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DOAS GLAUCOMA CLINICAL CARE PATHWAY AND DATASET – June 2006 v1.0

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

INTRODUCTION

The **Glaucoma Clinical Care Pathway** focuses on the clinical care that clinical teams provide for patients with glaucoma (primary open angle glaucoma-POAG; normal tension glaucoma-NTG; ocular hypertension-OHT; and POAG/NTG suspects).

It is about:

- ***"what we do"*** when a person first presents to the health service
- ***"what we do"*** to make a diagnosis of glaucoma (POAG, NTG, OHT and POAG/NTG suspects)
- ***"what we do"*** for treating, monitoring response to treatment and for monitoring disease progression

The **Glaucoma Clinical Dataset** focuses on clinical information i.e. - ***"what information clinicians need"*** - in order to manage patients with glaucoma i.e. what do we need to know about a patient so that we can provide the appropriate management ("to do what we need to do") for that person? It represents an abstract of all the data that is usually captured during the routine care of a glaucoma patient.

Both the **Care Pathway and Dataset** are based on existing sources of good clinical practice from –

- Professional body guidance - Royal College of Ophthalmologists, European Glaucoma Society, American Academy of Ophthalmology
- Protocols and guidelines in use by glaucoma specialists and clinical teams across the country
- Existing ophthalmic information systems
- Input from Patient Focus Groups
- Multi-disciplinary national consultation

The Royal College of Ophthalmologists, College of Optometrists, Association of Optometrists, Royal College of Nursing, and the Royal College of General Practitioners, have all collaborated and contributed to the development of the ***Glaucoma Clinical Care Pathway and Clinical Dataset***, which will ultimately inform the development of the NHS Care Record.

EXPLANATORY TERMS FOR SOURCES USED AND GRADES OF EVIDENCE

Cited Sources

AAO - American Academy of Ophthalmology
EGS - European Glaucoma Society
RCOphth - Royal College of Ophthalmologists

[1] Consistent with other Ophthalmic DOAS projects – Cataract and Diabetic Eye Disease.

[2] Existing clinical protocols and information systems – Medisoft Glaucoma and TargetFour E-Patient.

[3] Clinical Consensus – DOAS Glaucoma National Steering Committee and feedback from national consultation

[4] Patient Feedback – DOAS Glaucoma Patient Focus Group

Grades of Evidence

The cited grades are those made by the American Academy of Ophthalmology when used to support its recommendations and guidance in its Preferred Practice Patterns, providing explicit rating of its importance to the care process and an explicit rating of the strength of the best available evidence.

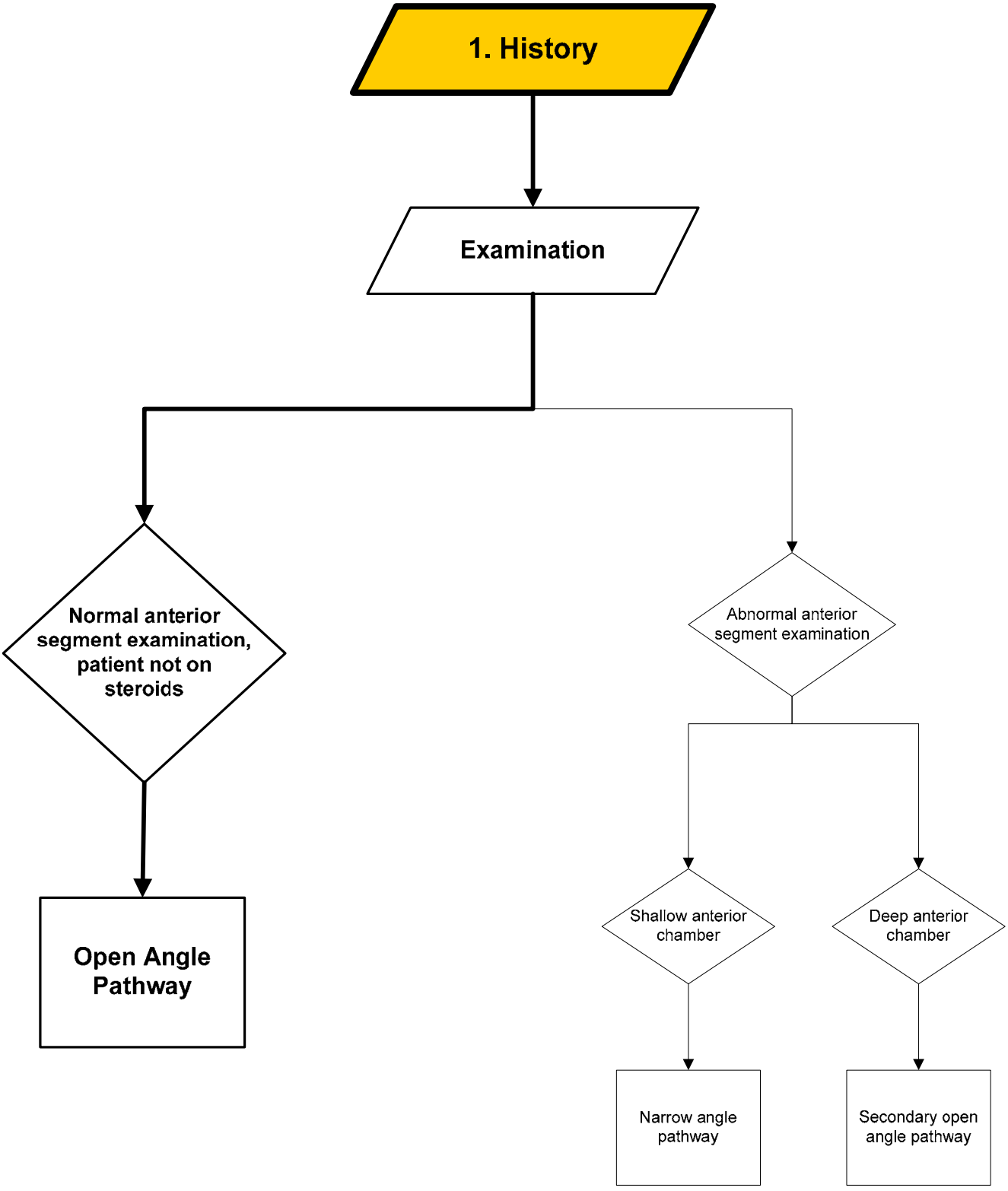
Level A - defined as most important
Level B - defined as moderately important
Level C - defined as relevant, but not critical

Level I - provides strong evidence in support of the statement
Level II - provides substantial evidence in support of the statement
Level III - provides consensus of clinical opinion in the absence of evidence that meets Level I and II

THE GLAUCOMA DOAS NATIONAL STEERING COMMITTEE MEMBERSHIP

- Clinicians with a special interest and expertise in glaucoma management
- Professional bodies and organisations –
    - Royal College of Ophthalmologists
    - College of Optometrists
    - Royal College of Nursing, Ophthalmic Nurses Forum
    - Royal College of General Practitioners
    - Association of Optometrists
- RNIB
- Patient Representatives
- North East London Strategic Health Authority
- DOAS Central Team – Connecting for Health
- DOAS Action Team – Moorfields Eye Hospital

Initial Presentation of Patient



GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

1. HISTORY AT PRESENTATION

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
Date of Presentation - History	Documents date of first presentation.	To monitor patient management along care pathway. To support clinical audit and outcome assessment.	n8 - ccyymmdd	NHS Dictionary
1. HISTORY				
1.1 Patient Details				
NHS number	The unique identifier allocated to a person by the NHS.	Identifies the person receiving the health care.	n10	Summary Core Dataset for Diabetes v4.0
Surname	The patient's surname.	Additional identifier for the person receiving care or unique identification to link records where the new NHS number is unavailable.	NHS Dictionary; a70	Cancer Dataset v4.0
Forename	The patient's forename.	Additional identifier for the person receiving care or unique identification to link records where the new NHS number is unavailable.	NHS Dictionary; a70	Cancer Dataset v4.0
Title	The patient's title.	Identify title of patient.	Mr, Mrs, Miss, Ms, Dr, Other	NHS Dictionary
Previous surname (if different)	To use only if patient has changed their surname.	Identify patient's previous NHS visits under different surname.	NHS Dictionary; a70	NHS Dictionary
Sex	A classification of the sex of a person. The classification is phenotypical rather than genotypical, i.e. does not provide codes for medical or scientific purposes.	Additional identifier for the person receiving health care. Also required in order to interpret some observations and test results and can influence care management.	n1 National codes: 0 Not Known 1 Male 2 Female 9 Not specified	Summary Core Dataset for Diabetes v4.0
Birth Date	Records the date on which the person was born.	Additional identifier for the person receiving health care. Also required for calculation of age.	n8 - ccyymmdd	Summary Core Dataset for Diabetes v4.0
Address	Address nominated by patient as residence.	Required to contact patient.	an175; (5 lines each an35)	NHS Dictionary

Note: All UNSHADED data items are ESSENTIAL and will form the core dataset for the glaucoma clinical care pathway, SHADED data items are DESIRABLE and will be dependent on local service arrangements or protocols.

GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
Postcode	The postcode of the patient's home address.	Additional identifier for the person receiving health care and required for correspondence. Also used to determine deprivation.	an8	Summary Core Dataset for Diabetes v4.0
Telephone number	The telephone number to contact patient.	Required to contact patient.	an35	UK Government Data Standards Catalogue
Email address	The email address of patient.	Alternative contact for patient.	Alphanumeric	NHS Dictionary
GMP code	The code of either the GMP with whom the patient is registered or has been referred by.	The contact details for GMP required to notify GMP of patients treatment and progress.	an8	NHS Dictionary
Practice code	The code of the practice of patient's registered GMP.	The contact details for GMP required to notify GMP of patients treatment and progress.	an6	NHS Dictionary
PCT code	The code of PCT.	For NHS organisations it is a code to identify most organisations that exchange information within the NHS.	an8	NHS Dictionary
Optometrist code	The code of Optometrist.	For NHS organisations it is a code to identify most organisations that exchange information within the NHS.		[3] Clinical Consensus
Ethnic category	The ethnicity of a patient, as specified by the patient.	The 16+1 new ethnic data categories defined in the 2001 census will become the national mandatory standard for the collection of ethnicity.	ETHNOS: an2	NHS Dictionary
Occupation	Identifies the current or previous occupation if retired, of the patient.	Used for research and audit purposes; to determine deprivation and access to services; and assessment of the impact of glaucoma on visual function and quality of life.	Free text field	Single Assessment Process Dataset
Driving Status at presentation	Establishes whether the patient is a driver or not.	Establishes baseline at presentation for future outcome assessment – indicator of visual functioning. Informs whether DVLA notification necessary.	Never driven Current driver No longer drives	[3] Clinical Consensus
Category of driving status	Describes the category of driving status as stipulated by the DVLA.	To monitor impact of glaucoma on visual functioning, and an outcome indicator. For audit and research purposes.	Group 1 – ODL : Car, Motorcycle Group 2 – VOC : LGV, PCV Not relevant	DVLA Codes

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
Living arrangements		Identifies the living arrangements of patient.	Helps to identify if additional support is required for patient at home.	Alone Not alone Sheltered Residential Care	[3] Clinical Consensus
1.2 Ocular History					
Ocular disease	Right eye	Documents known co-existing ocular disease history.	To determine any ocular co-morbidity that may affect the clinical management of patient.	Allergic eye disease Blepharitis Corneal disease Cataract Pseudophakia Aphakia Uveitis Retinal disease Cystoid macular oedema Trauma Other specify	AAO AIII, EGS, RCOphth
	Left eye				
Ocular surgery	Right eye	Documents any previous ocular surgery.	To determine if previous ocular surgery may affect the clinical management of patient.	Previous Glaucoma surgery Cataract surgery Refractive surgery Corneal graft Retinal surgery Previous lid surgery Other specify	AAO AIII, EGS, RCOphth
	Left eye				
Ocular medications	Right eye	Documents patient's current ocular medication.	To inform clinical management of patient and identify potential contraindications.	Ocular lubricants Topical antibiotics Topical steroids Anti allergy drops Other specify	AAO AIII, EGS, RCOphth
	Left eye				
1.3 Family History					
Family history of Glaucoma		Identifies 1st degree family history of glaucoma.	Identification of known risk factor for development of glaucoma. For audit and research purposes.	Yes/ No/ Don't know	AAO AIII, EGS, RCOphth
1.4 Drug History					
Systemic medications		Identifies patient's current systemic medication.	To identify current systemic medications taken by patient to inform management and identify contraindications to treatment.	Free text field	AAO

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
1.5 Systemic Medical History				
History of low diastolic blood pressure	Identifies if patient has low diastolic pressure.	To assess the presence of a known risk factor for glaucoma. For research and audit purposes.	Yes/ No	AAO, EGS
History of acute blood volume loss	Identifies if patient has ever suffered significant blood loss.	To assess the presence of a known risk factor for glaucoma. For research and audit purposes.	Yes/ No	EGS
History of migraine	Documents whether patient currently suffers with, or has had a history of migraine.	To assess the presence of a known risk factor for glaucoma. For research and audit purposes.	Yes/ No	EGS
Raynauds disease	Identifies if patient has Raynauds disease.	To assess the presence of a known risk factor for glaucoma. For research and audit purposes.	Yes/ No	AAO, EGS
Asthma	Identifies if patient has asthma.	To determine contra-indication with medication.	Yes/ No	EGS
Chronic Obstructive Pulmonary Disease	Identifies if patient has COPD.	To determine contraindication with medication.	Yes/ No	EGS
Heart block	Identifies if patient has heart block.	To determine contraindication with medication.	Yes/ No	EGS
Ischaemic Heart Disease	Identifies if patient has ischaemic heart disease.	To determine contraindication with medication.	Yes/ No	EGS
Diabetes mellitus Type I	Identifies if patient has diabetes mellitus type I.	To inform clinical management of patient's glaucoma. To assess significant co-morbidity.	Yes/ No	AAO, EGS, RCOphth
Diabetes mellitus Type II	Identifies if patient has diabetes mellitus type II.	To inform clinical management of patient's glaucoma. To assess significant co-morbidity.	Yes/ No	AAO, EGS, RCOphth
Renal impairment	Identifies if patient has any form of renal impairment.	To inform clinical management of patient's glaucoma. To assess significant co-morbidity. To determine contraindication with medication.	Yes/ No	EGS

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Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
1.6 Allergies				
Drug Allergies	Identifies all known drug allergies.	To ensure patient safety; to avoid allergic reactions; and alerting potential contraindications for treatment.	Free text field	AAO AIII
Other Allergies	Identifies all other (non-drug) known allergies.	To ensure patient safety; to avoid allergic reactions; and alerting potential contraindications for treatment.	Free text field	AAO AIII

POP –UP ALERT: Medication	Beta blockers – Asthma, Heart block, Bradycardia, Hypotension. Carbonic Anhydrase Inhibitors – Renal impairment/ Kidney disease. Prostaglandin Analogues – Pregnancy, Breast- feeding, Aphakia, Pseudophakia with torn posterior capsule, Cystoid Macular Oedema, Ocular Inflammation. Alpha agonists – contra-indicated if patient using mono-amine oxidase inhibitors or tricyclic antidepressants Steroids – current use of topical steroids

POP –UP ALERT: Allergies	Topical ocular medications Preservatives in topical ophthalmic medications Systemic medications

[1] Consistent with other Ophthalmic DOAS projects – Cataract and Diabetic Eye Disease.

[2] Existing clinical protocols and information systems – Medisoft Glaucoma and TargetFour E-Patient.

[3] Clinical Consensus – DOAS Glaucoma National Steering Committee and feedback from national consultation.

[4] Patient Feedback – DOAS Glaucoma Patient Focus Group.

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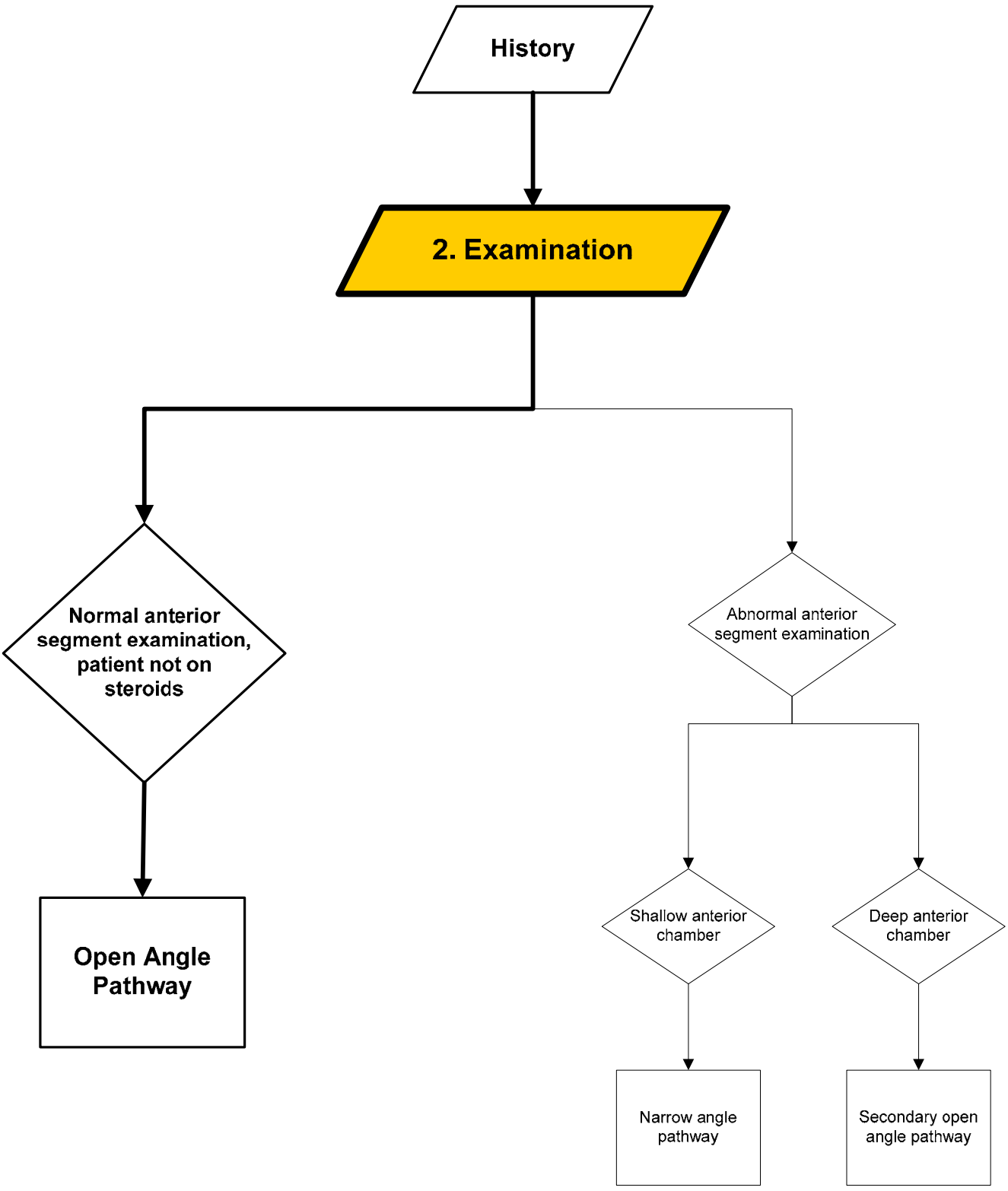
Initial Presentation of Patient



2. EXAMINATION AT PRESENTATION

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
Date of Presentation - Examination		Documents date of examination of first presentation.	To monitor patient management along care pathway. To support clinical audit and outcome assessment.	n8 - ccyymmdd	NHS Dictionary
2. EXAMINATION					
2.1 Visual Acuity					
Visual acuity unaided	Right eye	Measurement of visual acuity using the specified standard (Snellen or LogMAR).	Establishes baseline at presentation Ensures complete examination. Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	AAO AIII, EGS
	Left eye				
Visual acuity with correction if worn	Right eye	Measurement of visual acuity with correction using the specified standard (Snellen or LogMAR). To include any form of correction (i.e. glasses, contact lenses)	Establishes baseline at presentation Ensures complete examination. Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	AAO AIII, EGS
	Left eye				
Visual acuity with pin-hole	Right eye	The estimate of best attainable visual acuity of patient measured using specified standard (Snellen or LogMAR).	Establishes baseline at presentation Ensures complete examination Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	AAO AIII, EGS
	Left eye				

