Secondary Care Minimum Datasets Project

Refraction Clinics Minimum Dataset Documentation 2021

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THE COLLEGE OF OPTOMETRISTS

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Introduction

National minimum datasets are crucial to the provision of consistent clinical care, and for research into the nation's eye health. However, there are currently no standardised minimum datasets for recording patient eye health data in secondary care settings in the UK. This makes it difficult for clinicians to audit their clinics effectively, or to compare the outcomes for patients in one area to those in another It also makes public health research designed to identify effective approaches and interventions, as well as planning the future of eye care provision, hard or impossible to do.

The College of Optometrists' Secondary Care Minimum Datasets Project (SCMDS) was set up in response to a request for support in addressing this problem from the Hospital Optometrists' Committee. The aim of the project was to develop minimum datasets in important areas of secondary optometric care, and focused on producing datasets for refraction and low vision clinics.

The College set up collaborative and multi-disciplinary working groups for each of the clinic types, with an overarching project steering group to coordinate the work. Each working group created a draft dataset for their clinic type, which was refined through multiple rounds of consultation with optometrists and ophthalmologists.

The datasets produced were then reviewed by The College of Optometrists' Education and Standards Committee, before finally being formally approved by The Board of Trustees. They were then sent to the Informatics and Audit sub-committee of The Royal College of Ophthalmologists (RCOphth) for further review and approval.

This project is an excellent example of the two Colleges working together, and optometrists and ophthalmologists cooperating to improve the systems that support effective treatment and care.

I would like to thank Anthony Khawaja (Chair of the RCOphth Audit and Informatics Sub-Committee) for reviewing the datasets and Dr Naira Khachatryan for her work revising the datasets in line with the RCOphth review.

I would also like to acknowledge the important role played by the heads of hospital optometry departments and their teams at 12 hospital trusts and foundations across the UK who volunteered for the pilot stage of the Refraction Minimum Dataset, and thank them for their valuable contributions.

Professor Edward Mallen
Chair of The College of Optometrists' Research Committee, and Past President

Using these datasets

These datasets should be checked against the data that you and your colleagues are routinely collecting for patients in your low vision and refraction clinics. You should try to ensure that the data fields are present in your electronic patient record system, or other patient records, and that the data for each field is being recorded in the correct format. If your team collects additional data to that set out in the datasets, that is completely fine. These are minimum datasets and are not intended to constrain clinic teams from collecting / recording additional data for patients. If you find that data fields are missing from your system, then you should get in touch with your software provider to request that these are added. Similarly, if you find that you have a field, but the way data is recorded is different to that in the minimum datasets, then you should aim to adjust this for future patients.

If you work in primary care, then these datasets may be helpful in providing insights into the type of data that will be collected once you have a referred a patient into secondary care.

Understanding the way data will be recorded and what the minimum data set should be for each patient could help you to ensure that your referral data matches as closely as possible the format of the secondary care unit you are referring to.

Ultimately, using standardised minimum datasets within secondary care settings will make transferring care from one hospital to another simpler, and will support effective review of outcomes for individuals, as well as for clinics, making audit easier and more impactful. It is important to remember that these are intended to be minimum datasets, and recording additional data is fine, as long as all of the data fields in these sets are also completed. It is also important that clinicians provide feedback on the datasets as they are used in practice, as they will need to be regularly reviewed and updated - so please feedback to **researchteam@college-optometrists.org.**

Application

Mandatory: Data items which are essential for all applications and must be collected.

Optional: Data items which are required for some applications and may be collected.

Mandatory depending on whether other fields are completed.

Principles

The refraction dataset was developed under the principles of the Royal College of Ophthalmologists' (RCOphth) Dataset Guidelines (August 2013) and updated during 2019 to comply withRCOphths' updated principles in the 2018 Dataset Guidelines:

