediting a learner's knowledge and skills acquired in the work sector. Learners will be expected to carry out practical activities and to demonstrate knowledge and understanding.

Provided that the requirements for the qualification are met, centres may design course programmes of study in any way that they feel best meets the needs and capabilities of their learners. Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualifications before designing a course programme. It is the responsibility of screening programmes to provide resources, mentors and assessors. Assessments must meet the learning outcomes of the qualification.

Mentors and assessors must familiarise themselves with the structure, content and assessment requirements of the qualification.

The Wider Curriculum

It is recommended that centres and screening programmes consider the following:

- Key Skills (communication, application of Number, Information Technology, Working with Others, Improving Own Learning and Performance, Problem Solving)
- Health and Safety Considerations, in particular to impress upon learners that they must preserve the health and safety of others as well as themselves

- Spiritual, moral, social, cultural and environmental issues

Health and safety

The requirement to follow safe working practices is an integral part of all City & Guilds qualifications and assessments, and it is the responsibility of centres to ensure that all relevant health and safety requirements are in place before learners start practical assessments.

Should a learner fail to follow health and safety practice and procedures during an assessment (e.g. practical assessment, assignment) the test must be stopped and the learner advised of the reasons why. The learner should be informed that they have failed the assessment. Learners may retake the assessment at a later date, at the discretion of the centre. In any cases of doubt, guidance should be sought from the external verifier.

Appeals

Centres must have their own, auditable, appeals procedure. If a learner is not satisfied with the assessor's judgment of his/her competence during the assessment process, or a learner feels that the opportunity for assessment is being denied, the internal verifier and centre co-ordinator should, in the first instance, address the problem.

Further information is given in PCGQ. There is also appeals information for centres and learners on the City & Guilds website at **www.cityandguilds.com** or available from the Customer Relations department.

Equal opportunities

It is a requirement of centre approval that centres have an equal opportunities policy (see PCGQ). The regulatory authorities require City & Guilds to monitor centres to ensure that equal opportunity policies are being followed.

The City & Guilds equal opportunities policy is set out on the City & Guilds website: **www.cityandguilds.com**, in PCGQ, in the Directory of Qualifications, and is also available from the City & Guilds Customer Relations department.

Access to assessment

For learners with particular assessment requirements, centres should refer to our policy document Access to assessment, learners with particular requirements. This can be downloaded from our website **www.cityandguilds.com**

Confidentiality

The importance of maintaining confidentiality is paramount. Learners are reminded that the portfolio must not contain any material from which a patient can be identified. Portfolios containing such material will not be considered for the qualification.

7 The qualification structure

This qualification is a vocationally related qualification (VRQ), which has been developed by a multidisciplinary expert reference group* originally set up by NHSU and now comprising subject experts from the UK Four Nations and educationalists.

The award of Certificate in Diabetic Retinopathy Screening comprises the 3 mandatory units and 3 optional units.

Mandatory units

Unit 301 National Diabetic Retinopathy Screening Programmes, Principles, Processes and Protocols

Unit 302 Diabetes and its Relevance to Retinopathy Screening

Unit 303 Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance

Optional units (of which learners must take at least 3)

Unit 304 Preparing the Patient for Retinopathy Screening

Unit 305 Measuring Visual Acuity and Performing Pharmacological Dilatation

Unit 306 Imaging the Eye for the Detection of Diabetic Retinopathy

Unit 307 Detecting Retinal Disease

Unit 308 Classifying Diabetic Retinopathy

Unit 309 Administration and Management Systems in a Retinopathy Screening Programme

Learners will need to achieve 6 units in order to achieve the full qualification. Three units will be mandatory – units 301, 302 and 303. Learners will be advised to take units that reflect their job role and will be able to take additional units as required.

Certificates of unit credit will be issued to learners who are successful in one or more units, but who do not wish to complete the full qualification.

Availability of unit specifications

The units for the qualification are contained in section 13 of this Resource Pack.

Structure of units

The units in the qualification are written in a standard format and comprise

- Rationale
- Unit level
- Statement of notional learning hours
- Connections to NOS, Key Skills and the Knowledge and Skills Framework
- Assessment details
- Learning outcomes which may be practical and/ or knowledge based

Expert Reference Group

Subject experts

Steve Aldington, Retinopathy Grading Centre, Imperial College London

Susan Blakeney, Optometric Advisor, College of Optometrists

Deborah Broadbent, Training and Education Lead, English National Screening Programme for Diabetic Retinopathy

Shirley Burnett, British Association of Retinal Screeners

Grant Duncan, British Association of Retinal Screeners

Rosemarie Harris, Service Director for Diabetic Retinopathy Screening Service Wales (DRSSW)

Pat Hart, Consultant Ophthalmologist and Regional Director of Quality Assurance (N. Ireland)

Roderick Harvey, Diabetic Retinopathy Screening Collaborative Clinical Lead (Scotland)

Mo Lewis, Diabetes Nurse Specialist for Diabetic Retinopathy Screening Service Wales (DRSSW)

John Olson, ex Diabetic Retinopathy Screening Collaborative Clinical Lead (Scotland)

David R Owens, Clinical Director for Diabetic Retinopathy Screening Service Wales (DRSSW)

John Talbot, Royal College of Ophthalmologists

Peter Scanlon, National Co-ordinator, English National Screening Programme for Diabetic Retinopathy

The following individuals were involved in the development of the qualification:

Cynthia Adipue, NHSU administrative support

Judy Craven, National Open College Network

Lyndy Pullan, Programme Manager, NHSU

Gurpreet Sathya Narayanan, City & Guilds

8 Assessment requirements

Each unit can be assessed and certificated individually using a variety of assessment methods. The assignments are graded at pass, refer and fail.

Assignments

Assessment will include practical demonstration of skills, case studies, feature identification and grading tests, diagram labelling, written short answer tests and scenario-based questions.

Evidence should be presented in a portfolio, with all evidence signed and dated by the assessor using the appropriate recording forms.

Provision of assessments

City & Guilds provides assignments for each of the units, which are contained in section 14 of this Resource Pack.

Grading and marking

Assignments are marked by the centre and are graded Pass/Refer/Fail. The highest grade of success in any task is a pass. The following are definitions of the possible gradings for assignments:

Pass: when **all** assignment tasks are achieved

Refer: when some tasks in the assignment need to be reworked

Fail: when after the second attempt there are still a significant number of tasks that have not been completed to the required standard.

Invigilated tests

The invigilated tests in units 303, 307 and 308 are set as online tests. These are accessed through the certificate website www.drscertificate.co.uk. Learners are able to complete practice questions and also sit the online tests via this website. When learners are ready to complete the online test they must contact the City & Guilds centre through which they are registered.

Recommended units for job roles

Recommended units, matched to job roles for individuals not wishing or required to complete the whole qualification:

Measurement of visual acuity and drop instillation

Units 301, 302, 304 and 305

Imaging the eye for the detection of diabetic retinopathy

The Certificate in Diabetic Retinopathy should be completed, comprising Units 301, 302, 303, 304, 305 and 306

Grading diabetic retinopathy

Disease / no disease only

Units 301, 302, 303 and 307

Full disease grading (including Arbitration grading)

Units 301, 302, 303, 307 and 308

Screening Centre Managers and Administrators

Units 301, 302, 304 and 309

Accreditation of prior experiential learning (APEL)

Learners holding qualifications which already cover skills and knowledge for individual units may enable them to have their work acknowledged through the process of APEL. Evidence of the relevant qualification and current practice of skills will be required. Currently, optometrists registered with the General Optical Council (GOC) will be considered for APEL in relation to unit 303 (Anatomy, Physiology, Pathology of the Eye and its Clinical Relevance); unit 304 (Preparing the Patient for Retinopathy Screening) and unit 305 (Measuring Visual Acuity and Performing Pharmacological Dilatation).

Please refer to table below for mapping of learning outcomes in units 303-305 to the GOC competences.

Learning Outcome	GOC competencies
Unit 303	
Know the basic anatomy of the eye	6.2, 6.3, 6.5, 6.6, 6.7, 6.9, 6.10, 6.11, 6.12, 6.13, 6.14, 6.15
Know how the physiology of the eye is affected in patients with diabetes	6.12
Recognise the abnormal changes involved in, or that are part of, or that constitute, diabetic retinopathy	6.12
Know how diabetes may cause or be associated with abnormal changes in structures in the eye other than the retina	6.12
Recognise other significant diseases of the retina	6.5, 6.10, 6.11, 6.13, 6.18
Unit 304	
Check patient's identity	1.1, 2.1, 2.2, 2.3, 2.5
Understand the ways in which screening is affected by patient needs and the environment	1.6, 1.7, 1.8, 1.9, 1.10
Communicate effectively with the patient in preparation for screening	1.4, 1.6, 1.7, 1.8, 1.9, 1.10
Understand the requirements and processes relating to confidentiality	2.1
Understand their role within the procedure for handling complaints throughout the screening process	1.10, 2.4, 2.5
Unit 305	
Understand the purpose of visual acuity measurement	3.1, 3.5, 3.6, 5.15
Select the most appropriate test	3.5, 3.8, 3.9
Know the importance of patient's posture and position	5.1, 5.5, 5.7
Measure the visual acuity in each eye separately	5.15

Learning Outcome

Understand the purpose of dilation of the pupils

Understand the action of the drops and contra-indications to their use

Know the correct procedures for storage of eye drops

Know the correct way to instil eye drops

GOC competencies

5.1, 5.6, 5.7, 5.11

5.6, 6.19

5.6

5.6

9 Recording requirements

City & Guilds provides the following forms to help learners and assessors working towards the qualification. They should be photocopied as required for this VRQ.

Form VRQ 1 Learner and centre details

Form should be placed at the front of the file/portfolio in which learner assignments are kept

Form VRQ 2 Summary of achievement

Form is used to record the learner's on-going completion of units and progress to final achievement. It also allows the internal verifier and external verifier to indicate which units have been sampled for verification purposes.

Form VRQ 3 Learner assessment record

Form is used to record the results of each assignment and feedback to the learner. It can be used for both first and second submission of the assignment where necessary.

Form VRQ 4 Performance evidence record

Form used to record details of activities observed or for which a reflective account has been produced.

Centres are reminded that forms VRQ 2, 3 and 4 must be safeguarded by the centre throughout the learner's period of assessment and then kept by the centre for a period of three years after completion of the qualification. Learners should be given a photocopy of these completed forms to keep in their file/portfolio.

Form VRQ 1

Learner and centre details

VRQ title

City and Guilds number

Level

Learner contact details

City and Guilds enrolment number

Date enrolled with centre

Date registered with City and Guilds

Centre name

Centre number

Centre address

Centre telephone number

Centre fax number

Centre contact/quality assurance co-ordinator (QAC) name

Centre contact/quality assurance co-ordinator (QAC) contact details

Centre contact/quality assurance co-ordinator (QAC) e-mail address

Form VRQ 2

Summary of achievement

Learner name _____ City and Guilds ENR No. _____

Centre name _____ Centre number _____

Unit	Assignments	Date Completed	Pass/ Fail	IV signature if sampled	EV signature if sampled
Unit 301	National Diabetic Retinopathy Screening Programmes, Principles, Processes and Protocols				
Unit 302	Diabetes and its Relevance to Retinopathy Screening				
Unit 303	Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance				
Unit 304	Preparing the Patient for Retinopathy Screening				
Unit 305	Measuring Visual Acuity and Performing Pharmacological Dilatation				
Unit 306	Imaging the Eye for the Detection of Diabetic Retinopathy				
Unit 307	Detecting Retinal Disease				
Unit 308	Classifying Diabetic Retinopathy				
Unit 309	Administration and Management Systems in a Retinopathy Screening Programme				

All the assignments above have been completed to the required standard and meet the requirements for validity, currency, authenticity and sufficiency

Assessor's name _____

Assessor signature _____

Date _____

Learner signature _____

Date _____

Internal verifier signature _____

Date _____

Form VRQ 3

Learner assessment record

Unit number and title _____

Learner assessment record - assignment feedback and result sheet

Learner name _____

City and Guilds enrolment number _____

Assessor's name _____

Centre number _____

Date assignment submitted

1st _____

2nd _____

Assignment	1st submission outcome Pass/Refer	2nd submission outcome Pass/Fail
A		
B		
C		
D		

Assessors/tutor's comments to learners

Target date and action plan for resubmission (if applicable)

Outcome of second submission

Date of final assessment decision

I confirm that this assessment has been completed to the required standard and meets the requirements for validity, currency, authenticity and sufficiency

Tutor/assessor's signature

Date

I confirm that the assignment work to which this result relates is all my own work

Learner signature

Date

Internal verifier signature

Date

Form VRQ 4

Performance evidence record

Unit number and title

Learner name

Use this form to record details of activities (tick as appropriate)

- observed by your assessor
- self reflective account

The person who observed your activity must sign and date overleaf.