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
2.2 Pupillary Reactions					
RAPD	Right eye Left eye	To assess pupillary reactions.	Assessment of gross optic nerve function.	RAPD/ No RAPD	AAO BII
2.3 Anterior Segment					
Central corneal thickness	Right eye Left eye	Measurement for central corneal thickness.	Central corneal thickness is a factor that affects the accuracy of IOP measurements by applanation techniques.	µm	AAO AIII, EGS
Anterior segment inflammation	Right eye Left eye	Presence of current anterior segment for inflammation.	To determine if patient has POAG or Secondary glaucoma, to inform the patient management care pathway.	Yes/ No	AAO AIII
Depth of anterior chamber	Right eye Left eye	Measurement depth of anterior chamber, by van Herricks method.	To grade ratio of aqueous gap/cornea into ranges of variation.	Numerical value; 0.00 - 1	EGS
Gonioscopy	Right eye Left eye	General assessment of anterior chamber angle conformation.	Diagnostic assessment and to inform patient management.	Open Occludable Closed	AAO AIII, EGS
Lens	Right eye Left eye	Presence of cataract.	Common treatable co-morbidity in glaucoma patients. Presence needs to be considered for interpretation of visual fields.	Nil Early Moderate Mature	[3] Clinical Consensus
2.4 Intra Ocular Pressure					
Tonometry	Right eye Left eye	Document the equipment used to measure IOP.	For comparative purposes to assess accuracy of IOP measurement	Non contact tonometry Goldman applanation tonometry Perkins Other specify	Goldman Aplanation Tonometry (AAO AIII, EGS, RCOphth)
Intra Ocular Pressure	Right eye Left eye	Measurement of intro-ocular pressure (IOP) of eye.	An essential component of glaucoma assessment taking into account of diurnal variation to inform management of glaucoma.	mmHg – Numerical value: nn Time – Numerical value; nn:nn	Time (AAO BII)

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
2.5 Posterior Segment - Optic Disc Examination					
Slit Lamp Lens	Right eye Left eye	To indicate type of slit lamp lens used for optic disc examination.	To facilitate interpretation of disc diameter and cup-disc ratio.	Volk Nikon Other specify	[3] Clinical Consensus
Slit Lamp Lens Power	Right eye Left eye	To indicate strength of slit lamp lens in dioptres for optic disc examination.	To facilitate interpretation of disc diameter and cup-disc ratio.	Alphanumeric 60D 68D 78D 90D	[3] Clinical Consensus
Vertical disc diameter	Right eye Left eye	A measure of disc size.	Evaluation of optic nerve for signs of glaucomatous damage and to inform management of and monitoring of disease.	Numerical value (mm); nn.n	EGS
Cup/ Disc ratio	Right eye Left eye	The decimal value obtained by dividing the vertical cup diameter with the vertical disc diameter.	Evaluation of optic nerve for signs of glaucomatous damage and to inform management of and monitoring of disease.	n2 01 No view 02 Cup disc ratio 0.1-1.0	EGS
Disc haemorrhages	Right eye Left eye	Assessment of presence of haemorrhage at or near optic disc margin.	Presence indicates local vascular damage.	Present/ Absent	EGS
Dilated fundus examination	Right eye Left eye	Examination of fundus (dilated).	To identify ocular co-morbidities.	BRVO CRVO CMO Background Diabetic Retinopathy Moderate non-proliferative DR Severe non-proliferative DR Proliferative DR Treated proliferative DR Early AMD Moderate AMD Advanced AMD Other specify	AAO AIII, EGS

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
2.6 Visual Fields Assessment					
Perimetry	Right eye	Type of perimetry used to assess visual fields.	For comparative purposes for interpreting visual fields and to inform management and monitoring of disease.	Goldman perimetry Dicon Henson Octopus Humphrey Frequency Doubling Perimetry (FDP)	AAO AIII, EGS, RCOphth
	Left eye				
Visual field	Right eye	Description of visual field.	Inform diagnosis and management of glaucoma and monitoring progression. Monitoring for clinical audit purposes.	Normal/Abnormal	AAO AIII, EGS, RCOphth
	Left eye				
2.7 Refraction					
Sphere	Right eye	The spectacle correction worn by the patient. This may be assessed by measurement of the patient's current glasses or by refraction of the patient at the time (automated or manual – subjective refraction). The sphere is the base – corrections upon which cylinder, reading addition and prism may be superimposed.	To establish how far from normal sight the patient's eye is, and to compare with other eye. It is necessary to correct for refraction, when patient performs visual field test.	±nn.nn 2 decimal places Dioptres NB – It is necessary to specify the value if positive or negative.	Cataract National Dataset v14 [1]Consistent with other Ophthalmic DOAS projects
	Left eye				
Cylinder	Right eye	The cylindrical correction superimposed on refraction as part of patient's the patient's refraction.	To establish how far from normal sight the patient's eye is, and to compare with other eye. It is necessary to correct for refraction, when patient performs visual field tests.	±nn.nn 2 decimal places Dioptres NB – It is necessary to specify the value if positive or negative.	Cataract National Dataset v14 [1]Consistent with other Ophthalmic DOAS projects
	Left eye				
Axis	Right eye	The axis of the cylindrical refraction.	To establish how far from normal sight the patient's eye is, and to compare with other eye. It is necessary to correct for refraction, when patient performs visual field tests.	nnn.n 2 decimal places 000.5 to 180.0 degrees	Cataract National Dataset v14 [1]Consistent with other Ophthalmic DOAS projects
	Left eye				

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
2.8 Action taken				
Management decision at presentation	Describes what happens to the patient at the end of initial assessment	Supports patient management along the care pathway. For clinical audit purposes.	Referred for Diagnostic Assessment Review for repeat investigations Routine review Discharge	[3] Clinical Consensus

[1] Consistent with other Ophthalmic DOAS projects – Cataract and Diabetic Eye Disease.

[2] Existing clinical protocols and information systems – Medisoft Glaucoma and TargetFour E-Patient.

[3] Clinical Consensus – DOAS Glaucoma National Steering Committee and feedback from national consultation.

[4] Patient Feedback – DOAS Glaucoma Patient Focus Group.

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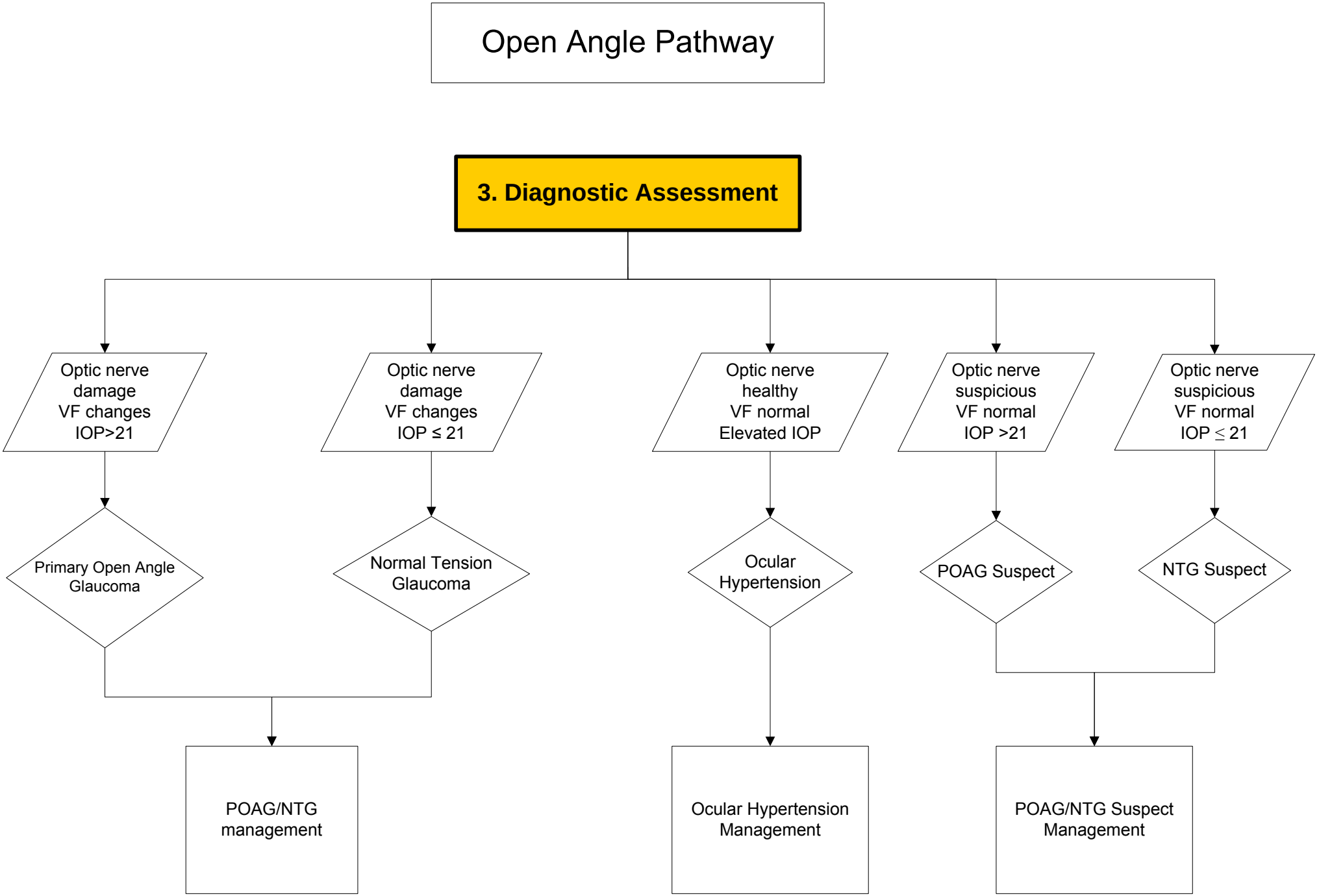
Open Angle Pathway



3. DIAGNOSTIC ASSESSMENT

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
Date of diagnostic assessment		Documents date of diagnostic assessment, (this may be at the same time as FIRST PRESENTATION depending on local service arrangements and protocols).	To monitor patient management along care pathway. To support clinical audit and outcome assessment.	n8 - ccyymmdd	NHS Dictionary
3. DIAGNOSTIC ASSESSMENT					
3.1 Visual Acuity					
Visual acuity unaided	Right eye	Measurement of visual acuity using the specified standard (Snellen or LogMAR).	Establishes baseline at presentation Ensures complete examination. Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	AAO AIII, EGS
	Left eye				
Visual acuity with correction if worn	Right eye	Measurement of visual acuity with correction using the specified standard (Snellen or LogMAR). To include any form of correction (i.e. glasses, contact lenses)	Establishes baseline at presentation Ensures complete examination. Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	AAO AIII, EGS
	Left eye				
Visual acuity with pin-hole	Right eye	The estimate of best attainable visual acuity of patient measured using specified standard (Snellen or LogMAR).	Establishes baseline at presentation Ensures complete examination Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	AAO AIII, EGS
	Left eye				

