

Reviewed
2026

FAMILY PRACTITIONER SERVICES GENERAL OPHTHALMIC STATISTICS NORTHERN IRELAND – ADMINISTRATIVE DATA QUALITY ASSESSMENT REPORT

This initial report highlights and seeks users views on the key outcomes of an in depth data quality assessment of administrative systems from which BSO/FPS Official Statistics (OS) are sourced and produced. Assessment outcomes are detailed in terms of key strengths and weaknesses, and potential sources of error and bias relating to these statistical series.



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Dear User of Family Practitioner Services Statistics in Northern Ireland,

Your views are being sought on our quality assessment report of administrative sources from which family practitioner services statistics in Northern Ireland are produced. Our assessment of administrative sources is based on quality standards published by the UK Statistics Authority. The statistical producer team are asking for your views on our assessment, in terms of process, outcomes and presentation. The official statistics publications to which this assessment report relates are detailed below, with links to the BSO website.

[General Ophthalmic Services Statistics - Business Services Organisation \(BSO\) Website](#)

Please forward your views on our assessment to:

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Background

This assessment report highlights and continues to seek user's views on the key outcomes of our data quality assessment of administrative systems from which HSCNI BUSINESS SERVICES ORGANISATION/FAMILY PRACTITIONER SERVICES OFFICIAL OPHTHALMIC STATISTICS (OS) are sourced and produced. Assessment outcomes are detailed in terms of key strengths and weaknesses, and potential sources of error and bias.

[UK Statistics Authority \(UKSA\): Assessment of Administrative Sources](#)

This assessment was carried out, and details our findings, to help users of our statistics better understand the range of administrative sources and processes from which our ophthalmic statistics are sourced and produced. As our ophthalmic statistics are classified as Official Statistics, the assessment was carried out in line with the 'UKSA Regulatory Standard for the Quality Assurance of Administrative Data', as published on 29th January 2015 (see below).

To quote directly from the standard, *"The Authority produced this Standard in response to concerns about the quality of administrative data that emerged during its assessments of statistics on police recorded crime. The Standard recognises the increasing role that administrative data are playing in the production of official statistics and clarifies the Authority's expectations for what producers of official statistics should do to assure themselves of the quality of these data."*

Quality Assurance of administrative data

As explained within the UKSA standard, *"Quality assurance of administrative data is more than simply checking that the figures add up. It is an ongoing, iterative process to assess the data's fitness to serve their purpose. It covers the entire statistical production process and involves monitoring data quality over time and reporting on variations in that quality. Postcollection quality assurance methods, such as data validation, are an important part of the quality assurance process, but can be of limited value if the underlying data are of poor quality. The Authority encourages the application of critical judgment of the underlying data from administrative systems before the data are extracted for supply into the statistical production process. As with survey data, producers need to: investigate the administrative data to identify errors, uncertainty and potential bias in the data; make efforts to understand why these errors occur and to manage or, if possible, eliminate them; and communicate to users how these could affect the statistics and their use."*

Business Services Organisation (BSO) - Family Practitioner Services (FPS)

FPS sits within BSO's Operations Directorate and provides a range of essential business services to Health and Social Care (HSC) organisations, primary care contractors & patients and plays a critical role in the payment of over £1 billion annually to health professionals in the dental, pharmacy, GP and ophthalmic sectors. It is responsible for making payments to practitioners from the Pharmaceutical, Dental, Ophthalmic and General Practitioner professions in Northern Ireland who are under contract with or have arrangements with the Strategic Planning and Performance Group (SPPG) of the Department of Health (formerly the Health and Social Care Board).

FPS maintains the central register of patients registered with General Medical practices in Northern Ireland, which includes issuing medical cards and processing changes such as name, address and doctor. FPS calculates payments made to General Medical and Dental Practitioners, Chemists and Community Optometrists throughout Northern Ireland, provides professional advice, support and information to customers and members of the public and maintains the pharmaceutical, dental, ophthalmic and the Northern Ireland Primary Medical Performers lists. FPS also provides the call and recall services for cervical and bowel cancer screening in Northern Ireland.

The FPS Information Unit is made up of statisticians seconded from the [Northern Ireland Statistics and Research Agency \(NISRA\)](#). The in-house statistical team are responsible for producing quarterly and annual Official Statistics for Family Practitioner Services, in accordance with the code of practice for [Statistics](#).

FPS Administrative Systems and Assessment

Almost all of the statistics detailed within the FPS quarterly and annual OS reporting are derived from in-house BSO administrative systems with the exception being Ophthalmic. These systems and the business areas to which they relate are detailed below in summary:

- Medical Registration – National Health Application Infrastructure System (NHAIS)
- Pharmacy – Family Practitioner Services Pharmacy Payment System
- Dental – Family Practitioner Services Dental Payment System
- Ophthalmic – General Ophthalmic Payment System
- General Medical Services – Family Practitioner Services GMS Payment System

The assessment of in-house BSO administrative systems and external system was carried out using the Quality Assurance Toolkit as detailed within the UKSA standard. The matrix approach to assessment advised by the UKSA has two components; namely, separate assessments of public interest in our statistics (low, medium, high) and data quality concern about our statistics (low, medium, high). The outcome of our assessment then determines the types and level of assurance and documentation required to keep our users informed

about the quality assurance arrangements in place for the administrative systems from which our statistics are sourced.

As explained within the standard (page 4), “The need for investigation and documentation increases at each level of assurance ‘Basic’ (A1) to ‘Enhanced’ (A2) to ‘Comprehensive’ (A3).” There is also a ‘No assurance’ A0 level to indicate that, “Operational context and administrative data collection by supplier not investigated, managed or documented”. Assessment at this level means that statistics are not being produced in accordance with the code of practice for statistics.