Links to: **Date of Activity:**

Task Performance evidence

**Learner
signature**

Date

**Assessor
signature**

Date

**Internal Verifier
signature (if
sampled)**

Date

(photocopy as required)

10 Links to National Occupational Standards

In fulfilling the above learning outcomes for this qualification, dependent on personal job description, the participant, would also meet some or all of the following National Occupational Standards:

- HC1 Confirm that the patient and the equipment are ready for screening for diabetic retinopathy
- HC2 Measure visual acuity
- HC3 Instil eye drops to dilate the pupil prior to image capture
- HC4 Obtain images of the retina
- HC5 Assess images of the fundus for evidence of disease
- HC6 Assess images of the fundus to establish the degree of diabetic retinopathy or other abnormality
- HC8 Maintain an information system to support retinal screening for patients
- HC9 Arrange appointments to suit patient and organisational needs
- HC10 Receive individuals and carers who attend appointments

And the following occupational standards

- Identify and manage hypoglycaemic emergencies
- Take action to help others to manage hypoglycaemic emergencies
- Promote effective communication and relationships
- Support staff in maintaining their identity and safe personal boundaries

11 Key Skills signposting

The qualification provides opportunities to gather evidence for the accreditation of Key Skills as shown in the table below. However, to gain Key Skills certification the Key Skills would need to be taken as additional qualification/s. Further information can be found in the City & Guilds Directory of Qualifications.

D indicates that the unit content provides opportunities for developing and practising a key skill.

E indicates that the unit or assignment provides opportunities for evidencing the Key Skill.

Information technology (IT)

eg All units provide opportunities to develop and practise or evidencing this key skill.

Communication (C)

eg The tasks that are assessed through written assignments may provide evidence for the written aspects of communication.

Application of number (N)

eg There is an opportunity for learners to evidence the use of number in units 305 -309.

Working with others (WVO)

eg Units 304, 305, 306, and 309 provide opportunities for evidencing this key skill.

Improving own learning and performance (IOLP)

eg Units 304 -309 provide opportunities for developing and practising or evidencing this key skill.

Problem solving (PS)

eg Units 304 -309 provide opportunities for developing and practising or evidencing this key skill.

Key Skills signposting

Key Skill	301	302	303	304	305	306	307	308	309
	E	E	E	E	E	E	E	E	E
ICT1	D	D	D						E
ICT2									E
ICT3	E	E	E						
C1									
C2									
C3									
N1					E	E	E	E	E
N2									D
N3									D
WWO1				E	E	E			E
WWO2				E	E	E			E
WWO3				E	E	E			E
IOLP1				E	E	E	E	E	E
IOLP2				D	D	D	D	D	D
IOLP3									
PS1				E	E	E	E	E	E
PS2									D
PS3									D

12 The wider curriculum

Each unit has specific links made to the following issues through the learning outcomes and hence related assignments.

Unit	Spiritual	Moral	Ethical	Social	Legal	Econ	Cultural	H&S	Europe
301	✓		✓	✓	✓	✓	✓		
302	✓		✓	✓			✓		
303									
304	✓	✓	✓	✓	✓	✓	✓	✓	✓
305	✓	✓	✓	✓	✓	✓	✓	✓	✓
306	✓	✓	✓	✓	✓	✓	✓	✓	✓
307					✓	✓		✓	✓
308					✓	✓		✓	✓
309	✓	✓	✓	✓	✓	✓	✓	✓	✓

13 Units

Unit 301

National Diabetic Retinopathy Screening Programmes, Principles, Processes and Protocols

Level 3

Rationale

Understanding how a national screening programme for diabetic retinopathy developed and functions is a key requirement for all personnel involved in the identification and management of diabetic retinopathy.

This unit covers the principles, processes, protocols and targets for national screening for diabetic retinopathy.

Learning outcomes

There are 5 outcomes to this unit. The learner will be able to:

- Understand the purpose of screening
- Understand the impact that screening may have on the patient
- Understand the procedures in their National Screening Programme
- Understand quality assurance in national screening programmes
- Understand the factors which lead to effective screening

Notional learning hours

A total of 30 notional learning hours has been allocated to this unit.

Guided learning hours

A total of 3 guided learning hours has been allocated to this unit.

Links to NOS

This unit contributes towards the knowledge and understanding required for the following NOS from the National Service Framework for Diabetes:

- HC1, HC2, HC3, HC4, HC5, HC6, HC7, HC8, HC9 and HC10.

Links to Knowledge and Skills Framework

This unit links with the following dimensions and levels within the NHS Knowledge and Skills Framework

- Dimension HWB6: Assessment and treatment planning Level 1
- Dimension HWB6: Assessment and treatment planning Level 2
- Dimension HWB6: Assessment and treatment planning Level 3
- Dimension G5: Services and project management Level 1
- Dimension G5: Services and project management Level 2

Key Skills

This unit contributes towards the Key Skills in the following areas:

- Information Technology

- Communication

Assessment and grading

This unit will be assessed by

- an **assignment** covering underpinning knowledge and its application

**Unit 301 National Diabetic Retinopathy Screening
Programmes, Principles, Processes and
Protocols**

Outcome 1 Understand the purpose of screening

The learner will be able to:

- 1.1 Explain what screening means
- 1.2 Explain the prime purpose of screening for diabetic retinopathy
- 1.3 Explain why it is important to screen for diabetic retinopathy and what are the limitations

**Unit 301 National Diabetic Retinopathy Screening
Programmes, Principles, Processes and
Protocols**

Outcome 2 Understand the impact that screening may have on
the patient

The learner will be able to:

- 2.1 Describe the psychological impact that screening might have on the patient
- 2.2 Describe the process for patients' informed decision making in a screening programme

Unit 301 National Diabetic Retinopathy Screening Programmes, Principles, Processes and Protocols

Outcome 3 Understand the procedures in their National Screening Programme

The learner will be able to:

- 3.1 Describe the components of any national screening programme for diabetic retinopathy
- 3.2 Describe the advantages and disadvantages of the methods chosen in their National Screening Programme and how these methods may be implemented

**Unit 301 National Diabetic Retinopathy Screening
Programmes, Principles, Processes and
Protocols**

Outcome 4 Understand quality assurance in national screening
programmes

The learner will be able to:

- 4.1 Explain why it is necessary to implement effective internal and external quality assurance measures
- 4.2 List the performance indicators in their National Screening Programme
- 4.3 Describe how their own performance will be monitored in the programme and how this will influence the overall performance of the programme.

Unit 301 National Diabetic Retinopathy Screening Programmes, Principles, Processes and Protocols

Outcome 5 Understand the factors which lead to effective screening

The learner will be able to:

- 5.1 Describe the targets in their National Screening Programme
- 5.2 Explain the importance of maintaining accurate registers on patients with diabetes
- 5.3 Describe the factors that might lead to non-compliance with screening

Level 3

Rationale

This unit covers the knowledge base about the types and management of diabetes and the risk factors for the development and progression of diabetic retinopathy required by anyone involved in the screening process.

Learning outcomes

There are 4 outcomes to this unit. The learner will be able to:

- Understand the difference between type 1 and type 2 diabetes
- Recognise the symptoms of hypoglycaemia
- Be aware of the long-term complications of diabetes
- Understand the relevance of risk factors in development of diabetic retinopathy

Notional learning hours

A total of 30 notional learning hours has been allocated to this unit.

Guided learning hours

A total of 3 notional learning hours has been allocated to this unit.

Links to NOS

This unit contributes towards the knowledge and understanding required for the following NOS from the National Service Framework for Diabetes:

- HC1, HC2, HC3, HC4, HC5, HC6, HC7, HC8, HC9 and HC10.

Links to Knowledge and Skills Framework

This unit links with the following dimensions and levels within the NHS Knowledge and Skills Framework

- Dimension HWB6: Assessment and treatment planning Level 1
- Dimension HWB6: Assessment and treatment planning Level 2
- Dimension HWB6: Assessment and treatment planning Level 3
- Dimension G5: Services and project management Level 1
- Dimension G5: Services and project management Level 2

Key Skills

This unit contributes towards the Key Skills in the following areas:

- Information Technology
- Communication

Assessment and grading

This unit will be assessed by:

- an **assignment** covering underpinning knowledge and its application

Unit 302

Diabetes and its Relevance to Retinopathy Screening

Outcome 1

Understand the difference between type 1 and type 2 diabetes

The learner will be able to:

- 1.1 Explain the differences between type 1 and type 2 diabetes in terms of basic symptomatology, pathology and diagnostic criteria
- 1.2 Describe the treatment options for diabetes

Unit 302

Diabetes and its Relevance to Retinopathy Screening

Outcome 2

Recognise the symptoms of hypoglycaemia

The learner will be able to:

- 2.1 Describe the signs and symptoms of hypoglycaemia
- 2.2 Explain how to manage a patient if it is suspected that they could be hypoglycaemic

Unit 302

Diabetes and its Relevance to Retinopathy Screening

Outcome 3

Be aware of the long-term complications of diabetes

The learner will be able to:

- 3.1 Describe the macrovascular and microvascular complications of diabetes, including heart disease and stroke, nephropathy, neuropathy and retinopathy

Unit 302

Diabetes and its Relevance to Retinopathy Screening

Outcome 4

Understand the relevance of risk factors in development of diabetic retinopathy

The learner will be able to:

- 4.1 Explain the risk factors, including duration of diabetes, glycaemic control and blood pressure control in the development of retinopathy
- 4.2 Explain the importance of monitoring patients regularly for these risk factors
- 4.3 Describe the role of the retinal screener in enabling the patient to obtain advice to help them with the self-management of their diabetes

Level 3

Rationale

This unit covers the anatomy, physiology, pathology of the eye, and their clinical relevance in relation to diabetic retinopathy and other defined ophthalmic conditions.

Learning outcomes

There are 5 outcomes to this unit. The learner will be able to:

- Know the basic anatomy of the eye
- Know how the physiology of the eye is affected in patients with diabetes
- Recognise the abnormal changes involved in, or that are part of, or that constitute, diabetic retinopathy
- Know how diabetes may cause or be associated with abnormal changes in structures in the eye other than the retina
- Recognise other significant diseases of the retina

Notional learning hours

A total of 60 notional learning hours has been allocated to this unit.

Guided learning hours

A total of 6 guided learning hours has been allocated to this unit.

Links to NOS

This unit contributes towards the knowledge and understanding required for the following NOS from the National Service Framework for Diabetes:

- HC2, HC3, HC4, HC5, HC6, HC7.