1. Priority should be given to clinical topic areas which are high volume and / or high risk clinically. Before starting a dataset, it is important to check whether any relevant datasets already exist to avoid duplication of effort. Potentially useful resources include The Royal College of Ophthalmologists and the International Consortium for Health Outcomes Measurement (ICHOM).
2. The dataset should comprise routinely collected information. The intention is to not burden busy clinicians with additional work. The dataset should be constructed of items that are, or should be, recorded as part of the routine clinical management of the patient.
3. Items not required for likely analysis should be excluded unless collected as part of routine electronic medical record (EMR) use. The collection of data requires time and effort, and therefore the total number of items should be minimised where routine working does not involve EMR use. The range of analyses likely to be conducted on the data is largely predictable, and items not required for these analyses should be identified as optional.
4. Items in common with other datasets should be congruent. Several data items (for example visual acuity, intraocular pressure (IOP) will be common to many ophthalmic datasets. It makes sense that only one definition for each item is used throughout all datasets, particularly within a subspecialty.
5. The dataset should be capable of implementation in an electronic patient record. It is likely that the maximum benefit of the dataset will only be achieved when information is routinely collected using electronic patient record systems.
6. Patient Reported Outcome Measures (PROMs) are increasingly being recognised as an integral part of modern healthcare, including in ophthalmology. Where a nationally or internationally validated PROM is available, a dataset should provide for its collection. A database of Clinical Outcome Assessments (COAs) can provide a helpful starting point for a search.
7. Coding of datasets standardising terminology is increasingly important for medical practice, both for clinical working and management of services. The Systematized Nomenclature of Medicine -- Clinical Terms (SNOMED-CT) is the preferred NHS coding system. Ideally all datasets should be 'SNOMED-CT Coded' although currently this remains aspirational for many existing datasets.
8. The RCOphth, through its Informatics and Audit Sub-committee, is keen to encourage dataset development and through the committee can provide guidance to developers. The RCOphth is able to 'Kitemark' or provide approval for datasets and place them on a RCOphth dataset register.

Components of the dataset

The dataset is divided into three main sections:

- patient details
- appointment details
- refraction details (clinical data collected during the appointment).

If data for the these sections is entered and saved using web based application, an examination note may be produced.

Patient details

Data Item	Description	Purpose	Type / Value
Patient ID Number (UUID)	A randomly generated unique ID number (not NHS number or other identifiable patient number).	To inform the ongoing care process (for data management and service delivery). This will not be patient identifiable information.	STRING
Age	Date of birth.	To inform the ongoing care process (for data management and service delivery).	INTEGER / STRING
Gender	A classification of the patient's gender: • male • female • other / self-description • unspecified / prefer not to say.	To identify the person receiving healthcare and to inform the ongoing care process (for data management and service delivery).	LIST
Ethnic category	The ethnicity of a person using the classification used for the 2011 census.	To identify the person receiving healthcare and to inform the ongoing care process (for data management and service delivery).	LIST
Service provider	Unique identifier for the acute trust or other organisation.	To identify the treatment centre providing this patient's refraction care.	STRING
Postcode	Patient's home postcode: three- or four-character code, as provided in the Postcode Directory. Must NOT be the patient's full postcode.	To allow safe analysis of refraction clinics care and epidemiology with respect to geographical location.	STRING

Mandatory Optional Mandatory depending

Appointment details

Data Item	Description	Purpose	Type / Value
Date of referral	Date on which referral was received by the hospital.	To assess whether delays are occurring between referral and refraction clinic attendance.	DATE
Visit date	Date on which patient attends the hospital / clinical area for refraction.	To assess whether delays are occurring between referral and refraction clinic attendance.	DATE
Reason for refraction	Reason(s) for referral to refraction clinic: • diagnostic • post-operative • routine • other.	To record the reason(s) for the patient being referred to the refraction clinic to enable evaluation of referrals.	LIST
Admission type	Drop down list or free text box: • outpatient • day case • inpatient.	To support improved understanding of the work patterns and patient journeys/ pathways for refraction clinic patients and staff.	LIST / STRING
Source of referral	The person responsible for referral to refraction clinic: • secondary care • primary care • social services • third sector (e.g. charities, community groups) • education • self-referral.	To record the route of the patient being referred to the refraction clinic to enable evaluation of referrals.	LIST
Cycloplegic [refraction]	Indicates whether cycloplegic refraction was undertaken: • yes • no.	To record whether cycloplegic refraction was undertaken.	BOOL
Cycloplegic agent	Identifies the cycloplegic agent used.	To record the type of cycloplegic agent used (if applicable).	STRING / LIST
Patient-reported mental health	How would you rate your overall mental or emotional health? Scale: • excellent • very good • good • fair • poor.	To gather patient-reported data on the patient's assessment of their mental health.	LIST / STRING