The outcomes of our completed assessment for our ophthalmic statistical series, sourced from an external provider system and other in-house BSO administrative systems, are detailed in the sections that follow. Following assessment using the QA Toolkit, the level of assurance was assessed as ‘Enhanced’ (A2).

From the UKSA standard, summaries of each of the three possible assessment levels are detailed below:

A1: Basic assurance Statistical producer has reviewed and published a summary of the administrative data QA arrangements

A2: Enhanced assurance Statistical producer has evaluated the administrative data QA arrangements and published a fuller description of the assurance

A3: Comprehensive assurance Statistical producer has investigated the administrative data QA arrangements, identified the results of independent audit, and published detailed documentation about the assurance and audit

These three levels of assurance are applied across a range of four areas relating to administrative data provided for producing official statistics as outlined below:

- Operational context & administrative data collection
- Communication with data supply partners
- QA principles, standards and checks applied by data suppliers
- Producer's QA investigations & documentation

Within each of the sections that follow, presented in summary form is our assessed level of assurance for our statistical series, and the information available as supporting evidence in respect of the four areas above.

Review and Updates

As part of our ongoing commitment to maintain user’s and public confidence in our ophthalmic statistics, the administrative systems from which we source our data will be reviewed annually, or as required in line with planned changes to administrative systems.

Reviews will be through formal consultation with data providers regarding changes/amendments to administrative systems which might then impact on our assessment of data quality concerns and changing public interest in our statistics. Should a revised assessment result in an increased or a decreased level of assurance, we will then update our assessment report for relevant statistical series. Users will be notified of revisions/updates to this report at the earliest opportunity, probably at the same time as publication of the next release of our quarterly or year-end statistical report.

General Ophthalmic Statistics

General Ophthalmic Statistics present information on a range of ophthalmic services and are based on claims submitted by primary care opticians to Family Practitioner Services. Information is provided on workforce i.e. General Ophthalmic Practices and General Ophthalmic Practitioners; health service sight tests, vouchers, repairs and replacements and additional ophthalmic services, including the Northern Ireland Primary Care Optometry Enhanced Services, the Northern Ireland Primary Eyecare Assessment and Referral Service (NIPEARS) and the Ocular Hypertension (OHT) Review and Monitoring Service. It also includes BSO Payments processed on behalf of SPPG towards the overall cost of General Ophthalmic Services, and UK Comparison data.

A number of administrative sources are used in this production and are listed below:

Ophthalmic Payment System

The Ophthalmic Payment System, which is hosted by an external supplier DXC Technology, manages all health service ophthalmic activity carried out in Northern Ireland through the General Ophthalmic Services Regulations (NI) 2007 that are submitted by General Ophthalmic Practitioners to BSO for monthly payment. Information does not include any ophthalmic activity delivered by Trust based ophthalmic services or any activity carried out privately by health service opticians.

Two systems were developed as part of the Ophthalmic Payment System by HP in 2009 and 2012. The external supplier DXC is now responsible for the hosting and running of these two systems:

- Ophthalmic Claims System (OCS) - This system was designed to provide intuitive facilities for the submission of claims via the web, and the viewing and downloading of payment reports for the contractors. At a later point it was extended to allow internal BSO staff to enter ophthalmic claims on behalf of contractors who submitted manual forms.
- Ophthalmic Verification System (OVS) - This is a web app that underpins the OCS system and is responsible for the handling of exceptions of claims that require manual handling and duplicate claims, adding adjustments to contractor's payments and to provide a front end for payment reports to be generated.

The Ophthalmic Payment Team is then responsible for:

- investigation of duplicate payment claims;
- processing pre- approvals for a number of specific claims;

- processing paper GOS forms manually that fall outside the business rules of GOS claims/not available on OCS;
- the monthly payments to primary care General Ophthalmic Practices for Health Service treatment carried out in Northern Ireland that are submitted to BSO;

Statisticians in the FPS Information Unit use the Ophthalmic Payment System data as the main source for published statistical outputs. This is combined with other data sources i.e. National Health Application and Infrastructure Services (NHAIS), Common Practitioner Model and the NISRA Central Postcode Directory to provide the following output:

- Ophthalmic Practitioners by geographical location;
- Ophthalmic Practices by geographical location;
- Sight tests, vouchers and repairs provided to patients by gender, age and geographical location;
- HSCNI payment towards Ophthalmic Services i.e. payments that FPS has processed on behalf of SPPG towards the overall cost of Ophthalmic Services in Northern Ireland, by geographical location.

National Health Application and Infrastructure Services (NHAIS)

The NHAIS system, which resides within FPS (Family Practitioner Services), manages GP registrations and payments, GP patient lists and their demographics including a record level list of all persons on the GP registered Patients index (whether living, dead or gone away). It also holds information on a patient's entitlement to primary care in Northern Ireland.

The Registration Team within FPS is responsible for:

- the registration and transfer of patients onto and between GP Practices within Northern Ireland and the rest of the UK,
- the transfer of medical records between GP Practices within Northern Ireland and the rest of UK, and
- the archiving of Medical Records of patients no longer registered with a GP Practice in Northern Ireland.

Statisticians in the FPS Information Unit link the Ophthalmic Payment System data to the NHAIS data (see above) in order to publish demographic breakdowns for ophthalmic activity such as age, gender and geographical location.

Ophthalmic Masterfile

The Common Practitioner Model (CPM) is a user interface that manages the General Dental, General Medical and General Pharmaceutical contract lists. Optometry is currently not on CPM. Instead the Ophthalmic Masterfile, which resides with the Professional Support Team, manages general ophthalmic contract information to include Optometrist/Ophthalmic

Medical Practitioner or Dispensing Optician demographics and contact details etc. The Ophthalmic Masterfile also holds information on ophthalmic practices including name, address, unique identifier, contact details etc.