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Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
3.2 Pupillary Reactions					
RAPD	Right eye Left eye	To assess pupillary reactions.	Assessment of gross optic nerve function.	RAPD/ No RAPD	AAO BII
3.3 Anterior Segment					
Central corneal thickness	Right eye Left eye	Measurement of central corneal thickness.	Central corneal thickness is a factor that affects the accuracy of IOP measurements by applantion techniques.	µm	AAO AIII, EGS
Anterior segment inflammation	Right eye Left eye	Presence of current anterior segment inflammation.	To determine if patient has POAG or Secondary glaucoma, to inform the patient management care pathway.	Yes/ No	AAO AIII
Gonioscopy	Right eye Left eye	General assessment of anterior chamber angle conformation.	Diagnostic assessment and to inform patient management.	Open Occludable Closed	AAO AIII, EGS
Lens	Right eye Left eye	Presence of Cataract.	Common treatable co-morbidity in glaucoma patients. Presence needs to be considered for interpretation of visual fields.	Nil Early Moderate Mature	[3] Clinical consensus
3.4 Intra Ocular Pressure					
Tonometry	Right eye Left eye	Document the equipment used to measure IOP.	For comparative purposes to assess accuracy of reading.	Non contact tonometry Goldman applanation tonometry Perkins Other specify	Goldman Aplanation Tonometry (AAO AIII, EGS, RCOphth)
Intra Ocular Pressure	Right eye Left eye	Measurement of intro-ocular pressure (IOP) of eye.	An essential component of glaucoma assessment taking into account of diurnal variation to inform management of glaucoma.	mmHg – Numerical value: nn Time – Numerical value; nn:nn	Time (AAO BII)

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Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
3.5 Posterior Segment - Optic disc examination					
Slit Lamp Lens	Right eye Left eye	To indicate type of slit lamp lens used for optic disc examination.	To facilitate interpretation of disc diameter and cup-disc ratio.	Volk Nikon Other specify	[3] Clinical Consensus
Slit Lamp Lens Power	Right eye Left eye	To indicate strength of slit lamp lens in dioptres for optic disc examination.	To facilitate interpretation of disc diameter and cup-disc ratio.	Alphanumeric 60D 68D 78D 90D	[3] Clinical Consensus
Vertical disc diameter	Right eye Left eye	A measure of disc size.	Evaluation of optic nerve for signs of glaucomatous damage and to inform management of and monitoring of disease.	Numerical value (mm); nn.n	EGS
Cup/ Disc ratio	Right eye Left eye	The decimal value obtained by dividing the vertical cup diameter with the vertical disc diameter.	Evaluation of optic nerve for signs of glaucomatous damage and inform management of and monitoring of disease.	n2 01 No view 02 Cup disc ratio 0.1-1.0	EGS
Disc haemorrhages	Right eye Left eye	Assessment of presence of haemorrhage at or near optic disc margin.	Presence indicates local vascular damage.	Present/ Absent	EGS
Dilated fundus examination	Right eye Left eye	Examination of fundus (dilated).	To identify ocular co-morbidities.	BRVO CRVO CMO Background Diabetic Retinopathy Moderate non-proliferative DR Severe non-proliferative DR Proliferative DR Treated proliferative DR Early AMD Moderate AMD Advanced AMD Other specify	AAO AIII, EGS

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Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
3.6 Visual Fields Assessment					
Perimetry	Right eye Left eye	Type of perimetry used to assess visual fields.	For comparative purposes for interpreting visual fields and to inform management and monitoring of disease.	Goldman perimetry Dicon Henson Octopus Humphrey Frequency Doubling Perimetry (FDP)	AAO AIII, EGS, RCOphth
Visual Field image	Right eye Left eye	Capturing and archiving of digital visual field images for each eye.	Inform diagnosis and management of glaucoma and monitoring progression. To support clinical audit and assessment of outcomes.	Requirement of an image Visual field images to be available in an accessible viewable format on screen, with the facility for viewing consecutive field images (e.g. Scrolling on a screen; or multiple consecutive images on screen); to aid clinical assessment of progression. Manipulation of images necessary	[3] Clinical Consensus
Reliability of field	Right eye Left eye	Assessment of the reliability indices of field.	Identifying factors that affect the reliability of field test. To inform interpretation of field and its contribution to clinical management.	Reliable/ Unreliable	[3] Clinical Consensus
Assessment of field	Right eye Left eye	Assessing the outcome of the field test.	Identifying outcome and taking appropriate action.	Normal Defect evident Uncertain	[3] Clinical Consensus
3.7 Optic Disc Imaging					
Optic disc digital photograph	Right eye Left eye	Digital optic disc colour photos for each eye.	Objective documentation and archiving of optic disc parameters to inform clinical management and monitoring of disease progression. To support clinical audit and assessment of outcomes.	Colour digital disc photo Images to be available in an accessible viewable format on screen, with the facility for viewing consecutive images (e.g. scrolling on a screen; or multiple consecutive images on screen); to aid clinical assessment of progression.	[3] Clinical Consensus

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Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
Modality of optic disc imaging	Right eye Left eye	Imaging technique used.	Emerging technological modalities available with different assessment features. Variable availability of equipment and use in current routine practice. Uptake increasing Allows for documentation of modality of disc imaging used for comparative purposes and inform diagnosis, management and monitoring of disease.	HRTII OCT GDXVcc Other specify	[3] Clinical Consensus
Optic nerve image	Right eye Left eye	Digital optic nerve image.	Capturing and archiving of digital optic disc images for each eye. Inform diagnosis and management of glaucoma and monitoring progression. To support clinical audit and assessment of outcomes.	Requirement of an image Images to be available in an accessible viewable format on screen, with the facility for viewing consecutive images (e.g. scrolling on a screen; or multiple consecutive images on screen); to aid clinical assessment of progression.	[3] Clinical Consensus
3.8 Diagnosis					
Diagnosis	Right eye Left eye	Documentation of diagnosis made.	Inform patient's clinical management and monitoring along care pathway. To support clinical audit and assessment of outcomes.	Ocular hypertension Primary open angle glaucoma Normal Tension Glaucoma Suspect POAG Suspect NTG Other specify	[3] Clinical Consensus

[1] Consistent with other Ophthalmic DOAS projects – Cataract and Diabetic Eye Disease.

[2] Existing clinical protocols and information systems – Medisoft Glaucoma and TargetFour E-Patient.

[3] Clinical Consensus – DOAS Glaucoma National Steering Committee and feedback from national consultation.

[4] Patient Feedback – DOAS Glaucoma Patient Focus Group.

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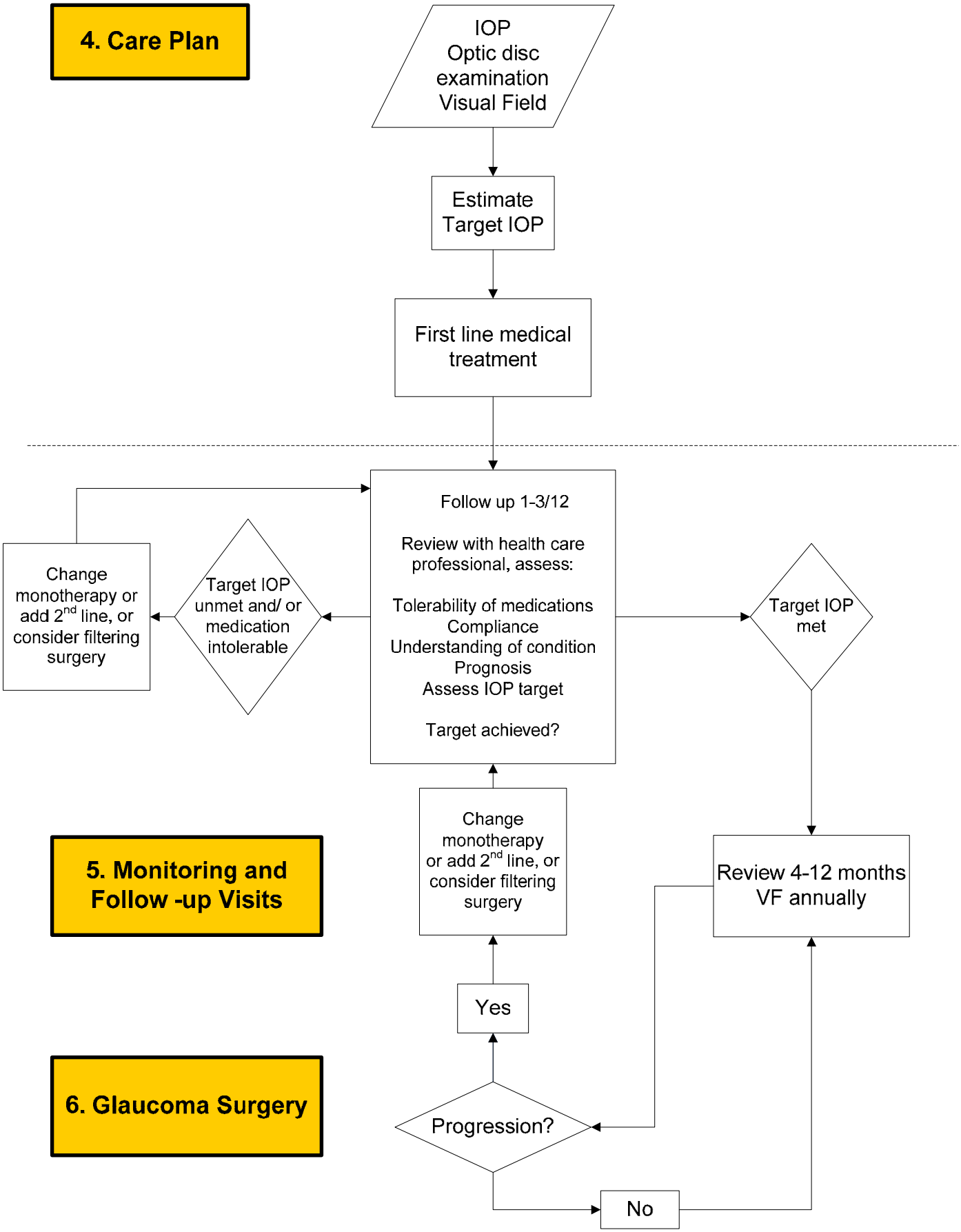
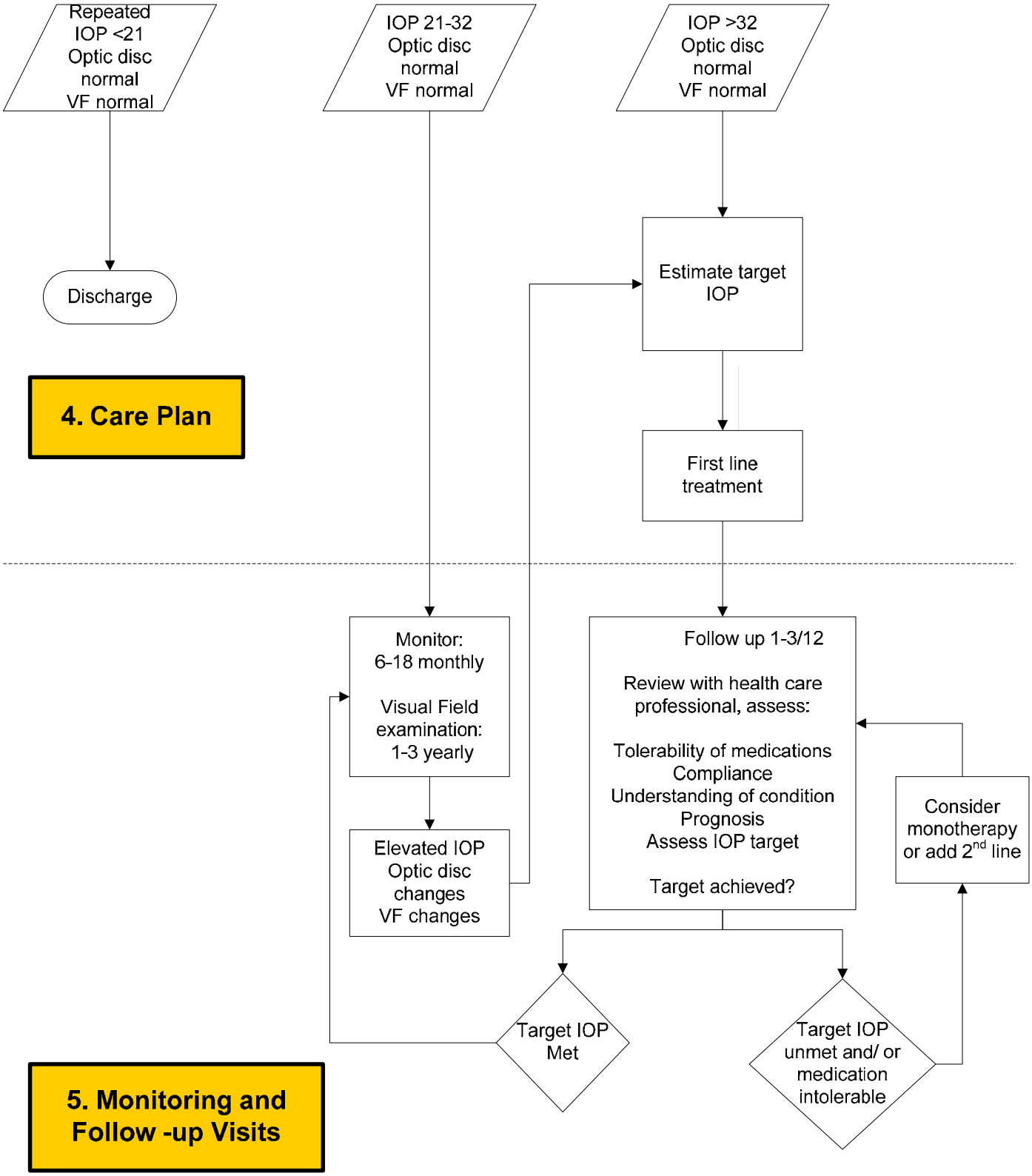
POAG/NTG Management