Distance refraction details

Data Item	Description	Purpose	Type / Value
Measurement type	The standard which is being used to measure distance visual acuity type: • singles • single row • crowded • full.	To record the type of distance visual acuity chart/card used as this may be relevant to best corrected visual acuity.	LIST / STRING
Correction mode [RIGHT eye]	The procedure by which the distance visual acuity is obtained: • glasses distance visual acuity • contact lenses distance visual acuity • unaided distance visual acuity.	To record what correction (if any) the subject was wearing when the visual acuity was determined.	LIST / STRING
VA standard [RIGHT eye]	The standard which is being used to measure distance visual acuity: • Snellen • LogMAR • decimal.	To allow comparison and conversion of visual acuity measurements recorded using different standards.	LIST / ENUM
VA [RIGHT eye]	Distance visual acuity prior to refraction: • NPL • PL • HM • CF • 6/60 [1.0] • 6/48 [0.9] • 6/38 [0.8] • 6/30 [0.7] • 6/24 [0.6] • 6/19 [0.5] • 6/15 [0.4] • 6/12 [0.3] • 6/9.5 [0.2] • 6/7.5 [0.1] • 6/6 [0.0] • 6/5 [-0.1]	To record the RIGHT eye distance visual acuity prior to refraction.	LIST / ENUM

Mandatory Optional Mandatory depending

Distance refraction details (cont)

Data Item	Description	Purpose	Type / Value
Refraction sphere [RIGHT eye]	The spherical component of the optical correction for the RIGHT eye. The sphere is the base correction upon which cylinder, reading addition (and prism) may be superimposed.	To record the spherical component of the refraction for the RIGHT eye.	INTEGER / FLOAT
Refraction cylinder [RIGHT eye]	The cylindrical correction superimposed on [Refraction sphere RIGHT eye].	To record the cylindrical component of the refraction of the RIGHT eye.	INTEGER
Refraction axis [RIGHT eye]	The axis of the cylindrical component in [Refraction cylinder RIGHT eye].	To record the axis of the cylindrical component of the refraction for the RIGHT eye.	INTEGER
Post-refraction VA [standard] [RIGHT eye]	The standard which is being used to measure distance visual acuity post-refraction: • Snellen • LogMAR • decimal.	To allow comparison and conversion of visual acuity measurements post-refraction recorded using different standards.	LIST / STRING
Post-refraction VA [RIGHT eye]	Distance visual acuity post-refraction for the RIGHT eye. • NPL • PL • HM • CF • 6/60 [1.0] • 6/48 [0.9] • 6/38 [0.8] • 6/30 [0.7] • 6/24 [0.6] • 6/19 [0.5] • 6/15 [0.4] • 6/12 [0.3] • 6/9.5 [0.2] • 6/7.5 [0.1] • 6/6 [0.0] • 6/5 [-0.1]	To record the RIGHT eye distance visual acuity post-refraction.	LIST/ ENUM

Distance refraction details (cont)

Data Item	Description	Purpose	Type / Value
Correction mode [LEFT eye]	The procedure by which the distance visual acuity is obtained: • glasses distance visual acuity • contact lenses distance visual acuity • unaided distance visual acuity.	To record what correction (if any) the subject was wearing when the visual acuity was determined.	LIST / STRING
VA standard [LEFT eye]	The standard which is being used to measure distance visual acuity: • snellen • logMAR • decimal.	To allow comparison and conversion of visual acuity measurements recorded using different standards.	LIST / STRING
VA [LEFT eye]	Distance visual acuity prior to refraction. • NPL • PL • HM • CF • 6/60 [1.0] • 6/48 [0.9] • 6/38 [0.8] • 6/30 [0.7] • 6/24 [0.6] • 6/19 [0.5] • 6/15 [0.4] • 6/12 [0.3] • 6/9.5 [0.2] • 6/7.5 [0.1] • 6/6 [0.0] • 6/5 [-0.1]	To record the left eye distance visual acuity prior to refraction.	LIST / ENUM
Refraction sphere [LEFT eye]	The spherical component of the optical correction for the LEFT eye. The sphere is the base correction upon which cylinder, reading addition (and prism) may be superimposed.	To record the spherical component of the refraction for the LEFT eye.	INTEGER / FLOAT
Refraction cylinder [LEFT eye]	The cylindrical correction superimposed on [Refraction sphere LEFT eye].	To record the cylindrical component of the refraction of the LEFT eye.	INTEGER

Mandatory Optional Mandatory depending

Distance refraction details (cont)

Data Item	Description	Purpose	Type / Value
Refraction axis [LEFT Eye]	The axis of the cylindrical component in [Refraction cylinder LEFT eye].	To record the axis of the cylindrical component of the refraction for the LEFT eye.	INTEGER
Post-refraction VA [standard] [LEFT Eye]	The standard which is being used to measure distance visual acuity post-refraction: • snellen • logMAR • decimal.	To allow comparison and conversion of distance visual acuity measurements post-refraction recorded using different standards.	LIST / STRING
Post-refraction VA [LEFT Eye]	Distance visual acuity post-refraction. • NPL • PL • HM • CF • 6/60 [1.0] • 6/48 [0.9] • 6/38 [0.8] • 6/30 [0.7] • 6/24 [0.6] • 6/19 [0.5] • 6/15 [0.4] • 6/12 [0.3] • 6/9.5 [0.2] • 6/7.5 [0.1] • 6/6 [0.0] • 6/5 [-0.1]	To record the LEFT eye distance visual acuity post-refraction.	LIST/ ENUM
Refraction type	The method used to determine final refraction: • subjective • autorefraction • retinoscopy. This may be obtained by measurement of the refraction of the patient (either automated or manual including either subjective or retinoscopic refractions).	The method used to determine final refraction.	LIST / STRING