The Professional Support Team within FPS are the administrators of the Ophthalmic Masterfile as they maintain the statutory Ophthalmic List and members of the team are authorised to make changes to it (e.g. adding, amending and removing contracts).

The Ophthalmic Masterfile is the data source for General Ophthalmic Practitioner/Optomestrist headcounts and, counts of Ophthalmic Practices by Geographical Location. The Ophthalmic Payment system and Ophthalmic Masterfile data is combined to produce statistical outputs on Number of Ophthalmic Practices per 100,000 Resident Population; proximity of patients to Ophthalmic Practices and to inform statistics on BSO Payments towards Ophthalmic services. Geographical location is obtained through matching postcode details to the NISRA Central Postcode Directory, while NISRA mid-year population estimates are used for the resident population.

Quality Assessment

Table 1 below details the outcome of our assessment of General Ophthalmic Statistics using the matrix assessment toolkit as explained in the previous section (pages 5 and 6), in terms of data quality concern and public interest. Ophthalmic workforce statistics were typically assessed as Low/Medium for data quality concern and Low for public interest, indicating that a low level of assurance is appropriate, which is A1 on our matrix classification. Ophthalmic activity and Payment Statistics were typically assessed as Medium for data quality concern and Medium for public interest, indicating that a medium level of assurance is appropriate, which is A2 on our matrix classification.

Table 1: Assessment of General Ophthalmic Statistics

Statistical Theme	Admin Source	Data Quality Concern	Public Interest	Matrix Classification
Ophthalmic Practitioners Headcount	Ophthalmic Masterfile Database	Medium	Low	A2
Ophthalmic Practices (count and per 100,000 resident population) by Geography	Ophthalmic Masterfile Database, CPD, MYPE	Low	Low	A1
Sight Tests, Vouchers and Repairs by Age, Gender and Geography	OCS, NHIAS, CPD	Medium	Medium	A2
Exemption Reasons for sight test and vouchers	OCS, STC form	Medium	Medium	A2
Assessments at Northern Ireland Primary Care Optometry Services	OCS, LES II form, OHT form, CPD	Medium	Medium	A2
BSO Payments processed on behalf of HSCB towards cost of Ophthalmic Services by Geography	OCS, CPD, MYPE	Medium	Medium	A2
Population weighted distance to nearest Ophthalmic Practice	OCS, NHIAS, CPD	Low	Medium	A1
GB Comparisons	OCS, NHAIS, MYPE, GB Data	Low	Medium	A1

Operational Context and Administrative Data Collection

Ophthalmic Payment System (OCS and OVS)

In Northern Ireland, residents who wish to claim partial or full help towards their eye care must provide their optometry practice with their Health and Care Number (HCN). The HCN provides a unique identifier that allows the various elements of information used in the delivery of clinical and social care services to be matched to the correct individual patient, enabling the sharing of records and demographic data across many critical clinical Source Systems.

The Ophthalmic Payment System, which is hosted by an external supplier DXC Technology, manages all health service ophthalmic activity carried out in Northern Ireland under the General Ophthalmic Services Regulations (NI) 2007 that are submitted by General Ophthalmic Practitioners to BSO for monthly payment. Information is not held on any activity delivered by Trust based ophthalmic services or any work carried out privately by health service ophthalmic practitioners.

Two systems were developed as part of the Ophthalmic Payment System by HP in 2009 (OVS) and 2012 (OCS). The external supplier DXC is now responsible for the hosting and running of these two systems. The Ophthalmic Verification System (OVS) is a web app that is responsible for the verification of claims submitted including the handling of exceptions of claims that require manual handling and duplicate claims. It is also used to pay adjustments to contractors and to provide a front end for payment reports to be generated. Prior to 2012, submissions from contractors were all paper forms and required scanning into Kofax (OCR). In 2012, the Ophthalmic Claims System (OCS) which is underpinned by OVS was developed to facilitate the submission of claims or submit a request for pre-approval or domiciliary notification via the web. It also enable contractors to view a monthly payment forecast, view payment summaries for previous months payments from OVS, view individual forms successfully submitted for payment, and check the status of pre-approval or domiciliary notification requests. At a later point it was extended to allow internal BSO staff to enter ophthalmic claims on behalf of contractors who still submitted manual forms. The main benefit of OCS was the submission of claims electronically however it also had the following benefits:

- Reduction of manual data keying in BSO
- Provision to submit claims without the need to fill in paper forms
- Allow contractors and BSO staff to track claims online such as pre-approvals
- Reduce data error by attempting to validate data at entry and at point of submission
- Provision of payment reporting online

The main source of data is from OCS which is accessible through the [BSO Optometry Portal](#). Contractors are required to sign User Agreements for both the Portal and OCS and are issued Cryptocard keyfob tokens along with login credentials.

OCS will carry out a number of validations to ensure the payment claims submitted meet the criteria laid down within General Ophthalmic Services Regulations (NI) 2007 for sight tests, vouchers and repairs and for the enhanced LES I and NIPEARS services. Even before a new claim can be submitted on OCS, the HCN of the patient being seen is required, in order to check when the Date of Last GOS Test was. If the contractor goes ahead with the Sight Test without getting prior approval (under 3 months) or stating a reason for the early retest (over 3 months) the claim will not be paid. Contractors can also submit claims for pre-approval for Sight Test, Voucher and Repair/Replace including domiciliary visits. The Ophthalmic Payment Team is notified about pre-approvals & domiciliary requests via OCS and either approve or reject them.

Although the majority of ophthalmic payment claims is submitted via OCS, there are a small number of claims that cannot be submitted through OCS as they fall outside the strict business rules that apply to most GOS claims. These claims need to be sent in on a paper and processed manually by BSO. Types of claims still requiring paper GOS forms are detailed in the [OCS User Manual](#). In addition approximately 5% of ophthalmic practices do not have OCS and therefore submit all manual paper forms for payment which are manually inputted by the Ophthalmic Payment Team onto OCS.