Links to Knowledge and Skills Framework

This unit links with the following dimensions and levels within the NHS Knowledge and Skills Framework

- Dimension HWB6: Assessment and treatment planning Level 1
- Dimension HWB6: Assessment and treatment planning Level 2
- Dimension HWB6: Assessment and treatment planning Level 3

Key Skills

This unit contributes towards the Key Skills in the following areas:

- Information Technology
- Communication

Assessment and grading

This unit will be assessed by:

- an **assignment** covering underpinning knowledge and its application

Unit 303

Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance

Outcome 1

Know the basic anatomy of the eye

The learner will be able to:

- 1.1 Describe the anatomy of the anterior segment of the eye, including the cornea, iris and lens
- 1.2 Describe the anatomy of the posterior segment of the eye, including the vitreous body, the retina, the retinal vasculature, the retinal pigment epithelium, the optic nerve, Bruch's membrane and the choroid
- 1.3 Describe the normal appearance of the fundus and identify the macula and the area of the fundus image within one disc diameter of the centre of the fovea
- 1.4 Explain the potential significance of changes within one disc diameter of the centre of the fovea
- 1.5 Explain the potential significance of changes in the retinal periphery

Unit 303

Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance

Outcome 2

Know how the physiology of the eye is affected in patients with diabetes

The learner will be able to:

- 2.1 Explain how diabetes may affect the function of the retinal vasculature and the retina and the consequences for vision

Unit 303

Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance

Outcome 3

Recognise the abnormal changes involved in, or that are part of, or that constitute, diabetic retinopathy

The learner will be able to:

- 3.1 Describe changes in the fundus appearance that are not normal
- 3.2 Describe the abnormal changes seen in the retina in diabetic retinopathy
- 3.3 Identify the individual features of diabetic retinopathy including retinal haemorrhages, microaneurysms, cotton wool spots, venous abnormalities, intraretinal microvascular anomalies, new vessels, fibrovascular proliferation, pre-retinal haemorrhage, vitreous haemorrhage and retinal exudates
- 3.4 Describe the clinical features of diabetic retinopathy and explain their significance

Unit 303

Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance

Outcome 4

Know how diabetes may cause or be associated with abnormal changes in structures in the eye other than the retina

The learner will be able to:

- 4.1 Describe the changes that may occur in the lens in diabetes including transient refractive changes and cataract
- 4.2 Explain the relevance of these conditions
- 4.3 Describe and identify the changes that may occur in the retinal vasculature (other than diabetic retinopathy) in diabetes
- 4.4 Explain the significance of changes that may occur in the retinal vasculature (other than diabetic retinopathy) in diabetes

Unit 303

Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance

Outcome 5

Recognise other significant diseases of the retina

The learner will be able to:

- 5.1 Identify the following conditions on a retinal image:- drusen, age-related macular degeneration, choroidal neovascular membrane, choroidal naevus, choroidal melanoma, myelinated nerve fibres, myopic degeneration, old choroiditis, rhegmatogenous retinal detachment and asteroid hyalosis
- 5.2 Describe the relevance of these conditions

Level 3

Rationale

This unit covers the preparation of the patient for screening for diabetic retinopathy in a variety of settings and where patients have particular needs.

Learning outcomes

There are 5 outcomes to this unit. The learner will be able to:

- Check patient's identity
- Understand the ways in which screening is affected by patient needs and the environment
- Communicate effectively with the patient in preparation for screening
- Understand the requirements and processes relating to confidentiality
- Understand their role within the procedure for handling complaints throughout the screening process

Notional learning hours

A total of 20 notional learning hours has been allocated to this unit.

Guided learning hours

A total of 2 guided learning hours has been allocated to this unit.

Links to NOS

This unit contributes towards the knowledge and understanding required for the following NOS from the National Service Framework for Diabetes:

- HC1

Links to Knowledge and Skills Framework

This unit links with the following dimensions and levels within the NHS Knowledge and Skills Framework

- Dimension HWB6: Assessment and treatment planning Level 1

Key Skills

This unit contributes towards the Key Skills in the following areas:

- Information Technology
- Working with others
- Improving own learning and performance

Assessment and grading

This unit will be assessed by:

- an **assignment** covering practical skills and underpinning knowledge

Unit 304

Preparing the Patient for Retinopathy Screening

Outcome 1

Check patient's identity

The learner will be able to:

- 1.1 Explain the importance of correctly confirming patient identity
- 1.2 Demonstrate how to confirm patient identity

Unit 304

Preparing the Patient for Retinopathy Screening

Outcome 2

Understand the ways in which screening is affected by patient needs and the environment

The learner will be able to:

- 2.1 Explain how the results of the examination may be influenced by factors such as patient age, co-operation, ability or special needs
- 2.2 Describe how lack of privacy can affect a screening encounter
- 2.3 Explain why it is important to manage the examination if factors which might influence the results of the examination are identified
- 2.4 Demonstrate how to record that the examination has been managed

Unit 304

Preparing the Patient for Retinopathy Screening

Outcome 3

Communicate effectively with the patient in preparation for screening

The learner will be able to:

- 3.1 Explain why it is important that the patient understands why they are undergoing the particular procedures
- 3.2 Describe obstacles to understanding and how to overcome them
- 3.3 Explain how to ensure that the patient has understood the nature of the particular tests to be performed
- 3.4 Explain the importance of patient consent to procedures and how to confirm and record that the patient has given consent
- 3.5 Explain how to proceed if the patient did not understand the procedures or did not wish to proceed

Unit 304

Preparing the Patient for Retinopathy Screening

Outcome 4

Understand the requirements and processes relating to confidentiality

The learner will be able to:

- 4.1 Describe the requirements and processes for the use and storage of patient information and why it is important
- 4.2 Inform the patient who will receive the results of the examination
- 4.3 Establish that the patient has understood how the information they have given will be used and stored and who will have access to this information

Unit 304

Preparing the Patient for Retinopathy Screening

Outcome 5

Understand their role within the procedure for handling complaints throughout the screening process

The learner will be able to:

- 5.1 Describe the local procedure for handling complaints within the organisation
- 5.2 Describe how they would deal with patient complaints

Level 3

Rationale

This unit covers the ability to accurately record the visual acuity using a variety of visual acuity charts and in patients with particular needs, and the ability to safely dilate the pupils.

Learning outcomes

There are 8 outcomes to this unit. The learner will be able to:

- Understand the purpose of visual acuity measurement
- Select the most appropriate test
- Know the importance of patient's posture and position
- Measure the visual acuity in each eye separately
- Understand the purpose of dilatation of the pupils
- Understand the action of the drops and contra-indications to their use
- Know the correct procedures for storage of eye drops
- Know the correct way to instil eye drops

Notional learning hours

A total of 30 notional learning hours has been allocated to this unit.

Guided learning hours

A total of 3 guided learning hours has been allocated to this unit.

Links to NOS

This unit contributes towards the knowledge and understanding required for the following NOS from the National Service Framework for Diabetes:

- HC1, HC2, HC3

Links to Knowledge and Skills Framework

This unit links with the following dimensions and levels within the NHS Knowledge and Skills Framework

- Dimension HWB6: Assessment and treatment planning Level 1
- Dimension HWB6: Assessment and treatment planning Level 2

Key Skills

This unit contributes towards the Key Skills in the following areas:

- Information Technology
- Numeracy
- Working with others
- Improving own learning and performance
- Problem Solving

Assessment and grading

This unit will be assessed by:

- an **assignment** covering practical skills and underpinning knowledge

Unit 305

Measuring Visual Acuity and Performing Pharmacological Dilatation

Outcome 1

Understand the purpose of visual acuity measurement

The learner will be able to:

- 1.1 Explain why the accurate measurement and recording of visual acuity may be used in a National Screening Programme for diabetic retinopathy

Unit 305

Measuring Visual Acuity and Performing Pharmacological Dilatation

Outcome 2

Select the most appropriate test

The learner will be able to:

- 2.1 Select the appropriate visual acuity test to be used depending on the individual's age, co-operation, ability, special needs or local protocols
- 2.2 Explain the strengths and limitations of the different visual acuity tests
- 2.3 Explain the significance of the use of an individual's spectacles and/or pinhole in testing visual acuity

Unit 305

Measuring Visual Acuity and Performing Pharmacological Dilatation

Outcome 3

Know the importance of patient's posture and position

The learner will be able to:

- 3.1 Explain why it is important for the patient to be comfortable
- 3.2 Explain why it is important to position the patient at the correct distance from the test chart

Unit 305

Measuring Visual Acuity and Performing Pharmacological Dilatation

Outcome 4

Measure the visual acuity in each eye separately

The learner will be able to:

- 4.1 Use the occluder effectively to completely cover the eye not being tested
- 4.2 Demonstrate how visual acuity is measured

Unit 305

Measuring Visual Acuity and Performing Pharmacological Dilatation

Outcome 5

Understand the purpose of dilatation of the pupils

The learner will be able to:

- 5.1 Explain the reasons for pupil dilatation in their screening programme for diabetic retinopathy

Unit 305

Measuring Visual Acuity and Performing Pharmacological Dilatation

Outcome 6

Understand the action of the drops and contra-indications to their use

The learner will be able to:

- 6.1 Explain the action of mydriatic eye drops and contra-indications to their use
- 6.2 Explain how to identify a situation in which pupil dilatation is contra-indicated
- 6.3 Demonstrate how to determine which eye drop should be used

Unit 305

Measuring Visual Acuity and Performing Pharmacological Dilatation

Outcome 7

Know the correct procedures for storage of eye drops

The learner will be able to

7.1 Explain the correct procedures for storage of eye drops

Unit 305

Measuring Visual Acuity and Performing Pharmacological Dilatation

Outcome 8

Know the correct way to instil eye drops

The learner will be able to

- 8.1 Explain the infection control procedures necessary in the instillation of eye drops
- 8.2 Explain how to confirm that the eye drop is safe to use
- 8.3 Demonstrate how to instil eye drops correctly
- 8.4 Explain how to identify and manage an adverse or critical incident

Level 3

Rationale

This unit covers the knowledge and skills required to carry out imaging of the retina and anterior segment, in order to support the accurate detection of possible features of diabetic retinopathy, and includes practical demonstrations of the necessary skills.

Learning outcomes

There are 4 outcomes to this unit. The learner will be able to:

- Prepare the retinal camera and associated environment and equipment for obtaining images of the eye
- Understand the criteria for assessment of images for clarity, positioning and gradability
- Obtain images of the retina
- Obtain images of the fundus reflex

Notional learning hours

A total of 60 notional learning hours has been allocated to this unit.

Guided learning hours

A total of 6 guided learning hours has been allocated to this unit.

Links to NOS

This unit contributes towards the knowledge and understanding required for the following NOS from the National Service Framework for Diabetes:

- HC4

Links to Knowledge and Skills Framework

This unit links with the following dimensions and levels within the NHS Knowledge and Skills Framework

- Dimension HWB6: Assessment and treatment planning Level 3

Key Skills

This unit contributes towards the Key Skills in the following areas:

- Information Technology
- Numeracy
- Working with others
- Improving own learning and performance
- Problem Solving

Assessment and grading

This unit will be assessed by:

- an **assignment** covering practical skills and underpinning knowledge

Unit 306

Imaging the Eye for the Detection of Diabetic Retinopathy

Outcome 1

Prepare the retinal camera and associated environment and equipment for obtaining images of the eye

The learner will be able to:

- 1.1 Ensure that the working environment is suitable and safe for the screening episode
- 1.2 Verify that the equipment is working correctly
- 1.3 Open the appropriate imaging software package on the retinal camera's computer
- 1.4 Prepare and align the retinal camera for a specific patient imaging session
- 1.5 Prepare a patient's record for the current imaging visit

Unit 306

Imaging the Eye for the Detection of Diabetic Retinopathy

Outcome 2

Understand the criteria for assessment of images for clarity, positioning and gradability

The learner will be able to

- 2.1 Describe the criteria for assessment of images for clarity, field position and gradability according to national and local standards
- 2.2 Assess images for clarity, field position and gradability according to national and local standards
- 2.3 Describe how assessment of images for gradability relates to national and local targets for quality assurance
- 2.4 Explain why imaging may be unsuccessful and how they may overcome or document the reason(s) for this

Unit 306

Imaging the Eye for the Detection of Diabetic Retinopathy

Outcome 3

Obtain images of the retina

The learner will be able to:

- 3.1 Describe the field position for imaging in their National Screening Programme
- 3.2 Obtain colour retinal image(s) of sufficient quality and quantity and in the correct position(s) for both eyes
- 3.3 Explain why it might be appropriate to take additional retinal images to inform diagnosis, according to local protocols
- 3.4 Save the images and complete the session

Unit 306

Imaging the Eye for the Detection of Diabetic Retinopathy

Outcome 4

Obtain images of the fundus reflex

The learner will be able to:

- 4.1 Explain the reasons why it may not be possible to obtain retinal images of sufficient quality or quantity for assessment
- 4.2 Obtain a colour image of the fundus reflex suitable for subsequent assessment of possible media opacities and small pupil size

Level 3

Rationale

This unit covers the ability to recognise the normal appearance of the retina and changes in the retina due to diabetic retinopathy, and how the results of the examination will affect the patient.