Near refraction details

Data Item	Description	Purpose	Type / Value
Correction mode	The procedure by which the near visual acuity is obtained: • glasses near visual acuity • contact lenses near visual acuity • unaided distance visual acuity.	To record what correction (if any) the subject was wearing when the visual acuity was determined.	LIST / STRING
Distance	The distance at which the near visual acuity was measured.	To record the distance in centimetres at which the near visual acuity is measured for those charts which use letter size rather than a logarithmic scale.	INTEGER
Reading add [RIGHT eye]	The spherical power added to the refraction in [Refraction RIGHT eye sphere; cylinder; axis of cylinder] that is prescribed for near vision for the RIGHT eye.	To record the spherical power added to the RIGHT eye distance prescription for near vision.	INTEGER
Post-refraction VA [standard] [RIGHT eye]	The standard which is being used to measure near visual acuity post-refraction: • reduced Snellen • reduced LogMAR • near vision points • Jaeger (approx).	To allow comparison and conversion of near visual acuity measurements post-refraction recorded using different standards.	LIST / STRING
Post-refraction VA [RIGHT eye]	Near visual acuity post-refraction: • not recorded • 6/95 [1.22] • 6/75 [1.1] • 6/60 [1.0] • 6/48 [0.92] • 6/38 [0.8] • 6/30 [0.7] • 6/24 [0.6] • 6/19 [0.5] • 6/15 [0.4] • 6/12 [0.3] • 6/9.5 [0.22] • 6/7.5 [0.1] • 6/6 [0.0]	To record the RIGHT eye near visual acuity post-refraction.	LIST/ ENUM

Mandatory Optional Mandatory depending

Near refraction details (cont)

Data Item	Description	Purpose	Type / Value
Reading add [LEFT eye]	The spherical power added to the refraction in [Refraction LEFT Eye sphere; cylinder; axis of cylinder] that is prescribed for near vision for the LEFT eye.	To record the spherical power added to the LEFT eye distance prescription for near vision.	INTEGER
Post-refraction VA [standard] [LEFT eye]	The standard which is being used to measure near visual acuity post-refraction: • reduced Snellen • reduced LogMAR • near vision points • Jaeger (Approx).	To allow comparison and conversion of near visual acuity measurements post-refraction recorded using different standards.	LIST / STRING
Post-refraction VA [LEFT eye]	Near visual acuity post-refraction: • not recorded • 6/95 [1.22] • 6/75 [1.1] • 6/60 [1.0] • 6/48 [0.92] • 6/38 [0.8] • 6/30 [0.7] • 6/24 [0.6] • 6/19 [0.5] • 6/15 [0.4] • 6/12 [0.3] • 6/9.5 [0.22] • 6/7.5 [0.1] • 6/6 [0.0]	To record the LEFT eye near visual acuity post-refraction.	LIST / ENUM

Conclusion

Data Item	Description	Purpose	Type / Value
Cooperation	The patient's ability to participate and cooperate with elements of refraction clinic examination, testing and procedures: • full cooperation • fair cooperation • poor cooperation.	To identify issues which may create difficulty with providing a complete refraction and identify reasons why dissatisfaction with post-refraction vision may arise.	LIST / STRING
Co-pathology	Co-pathology sufficiently severe to be a cause of reduced best corrected visual acuity: • yes • no.	To identify whether co-pathology might impact the visual outcome of refractive correction.	BOOL
Prescription	A record of whether a final prescription was issued: • prescription NOT to be issued • issue modified prescription • issue as found (unmodified).	To record whether a prescription was issued as part of assessment at the refraction clinic.	LIST / STRING

Prescription

Data Item	Description	Purpose	Type / Value
Refraction sphere [RIGHT eye]	The spherical component of the optical correction for the RIGHT eye. The sphere is the base correction upon which cylinder, reading addition (and prism) may be superimposed.	To record the spherical component of the final prescription for the RIGHT eye.	INTEGER
Refraction cylinder [RIGHT eye]	The cylindrical correction superimposed on [refraction RIGHT eye sphere].	To record the cylindrical component of the final prescription of the RIGHT eye.	INTEGER
Refraction axis [RIGHT eye]	The axis of the cylindrical refraction in [Refraction RIGHT eye cylinder].	To record the axis of the cylindrical component of the final prescription for the RIGHT eye.	INTEGER