The quality of the ophthalmic data improved in the earlier years once OCS was established via Change Control Requests to HP and subsequently DXC to make modifications to the system. Examples of this are:

- Integrated approach to the management of Notification Code Requests for Domiciliary Visit rather than a custom-built Access database
- Integrated approach to Pre-approval Code Requests and Allocation rather than custom built Access database
- Addition of NIPEARS claims system running within the OCS framework.

Change controls to DXC have been less frequent in recent years due to the cost of adding a number of new enhanced schemes into the ophthalmic payment application. In addition, security patches to the operating systems and server components underpinning the entire Ophthalmic solution have ceased with the extended support for the Windows server 2008 R2 expiring in January 2020. This has meant new services such as LES II, OHT and Remote NIPEARS are being collated via manual forms or eforms created by BSO and has increased the amount of manual collation and validation that the Ophthalmic Payment Team need to carry out prior to payment.

Regardless of submission method all claims enter OCS and go through predefined validation rules. If accepted, they then pass on to OVS and it is at this stage they go through further validations resulting in some claims going onto the OVS Processing Pool. The Ophthalmic Payment Team access this processing pool and review claims that are found to be duplicates e.g. multiple sight tests by different contractors for the same patient in the same payment cycle and those that have high-severity exceptions that require BSO intervention before they can be processed for payment. At this point those claims may be approved or rejected for payment. OVS is also where adjustment payments are made to contractors, this may be due to an advance paid the previous month, back pay for sight test/voucher arrears or as result of findings from any payment queries etc.

When all exceptions and duplicates have been completed in OVS, BSO Ophthalmic Payment Team following the OCS Claims deadline, request the payment processing reports to be generated. Those reports are then downloaded and saved on a secure HSCNI network drive and passed to the Data Analysts in BSO who then upload the payment file to Shared Services for payment to contractors.

BSO have a range of service delivery targets (KPIs) which are monitored using the Ophthalmic Payment System. This includes:

- 95% of claims paid within month
- 95% of claims submitted via BSO Optometry Portal
- 95% accuracy based on claims paid

The Ophthalmic Payments team within FPS is responsible for processing these claims supplied by the ophthalmic practices for monthly payments to General Ophthalmic Practices following validation. To ensure all claim data is updated and recorded accurately, the BSO have detailed process maps and accompanying Standard Operating Procedures (SOPs) outlining the steps for the ophthalmic payment process. These process maps and SOPs have been made available to Statisticians.

At the end of any given month, 99-100% of claims are paid with around 97-98% paid automatically.

NHAIS

In Northern Ireland residents can register with a GP for the provision of general medical services and advice, depending on their settlement status. For example, those born in Northern Ireland provided with a medical card at birth are normally entitled to register with a GP and move between GPs in Northern Ireland without any restrictions.

Persons coming to Northern Ireland to live are required to meet the 'Ordinarily Resident Test' in Northern Ireland, i.e. you must be lawfully residing in Northern Ireland and have an

identifiable and settled purpose here. To satisfy this test you must have indefinite leave to remain in the United Kingdom (UK), and provide proof of your settled purpose e.g. to work, and confirmation of your Northern Ireland address. An eligible visitor is a visitor to Northern Ireland who is lawfully present in Northern Ireland and satisfies a relevant exemption from charges such as students, workers and asylum seekers in accordance with the Health and Personal Social Services Provision of Health Services to Persons Not Ordinarily Resident Regulations (Northern Ireland) 2015 (https://bso.hscni.net/wpfd_file/2015_pnor_regs/).

A patient's digital identity takes the form of a HCN linked to the individual patient's demographic details. This service provides a unique identifier that allows the various elements of information used in the delivery of clinical and social care services to be matched to the correct individual patient, enabling the sharing of records and demographic data across many critical clinical Source Systems.

NHAIS is the system used to register the entitled patients/clients to state funded health and care services in Northern Ireland, the management of GP lists and to calculate the Global Sum payments¹ each quarter. It captures details of the relationship between patients, GPs and their practices. Registrations are collected from GP systems through dedicated links and/or by contacting BSO directly. The Registration team within FPS is responsible for maintaining GP Registered Patients Index. NHAIS also contains data on previously registered patients however this is incomplete due to historical data migration issues.

A significant number of bodies such as NISRA, ONS, The Electoral Office and the GRO rely on data from NHAIS to perform their functions; extras of the NHAIS index are used to provide these bodies with the data they need to inform decision making in these other bodies.

The main source of data is from GP systems via GP Links. This is a two way flow of information via an Electronic Data Interchange between the BSO and the GP Practice with the ability to add, delete and amend patient records at either side subject to validation. Registration Links has sufficient functionality to ensure that both the GP Practice and NHAIS systems are kept in line with one another.

SPPG also operates two way information flows with BSO by way of emails, spreadsheets and databases to inform medical registration data. The General Register Office (GRO) provides death data to BSO; notification of these deaths may already have occurred from other sources but the GRO data is the official source. The Health and Care team operate a two way flow of patient information with the BSO including registration status. NHS Scotland and England also operate a two way flow of information with the BSO in relation to patients who have moved between jurisdictions.

¹ The Global Sum Payment is the payment to GP practices for services provided to their registered patients.

The Registration team within FPS is responsible for maintaining the GP Registered Patients Index. To ensure all registration data is updated and recorded accurately, the BSO have detailed process maps and accompanying Standard Operating Procedures (SOP's) outlining the steps for completing medical registrations, adjustments, deductions etc. These process maps and SOP's have been made available to Statisticians.