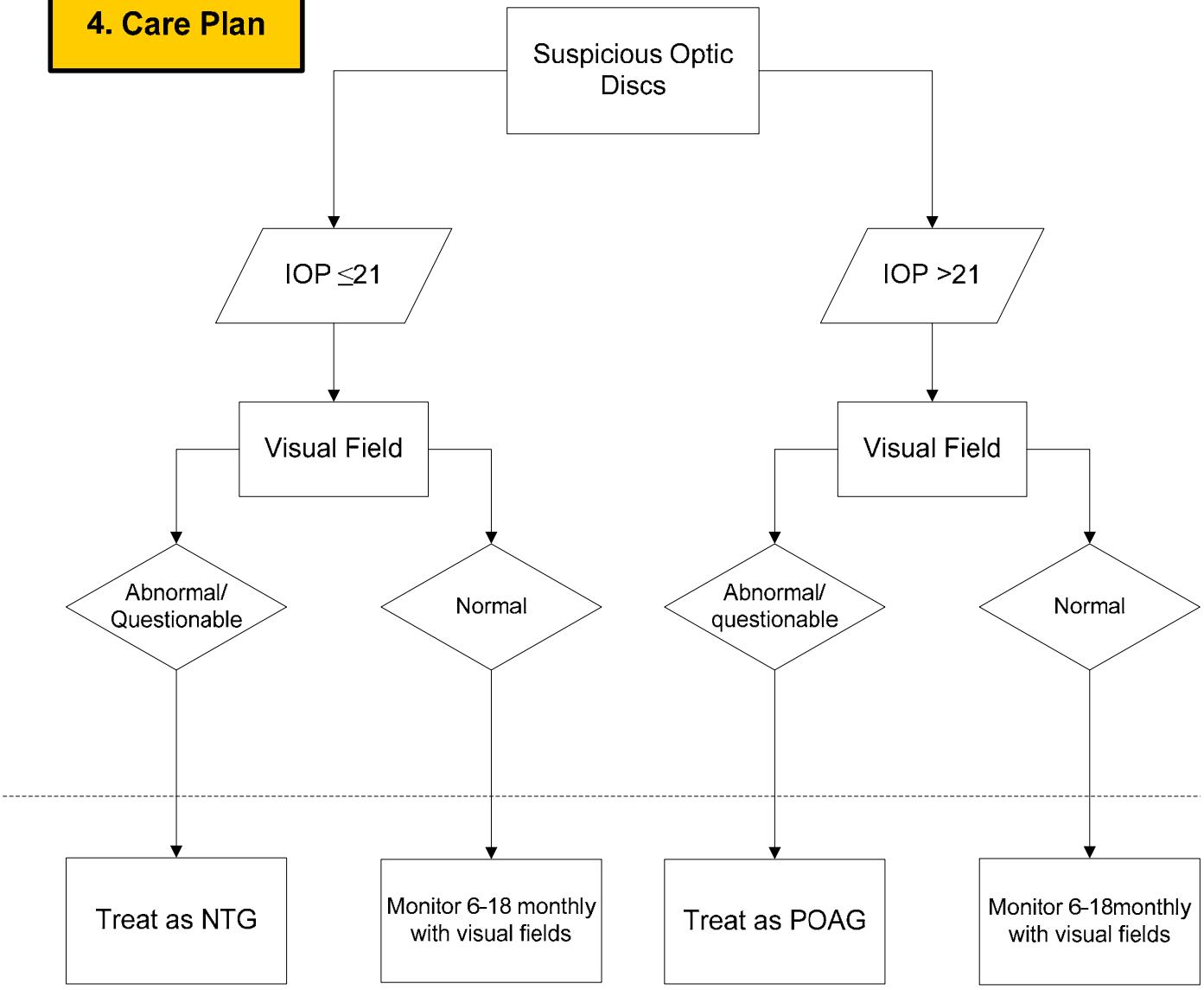


Ocular Hypertension Management



Suspect POAG/NTG Management

4. Care Plan



5. Monitoring and Follow -up Visits

4. CARE PLAN FOR PATIENT AT DIAGNOSIS

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
Date of care plan		Date on which management initiated, link to IOP and interventions graph	To monitor patient management along care pathway. To support clinical audit and outcome assessment.	n8 - ccyymmdd	NHS Dictionary
4. CARE PLAN FOR PATIENT					
Target IOP	Right eye	The attainable IOP target for patient on treatment, taking into consideration contributing factors.	Monitoring response to treatment. To support clinical audit and outcome assessment.	mmHg – Numerical value: nn	EGS
	Left eye				
First line of topical treatment option	Right eye	Type of topical medication used to treat patient.	Managing and monitoring of patient care To support clinical audit and outcome assessment.	Nil Prostaglandin analogues Beta blockers Alpha agonists Carbonic anhydrase inhibitors Combined beta blockers/CAIs Combined beta blockers/alpha agonists	EGS
	Left eye				
Management decision at care plan assessment.		Describes what happens to patient at the end of this assessment.	Supports management of patients care pathway and for audit purposes.	Follow-up Discharge	[3] Clinical consensus [4] Patient Feedback
Follow up interval		Suggested interval until next follow up appointment.	To determine management of patient and their glaucoma based on severity of their disease, and for audit purposes.	Days, weeks or months	[3] Clinical consensus

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
4.1 Prescription				
Prescription given to patient?	To record if patient was given a copy of the prescription.	To inform patients what medication they are currently being given for their treatment.	Yes/ No/ Not relevant	[3] Clinical consensus [4] Patient Feedback
Arrangement for repeat prescription?	To record from where patient should get their repeat prescription.	To ensure patients know where they have to go to get their repeat prescription and to record who is responsible for providing the repeat prescription.	GP Hospital Community Pharmacist Other specify Not relevant	[3] Clinical consensus [4] Patient Feedback
4.2 Administration of drops				
Impairment of manual dexterity	To identify if patient has any impairment of manual dexterity that may affect their administration of eye drops.	Difficulty with administration may influence compliance. To determine if the medications are being taken properly or inform use of alternatives Indicator of whether support necessary for administration of drops to facilitate compliance.	Tremor CVA Arthritis Other specify	[3] Clinical consensus
Responsibility for administration of drops	Person responsible for administering drops to patient.	Difficulty with administration may influence compliance. To determine if the medications are being taken properly or inform use of alternatives Indicator of whether support necessary for administration of drops to facilitate compliance.	Patient Carer Community nurse Other specify	[3] Clinical Consensus [4] Patient Feedback
Demonstration of eye drop instillation?	Records whether a demonstration of eye drop was provided to the patient and/or their carer.	Difficulty with administration may influence compliance. To determine if the medications are being taken properly or inform use of alternatives Indicator of whether support necessary for administration of drops to facilitate compliance.	Yes No	[3] Clinical Consensus [4] Patient Feedback

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
Assessment of eye drop instillation	Documents if patient or carer was able to instill eye drops accordingly.	Difficulty with administration may influence compliance. To determine if the medications are being taken properly or inform use of alternatives Indicator of whether support necessary for administration of drops to facilitate compliance.	Yes No	[3] Clinical Consensus [4] Patient Feedback
Patient information on condition	Records whether patient was provided with information about the condition and medications whether verbal or written.	Indicator of patient education, audit and outcome assessment.	Yes No	[3] Clinical Consensus [4] Patient Feedback

POP –UP ALERT: Medication	Beta blockers – Asthma, Heart block, Bradycardia, Hypotension. Carbonic Anhydrase Inhibitors – Renal impairment/ Kidney disease. Prostaglandin Analogues – Pregnancy, Breast- feeding, Aphakia, Pseudophakia with torn posterior capsule, Cystoid Macular Oedema, Ocular Inflammation. Alpha agonists – contra-indicated if patient using mono-amine oxidase inhibitors or tricyclic antidepressants Steroids – current use of topical steroids
POP –UP ALERT: Allergies	Topical ocular medications Preservatives in topical ophthalmic medications Systemic medications

[1] Consistent with other Ophthalmic DOAS projects – Cataract and Diabetic Eye Disease.