Mandatory Optional Mandatory depending

Prescription (cont)

Data Item	Description	Purpose	Type / Value
Reading add [RIGHT eye]	The spherical power added to the refraction in [refraction RIGHT eye sphere; cylinder; axis of cylinder] that is prescribed for near vision for the RIGHT eye.	To record the spherical power added to the distance prescription for near vision in the final prescription.	INTEGER
Refraction sphere [LEFT eye]	The spherical component of the optical correction for the LEFT eye. The sphere is the base correction upon which cylinder, reading addition (and prism) may be superimposed.	To record the spherical component of the final prescription for the LEFT eye.	INTEGER
Refraction cylinder [LEFT eye]	The cylindrical correction superimposed on [refraction LEFT eye sphere].	To record the cylindrical component of the final prescription of the LEFT eye.	INTEGER
Refraction axis [LEFT eye]	The axis of the cylindrical refraction in [refraction LEFT eye cylinder].	To record the axis of the cylindrical component of the final prescription for the LEFT eye.	INTEGER
Reading add [LEFT eye]	The spherical power added to the refraction in [refraction LEFT eye sphere; cylinder; axis of cylinder] that is prescribed for near vision for the LEFT eye.	To record the spherical power added to the distance prescription for near vision in the final prescription.	INTEGER
Prism notation	The prism notation: • standard • 180 degrees • 360 degrees.	To record the prism notation (if any).	STRING
Prism distance: horizontal power [RIGHT eye]	A record of the final prism power that is prescribed for the RIGHT eye for distance.	To record any prescribed prism in the final prescription.	INTEGER
Prism Distance: Horizontal base direction [RIGHT eye]	A record of the final prism horizontal base direction for the RIGHT eye for distance.	To record any prescribed prism in the final prescription.	INTEGER

Prescription (cont)

Data Item	Description	Purpose	Type / Value
Prism distance: vertical power [RIGHT eye]	A record of the final prism vertical power that is prescribed for the RIGHT eye for distance.	To record any prescribed prism in the final prescription.	INTEGER
Prism distance: vertical base direction [RIGHT eye]	A record of the final prism vertical base direction for the RIGHT eye for distance.	To record any prescribed prism in the final prescription.	INTEGER
Prism distance: horizontal power [LEFT eye]	A record of the final prism power that is prescribed for the LEFT eye for distance.	To record any prescribed prism in the final prescription.	INTEGER
Prism distance: horizontal base direction [LEFT eye]	A record of the final prism horizontal base direction for the LEFT eye for distance.	To record any prescribed prism in the final prescription.	INTEGER
Prism distance: vertical power [LEFT eye]	A record of the final prism vertical power that is prescribed for the LEFT eye for distance.	To record any prescribed prism in the final prescription.	INTEGER
Prism distance: vertical base direction [LEFT eye]	A record of the final prism vertical base direction for the LEFT eye for distance.	To record any prescribed prism in the final prescription.	INTEGER
Prism near: horizontal power [RIGHT eye]	A record of the final prism horizontal power that is prescribed for the RIGHT eye for near.	To record any prescribed prism in the final prescription.	INTEGER
Prism near: horizontal base direction [RIGHT eye]	A record of the final prism horizontal base direction for the RIGHT eye for near.	To record any prescribed prism in the final prescription.	INTEGER
Prism near: vertical power [RIGHT eye]	A record of the final prism vertical power that is prescribed for the RIGHT eye for near.	To record any prescribed prism in the final prescription.	INTEGER
Prism near: vertical base direction [RIGHT eye]	A record of the final prism vertical base direction for the RIGHT eye for near.	To record any prescribed prism in the final prescription.	INTEGER
Prism near: horizontal power [LEFT eye]	A record of the final prism horizontal power that is prescribed for the LEFT eye for near.	To record any prescribed prism in the final prescription.	INTEGER
Prism near: horizontal base direction [LEFT eye]	A record of the final prism horizontal base direction for the LEFT eye for near.	To record any prescribed prism in the final prescription.	INTEGER
Prism near: vertical power [LEFT eye]	A record of the final prism vertical power that is prescribed for the LEFT eye for near.	To record any prescribed prism in the final prescription.	INTEGER
Prism near: vertical base direction [LEFT eye]	A record of the final prism vertical base direction for the LEFT eye for near.	To record any prescribed prism in the final prescription.	INTEGER

Acknowledgements

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