At the end of any given month there are between 2,000 and 3,000 registrations that are outstanding (have been entered on to the system but have not been completed). Of these approximately 80% are from either GB or non-UK countries. This lag is normally as a result of additional documentation that is required to complete the registration and a number of these may be deemed not entitled. Less quantifiable is the number of registered patients who no longer reside in Northern Ireland but have left without notifying their GP or BSO.

Ophthalmic Masterfile

The Ophthalmic Masterfile is an Access database that facilitates BSO users to add, edit and view details of ophthalmic contractors. The ophthalmic data held on this is the "Ophthalmic List" and allows staff in practices to submit claims to the ophthalmic payment system. The Ophthalmic Masterfile holds information on Ophthalmic Practices. If a practice wishes to provide General Ophthalmic Services (GOS) they are required to apply to become a GOS contractor i.e. apply to join the Ophthalmic List. More information on what information is collected and forms to complete can be found here: [Ophthalmic Listing Information and Forms](#). The completed application should be sent to the Professional Support team within BSO. Following that, the practice must be inspected by an Optometric Adviser to ensure that it meets the requirements to provide GOS before a contractor (premises) code may be issued. When the application process is complete and inspection has been approved, the practice will join the Ophthalmic List and be issued with a premises code that will enable them to provide, and submit claims for payment of, General Ophthalmic Services. The Ophthalmic Team Leader requests an update to the OCS system. The GOS15A/15C/15D is then signed and dated by the officer responsible to indicate that all relevant checks have been carried out plus added to the Ophthalmic Masterfile.

If an optometrist/ophthalmic medical practitioner/dispensing optician wants to provide General Ophthalmic Services they are required to complete an application form to enrol with SPPG. More information on when it should be completed and what information is collected can be found here: [Ophthalmic Professional Enrolment with SPPG](#). The completed application should be sent to the Professional Support team within BSO along with photographic ID. BSO will inform the Optometric Advisers within SPPG of the application. BSO then checks the GOC website that the registration received is valid. Enrolment applications must attend an Induction Session before the application process is signed as completed. These Induction Sessions are organised by BSO. The GOS20A/20B/20C is then

signed and dated by the officer responsible to indicate that all relevant checks have been carried out and is added to the Enrolment list which is accessible through the Ophthalmic Masterfile database and given a Personal Code. Practitioners are unable to provide General Ophthalmic Services (GOS) until they have been issued with this personal code by BSO.

The Professional Support team are also responsible for removing practices from the Ophthalmic List when there is a planned closure of the practice / withdrawal of the contractor. SPPG and BSO must be notified at least 14 working days before the planned date of practice closure / contractor withdrawal.

Any changes such as joiners and leavers, be that personal codes or premises codes, are passed on to the Ophthalmic Payment Team from Professional Support Team, who then log a vFire to request DXC to make an amendment to the background data in OCS.

As well as the standard checks done on application, Professional Support team also carry out the following processes:

- Using the monthly list posted online by the General Optical Council (GOC) of removals/additions, checks are done to ensure this aligns with the list BSO holds. It also covers Body Corporate practice changes.
- Non Payment of Annual GOC Fees (NPF) – annual removal/withdrawal list issued April of each year on GOC website and checks done against both contractor and optometrist lists held by BSO.
- Biannual checks of ophthalmic medical practitioners enrolments against the General Medical List
- Every year optometrists are required to achieve a number of points on their Continuous Professional Development. If they do not achieve the correct amount by the end of the 3 year cycle they are removed from the GOC list.
- Enrolment lists are reviewed on request by SPPG and a large list cleansing exercise is done every few years.

To ensure all data is updated and recorded accurately, the BSO Professional Support Team have detailed checklists and detailed Standard Operating Procedures (SOP's). These have been made available to Statisticians.

Communications with Data Supply Partners

Ophthalmic Payment System

NISRA Statisticians within BSO can access Ophthalmic Payment information directly via tables held in Microsoft SQL Server Management Studio which sits on a secure network server within BSO. This data is only accessible following a written request to IT within BSO and is only completed following managerial approval. These SQL tables were created by Information Unit and Data Analyst staff within BSO by reading the payment processing reports, downloaded by the Ophthalmic Payment Team for payment, into SQL using SQL Server Integration Services (SSIS). The SQL tables are updated on a monthly basis following payment so no information is available to NISRA Statisticians regarding claims due to be paid in the upcoming payment cycle.

Statisticians within FPS Information Unit are located in close proximity to the BSO FPS Ophthalmic Payment team, BSO Data Analysts, SPPG Ophthalmic Advisors and relevant IT staff which helps facilitate frequent informal and formal contact to discuss/review statistical methodology and requirements (advice on variable list and functionality) as well as data quality issues. Tailored guidance has been circulated and formal presentations given to ensure that data providers are aware of their responsibilities under the Code of Practice for Statistics and particularly with regard to pre-release practices.

Statisticians within FPS Information Unit are also represented on the FPPS Service Review Group. This was formed to coordinate the FPPS solutions maintenance and management going forward when the new systems were introduced for GPs, Dentists and Pharmacies. Due to the security patches to operating systems and server components underpinning the entire Ophthalmic solution having ceased with the extended support for the Windows server 2008 R2 expiring in Jan 2020 and the significant threat it poses to the enterprise system environment and the ongoing supportability of the system plus the cost of adding additional enhanced schemes to the current system, there has been discussion at this group in relation to replacing OVS/OCS with an FPPS system similar to what is in place for the other three primary care providers. Currently the server risk is being mitigated, through a project to port the application to new infrastructure within the HCSNI domain using Web Deploy. However a more robust longer term solution is required as the system has started to show evidence of becoming unstable as outages and reboots have become a regular basis risking reputational damage to both BSO and SPPG. Currently a business case is being drafted for the proposal to process ophthalmic claims through the FPPS hosted system and managed by BSO.