[2] Existing clinical protocols and information systems – Medisoft Glaucoma and TargetFour E-Patient.

[3] Clinical Consensus – DOAS Glaucoma National Steering Committee and feedback from national consultation.

[4] Patient Feedback – DOAS Glaucoma Patient Focus Group.

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5. MONITORING AND FOLLOW- UP VISIT

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
Date of follow-up visit		Documents date of follow-up visit.	To monitor patient management along care pathway. To support clinical audit and outcome assessment.	n8 - ccyymmdd	NHS Dictionary
5. FOLLOW- UP VISIT					
5.1 Visual Acuity					
Visual acuity unaided	Right eye	Measurement of visual acuity using the specified standard (Snellen or LogMAR).	Establishes baseline at presentation Ensures complete examination. Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	AAO AIII, EGS
	Left eye				
Visual acuity with correction	Right eye	Measurement of visual acuity with correction using the specified standard (Snellen or LogMAR). To include any form of correction (i.e. glasses, contact lenses).	Establishes baseline at presentation Ensures complete examination. Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	AAO AIII, EGS
	Left eye				
Visual acuity with pin-hole	Right eye	The estimate of best attainable visual acuity of patient measured using specified standard (Snellen or LogMAR).	Establishes baseline at presentation Ensures complete examination Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	AAO AIII, EGS
	Left eye				

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
5.2 Pupillary Reactions					
RAPD	Right eye Left eye	To assess pupillary reactions.	Assess gross optic nerve function.	RAPD/ No RAPD	AAO BII
5.3 Anterior Segment					
Lens	Right eye Left eye	Presence of Cataract.	Common treatable co-morbidity in glaucoma patients. Presence needs to be considered for interpretation of visual fields.	Nil Early Moderate Mature	[3] Clinical Consensus
5.4 Intra Ocular Pressure					
Tonometry	Right eye Left eye	Document the equipment used to measure IOP.	For comparative purposes to assess accuracy of reading.	Non contact tonometry Goldman applanation tonometry Perkins Other specify	Goldman Aplanation Tonometry (AAO AIII, EGS, RCOphth)
Intra Ocular Pressure	Right eye Left eye	Measurement of intro-ocular pressure (IOP) of eye.	An essential component of glaucoma assessment taking into account of diurnal variation to inform management of glaucoma.	mmHg – Numerical value: nn Time – Numerical value; nn:nn	Time (AAO BII)

POP –UP ALERT: Target IOP met?	Right eye Left eye	Yes/ No

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Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
5.5 Posterior Segment - Optic disc examination					
Slit Lamp Lens	Right eye	To indicate type of slit lamp lens used for optic disc examination.	To facilitate interpretation of disc diameter and cup-disc ratio.	Volk Nikon Other specify	[3] Clinical Consensus
	Left eye				
Slit Lamp Lens Power	Right eye	To indicate strength of slit lamp lens in dioptres for optic disc examination.	To facilitate interpretation of disc diameter and cup-disc ratio.	Alphanumeric 60D 68D 78D 90D	[3] Clinical Consensus
	Left eye				
Vertical disc diameter	Right eye	A measure of disc size.	Evaluation of optic nerve for signs of glaucomatous damage and to inform management of and monitoring of disease.	Numerical value (mm); nn.n	EGS
	Left eye				
Cup/ Disc ratio	Right eye	The decimal value obtained by dividing the vertical cup diameter with the vertical disc diameter.	Evaluation of optic nerve for signs of glaucomatous damage and inform management of and monitoring of disease.	n2 01 No view 02 Cup disc ratio 0.1-1.0	EGS
	Left eye				
Disc haemorrhages	Right eye	Assessment of presence of haemorrhage at or near optic disc margin.	Presence indicates local vascular damage.	Present/ Absent	EGS
	Left eye				
Dilated fundus examination	Right eye	Examination of fundus (dilated).	To identify ocular co-morbidities.	BRVO CRVO CMO Background Diabetic Retinopathy Moderate non-proliferative DR Severe non-proliferative DR Proliferative DR Treated proliferative DR Early AMD Moderate AMD Advanced AMD Other specify	AAO AIII, EGS
	Left eye				

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
5.6 Visual Fields Assessment					
Visual fields required?	Right eye Left eye	Documents need for visual fields test assessment at this visit.	To monitor patient management along care pathway To support clinical audit and outcome assessment.	Yes No Not applicable	NHS Dictionary
Date of visual fields test	Right eye Left eye	Documents date field test performed.	To monitor patient management along care pathway To support clinical audit and outcome assessment.	n8 - ccyymmdd	NHS Dictionary
Perimetry	Right eye Left eye	Type of perimetry used to assess visual fields.	For comparative purposes for interpreting visual fields and to inform management and monitoring of disease.	Dicon Henson Octopus Humphrey Frequency Doubling Perimetry (FDP)	AAO AIII, EGS, RCOphth
Visual Field image	Right eye Left eye	Capturing and archiving of digital visual field images for each eye.	Inform diagnosis and management of glaucoma and monitoring progression. To support clinical audit and assessment of outcomes.	<u>Requirement of an image</u> Visual field images to be available in an accessible viewable format on screen, with the facility for viewing consecutive field images (e.g. Scrolling on a screen; or multiple consecutive images on screen); to aid clinical assessment of progression. Manipulation of images necessary.	[3] Clinical Consensus
Reliability of field	Right eye Left eye	Assessment of the reliability indices of field.	Identifying factors that affect the reliability of field test. To inform interpretation of field and its contribution to clinical management.	Reliable/ Unreliable	[3] Clinical Consensus
Assessment of field	Right eye Left eye	Assessing the outcome of the field test.	Identifying outcome and taking appropriate action.	Normal Defect evident Uncertain	[3] Clinical Consensus

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
5.7 Optic Disc Imaging					
Optic disc digital photograph	Right eye Left eye	Digital optic disc colour photos for each eye.	Objective documentation and archiving of optic disc parameters to inform clinical management and monitoring of disease progression. To support clinical audit and assessment of outcomes.	Colour digital disc photo Images to be available in an accessible viewable format on screen, with the facility for viewing consecutive images (e.g. scrolling on a screen; or multiple consecutive images on screen); to aid clinical assessment of progression	[3] Clinical Consensus
Optic disc imaging required?	Right eye Left eye	Record if optic disc imaging is required at this visit.	Identifies if optic disc imaging is required at this visit based on previous visits and determines optic disc imaging requirement at next visit.	Yes No	[3] Clinical Consensus
Modality of optic disc imaging	Right eye Left eye	Imaging technique used.	Emerging technological modalities available with different assessment features. Variable availability of equipment and use in current routine practice. Uptake increasing Allows for documentation of modality of disc imaging used for comparative purposes and inform diagnosis, management and monitoring of disease.	HRTII OCT GDXVcc Other specify	[3] Clinical Consensus
Optic nerve image	Right eye Left eye	Digital optic nerve image.	Capturing and archiving of digital optic disc images for each eye. Inform diagnosis and management of glaucoma and monitoring progression. To support clinical audit and assessment of outcomes.	Requirement of an image Images to be available in an accessible viewable format on screen, with the facility for viewing consecutive images (e.g. Scrolling on a screen; or multiple consecutive images on screen); to aid clinical assessment of progression.	[3] Clinical Consensus

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
5.8 Glaucoma Medication				
5.8.1 Tolerability of Medication				
Side- Effects: Local	Ophthalmic side effects of topical glaucoma medication.	Assessment of patient's tolerability, which may influence compliance. Informs use of alternative medication. To support clinical audit and assessment of outcomes.	None Red eye Ocular dermatitis Increased lash growths Iris pigmentation Ocular surface irritation Peri-orbital pigmentation Papillary conjunctivitis Follicular conjunctivitis Forniceal shortening Other specify	[3] Clinical Consensus [4] Patient Feedback
Side- Effects: Systemic	Systemic side effects of topical glaucoma medication.	Assessment of patient's tolerability, which may influence compliance. Informs use of alternative medication. To support clinical audit and assessment of outcomes.	None Shortness of breath Wheeze Impaired taste Other specify	[3] Clinical Consensus [4] Patient Feedback
5.8.2 Glaucoma medication change				
Medication changed	Records if patient's medication changed.	Determines management of patient and also notifies the relevant professionals of medication changed.	Yes/ No	[3] Clinical Consensus [4] Patient Feedback
5.8.3 Prescription				
Prescription given to patient?	To record if patient was given a copy of the prescription	To inform patients what medications they are currently being given for their treatment.	Yes/ No	[3] Clinical Consensus [4] Patient Feedback
Arrangement for repeat prescription?	To record from where patient should get their repeat prescription.	To ensure patients know where they have to go to get their repeat prescription and to record who is responsible for providing the repeat prescription.	GP Hospital Community Pharmacist Other specify	[3] Clinical Consensus [4] Patient Feedback

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
5.9 Clinical Management					
Management decision at this follow-up assessment.		Describes what happens to patient at the end of this assessment.	To monitor patient management along care pathway. To support clinical audit and outcome assessment.	Follow-up Discharge Low Vision Aids Assessment Certification of Vision Impairment Registration	[3] Clinical Consensus
Follow up interval		Interval until next appointment.	Determines the management of patient and their glaucoma.	Days, weeks, months	[3] Clinical Consensus
Fields at next follow-up?		Records if fields are required at next follow-up.	To monitor patient management along care pathway. To support clinical audit and outcome assessment.	Yes/ No	[3] Clinical Consensus
5.10 Surgery					
Glaucoma surgery indicated?	Right eye	Decision to proceed to filtering surgery has been made.	Determines surgical management of patient. To monitor patient management along care pathway. To support clinical audit and outcome assessment.	Yes/ No	[3] Clinical Consensus [2] Existing clinical protocols and information systems
	Left eye				
Cataract surgery indicated?	Right eye	Decision to proceed to cataract surgery has been made.	Determines surgical management of patient To monitor patient management along care pathway and transfer to Cataract Pathway To support clinical audit and outcome assessment.	Yes/ No	[3] Clinical Consensus [2] Existing clinical protocols and information systems
	Left eye				
Other surgery indicated?	Right eye	Decision to proceed to other surgical options.	Determines surgical management of patient To monitor patient management along care pathway. To support clinical audit and outcome assessment.	Yes/No Specify	[3] Clinical Consensus [2] Existing clinical protocols and information systems
	Left eye				

[1] Consistent with other Ophthalmic DOAS projects – Cataract and Diabetic Eye Disease.