Learning outcomes

There are 5 outcomes to this unit. The learner will be able to:

- Prepare the environment and equipment for grading for disease
- Use grading software to record result
- Understand the criteria for assessment of images for clarity, positioning and gradability
- Identify the presence or absence of diabetic or other eye disease according to defined standards
- Record and communicate the results of image assessment

Learning hours

A total of 60 notional learning hours has been allocated to this unit.

Guided learning hours

A total of 6 guided learning hours has been allocated to this unit.

Links to NOS

This unit contributes towards the knowledge and understanding required for the following NOS from the National Service Framework for Diabetes:

- HC5, HC6, HC7

Links to Knowledge and Skills Framework

This unit links with the following dimensions and levels within the NHS Knowledge and Skills Framework

- Dimension HWB6: Assessment and treatment planning Level 3

Key Skills

This unit contributes towards the Key Skills in the following areas:

- Information Technology
- Numeracy
- Improving own learning and performance
- Problem Solving

Assessment and grading

This unit will be assessed by:

- an **assignment** covering practical skills and underpinning knowledge

Unit 307

Outcome 1

Detecting Retinal Disease

Prepare the environment and equipment for grading for disease

The learner will be able to

- 1.1 Verify that equipment is working correctly
- 1.2 Ensure that the working environment is suitable for grading
- 1.3 Open the appropriate software package

Unit 307

Detecting Retinal Disease

Outcome 2

Use grading software to record result

The learner will be able to

- 2.1 Navigate correctly through the grading software according to their access rights
- 2.2 Enter grading results in the software
- 2.3 Check and save work
- 2.4 Describe the importance of correct data entry
- 2.5 Manage software problems within their own area of competency and authority
- 2.6 Explain the course of action if software problems arise outside their own area of competency and authority

Unit 307

Outcome 3

Detecting Retinal Disease

Understand the criteria for assessment of images for clarity, positioning and gradability

The learner will be able to

- 3.1 Describe the criteria for assessment of images for clarity, field position and gradability according to national and local standards
- 3.2 Assess images for clarity, field position and gradability according to national and local standards
- 3.3 Explain how the interpretation of images for disease may be compromised if the clarity or field position of the images does not meet national or local criteria
- 3.4 Describe how assessment of images for gradability relates to national and local targets for quality assurance
- 3.5 Manage the results of assessment for clarity, field position and gradability appropriately

Unit 307

Detecting Retinal Disease

Outcome 4

Identify the presence or absence of diabetic or other eye disease according to defined standards

The learner will be able to

- 4.1 Identify all the lesions of diabetic retinopathy
- 4.2 Identify images with diabetic retinopathy
- 4.3 Identify images with diabetic retinopathy requiring urgent referral where this is required by the learner's relevant grading protocol
- 4.4 Identify images with other eye disease as required in their programme
- 4.5 Identify images without diabetic retinopathy and without other eye disease

Unit 307

Outcome 5

Detecting Retinal Disease

Record and communicate the results of image assessment

The learner will be able to

- 5.1 Record the presence or absence of diabetic retinopathy and other eye disease
- 5.2 Describe the internal quality assurance processes in their organisation
- 5.3 Describe the grading pathway in their programme
- 5.4 Describe how the results of a final assessment will affect the referral and management of the patient
- 5.5 Explain the national and local targets for examination of images for disease

Level 3

Rationale

This unit covers the ability to identify and classify the lesions of diabetic retinopathy according to national and local protocols and how to manage the patient according to the grade allocated.

Learning outcomes

There are 4 outcomes to this unit. The learner will be able to:

- Understand the process for grading the level of eye disease in people with diabetes
- Classify the level of diabetic retinopathy
- Record the level of diabetic or other eye disease according to defined standards
- Understand the process for communicating grading results and the impact on patient referral and management

Notional learning hours

A total of 20 notional learning hours has been allocated to this unit.

Guided learning hours

A total of 2 guided learning hours has been allocated to this unit.

Links to NOS

This unit contributes towards the knowledge and understanding required for the following NOS from the National Service Framework for Diabetes:

- HC2, HC5, HC6, HC7

Links to Knowledge and Skills Framework

This unit links with the following dimensions and levels within the NHS Knowledge and Skills Framework

- Dimension HWB6: Assessment and treatment planning Level 2
- Dimension HWB6: Assessment and treatment planning Level 3

Key Skills

This unit contributes towards the Key Skills in the following areas:

- Information Technology
- Numeracy
- Improving own learning and performance
- Problem Solving

Assessment and grading

This unit will be assessed by:

- an **assignment** covering practical skills and underpinning knowledge

Unit 308

Outcome 1

Classifying Diabetic Retinopathy

Understand the process for grading the level of eye disease in people with diabetes

The learner will be able to

- 1.1 Explain how their role influences the ability of their screening programme to meet their National performance indicators.
- 1.2 Describe their National and local grading protocol(s) for diabetic retinopathy

Unit 308

Outcome 2

Classifying Diabetic Retinopathy

Classify the level of diabetic retinopathy

The learner will be able to:

- 2.1 Explain the clinical signs and symptoms which may act as surrogate markers for the presence of clinically significant macular oedema
- 2.2 Explain how levels of diabetic retinopathy are allocated by grouping of individual lesions
- 2.3 Explain why review of images from a previous screening event may occasionally help in the assessment process

Unit 308

Outcome 3

Classifying Diabetic Retinopathy

Record the level of diabetic or other eye disease according to defined standards

The learner will be able to:

- 3.1 Demonstrate how to correctly identify the lesions and record the level of diabetic retinopathy, or verify that an appropriate level has been ascribed by the computer software programme they are using

Unit 308

Outcome 4

Classifying Diabetic Retinopathy

Understand the process for communicating grading results and the impact on patient referral and management

The learner will be able to

- 4.1 Explain how the level of retinopathy influences patient management
- 4.2 Explain who will receive the results of the final examination of images

Level 3**Rationale**

This unit covers the knowledge and skills required in order to administrate a retinopathy screening programme using electronic information programmes.

Learning outcomes

There are 11 outcomes to this unit. The learner will be able to:

- Understand how to obtain information on who has diabetes in the area covered by the screening programme
- Understand how the electronic information system works
- Understand why it is important to keep the database up to date and how to input information
- Understand the system for making and changing appointments
- Provide information to patients and colleagues
- Know the procedure for dealing with patient complaints
- Know how to provide information to screening centres
- Input data from screening centres
- Generate audit reports for internal and external audit
- Understand the necessity to maintain the integrity of the information system
- Understand the requirements for data processing and patient consent

Notional learning hours

A total of 60 notional learning hours has been allocated to this unit.

Guided learning hours

A total of 6 guided learning hours has been allocated to this unit.

Links to NOS

This unit contributes towards the knowledge and understanding required for the following NOS from the National Service Framework for Diabetes:

- HC8, HC9, HC10

Links to Knowledge and Skills Framework

This unit links with the following dimensions and levels within the NHS Knowledge and Skills Framework

- Dimension G5: Services and project management Level 1
- Dimension G5: Services and project management Level 1

Key Skills

This unit contributes towards the Key Skills in the following areas:

- Information Technology
- Numeracy
- Working with others
- Improving own learning and performance
- Problem Solving

Assessment and grading

This unit will be assessed by:

- an **assignment** covering practical skills and underpinning knowledge

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 1

Understand how to obtain information on who has diabetes in the area covered by the screening programme

The learner will be able to

- 1.1 Explain how a diabetes register is compiled for diabetic retinopathy screening
- 1.2 Assess the gaps in the records and give the reasons for these gaps

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 2

Understand how the electronic information system works

The learner will be able to

- 2.1 Describe the operations that can be performed by the database software
- 2.2 Identify faults in the operations of the system and either rectify the fault or contact professional expertise when necessary

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 3

Understand why it is important to keep the database up to date and how to input information

The learner will be able to

- 3.1 Explain why it is important to keep the database up to date
- 3.2 Explain the importance of accurate data input e.g. NHS numbers, complex surnames
- 3.3 Explain how to obtain accurate information e.g. from GPs

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 4

Understand the system for making and changing appointments

The learner will be able to

- 4.1 Describe the appointments system (this may include a variety of centres) and the system for changing appointments.

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 5

Provide information to patients and colleagues

The learner will be able to

- 5.1 Handle enquiries from patients and colleagues in an efficient and helpful manner
- 5.2 Explain to patients the importance of attending for retinopathy screening
- 5.3 Explain to patients what exactly happens and what to expect during the retinopathy screening appointment

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 6

Know the procedure for dealing with patient complaints

The learner will be able to

6.1 Describe the procedure for dealing with patient complaints

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 7

Know how to provide information to screening centres

The learner will be able to

7.1 Describe how to provide relevant information to screening centres.

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 8

Input data from screening centres

The learner will be able to

- 8.1 Identify and audit non attendance at screening appointment
- 8.2 Explain importance of checking patient identity
- 8.3 Input data accurately
- 8.4 Save data appropriately
- 8.5 Generate letters and reports for GPs and referrals to ophthalmology

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 9

Generate audit reports for internal and external audit

The learner will be able to

- 9.1 Explain their National quality assurance systems
- 9.2 Explain how to generate audit reports

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 10

Understand the necessity to maintain the integrity of the information system

The learner will be able to

- 10.1 Describe the procedures for ensuring the security and confidentiality of data
- 10.2 Explain the procedures for checking data validity
- 10.3 Manage software problems within their own area of competency and authority
- 10.4 Explain the course of action if software problems arise outside their own area of competency and authority

Unit 309

Administration and Management Systems in a Retinopathy Screening Programme

Outcome 11

Understand the requirements for data processing and patient consent

The learner will be able to

11.1 Describe the requirements of the Data Protection Act in relation to their programme

11.2 Understand the current implications of the Freedom of Information legislation

11.3 Describe the issues around patient consent to store patients' records on a central database

11.4 Describe the importance of appropriate levels of access to the screening database

14 Assignments

Unit 301

National Diabetic Retinopathy Screening Programmes, Principles, Processes and Protocols

Task A

*Write short notes on the following

- 1a Explain what is meant by the general term “screening”.
- 1b Describe the criteria for screening a condition.
- 2 Explain the purpose of screening for diabetic retinopathy.
- 3 Explain why it is important to screen for diabetic retinopathy.
- 4 State the limitations of screening for diabetic retinopathy.
- 5a Why might screening for any condition be stressful for a patient?
- 5b Why is screening for diabetic retinopathy unlike screening for any other condition?
- 6 What is informed decision making?
- 7a State the most important components of any systematic screening programme for diabetic retinopathy.
- 7b Describe how these components are managed where you work.
- 7c Discuss at least **three** advantages or disadvantages of the model of screening they use.
- 8 Give **four** possible consequences of poor performance by a screener.
- 9a Describe the difference between internal and external quality assurance systems within a national screening programme.
- 9b Give **three** reasons why it is necessary to implement internal and external quality assurance in any national screening programme.
- 10 List the Performance Indicators for external quality assurance in your national screening programme and explain what each one measures and why.
- 11 State the targets for screening provision for your own national screening programme.
- 12 Why is it important to maintain an accurate database (register) of people with diabetes?
- 13 Discuss the factors that might lead to non-compliance with screening for diabetic retinopathy.

Your completed work should be no more than 2000 words.