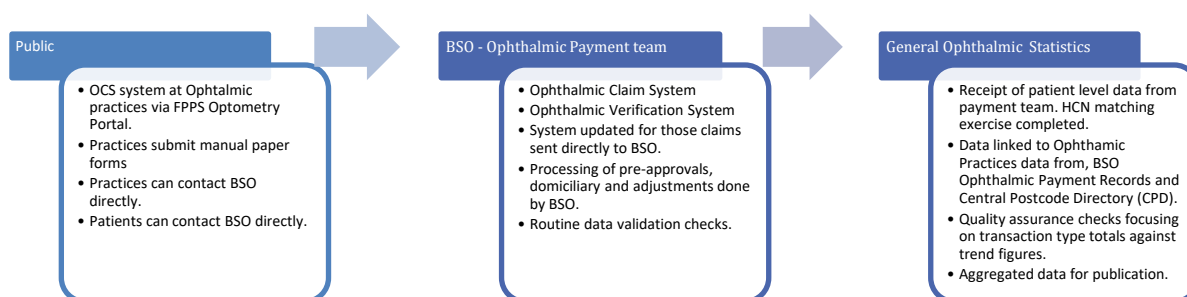
Also the BSO Analysts Liaison Group (ALG) provides an information sharing forum between the NISRA statisticians based in FPS Information Unit and the data analysts embedded in each of the FPS payment teams. It can also be used to commission and take forward

projects that will be of mutual benefit to the information function within FPS. Some objectives of this group are:

- To inform each other with regard to any planned changes to existing data tables, development of new data tables or implementation of new/updated coding classifications.
- To highlight any data quality issues that may have been unearthed, consider possible resolutions and to discuss ways to improve FPS data quality in general.
- To update each other as to how FPS information is being used both within the payment teams, as part of projects and to develop Official Statistics.

Communication between the BSO Ophthalmic Payment team and Ophthalmic Practices is regular. Detailed guidance on submitting ophthalmic claims for payment is provided to Ophthalmic Practices. The BSO FPS Ophthalmic Payment team also monitor volumes and processing times to ensure processes are efficient and KPI targets are met.

Flow:



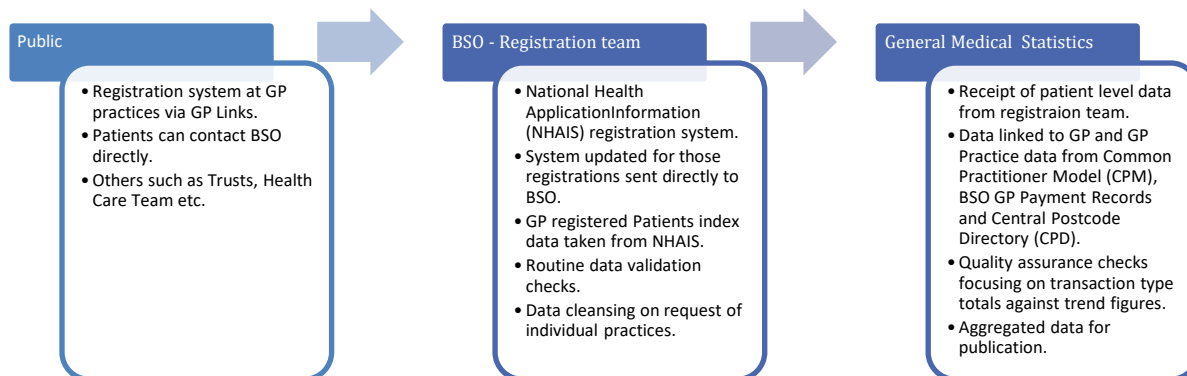
NHAIS

NISRA Statisticians within BSO can access GP Registration information directly via tables held in Microsoft SQL Server Management Studio which sits on a secure network server within BSO. This data is only accessible following a written request to IT within BSO and is only completed following managerial approval. These SQL tables are created by IT staff within BSO in conjunction with other BSO business areas and tested prior to being used. IT staff have also set up an automated process so that certain SQL tables gets updated nightly.

Statisticians within FPS Information Unit are located in close proximity to the BSO FPS Registration team and relevant IT staff which helps facilitate frequent informal and formal contact to discuss/review statistical methodology and requirements (advice on variable list and functionality for future NHAIS replacement, for example) as well as data quality issues. Tailored guidance has been circulated and formal presentations given to ensure that data providers are aware of their responsibilities under the Code of Practice for Statistics and particularly with regard to pre-release practices.

Communication between the BSO FPS Registration and GP Practices is regular. Detailed guidance on the registration process is provided to GP Practices with volumes and processing times monitored to ensure processes are uniform and efficient.

Flow:



Ophthalmic Masterfile

For the Ophthalmic list applications the Data suppliers are BSO. Standard Operating Procedure documents have been developed for use by BSO staff to support governance procedures around issuing a personal/dispensing code to the Optometrist/Ophthalmic Medical Practitioner and a premises code to new contractors.

Stakeholders are then advised via email of practice changes and enrolments e.g. new practice, Optometrist leaving, change of practice address.

If a change as made to the application process, BSO would consult with SPPG regarding if it's a minor or operational change and which BSO would then action.

Quality Assurance Principles, Standards and Checks by Data Supplier

Ophthalmic Payment System

There are numerous checks carried out on ophthalmic claims and pre- approvals data to minimise the risk to data quality both at source e.g. Ophthalmic Practice and upon receipt of data in the BSO.