[2] Existing clinical protocols and information systems – Medisoft Glaucoma and TargetFour E-Patient.

[3] Clinical Consensus – DOAS Glaucoma National Steering Committee and feedback from national consultation.

[4] Patient Feedback – DOAS Glaucoma Patient Focus Group.

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6. GLAUCOMA SURGERY

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
6.1 Pre- operative Assessment					
Date of pre-operative assessment		Documents date of pre-operative assessment.	To monitor patient management along care pathway. To support clinical audit and outcome assessment.	n8 - ccyymmdd	NHS Dictionary
Eye for surgery		Documents which eye is to be operated upon.	Facilitates clinical risk and patient safety checks to ensure that appropriate eye will be having the operation. To support clinical audit and assessment of outcomes.	n2 01 Right eye 02 Left eye	[1]Consistent with other Ophthalmic DOAS projects
First/ Second eye		Determine whether fellow eye has already had surgery for glaucoma.	Facilitates clinical risk and patient safety checks to ensure that appropriate eye will be having the operation. To support clinical audit and assessment of outcomes. To support clinical audit and assessment of outcomes. Analysis of trends in surgical activity.	n2 01 First eye 02 Second eye	
Visual acuity unaided at pre-operative assessment	Right eye	Measurement of visual acuity using the specified standard (Snellen or LogMAR).	Establishes baseline at presentation Ensures complete examination. Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	
	Left eye				
Visual acuity with correction if worn at pre-operative assessment	Right eye	Measurement of visual acuity with correction using the specified standard (Snellen or LogMAR). To include any form of correction (i.e. glasses, contact lenses).	Establishes baseline at presentation Ensures complete examination. Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	
	Left eye				

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
Visual acuity with pin-hole at pre-operative assessment	Right eye	The estimate of best attainable visual acuity of patient measured using specified standard (Snellen or LogMAR).	Establishes baseline at presentation Ensures complete examination Indicator of visual function for clinical audit and outcome assessment.	Snellen 6/4, 6/5, 6/6, 6/9, 6/12, 6/18, 6/24, 6/36, 6/60, 3/60, 1/60, CF, HM, PL, NPL LogMAR -0.2, -0.1, 0.0, 0.2, 0.3, 0.48, 0.6, 0.8, 1.0, 1.3, 1.8, CF, HM, PL, NPL	[1]Consistent with other Ophthalmic DOAS projects
	Left eye				
Pre-operative IOP	Right eye	Measurement of IOP.	Establishes baseline prior to surgery. Ensure complete examination prior to surgery.	Time – Numerical value; nn:nn mmHg – Numerical value: nn	
	Left eye				
Pre-operative anterior segment examination	Right eye	Eye conditions which may be predictors of potential adverse outcomes.	To inform surgical management. To support clinical audit and outcome assessment.	n2 01 Normal 02 Blepharitis 03 Conjunctival inflammation 04 Anterior chamber activity 05 Other specify	
	Left eye				
Pre-operative medical conditions		General systemic conditions which may be predictors of potential adverse outcomes of surgery and anaesthesia.	To inform anaesthetic and surgical management. Ensure complete examination prior to surgery. To support clinical audit and outcome assessment.	n2 01 None 02 Hypertension 03 Ischaemic heart disease 04 Pacemaker in situ 05 Anxiety 06 Claustrophobia 07 Tremor 08 Dementia/confusion 09 Asthma 10 Chronic obstructive airways disease 11 Arthritis 12 Patient on warfarin 13 Other specify	[2]Existing clinical protocols and information systems

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item		Description	Purpose	Codes and Classifications	Source/ Guidance
Pre-operative topical medications	Right eye	Describes topical glaucoma medications, which the patient is currently on.	Establishes baseline prior to surgery. Ensure complete assessment prior to surgery. To support clinical audit and outcome assessment.	n2 01 None 02 Xalatan 03 Lumigan 04 Travatan 05 Timolol 06 Alphagan 07 Trusopt 08 Azopt 09 Cosopt 10 Combigan 11 Betagan 12 Betoptic 13 Pilocarpine 14 Other specify	[2]Existing clinical protocols and information systems
	Left eye				
Pre-operative Cup/ Disc ratio	Right eye	Indicator of glaucomatous damage to the optic nerve.	Establishes baseline prior to surgery Ensure complete examination prior to surgery. To support clinical audit and outcome assessment.	n2 01 No view 02 Cup disc ratio 0.1-1.0	
	Left eye				
6.2 Consent					
Consent		Documentation of informed consent.	Facilitates clinical governance (risk management and patient safety) audit and patient education.	n2 01 Yes 02	[1]Consistent with other Ophthalmic DOAS projects
6.3 Anaesthetic					
Date of anaesthetic		Documents date of anaesthetic assessment.	To monitor patient management along care pathway. To support clinical audit and outcome assessment.	n8 - ccyymmdd	NHS Dictionary
Staff administering anaesthetic		Member of staff administering the anaesthetic to the patient, identified by anonymised number held locally.	To support clinical audit, assessment of complications and outcomes and inform training.	n10 Table held locally	[1]Consistent with other Ophthalmic DOAS projects

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Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
Grade of staff administering anaesthetic	Grade of individual administering anaesthetic.	To support clinical audit, assessment of complications and outcomes and inform training.	n2 01 Consultant 02 Fellow 03 Specialist Registrar 04 SHO 05 Trust Doctor 06 Nurse 07 Clinical Assistant 08 Other ODP	[1]Consistent with other Ophthalmic DOAS projects
Type of anaesthetic	Mode of administration of anaesthetic administered prior or during surgery.	To support clinical audit, assessment of complications and outcomes.	n2 01 None 02 General 03 Retrobulbar 04 Peribulbar 05 Subtenons 06 Subconjuctival 07 Topical 08 Intracameral 09 Other specify	
Sedation	Any other additional drug administered to patient for sedation.	To support clinical audit, assessment of complications and outcomes.	NHS drug dictionary May include, type of local, adrenalin, hyalase, buffers, anxiolytics, analgesics, other medicines.	
Pre-operative antimicrobial prophylaxis	Documents any antimicrobial preparation administered, prior to operation.	To support clinical audit, assessment of complications and outcomes. Infection Control - monitoring of hospital acquired infections.	NHS Drug dictionary	[2]Existing clinical protocols and information systems
Complications of Local Anaesthetic (LA)	Any adverse event occurring during or after administration of LA that might compromise surgery or the outcome.	To support clinical audit, assessment of complications and outcomes.	n2 01 None 02 Eyelid haemorrhage/bruising 03 Conjunctival chemosis 04 Retrobulbar/peribulbar haemorrhage 05 Globe/optic nerve perforation or penetration 06 Inadequate anaesthesia 07 Systematic problems, bradycardia, apnoea, hypotension 08 Operation cancelled due to complication	Summary Core Dataset for Diabetes v4.0 [1]Consistent with other Ophthalmic DOAS projects

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
6.4 Operation				
Date of Surgery	Document date of surgery.	To monitor patient management along care pathway. To support clinical audit and outcome assessment.	an10 ccyy-mmdd	NHS Dictionary
Type of operation	Documents Surgical procedure performed.	Identifier of procedure. To support clinical audit and assessment of outcomes. Analysis of trends in surgical activity.	n2 01 Trabeculectomy 02 Trabeculectomy + antiproliferative 03 Insertion of tube 04 Cyclodiode laser 05 Laser trabeculoplasty 06 Bleb revision 07 Bleb needling 08 Other specify	[2]Existing clinical protocols and information systems
Type of admission	Description of how patient was admitted for care.	To support clinical audit, assessment of outcomes and complications, and monitoring of surgical activity.	n2 01 Day case/ambulatory 02 Inpatient	[1]Consistent with other Ophthalmic DOAS projects
Eye for surgery	Patient's eye being operated on.	Facilitates clinical risk and patient safety checks to ensure that appropriate eye will be having the operation. To support clinical audit and assessment of outcomes.	n2 01 Left eye 02 Right eye	
First/ Second eye	Determine whether fellow eye has already had surgery for glaucoma.	Facilitates clinical risk and patient safety checks to ensure that appropriate eye will be having the operation. To support clinical audit and assessment of outcomes. To support clinical audit and assessment of outcomes. Analysis of trends in surgical activity.	n2 01 First eye 02 Second eye	
Surgeon	Operating surgeon identified by anonymised number according to local organisational arrangements.	To support clinical audit and assessment of outcomes. To inform training.	n10 Table held locally	

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GLAUCOMA CLINICAL CARE PATHWAY AND DATASET

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
Surgeon grade	Grade of operating surgeon.	To support clinical audit and assessment of outcomes. To inform training.	n2 01 Consultant 02 Specialist Registrar 03 Fellow 04 Associate Specialist 05 SHO 06 Clinical Assistant 07 Trust Doctor 08 Other specify	[1]Consistent with other Ophthalmic DOAS projects
Assistant	Member of staff assisting the surgeon performing the operation, identified by anonymised number according to local organisational arrangements.	To support clinical audit and assessment of outcomes. To inform training.	n10 Table held locally	
Assistant grade	Grade of staff assisting surgeon.	To support clinical audit and assessment of outcomes. To inform training.	n2 01 Consultant 02 Specialist Registrar 03 Fellow 04 Associate Specialist 05 SHO 06 Clinical Assistant 07 Trust Doctor 08 Other specify	

Note: All UNSHADED data items are ESSENTIAL and will form the core dataset for the glaucoma clinical care pathway, SHADED data items are DESIRABLE and will be dependent on local service arrangements/ protocols.