Footnotes

* Learners with special assessment needs and, who might otherwise be disadvantaged by having to provide **written** answers to questions, may use an agreed alternative means of recordings. An electronic recording format is acceptable e.g. audio tape, so long as the evidence remains both auditable & audible. Where special arrangements are deemed necessary the centre should discuss and agree the alternative to be used with the City & Guilds External Verifier prior to its use.

Scenarios

Learners should complete the following **two** scenarios:

- 1 A patient who has died is invited for an annual screening appointment. The patient's wife is very distressed when she phones to inform the programme that her husband has died. How can the programme guard against this situation?
- 2 A patient phones up to say that they don't think it is necessary for them to come for screening as they have regular checks with their optician. It is clear that they don't want to come for retinopathy screening. How do you reassure the patient and encourage them to attend?

Task A**Case Studies**

Write **two** short case studies under the following headings, **one** based on a patient with Type 1 diabetes and **one** based on a patient with Type 2 diabetes:

- Patient profile (age, sex, ethnic group, occupation)
- Date of diagnosis and age at diagnosis
- Family history of diabetes
- Past history of gestational diabetes
- Presenting symptoms
- Method of diagnosis
- Location of management (GP/hospital)
- Self monitoring (glucose, BP)
- Existing co-morbidity
- Current and past treatment of diabetes, including reasons for changes in management
- Diabetic complications
- Management of risk factors for potential/current complications through life style or medication

Your completed work should be no more than 1500 words.

Unit 302

Diabetes and its Relevance to Retinopathy Screening

Task B

*Write short notes on the following topics.

- 1a List the **three** microvascular and **three** macrovascular complications of diabetes.
- 1b Explain how microvascular and macrovascular complications affect the patient.
- 2 List **two** major modifiable and **four** unmodifiable risk factors for the development of diabetic retinopathy in patients.
- 3a Explain what is meant by hypoglycaemia.
- 3b Describe the signs and symptoms of hypoglycaemia.
- 3c State who is most at risk from hypoglycaemia.
- 3d State the **three** most likely reasons for hypoglycaemia to occur.
- 3e State how a patient having a mild (not needing the assistance of another person) hypoglycaemic episode should be treated.
- 3f Explain how a patient having a severe (needing the assistance of another person or in coma) hypoglycaemic attack should be managed.
- 4a Explain how you would you find out who is responsible for the patient's diabetes education.
- 4b How would you advise a patient to obtain the education information they needed?

Your completed work should be no more than 1000 words.

Footnotes

* Learners with special assessment needs and, who might otherwise be disadvantaged by having to provide **written** answers to questions, may use an agreed alternative means of recordings. An electronic recording format is acceptable e.g. audio tape, so long as the evidence remains both auditable & audible. Where special arrangements are deemed necessary the centre should discuss and agree the alternative to be used with the City & Guilds External Verifier prior to its use.

Task A

*Write short notes on the following topics:

- 1 Describe the normal function of the cornea, iris, lens, vitreous body, retina, retinal vasculature, retinal pigment epithelium, optic nerve, Bruch's membrane and choroid.
- 2 What is the significance of the area of the retina within 1 DD of the centre of the fovea?
- 3 Discuss the significance of changes in the retinal periphery.
- 4 Explain how diabetes may affect the function of the retinal vasculature and the retina and the consequences for vision.
- 5 Describe the clinical features of diabetic retinopathy and their significance.
- 6 Describe changes in the retinal vasculature in diabetes, other than diabetic retinopathy, and their relevance, and how to distinguish between them.
- 7 Discuss the effect of diabetes on the lens of the eye
- 8 Discuss why the identification of certain other eye conditions may be relevant in a screening programme whose prime purpose is to detect diabetic retinopathy.

Your completed should be not more than 2000 words.

Footnotes

* Learners with special assessment needs and, who might otherwise be disadvantaged by having to provide **written** answers to questions, may use an agreed alternative means of recordings. An electronic recording format is acceptable e.g. audio tape, so long as the evidence remains both auditable & audible. Where special arrangements are deemed necessary the centre should discuss and agree the alternative to be used with the City & Guilds External Verifier prior to its use.

Unit 303

Anatomy, Physiology and Pathology of the Eye and its Clinical Relevance

Task B

Invigilated test

- 1 Label a test set of anatomical diagrams of the eye correctly.
- 2 Identify the lesions of diabetic retinopathy on a test set of images correctly.
- 3 Identify other relevant retinal lesions on a test set of images correctly.

Task A

*Write short answers to the following questions.

- 1 Explain how to confirm the patient's identity before the screening examination and why this is important.
- 2a How might the screening examination be adversely influenced by the patient's age, physical ability, mental ability or general lack of co-operation.
- 2b How might the screening examination be managed deal with the above factors?
- 3 Why is privacy important in the screening examination?
- 4 What methods could be employed to ensure that the patient understands what the screening examination involves?
- 5a What obstacles may there be to the patient not understanding what the screening examination involves?
- 5b How might these obstacles be overcome?
- 5c What are the consequences of a lack of understanding of what the screening examination involves?
- 6 Why is it important to obtain patient consent before the screening examination and how might evidence of consent be recorded?
- 7 What should be done if the patient does not consent to screening?
- 8 How should patient information be stored and who should be able to access it?
- 9a Explain why patients complain and how to deal with difficult patients.
- 9b Explain how to deal with patient complaints using the appropriate local procedure/protocol.

Your completed work should be no more than 2000 words.

Footnotes

* Learners with special assessment needs and, who might otherwise be disadvantaged by having to provide **written** answers to questions, may use an agreed alternative means of recordings. An electronic recording format is acceptable e.g. audio tape, so long as the evidence remains both audible & auditable. Where special arrangements are deemed necessary the centre should discuss and agree the alternative to be used with the City & Guilds External Verifier prior to its use.

Task B

Scenarios

Complete **either** 1a **or** 1b and **two** other scenarios of your choice.

- 1a A patient attends for their retinal screening in a wheelchair. How would you manage the situation?
- 1b A 12 year old patient attends for their retinal screening and as a result of being afraid or unsure of the procedure is uncooperative. What measures would you take to try to put them at their ease and successfully complete the screening examination?
- 2 A patient complains that they have been waiting for an unacceptable length of time in the waiting room. They inform you that they are going to leave before the screening examination has been carried out. How might you deal with this situation?
- 3 Whilst preparing the patient for the screening examination they become concerned about the different people who will have access to their images and personal information. The patient is unsure if they are happy to consent to the use of this information and refuses to continue with the examination. How might you deal with this situation?
- 4 You call your next patient into the examination room. Two people stand at the same time. You find that they share both first and surnames. How would you establish which of the two was next on your list?

Unit 305

Measuring Visual Acuity and Performing Pharmacological Dilatation

Task A

*Write short questions to the following questions.

- 1 Why might it be useful to measure distance visual acuity (VA) as part of the screening examination?
- 2 Under what circumstances might you use the following different methods of visual acuity testing and notation?
 - a Snellen letter chart.
 - b E Chart.
 - c Bailey Lovie logMAR.
 - d Kay picture test chart.
 - e Sheridan - Gardner test.
- 3 Why is corrected visual acuity measured?
- 4 What is the effect of the pinhole on visual acuity testing?
- 5 Why is it important for the patient to be comfortable when testing visual acuity?
- 6 Why must a visual acuity chart be placed at the correct distance and what are the implications of placing it at the wrong distance?
- 7 Why is it better to use an occluder rather than the patient's hand when testing visual acuity?
- 8 How can pupil dilatation improve the result of the screening examination?
- 9a How do mydriatic drops work?
- 9b What questions should you ask the patient to establish whether the use of mydriatic drops is contra-indicated?
- 10 How should mydriatic drops be correctly stored and what checks should be made to confirm they are safe to use?
- 11 Explain how mydriatic drops might precipitate a critical incident and the population group that are at risk
- 12 What should be done in the event of an adverse or critical incident as a result of the use of mydriatic drops?

Your completed work should be no more than 2000 words.

Footnotes

* Learners with special assessment needs and, who might otherwise be disadvantaged by having to provide **written** answers to questions, may use an agreed alternative means of recordings. An electronic recording format is acceptable e.g. audio tape, so long as the evidence remains both auditable & audible. Where special arrangements are deemed necessary the centre should discuss and agree the alternative to be used with the City & Guilds External Verifier prior to its use.

Unit 305

Measuring Visual Acuity and Performing Pharmacological Dilatation

Task B

Practical Demonstration

Practical demonstration to the satisfaction of the workplace assessor (two clinics or more with a **minimum of 16** patients in total) to include the following:

- Appropriate choice of visual acuity test
- Correct patient positioning
- Correct use of occluder and pinhole as necessary
- Correct measurement of visual acuity in both eyes
- Check for possible contra-indications to the use of mydriatic drops
- Proper infection control procedure
- Correct instillation of appropriate eye drops.

Task A

*Write short notes on the following questions.

- 1 Describe the field position/s used in your National Screening Programme.
- 2 What factors might cause the operator to take additional retinal images in addition to the required fields during the patient investigation?
- 3 What are the criteria for assessment of images for gradability according to national standards?
- 4a List ocular and non ocular factors which may prevent the operator from obtaining retinal images of suitable quality or quantity?
- 4b How would you attempt to overcome these reasons and document the reason?
- 5a What are your National targets for the acceptable number of ungradable images in an individual screening programme?
- 5b Give **two** implications of an unacceptable number of ungradable images.

Your completed work should be no more than 1000 words.

Footnotes

* Learners with special assessment needs and, who might otherwise be disadvantaged by having to provide **written** answers to questions, may use an agreed alternative means of recordings. An electronic recording format is acceptable e.g. audio tape, so long as the evidence remains both auditable & audible. Where special arrangements are deemed necessary the centre should discuss and agree the alternative to be used with the City & Guilds External Verifier prior to its use.

Practical Demonstration

Practical demonstration to the satisfaction of the workplace assessor during a clinic (s) with a **minimum of 8** patients, to include the following actions:

- Ensure that the environment is safe and suitable for the screening episode.
- Confirm equipment is working correctly.
- Access and open the appropriate software application.
- Open/initiate/confirm a new visit session for the patient.
- Meet and greet and seat the patient at the camera.
- Correctly use the external and if appropriate internal fixation device(s).
- Assess image quality. Follow National protocols if the image is ungradable.
- Obtain images of the patient's fundi (as required by the screening programme).
- Obtain fundus reflex images of both eyes (according to National protocol).
- Save the images and complete the session.
- Warn patient regarding post flash visual problems and glare.

Unit 306

Imaging the Eye for the Detection of Diabetic Retinopathy Screening

Task C

Practice File

Provide a Practice File containing appropriate digital, retinal and anterior segment images.

The file should contain images obtained from **no less than 6 people** (both eyes) ideally with diabetes. Where possible, all of the patients should have been imaged during a single clinical session (i.e. 3-4 hours duration).

- **all** of the images should meet individual National quality requirements for gradability, **and** the images from no less than **two** of the participants (both eyes) must be fully assessable for clarity and correctly positioned according to their National protocol.

The Practice File must include at least **one** person from each of the following categories:

- A person with diabetes whose pupil(s), after adequate pharmacological dilatation (waiting no less than 30 minutes) are still less than 6mm diameter.
- A person with diabetes in whom there is visible central nuclear sclerosis, cortical or posterior subcapsular cataract on/near the optical axis in at least one eye.
- A person with diabetes who is over the age of 70 years.
- A person with diabetes who is of ethnic origin other than white Caucasian (e.g. Afro-Caribbean, Asian sub-continent).

In the first 2 categories (poor dilatation and media opacity) both digital retinal and anterior segment images **must** be included.

Learners should note that in order to complete this file, images of up to 10 people from more than one session may be required.

Practical Demonstration

Practical demonstration of the following actions:

- How to verify that equipment is in working order and computer screen resolution is set at the appropriate level.
- How to open the appropriate software package on the personal computer.
- How to navigate correctly through the grading software.
- How to assess images for gradability.
- How to enter the grading result in the software.
- How to manage the results of assessment for image gradability appropriately.
- How to save work.