Checks done at source include claims meeting the provisos set out in the General Ophthalmic Services Regulations (NI) 2007, checks against the patient’s last sight test and all required fields are completed. If they don’t meet checks, practices must submit these for prior approval with an explanation. Approval is also required for a domiciliary test to be carried out and practices are required to give at least 48 hours’ notice. The Ophthalmic Payment Team is notified of these prior approvals/domiciliary visits on OCS and need to

approve or reject these requests. Databases are also updated for those that submit these requests via paper, telephone or email. Where the request is outside of the relevant Memorandum of Ophthalmic Service (MOS) criteria then an email is sent from the prior approval email address to the Optometric Adviser for their consideration. BSO Ophthalmic staff will take the lead from them in this scenario.

Once a claim passes through OCS either through electronic submission or paper form keyed in by BSO staff, it enters OVS where they are validated and it is at this stage it is decided if they enter the OVS Processing Pool to review. Those claims that don't automatically pass validation go to the OVS Processing Pool workflow. The duplicate report is generated within OVS by inbuilt business rules which identify the relevant issue. Ophthalmic staff are required to investigate why a duplicate has been sent and take the appropriate action. The same applies for those claims flagged as high-severity exceptions.

Where changes and upgrades have been made to either of the systems, DXC will carry out UAT testing with BSO staff in order to check these are correct and sign off on the work. In addition DXC will give prior notice when these are due to go live and eBusiness Team within BSO will inform practices of these changes and the downtime periods.

Due to the reduction in the number of change requests to the system over the latter years and the number of new enhanced services that have been created since OCS was created, this has meant the system has not evolved accordingly to maximise effective business continuity. Some of this work has been taken forward via workarounds which preferably need standardised and normalised with standard governance and controls applied. Below are a number of scenarios where the data is at risk of errors and how BSO have applied their own quality assurance checks in order to minimise this:

- A number of claim forms e.g. STC forms for HC3 claimants, LES II enhanced service, OHT monitoring and Remote NIPEARS are not on OCS. These are either submitted via paper forms or through an eform created by BSO. This requires manual collation of these data returns into separate excel spreadsheets and validations of individual claims. For example due to the criteria for a LES II to be payable, this requires the Ophthalmic Payment Team looking up the previous history for the patient from either a normal sight test or following a LES I assessment. All of these are paid as Adjustments and not available as individual payment breakdowns for the contractors.
- When the Payment Reports are generated for payment and downloaded, some of the CSV file formats are not in the correct order for Finance reporting within BSO. This requires the Ophthalmic Payment team to manually fix these.
- Eligibility criteria have changed since some schemes first came in, such as LES I, which was set up on OCS a number of years ago. Due to the change in eligibility, practices now need to submit these claims on paper forms however some practices are still using this function on OCS. Again Ophthalmic Payment Team must manually

carry out individual validation checks on all claims that come in for this whether via paper or OCS as the validation rules on OCS were not changed.

- OVS is set up to identify duplicates i.e. same name, DOB etc. that appear within the same payment cycle be this with the same practice or a number of practices. OVS is not able to identify if the same patient has had multiple sight tests claims submitted, for the same date of service, from various practices if they are submitted over various payment cycles. As such BSO could be paying for multiple claims given Ophthalmic Practices have 6 months in which to submit their claims for payment.
- In 2018, NIPEARS was set up on OCS. Criteria for this scheme is that no more than one NI PEARS claim can be made if the patient has already made one in the last 12 calendar months. Under normal circumstances, there can be only one follow-up appointment after a first appointment in any one patient referral episode i.e. same condition. If there is more than one follow-up appointment or another claim comes in for a second condition then the claim should be rejected and a preapproval request should be submitted for consideration. Instead OCS accepts the claim and instead will be flagged up as duplicate and subsequently needs handled in OVS. This has resulted in the Ophthalmic Payment Team carrying out more validation checks in OVS and looking back on a patients previous claim history. It then requires the following manual interventions:
 - If a patient has had more the one “First appointment” within a 12 month period then a vFire is logged and DXC change the form type of all but the most recent NI PEARS claim. OCS would then prompt the contractor to submit their new NI PEARS claim for pre-approval. Once the contractor has submitted their new claim for payment DXC is asked revert the changes back again.
 - It would be the same if a patient has had more than one first appointment at any time (this does not have to be within 12 months). If the contractor then tries to claim a follow-up to the most recent NI PEARS claim, the system does not recognise that there have been any first appointments. Again, a vFire is logged and DXC are asked to change the form type of all but the most recent NI PEARS claim. This would then allow the contractor to submit a follow-up. Once this has been submitted, DXC are asked to revert the changes back again.

The Ophthalmic Payment Team runs a dummy payment run on the morning of the actual payment run. This allows them to filter the NI PEARS csv file for any NI PEARS claims for patients under the age of 5 (Patients under 5 are not eligible for NI PEARS), this was not written into the OCS rules. Any meeting this criterion are returned to the practice as not payable. Checks are also carried out on the voucher and repair/replacement csv files for any £0.00 payments. This can happen in vouchers if the patient is on a HC3 and the practice has completed the HC3 amount incorrectly. With repair/replacements it can happen if it is for a

repair only but the contractor has not selected which part of the spectacles is being repaired. These are returned to the contractor to amend.

There are no quarterly or annual checks carried out by the Ophthalmic Payment Team. The only post payment checks carried out would be by Counter Fraud and Probity Unit. They request claim details for a contractor and randomly check a selection. If there are any claims submitted incorrectly they would inform the Ophthalmic Payment Team to deduct the amount from the contractor's next payment. This would be done as an adjustment within OVS. Counter Fraud and Probity Unit within BSO also look into fraudulent claims, be this via monitoring reports from Units within BSO or through the Counter Fraud helpline. On occasions Information Unit have also identified potential fraud cases through routine or ad-hoc work and this had been passed on to Probity.