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
6.5 Trabeculectomy Surgical Data				
6.5.1 Operation Details				
Conjunctival flap method	Describes type of conjunctival flap made- - technical specification of procedure.	Supports audit and outcome assessment.	n2 01 Limbal based 02 Fornix based	[2]Existing clinical protocols and information systems
Antimetabolite	Documents the antimetabolite used - technical specification of procedure.	To support clinical audit and assessment of outcomes.	n2 01 None 02 5FU 25mg/ml 03 5FU 50mg/ml 04 MMC 0.1mg/ml 05 MMC 0.2mg/ml 06 MMC 0.3mg/ml 07 MMC 0.4 mg/ml 08 Other specify	
Antimetabolite exposure time	Describes the length of time in minutes and seconds which tissue is exposed to antimetabolites - technical specification of procedure.	To support clinical audit and assessment of outcomes.	Time mins/secs	
Antimetabolite site	Describes the site which is exposed to antimetabolites - technical specification of procedure.	To support clinical audit and assessment of outcomes.	n2 01 Conjunctival 02 Scleral	
Flap suture method	Describes the method of closure of scleral flap - technical specification of procedure.	To support clinical audit and assessment of outcomes.	N2 01 Fixed scleral 02 Releasable scleral	
Number of sutures used to close scleral flap	Describes the number of sutures used to close scleral flap - technical specification of procedure.	To support clinical audit and assessment of outcomes.	Range 1-10	

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Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
Post-operative antibiotic	Describes the type of post operative antibiotic given.	To support clinical audit and assessment of outcomes.	n2 01None 02 Cefotaxime 02 Cefuroxime 03 Gentamicin 04 Vancomycin 05 Tobramycin 06 Amikacin 07 Chloramphenicol 08 Other specify	[2]Existing clinical protocols and information systems
Post-operative antibiotic delivery route	Describes route of administration of antibiotic.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Subconjunctival 03 Topical 04 Intracameral	
Post-operative steroid	Describes the type of post operative steroid given.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Betamethasone 03 Methylprednisilone 04 Dexamethasone 05 Maxitrol	
Postoperative steroid delivery route	Describes route of administration of steroid given at the end of surgery.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Subconjunctival 03 Topical	
Per-operative complications of procedure	Unplanned events occurring during surgery that may influence performance of the surgical procedure and clinical outcome.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Conjunctival button hole 02 Corneal abrasion 03 Antimetabolite spillage onto cornea 04 Scleral flap buttonhole 05 Torn scleral flap 06 Iris trauma 07 Iris prolapse 08 Hyphaema 09 Vitreous loss 10 Choroidal/suprachoroidal haemorrhage 11 Operation cancelled 12 Other specify	

Note: All UNSHADED data items are ESSENTIAL and will form the core dataset for the glaucoma clinical care pathway, SHADED data items are DESIRABLE and will be dependent on local service arrangements/ protocols.

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
6.5.2 Post-operative Details				
Date post-operative complication detected	Documents date at which complication occurred after surgery.	To support clinical audit and assessment of outcomes.	Date n8 cc/yy/mm/dd	[2]Existing clinical protocols and information systems
Post-operative complications of trabeculectomy.	Ophthalmic complications of trabeculectomy.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Blebitis 03 Bleb failure 04 Bleb leak 05 Cataract 06 Choroidal detachment 07 Endophthalmitis 08 Flat anterior chamber 09 Hyphaema 10 Hypotony 11 Raised IOP 12 Suprachoroidal haemorrhage 13 Wound leak	
6.5.3 Post-op Bleb Management				
Date of post-operative bleb management	Date of intervention required for bleb management.	To support clinical audit and assessment of outcomes.	Date n8 cc/yy/mm/dd	[3] Clinical Consensus
Bleb Intervention	Type of intervention required to ensure bleb function.	To support clinical audit and assessment of outcomes of surgery.	n2 01 Massage 02 Removal of releasable sutures 03 Injection of 5FU 04 Needling of bleb 05 Injection steroids 06 Revision of bleb 07 Re-do Trabeculectomy 08 Other specify	

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Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
6.6 Cyclodiode laser				
6.6.1 Operation details				
Area treated	Describes the structures to which laser will be applied.	To support clinical audit and assessment of outcomes.	n2 01 Ciliary body 02 Other	[2]Existing clinical protocols and information systems
Degrees treated	Describes the area treated with laser technical specification of procedure.	To support clinical audit and assessment of outcomes	0 – 360 degrees	
Number of shots applied	Describes the number of shots given – technical specification of procedure.	To support clinical audit and assessment of outcomes.	0 – 200 shots	
Power of laser applied	Describes the power setting of laser used mW – technicial specification of procedure.	To support clinical audit and assessment of outcomes.	0 – 3000 mW	
Duration of laser applied	Describes the duration of laser burns applied – technical specification of procedure.	To support clinical audit and assessment of outcomes.	0 – 3000 msec	
Quadrants spared	Describes which quadrants are spared of laser, if any – technical specification of procedure.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Superonasal 03 Superior 04 Superotemporal 05 Temporal 06 Nasal 07 Inferonasal 08 Inferotemporal 09 Inferior	
Per-operative complications of cyclodiode laser	Unplanned events occurring during laser treatment that may influence clinical outcome.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Conjunctival burn 03 Scleral rupture 04 Iris trauma 05 Hyphaema 06 Globe rupture	

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Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
6.6.2 Post-operative Details				
Date post-operative complication detected	Documents date at which complication occurred after surgery.	To support clinical audit and assessment of outcomes.	Date n8 cc/yy/mm/dd	[2]Existing clinical protocols and information systems
Post-operative complications of cyclodiode laser	Ophthalmic complications of cyclodiode laser.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Failure of treatment to lower IOP 03 Persistent Uveitis 04 Phthisis 05 Other specify	
6.7 Tube Insertion				
6.7.1 Operation details				
Tube name	Type of tube implant used - technical specification of procedure.	To support clinical audit and assessment of outcomes.	n2 01 Ahmed S2 valve 02 Ahmed S3 valve (184 mm2) 03 Baerveldt tube 200mm2 04 Baerveldt tube BG-103-250 05 Baerveldt tube BG-101-350 06 Baerveldt tube BG-102-350 07 Baerveldt tube BG-103-425 08 Molteno MI-01 09 Molteno MI-D1 10 Molteno MI-P1 11 Molteno Double plate MI-R2 12 Molteno Double plate MI-L2 13 Molteno Double plate MI-DR2 14 Other specify	[2]Existing clinical protocols and information systems
Plate position	Describes the position of the plate of tube implant technical specification of procedure.	To support clinical audit and assessment of outcomes.	n2 01 Superotemporal 02 Superonasal 03 Inferotemporal 04 Inferonasal 05 Other specify	

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Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
Donor material	Describes the type of donor material used to cover the plate technical specification of procedure.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Sclera 03 Pericardium 04 Other specify	[2]Existing clinical protocols and information systems
Tube entry	Describes site of tube entry into AC – technical specification of operation.	To support clinical audit and assessment of outcomes.	Number in degrees Gauge of tube 19 – 23	
Antimetabolite	Documents the antimetabolite used – technical specification of operation.	To support clinical audit and assessment of outcomes.	n2 01 None 02 5FU 25mg/ml 03 5FU 50mg/ml 04 MMC 0.1mg/ml 05 MMC 0.2mg/ml 06 MMC 0.3mg/ml 07 MMC 0.4 mg/ml 08 Other specify	
Antimetabolite exposure time	Describes the length of time in minutes and seconds which tissue is exposed to antimetabolites – technical specification of operation.	To support clinical audit and assessment of outcomes.	Time mins/secs	
Antimetabolite site	Describes the site which is exposed to antimetabolites – technical specification of operation.	To support clinical audit and assessment of outcomes.	n2 01 Conjunctival 02 Scleral	
Per-operative complications of tube insertion	Unplanned events occurring during laser treatment that may influence clinical outcome.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Corneal touch 03 Corneal abrasion 04 Antimetabolite spillage onto cornea 05 Iris trauma 06 Iris prolapse 07 Hyphaema 08 Vitreous loss 09 Choroidal/suprachoroidal haemorrhage 10 Operation cancelled 11 Other specify	

Note: All UNSHADED data items are ESSENTIAL and will form the core dataset for the glaucoma clinical care pathway, SHADED data items are DESIRABLE and will be dependent on local service arrangements/ protocols.

Data item	Description	Purpose	Codes and Classifications	Source/ Guidance
6.7.2 Post-operative Details				
Date post-operative complication detected	Documents date at which complication occurred after surgery.	To support clinical audit and assessment of outcomes.	Date n8 cc/yy/mm/dd	[2]Existing clinical protocols and information systems
Post-operative complications of tube insertion	Ophthalmic complications of tube insertion.	To support clinical audit and assessment of outcomes.	n2 01 None 02 Hypotony 03 Raised IOP 04 Hyphaema 06 Wound leak 07 Flat anterior chamber 08 Tube recession 09 Choroidal detachment 10 Suprachoroidal haemorrhage 11 Blebitis 12 Endophthalmitis 13 Corneal touch 14 Other specify	

[1] Consistent with other Ophthalmic DOAS projects – Cataract and Diabetic Eye Disease.

[2] Existing clinical protocols and information systems – Medisoft Glaucoma and TargetFour E-Patient.

[3] Clinical Consensus – DOAS Glaucoma National Steering Committee and feedback from national consultation.

[4] Patient Feedback – DOAS Glaucoma Patient Focus Group.

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APPENDIX

REFERENCES

Evidence Base Supporting DOAS Glaucoma Clinical Care Pathway and Dataset

A Ocular History

American Academy of Ophthalmology - important pieces of information in the absence of evidence base :-

A1 Previous Ocular disease
A2 Previous Ocular surgery
A3 Previous Ocular medication

B Family History

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The prevalence of Primary open angle glaucoma in a population based study in The Netherlands.
The Rotterdam study. Ophthalmology 1994; 101:1851-5

B2 *Tielsch J, Sommer A, Katz J et al*.
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C Drug History

American Academy of Ophthalmology (AAO) III ie important pieces of information in the absence of an evidence base.

D Systemic Medical History

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Risk factors for open angle glaucoma. The Barbados Eye Study.
Arch Ophthalmol 1995;113:918-24

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D2.2 *Broadway D, Drance S*
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Am J Ophthalmol 2000;129:102-4

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Arch Ophthalmol 2001;119:1819-26

F Examination

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Arch Ophthalmol 1979;97:249-6

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Arch Ophthalmol 1987;105:1540-3

F2 Anterior Segment

American Academy of Ophthalmology comprehensive adult medical eye evaluation primary practice patterns 2005

F3 Depth of AC

Van Herick W, Shaeffer R, Schwartz A
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