*Write short answers to the following questions.

- 1 Why is it important that all data recorded in the software is correct?
- 2 What are the criteria for assessment of images for gradability according to your National standards?
- 3 What are the targets for image quality in your National programme?
- 4a List ocular and non ocular factors which may prevent the operator from obtaining retinal images of suitable quality or quantity?
- 4b What are the two possible outcomes for a patient with image(s) of inadequate quality?
- 5a Describe the grading pathway in your National screening programme.
- 5b What are your National targets for reporting screening results to patients?
- 6) What is the management of the patient according to results of final grading?

Your completed work should be no more than 1000 words.

Footnotes

* Learners with special assessment needs and, who might otherwise be disadvantaged by having to provide **written** answers to questions, may use an agreed alternative means of recordings. An electronic recording format is acceptable e.g. audio tape, so long as the evidence remains both auditable & audible. Where special arrangements are deemed necessary the centre should discuss and agree the alternative to be used with the City & Guilds External Verifier prior to its use.

Task C

Invigilated test

Grade a sample of images from an image bank.

Scenario

Complete the following scenario:

You are grading a set of images and when you press “save” an error report pops up and the programme terminates. What steps would you take to manage the situation?

*Write short notes on the following topics.

- 1 Describe the importance of timely grading of images and how this is achieved in your local screening programme.
- 2 Describe your National grading protocol for diabetic retinopathy showing how levels of diabetic retinopathy are allocated by grouping of individual lesions.
- 3 Discuss why the various indicators of diabetic maculopathy have been chosen and how effective they are at detecting clinically significant macular oedema (CSMO).
- 4 In what circumstances might review of images from a previous screen help you to ascertain whether the patient needs referral to the HES?
- 5 Explain how the level of retinopathy influences patient management.
- 6a Explain who will receive the results of the final examination of images.
- 6b Discuss **one** advantage and **one** disadvantage of notifying the patient.
- 6c Discuss **one** advantage and **one** disadvantage of verbal reporting.
- 6d Discuss the advantage and disadvantage of informing other clinicians.

Your completed work should be no more than 2000 words.

Footnotes

* Learners with special assessment needs and, who might otherwise be disadvantaged by having to provide **written** answers to questions, may use an agreed alternative means of recordings. An electronic recording format is acceptable e.g. audio tape, so long as the evidence remains both auditable & audible. Where special arrangements are deemed necessary the centre should discuss and agree the alternative to be used with the City & Guilds External Verifier prior to its use.

Unit 308 Classifying Diabetic Retinopathy

Task B

Invigilated test

Grade a sample of images from an image bank.

Task A

*Write short answers to the following questions.

- 1 Where would you obtain the names of all patients with diabetes in the area covered by the programme?
- 2 What is the age range for recruitment to a national retinal screening programme for a patient with diabetes?
- 3 Which patient details need to be recorded onto the database at patient recruitment?
- 4 How would you check patient's details if a patient's letter is returned by the postal service?
- 5 How would you identify missing patient data on the database?
- 6 What problems could arise if the patient data are inaccurate?
- 7 What is the procedure for dealing with complaints from patients?
- 8 Which images need to be graded by a second grader?
- 9 How is screening data on the database backed up?
- 10 Describe the procedures for ensuring security and confidentiality of data.
- 11 How do Data Protection Act requirements affect working practice in a diabetic retinopathy screening programme?
- 12 State the implications of the Freedom of Information Act (FOIA) to you and your screening programme.
- 13 Why is patient consent required to store their records on the screening database?

Your completed work should be no more than 2000 words.

Footnotes

* Learners with special assessment needs and, who might otherwise be disadvantaged by having to provide **written** answers to questions, may use an agreed alternative means of recordings. An electronic recording format is acceptable e.g. audio tape, so long as the evidence remains both auditable & audible. Where special arrangements are deemed necessary the centre should discuss and agree the alternative to be used with the City & Guilds External Verifier prior to its use.

Practical Demonstration

Practical demonstration to the satisfaction of the workplace assessor to include the following:

- How to search the database to find out if a patient is already registered.
- The method used to change patient details on the database when necessary (e.g. change of address).
- How to enter and save a patient record.
- Ways to check that information is accurate e.g. from GPs.
- How to record where a patient's diabetic eye care is being managed if he/she is not part of the photographic screening programme.
- How to make a patient's screening appointment.
- How to change a patient's appointment.
- How to deal with patient enquiries, including those on the importance of attending for screening and what will happen at the screening appointment.
- How to deal with enquiries from a colleague e.g. an optometrist, a diabetologist.
- How to generate clinic lists and any relevant documentation to screening centres.
- Demonstrate how to generate audit reports.
- How to identify non-attendance at screening appointments.
- How to operate the recall process and sending of patient letters, GP reports and referral letters to ophthalmology.
- How internal QA reports are generated.
- How to deal with problems in the database software and how to rectify them.

Footnotes

* Special arrangements can be made for evidence to be submitted as a recorded question and answer session with the assessor as an alternative to written responses. Learners wishing to provide such evidence will need to obtain advance permission from City & Guilds.

Unit 309 Administration and Management Systems in a Retinopathy Screening Programme

Task C

Scenario

Complete the following scenario:

You are setting up a new screening clinic and when you press “save” an error report pops up and the programme terminates. What steps would you take to manage the situation?

15 Candidate Guidance

Unit 301

National Diabetic Retinopathy Screening Programmes, Principles, Processes and Protocols

This table provides guidance as to what a learner should include in their answers in the individual assignments in order to achieve a pass.

TASK	PASS CRITERIA
<p>A.</p> <p>1a) Explain what is meant by the general term “screening”. (1.1)</p> <p>1b) Describe the criteria for screening a condition. (1.1)</p> <p>2) Explain the purpose of screening for diabetic retinopathy. (1.2)</p> <p>3) Explain why it is important to screen for diabetic retinopathy. (1.3)</p> <p>4) State the limitations of screening for diabetic retinopathy. (1.3)</p> <p>5a) Why might screening for any condition be stressful for a patient? (2.1)</p> <p>5b) Why is screening for diabetic retinopathy unlike screening for any other condition? (2.1)</p>	<p>A.</p> <p>1a) Learners should provide a definition of screening to demonstrate that they understand the concept of risk reduction.</p> <p>1b) Learners should describe the criteria for screening as described by Wilson and Jugner.</p> <p>2) Learners should give the prime aim of screening for diabetic retinopathy. They may also discuss any other purpose of screening for diabetic retinopathy.</p> <p>Learners should discuss which ocular conditions screening does not aim to detect and what opportunistic identification means.</p> <p>3) Learners should explain why it is important for the patient that screening for diabetic retinopathy occurs.</p> <p>4) Learners should state the Exeter Standards for sensitivity and specificity.</p> <p>Learners should also explain what sensitivity and specificity with regard to screening for diabetic retinopathy means.</p> <p>5a) Learners should discuss the psychological impact of screening and its possible outcomes on a patient – including the implications of a result of true positive, false positive and false negative.</p> <p>5b) Learners should know why having diabetes makes the patient different from a person without diabetes in terms of screening.</p>

<p>6) What is informed decision making? (2.2)</p> <p>7a) State the most important components of any systematic screening programme for diabetic retinopathy. (3.1)</p> <p>7b) Describe how these components are managed where you work. (3.2)</p> <p>7c) Discuss at least three advantages or disadvantages of the model of screening they use. (3.2)</p> <p>8) Give four possible consequences of poor performance by a screener (4.3)</p> <p>9a) Describe the difference between internal and external quality assurance systems within a national screening programme. (4.1)</p> <p>9b) Give three reasons why it is necessary to implement internal and external quality assurance in any national screening programme. (4.1)</p> <p>10) List the Performance Indicators for external quality assurance in your national screening programme and explain what each one measures and why. (4.2)</p> <p>11) State the targets for screening provision for your own national screening programme. (5.1)</p> <p>12) Why is it important to maintain an accurate database (register) of people with diabetes? (5.2)</p> <p>13) Discuss the factors that might lead to non-compliance with screening for diabetic retinopathy (5.3)</p>	<p>6) Learners should be able to describe the process of informed decision making in the context of diabetic retinopathy screening.</p> <p>7a) Learners must demonstrate understanding of the most important components of a National systematic screening programme and may also include other less important components.</p> <p>8) Learners must give four consequences for themselves, the patient or the programme.</p> <p>9a) Learners must describe how internal and external quality assurance systems differ.</p> <p>9b) Learners must include three possible reasons why their National programme has implemented quality assurance measures in order to pass</p> <p>10) Learners must list the minimal and achievable targets for each performance indicator listed and explain the relevance of each target.</p> <p>11) Learners must state the current targets for their own national screening programme.</p> <p>12) Learners should discuss why the database should be accurate – data entry and regular updating – how it might not be kept up to date and the implications of not having accurate data.</p> <p>13) Learners should discuss the reasons for non-compliance with any procedure and the specific factors in patients with diabetes.</p>
<p>B. Scenarios Learners should complete the following two</p>	<p>B. Scenarios</p>

scenarios.

1) A patient who has died is invited for an annual screening appointment. The patient's wife is very distressed when she phones to inform the programme that her husband has died. How can the programme guard against this situation? (5.2)

2) A patient phones up to say that they don't think it is necessary for them to come for screening as they have regular checks with their optician. It is clear that they don't want to come for retinopathy screening. How do you reassure the patient and encourage them to attend? (1.2)

This table provides guidance as to what a learner should include in their answers in the individual assignments in order to achieve a pass.

TASK	PASS CRITERIA
<p>A. Write two short case studies under the following headings, one based on a patient with Type 1 diabetes and one based on a patient with Type 2 diabetes (1.1, 1.2, 4.2)</p> <ul style="list-style-type: none"> ● Patient profile (age, sex, ethnic group, occupation) ● Date of diagnosis and age at diagnosis ● Family history of diabetes ● Past history of gestational diabetes ● Presenting symptoms ● Method of diagnosis ● Location of management (GP/hospital) ● Self monitoring (glucose, BP) ● Existing co-morbidity ● Current and past treatment of diabetes, including reasons for changes in management ● Diabetic complications ● Management of risk factors for potential/current complications through life style or medication 	<p>A. Learners must use the two case studies to demonstrate an understanding of the pathology of Type 1 and Type 2 diabetes and how it is diagnosed. This can be done through discussing factors, such as age at diagnosis, family history, medical history and presenting symptoms, speed of onset and clinical management, including choice of treatment and reasons for any changes in treatment.</p> <p>Learners must demonstrate an understanding of the management of Type 1 and Type 2 diabetes. Social factors, such as age, ethnicity, family profile and occupation should be discussed. Medical and lifestyle management issues should be discussed as well as the importance of achieving tight glucose and tight blood pressure control and the significance of co-morbidity and risk factors for further diabetic complications.</p>
<p>B. 1a) List the three microvascular and three macrovascular complications of diabetes. (3.1)</p> <p>1b) Explain how microvascular and macrovascular complications affect the patient. (3.1)</p> <p>2) List two major modifiable and four unmodifiable risk factors for the development of diabetic retinopathy in patients. (4.1)</p> <p>3a) Explain what is meant by hypoglycaemia. (2.1)</p>	<p>B. 1a) List the complications under the headings “macrovascular” and “microvascular.”</p> <p>1b) Learners should explain how these complications affect the patient and any impact this may have on the screening episode.</p> <p>2) List the factors under the headings “modifiable” and “unmodifiable”.</p> <p>Learners may also discuss the evidence surrounding the effect of pregnancy and/or smoking on diabetic retinopathy.</p> <p>3a) Learners should be able to provide a suitable definition of hypoglycaemia and be</p>

<p>3b) Describe the signs and symptoms of hypoglycaemia. (2.1)</p> <p>3c) State who is most at risk from hypoglycaemia. (2.1, 2.2)</p> <p>3d) State the three most likely reasons for hypoglycaemia to occur. (2.1, 2.2)</p> <p>3e) State how a patient having a mild (not needing the assistance of another person) hypoglycaemic episode should be treated. (2.2)</p> <p>3f) Explain how a patient having a severe (needing the assistance of another person or in coma) hypoglycaemic attack should be managed. (2.2)</p> <p>4a) Explain how you would you find out who is responsible for the patient's diabetes education. (4.3)</p> <p>4b) How would you advise a patient to obtain the education information they needed? (4.3)</p>	<p>able to define the level of plasma blood glucose at which symptoms of hypoglycaemia may be experienced by the patient.</p> <p>3b) Learners should describe symptoms.</p> <p>3c) Learners must state which patients are most at risk of developing hypoglycaemia.</p> <p>3d) Learners must state at least three reasons.</p> <p>4b) Learners should know where to direct the patient, locally and nationally, to obtain diabetes education.</p>
---	--

This table gives some of the possible answers that the learner may give and the minimum required to achieve a pass.

TASK	PASS CRITERIA
<p>A.</p> <p>1) Describe the normal function of the cornea, iris, lens, vitreous body, retina, retinal vasculature, retinal pigment epithelium, optic nerve, Bruch’s membrane and choroids. (1.1, 1.2)</p> <p>2) What is the significance of the area of the retina within 1 DD of the centre of the fovea? (1.4)</p> <p>3) Discuss the significance of changes in the retinal periphery. (1.5)</p> <p>4) Explain how diabetes may affect the function of the retinal vasculature and the retina and the consequences for vision. (2.1)</p> <p>5) The clinical features of diabetic retinopathy and their significance (3.4)</p> <p>6) Describe changes in the retinal vasculature in diabetes, other than diabetic retinopathy, and their relevance, and how to distinguish between them (4.3, 4.4)</p> <p>7) Discuss the effect of diabetes on the lens of the eye. (4.1, 4.2)</p>	<p>A.</p> <p>1) Learners should write short notes on appearance and function of each.</p> <p>2) Learners should discuss which photoreceptors are present in this area of the retina and their function. Learners should discuss the implications for vision of changes in this area. Learners should discuss why this area is identified in grading protocols.</p> <p>3) Learners should discuss the photoreceptors found in this area and discuss the conditions that might affect this area and the implications for vision.</p> <p>4) Learners should demonstrate a basic understanding of the changes that happen in the capillary bed and how this leads to both capillary closure and capillary leakage and how this in turn leads to the clinical signs seen in diabetic retinopathy.</p> <p>5) Learners should describe the clinical features of diabetic retinopathy and their significance in terms of progression and impact on vision.</p> <p>6) Learners should describe the clinical features of changes in the retinal vasculature other than diabetic retinopathy and their significance in terms of progression, long term consequences and impact on vision.</p> <p>7) Learners should discuss the impact of fluctuations in blood glucose levels on the normal lens of the eye causing transient refractive changes and cataract.</p>

<p>8) Discuss why the identification of certain other eye conditions may be relevant in a screening programme whose prime purpose is to detect diabetic retinopathy. (5.2)</p>	<p>8) Learners should discuss the relevance of detecting or not detecting other eye conditions in a screening programme for diabetic retinopathy.</p>
<p>B. Invigilated test</p> <p>1) Label a test set of anatomical diagrams of the eye correctly (1.3)</p> <p>2) Identify the lesions of diabetic retinopathy on a test set of images correctly (3.1, 3.2, 3.3)</p> <p>3) Identify other relevant retinal lesions on a test set of images correctly (3.1, 5.1)</p>	<p>B. Invigilated test</p> <p>1) Diagrams will be provided by the test centre</p> <p>2) Learners must correctly identify the following features of diabetic retinopathy on a test set of images: retinal haemorrhage, microaneurysm, exudate outside the arcades, cotton wool spot, venous beading, IRMA, new vessels on the disc, new vessels elsewhere, fibrovascular proliferation, pre retinal haemorrhage, macular exudate</p> <p>3) Learners must correctly identify the following conditions: drusen, age-related macular degeneration, choroidal neovascular membrane, choroidal naevus, choroidal melanoma, myelinated nerve fibres, myopic degeneration, old choroiditis, rhegmatogenous retinal detachment and asteroid hyalosis on a test set images.</p>

Unit 304

Preparing the Patient for Retinopathy Screening

This table gives some of the possible answers that the learner may give and the minimum required to achieve a pass.

TASK	PASS CRITERIA
<p>A.</p> <p>1) Explain how to confirm the patient's identity before the screening examination and why this is important. (1.1, 1.2)</p> <p>2a) How might the screening examination be adversely influenced by the patient's age, physical ability, mental ability or general lack of co-operation (2.1)</p> <p>2b) How might the screening examination be managed to deal with the above factors? (2.3, 2.4)</p> <p>3) Why is privacy important in the screening examination? (2.2)</p> <p>4) What methods could be employed to ensure that the patient understands what the screening examination involves? (3.3)</p> <p>5a) What obstacles may there be to the patient not understanding what the screening examination involves? (3.2)</p> <p>5b) How might these obstacles be</p>	<p>A.</p> <p>1) Learners should be able to explain how they would confirm the patient's identity. Learners should also be able to explain the importance of correctly confirming the patient's identity before the screening examination with regard to patient confidentiality, continuity of care and the legal implications of carrying out an examination on the wrong patient.</p> <p>2a) Learners should be able to explain the adverse influence that the patient's age, physical and mental ability (learning problems or mental health problems) or general lack of co-operation could have on the screening examination including the incorrect or inaccurate recording of patient details and/or visual acuity test results and the production of incorrect or ungradable images with regard to field of view or image quality.</p> <p>2b) Learners should be able to explain how the test could be managed to deal with the above factors.</p> <p>3) Answers should include reference to patient confidentiality, comfort, patient performance and respect for patients.</p> <p>4) Learners should discuss what information should be provided for patients prior to screening and how this could be re-inforced at the screening visit. Learners should discuss patient choice.</p>

<p>overcome? (3.2)</p> <p>5c) What are the consequences of a lack of understanding of what the screening examination involves? (3.1)</p> <p>6) Why is it important to obtain patient consent before the screening examination and how might evidence of consent be recorded? (3.4)</p> <p>7) What should be done if the patient does not consent to screening? (3.5)</p> <p>8) How should patient information be stored and who should be able to access it? (4.1)</p> <p>9a) Explain why patients complain and how to deal with difficult patients. (5.2)</p> <p>9b) Explain how to deal with patient complaints using the appropriate local procedure/protocol. (5.1)</p>	<p>5c) Learners should be able to explain the possible consequences of incorrect or inaccurate recording of patient details and/or visual acuity test results and the production of incorrect or ungradable images in terms of field of view or image quality.</p> <p>6) Learners should be able to explain why it is important to obtain patient consent and how it might be recorded in the patient's notes or in the software.</p> <p>7) Learners should be able to explain the procedure for those patients not giving consent for the screening examination.</p> <p>8) Learners should be able to explain how patient information should be stored by demonstrating knowledge on how the recommendations of the 1997 Caldicott report have been implemented resulting in the "NHS Code of Practice – Confidentiality" as well as local information storage policies. In Scotland they should be familiar with the Confidentiality & Security Advisory Group for Scotland (CSAGS) report 2002 http://www.show.scot.nhs.uk/csags/ and the Scottish executive Guidance "NHS Code of Practice on Protecting Patient Confidentiality" August 2003. http://www.show.scot.nhs.uk/confidentiality/publications/6074NHSCode.pdf In addition learners should be able to demonstrate knowledge of who can access the information they record including other clinicians and the patient themselves.</p> <p>9a) Learners should explain why people complain and how to deal with difficult patients.</p> <p>9b) Learners should be able to explain how they would deal with patient complaints and describe the relevant local procedures and protocols.</p>
<p>B. Scenarios Complete either 1a or 1b and two other scenarios of your choice.</p> <p>1a) A patient attends for their retinal screening in a wheelchair. How would you manage the situation? (2.1, 2.3)</p> <p>1b) A 12 year old patient attends for their retinal screening and as a result of being afraid or unsure of the procedure is uncooperative. What measures would</p>	<p>B. Scenarios</p>

you take to try to put them at their ease and successfully complete the screening examination? (2.1, 2.3)

2) A patient complains that they have been waiting for an unacceptable length of time in the waiting room. They inform you that they are going to leave before the screening examination has been carried out. How might you deal with this situation? (5.1, 5.2)

3) Whilst preparing the patient for the screening examination they become concerned about the different people who will have access to their images and personal information. The patient is unsure if they are happy to consent to the use of this information and refuses to continue with the examination. How might you deal with this situation? (4.1, 4.2, 4.3)

4) You call your next patient into the examination room. Two people stand at the same time. You find that they share both first and surnames. How would you establish which of the two was next on your list? (1.1, 1.2)

This table gives some of the possible answers that the learner may give and the minimum required to achieve a pass.

TASK	PASS CRITERIA
<p>A. 1) Why might it be useful to measure distance visual acuity (VA) as part of the screening examination? (1.1)</p> <p>2) Under what circumstances might you use the following different methods of visual acuity testing and notation? a) Snellen letter chart. b) E Chart. c) Bailey Lovie logMAR. d) Kay picture test chart. e) Sheridan - Gardner test. (2.1, 2.2)</p> <p>3) Why is corrected visual acuity measured? (2.3)</p> <p>4) What is the effect of the pinhole on visual acuity testing? (2.3)</p> <p>5) Why is it important for the patient to be comfortable when testing visual acuity? (3.1)</p> <p>6) Why must a visual acuity chart be placed at the correct distance and what are the implications of placing it at the wrong distance? (3.2)</p> <p>7) Why is it better to use an occluder rather than the patient's hand when testing visual acuity? (4.1)</p> <p>8) How can pupil dilatation improve the result of the screening examination? (5.1)</p> <p>9a) How do mydriatic drops work? 6.1</p>	<p>A. 1) Learners must be aware of the purpose of measurement of VA as part of a retinal screening programme and, depending on country, its relevance to the grading protocol.</p> <p>2) Learners should be aware of the different types of test chart available and the notations for their use. Learners should be aware of the advantages and disadvantages of each chart and when they should be used.</p> <p>5) Learners should be able to explain the importance of patient comfort when testing VA to help to achieve optimum result</p> <p>6) Learners should discuss the notation of VA and the implications of incorrectly positioning the chart.</p> <p>7) Learners should be able to explain why it is better to use an occluder rather than the patient's hand when testing VA.</p> <p>9a) Learners should know how mydriatic drops work and specifically how both tropicamide and phenylephrine work.</p>

<p>9b) What questions should you ask the patient to establish whether the use of mydriatic drops is contra-indicated? (6.1, 6.2)</p> <p>10) How should mydriatic drops be correctly stored and what checks should be made to confirm they are safe to use? (7.1, 8.2)</p> <p>11) Explain how mydriatic drops might precipitate a critical incident and the population group that are at risk.(8.2)</p> <p>12) What should be done in the event of an adverse or critical incident as a result of the use of mydriatic drops? (8.4)</p>	<p>12) Learners should demonstrate knowledge of the appropriate local protocol or procedure that would be employed in the event of an adverse or critical incident relating to the use of mydriatic eye drops, and in particular should discuss angle closure glaucoma.</p>
<p>B. Practical demonstration Practical demonstration to the satisfaction of the workplace assessor (two clinics or more with a minimum of 16 patients in total) to include the following:</p> <ul style="list-style-type: none"> ● Appropriate choice of visual acuity test (2.1) ●Correct patient positioning (3.2) ●Correct use of occluder and pinhole as necessary (2.3) ●Correct measurement of visual acuity in both eyes (4.2) ●Check for possible contra-indications to the use of mydriatic drops (6.2) ●Proper infection control procedure (8.1) ●Correct instillation of appropriate eye drops (6.3, 8.3) 	<p>B. Practical demonstration</p>

This table gives some of the possible answers that the learner may give and the minimum required to achieve a pass.

TASK	PASS CRITERIA
<p>A.</p> <p>1) Describe the field position /s used in your National Screening Programme (3.1)</p> <p>2) What factors might cause the operator to take additional retinal images in addition to the required fields during the patient investigation? (3.3)</p> <p>3) What are the criteria for assessment of images for gradability according to national standards? (2.1)</p> <p>4a) List ocular and non-ocular factors which may prevent the operator from obtaining retinal images of suitable quality or quantity? (4.1)</p> <p>4b) How would you attempt to overcome these reasons and document the reason?(2.4)</p> <p>5a) What are your National targets for the acceptable number of ungradable images in an individual screening programme? (2.3)</p> <p>5b) Give two implications of an unacceptable number of ungradable images. (2.3)</p>	<p>A.</p> <p>1) Learners should describe the field position/s used in their National Screening Programme.</p> <p>2) Learners should explain the circumstances when additional retinal images may need to be taken.</p> <p>3) Learners must describe overall photographic quality definitions as appropriate to their National Screening Programme.</p> <p>4a) Learners should include all the following conditions that might affect satisfactory imaging.</p> <p>4b) Learners should discuss options according to national and/or local protocols.</p> <p>5a) Learners should give their National targets.</p> <p>5b) Learners should be aware of the implications of a high number of ungradable images both on the individual patients concerned and on the screening programme as a whole.</p>
<p>B.</p> <p>Practical demonstration</p> <p>Practical demonstration to the satisfaction of the workplace assessor during a clinic (s) with a minimum of 8 patients, to include the following:</p>	<p>B.</p> <p>Practical demonstration</p>

<ul style="list-style-type: none"> ● Ensure that the environment is safe and suitable for the screening episode. (1.1) ● Confirm equipment is working correctly (1.2) ● Access and open the appropriate software application (1.3) ● Open/initiate/confirm a new visit session for the patient (1.5) <p>Meet and greet and seat the patient at the camera (1.4)</p> <ul style="list-style-type: none"> ● Correctly use the external and if appropriate internal fixation device(s) (3.2) ● Assess image quality. Follow national protocols if the image is ungradable. (2.2) ● Obtain images of the patient's fundi (as required by the screening programme) (3.2) ● Obtain fundus reflex images of both eyes (according to national protocol) (4.2) ● Save the images and complete the session (3.4) ● Warn patient regarding post flash visual problems and glare. 	
<p>C. Practice file Provide a Practice File containing appropriate digital, retinal and anterior segment images.</p> <p>The file should contain images obtained from no less than six people (both eyes) ideally with diabetes. Where possible, all of the patients should have been imaged during a single clinical session (i.e. 3-4 hours duration). (3.2)</p> <ul style="list-style-type: none"> ● all of the images should meet individual National quality requirements for gradability, and the images from no less than two of the participants (both eyes) must be fully assessable for clarity and correctly positioned according to their National protocol. <p>The Practice File must include at least one person from each of the following categories:</p> <ul style="list-style-type: none"> ● A person with diabetes whose pupil(s), after adequate pharmacological dilatation (waiting no less than 30 minutes) are still less than 6mm diameter ● A person with diabetes in whom there is visible central nuclear sclerosis, cortical or posterior subcapsular cataract on/near the optical axis in at least one eye ● A person with diabetes who is over the age of 70 years ● A person with diabetes who is of ethnic origin other than white Caucasian (e.g. Afro Caribbean, Asian sub-continent) 	<p>C. Practice file</p>

In the first 2 categories (poor dilatation and media opacity) both digital retinal and anterior segment images must be included.

Learners should note that in order to complete this file, images of up to 10 people from more than one session may be required.

This table gives some of the possible answers that the learner may give and the minimum required to achieve a pass.

TASK	PASS CRITERIA
<p>A. Practical demonstration Practical demonstration of the following:</p> <ul style="list-style-type: none"> ● How to verify that equipment is in working order and computer screen resolution is set at the appropriate level (1.1, 1.2) ● How to open the appropriate software package on the personal computer (1.3) ● How to navigate correctly through the grading software (2.1) ● How to assess images for gradability (3.2) ● How to enter the grading result in the software (2.2, 5.1) ● How to manage the results of assessment for image gradability appropriately (3.5) ● How to save work (2.3) 	<p>A. Practical demonstration The learner must be observed carrying out the actions in the task.</p>
<p>B. 1) Why is it important that all data recorded in the software is correct? (2.4)</p> <p>2) What are the criteria for assessment of images for gradability according to your National standards?(3.1)</p> <p>3. What are the targets for image quality in your National programme? (3.4)</p> <p>4a) List ocular and non ocular factors which may prevent the operator from obtaining retinal images of suitable quality or quantity? (3.3)</p> <p>4b) What are the two possible outcomes for a patient with image(s) of inadequate quality? (3.3)</p> <p>5a) Describe the grading pathway in your National screening programme (5.2, 5.3)</p>	<p>B. 1) Learners should discuss the ways in which incorrect data entry might affect the outcome for the patient and for the programme.</p> <p>2) Learners must describe overall photographic quality definitions as appropriate to their National Screening Programme.</p> <p>4b) Learners should discuss the implications for themselves, the patient and the screening programme of inadequate image quality.</p> <p>5a) Answers should reflect current National protocol – note this may change.</p>

<p>5b) What are your National targets for reporting screening results to patients? (5.5)</p> <p>6) What is the management of the patient according to results of final grading?(5.4)</p>	<p>5b) Answers should reflect current National protocol – note this may change.</p> <p>6) Learners should be aware of the consequences for the patient of the final grading result. Learners should know how their local and National programme manages patients with other eye conditions.</p>
<p>C. Invigilated test Grade a sample of images from an image bank (3.2, 3.5, 4.1, 4.2, 4.3, 4.4, 4.5, 5.1)</p>	<p>C. Invigilated test Learners grade a sample of images from an image bank.</p>
<p>D. Scenario Complete the following scenario:</p> <p>You are grading a set of images and when you press “save” an error report pops up and the programme terminates. What steps would you take to manage the situation? (2.5, 2.6)</p>	<p>D. Scenario</p>

This table gives some of the possible answers that the learner may give and the minimum required to achieve a pass.

TASK	PASS CRITERIA
<p>A.</p> <p>1) Describe the importance of timely grading of images and how this is achieved in your local screening programme. (1.1)</p> <p>2) Describe their National grading protocol for diabetic retinopathy showing how levels of diabetic retinopathy are allocated by grouping of individual lesions. (1.2, 2.2)</p> <p>3) Discuss why the various indicators of diabetic maculopathy have been chosen and how effective they are at detecting clinically significant macular oedema (CSMO). (2.1)</p> <p>4) In what circumstances might review of images from a previous screen help you to ascertain whether the patient needs referral to the HES? (2.3)</p> <p>5) Explain how the level of retinopathy influences patient management. (4.1)</p> <p>6a) Explain who will receive the results of the final examination of images (4.2)</p> <p>6b) Discuss one advantage and one disadvantage of notifying the patient. 4.2</p> <p>6c) Discuss one advantage and one disadvantage of verbal reporting (4.2)</p> <p>6d) Discuss the advantage and disadvantage of informing other clinicians. (4.2)</p>	<p>A.</p> <p>1) Learners must state who examines the images and how the results are communicated</p> <p>2) Learners should describe the disease features in each of the grading categories in their National protocol</p> <p>3) Learners should discuss the fact that a 2-D image is used to detect a 3-D feature. Discuss the ability of each surrogate marker to correctly identify those patients with CSMO (sensitivity) and those patients without CSMO (specificity).</p> <p>4) Learners should be able to discuss at least one situation in which reviewing images from a previous screening episode would help their decision in whether to refer the patient.</p> <p>5) Learners should be aware of the consequences of the grading level. Answers should reflect current National protocol – note this may change.</p> <p>6a) Learners should explain who will receive the results of the final examination in their National programme.</p> <p>6b) Answers should reflect current National protocol – note this may change.</p>

B. Invigilated test Grade a sample of images from an image bank. (3.1)	B. Invigilated test Learner must grade a sample of images from an image bank.
--	---

This table gives some of the possible answers that the learner may give and the minimum required to achieve a pass.

TASK	PASS CRITERIA
<p>A.</p> <p>1) Where would you obtain the names of all patients with diabetes in the area covered by the programme? (1.1, 1.2, 3.3)</p> <p>2) What is the age range for recruitment to a national retinal screening programme for a patient with diabetes? (1.1)</p> <p>3) Which patient details need to be recorded onto the database at patient recruitment? (1.1)</p> <p>4) How would you check patient’s details if a patient’s letter is returned by the postal service? (3.3)</p> <p>5) How would you identify missing patient data on the database? (2.1)</p> <p>6) What problems could arise if the patient data are inaccurate? (3.1, 3.2, 8.2)</p> <p>7) What is the procedure for dealing with complaints from patients? (6.1)</p> <p>8) Which images need to be graded by a second grader? (9.1)</p> <p>9) How is screening data on the database backed up? (10.1)</p> <p>10) Describe the procedures for ensuring security and confidentiality of data. (10.1,</p>	<p>A.</p> <p>1) Learners should know where to obtain demographic data on all patients with diabetes covered by the programme. They should also know that there may be gaps in the records.</p> <p>5) Learners should know how to run queries on the database to identify missing data.</p> <p>6) Learners should be able to give examples of what can happen if data are inaccurate or not kept up to date.</p> <p>7) Learners should describe how to deal with patient complaints according to local protocols.</p> <p>8) Learners should describe the National Internal QA requirements.</p> <p>9) Learners should describe how and where data is backed up.</p>

<p>11.4)</p> <p>11) How do Data Protection Act requirements affect working practice in a diabetic retinopathy screening programme? (11.1)</p> <p>12) State the implications of the Freedom of Information Act to you and your screening programme. (11.2)</p> <p>13) Why is patient consent required to store their records on the screening database? (11.3)</p>	<p>11) Learners should know that data should only be obtained and processed for the purpose it is intended</p> <p>12) Learners should be aware of what the FOIA covers and how this relates to patient identifiable information</p> <p>13) Learners in England should be familiar with PIAG requirements, and in Scotland with CSAGS.</p>
<p>B. Practical demonstration</p> <p>Practical demonstration to the satisfaction of the workplace assessor to include the following:</p> <ul style="list-style-type: none"> ● How to search the database to find out if a patient is already registered (2.1) ● The method used to change patient details on the database when necessary (e.g. change of address) (2.1) ● How to enter and save a patient record (8.3, 8.4) ● Ways to check that information is accurate e.g. from GPs (1.2, 10.2) ● How to record where a patient's diabetic eye care is being managed if he/she is not part of the photographic screening programme (1.1,2.1) ● How to make a patient's screening appointment (4.1) ● How to change a patient's appointment (4.1) ● How to deal with patient enquiries, including those on the importance of attending for screening and what will happen at the screening appointment (5.1, 5.2, 5.3) ● How to deal with enquiries from a colleague e.g. an optometrist, a diabetologist (5.1) ● How to generate clinic lists and any relevant documentation to screening centres (2.1, 7.1) <p>Demonstrate how to generate audit reports (8.1, 9.2)</p> <ul style="list-style-type: none"> ● How to identify non-attendance at screening appointments (8.1) ● How to operate the recall process and sending of patient letters, GP reports and referral letters to ophthalmology (2.1, 8.5) ● How internal QA reports are generated (2.1, 9.2) ● How to deal with problems in the database software and how to rectify them (2.2) 	<p>B. Practical demonstration</p>
<p>C. Scenario</p> <p>Complete the following scenario:</p>	<p>C. Scenario</p>

<p>You are setting up a new screening clinic and when you press “save” an error report pops up and the programme terminates. What steps would you take to manage the situation? (10.3, 10.4)</p>	
--	--

Published by City & Guilds
1 Giltspur Street
London
EC1A 9DD
T +44 (0)20 7294 2468
F +44 (0)20 7294 2400
www.cityandguilds.com

**City & Guilds is a registered charity
established to promote education
and training**

TS-03-7359