Staff within FPS provide high level aggregated data to feed into Key Performance Indicators (KPIs) to direct attention to areas of the Ophthalmic process that require attention/intervention. This includes information on volumes and processing times of both claims paid and accuracy of payments.

NHAIS

There are numerous checks carried out on Patient Registration data to minimize the risk to data quality both at source e.g. GP Practice and upon receipt of data in the BSO. Types of checks include checking for duplication against pre-existing registration details on internal and external systems, checking that all required fields are complete and checking supporting documentation such as proof of address where appropriate. Issues that arise are duplicate registrations, poor data entry, incorrect demographic details e.g. postcode etc. Quality indicators include no duplication of patients, 100% check of all new patient registrations at BSO side, and, validation of registration work by management.

Further to checks carried out at time of transaction as detailed above data are cleaned at the end of each quarter by the BSO using, for example, the following checks:

- checking countries of origin/destination are complete and the correct codes have been assigned,
- ensuring dates are in the correct format,
- ensuring that information has been collected for all records, and
- checking that reasons for movements are standardized across the records.

When NHAIS was first implemented in NI in 2004-2006, BSO Established a Data Quality Team to help tackle GP list inflation. Using NHAIS information, Dental information and the

Electoral Roll, GP Practices were visited to establish if registered patients were accessing NHS treatment. Outcomes included patient detail changes such as address updates, patients being classified as 'whereabouts unknown/left NI' and subsequent removal, and, BSO writing directly to the patient with removal being a potential outcome. Unfortunately, no documentation exists quantifying the number of records that were cleaned/removed as a result of this exercise. Currently the BSO do not currently have a data quality team. A project is underway to replace the NHAIS system and as part of this project FPS Statisticians and FPS Registration team have sought assurances that a data cleanse exercise will take place after migration of data to the new system to ensure data held and future data input is in a consistent format.

The BSO Registrations team along with external consultants carried out a Kaizen (lean) Project in 2018 with focus on improving the processing of patient registrations. Actions that followed included data collection guidance booklets and posters being issued to GP Practices, ongoing training provided to GP Practice Managers, and, actively monitoring registration processing times through Key Performance Indicators.

A Counter Fraud Unit within BSO look into fraudulent registrations and claims, and the Access to Health Team in BSO carries out further post registration eligibility checks.

Statisticians within FPS provide high level aggregated data to feed into Key Performance Indicators (KPIs) to direct attention to areas of the Registration process that require attention/intervention. This includes information on volumes and processing times of both complete and incomplete registrations (available at Practice Level and by registration type).

Ophthalmic Masterfile

Before entering the application details onto the Ophthalmic Masterfile, BSO staff have to carry out a number of validation checks that are submitted on the practice or personal application forms, this includes cross checking they are registered on the General Optical Council, photo ID checks and induction/inspection date are scheduled. If errors/issues arise the application is paused and applicant clarification is sought or the SPPG Ophthalmic Advisors notified.

In order to minimise risk when Professional Support Team register an optician or ophthalmic practice or edit changes on the Ophthalmic Masterfile, this is checked by another member of staff for accuracy. In order to minimise risk, the database is locked and only certain staff can update them. Standard Operating Procedures also ensure steps aren't missed.

During the data collection process, staff within SPPG carry out checks on the application form. Previously audit did checks on both lists but more recently are only checking the Contractors list i.e. practices.

Producers Quality Assurance Investigations and Documentation

Ophthalmic Payment System

As the main source of ophthalmic activity and payment data is independent contractors, statistical producers' ability to influence the data collection quality assurance is more limited than would be the case if we were dealing with other public bodies. Influence involves providing advice on data quality issues uncovered and proposing solutions and providing feedback on proposed new data collection forms.

The main validation checks on Ophthalmic Data within BSO are carried out by the Ophthalmic Payment prior to import of data into SQL tables used by statistical producers. The ophthalmic payment system captures the Health and Care Number (HCN) of patients, as it is required to check when the patient last had a sight test; however the HCN is not available on the downloaded payment reports that the Ophthalmic Payment Team extract from OVS each month. In order to produce statistics by patient's gender/home address, a matching exercise was carried out by Information Unit a number of years ago using the patient's forename, surname and date of birth to the index of registered patients (NHAIS) to obtain the HCN and patient demographics. The matching rates are shown in the table below.

Matching rate for patient HCNs on the Ophthalmic Payment System, 2013/14 – 2025/26

Financial Year	All Records	% Matched
2013/14	684,173	82.2%
2014/15	693,960	87.6%
2015/16	708,563	91.1%
2016/17	723,714	95.3%
2017/18	707,201	98.4%
2018/19	707,906	99.4%
2019/20	703,892	99.2%
2020/21	480,221	99.1%
2021/22	650,660	99.1%
2022/23	661,857	99.0%
2023/24	683,421	98.9%
2024/25	665,763	98.9%
2025/26	682,128	98.8%

Given the reduced matching rates in earlier years, it was decided that data could only be reliably produced for 2017/18 onwards. This should not be an issue in future years.

For the exemption reason tables, occasionally the exemption reason is not recorded in the payment system. To reduce the number of unknowns in cases where the person was aged

under 16 or 60 or over, they were moved into either the Child or Over 60 category. Those aged between 16 and 18 who had an unknown exemption were moved into the Student category. In 2017/18, 117 records were moved to one of those categories compared to only 3 records in 2020/21.

All data is based on payment date. However practitioners have up to 6 months to submit sight claims, and up to 3 months to submit voucher and repair/replacement claims for payments. Therefore data may not always reflect when the activity was carried out.

On a quarterly basis data held in Microsoft SQL Server Management Studio is run to produce official statistic outputs. As part of this process there are checks to ensure that data is robust such as comparing counts of Ophthalmic Claims e.g. Sight Tests, Vouchers, Repairs, Practices and Practitioners etc. with trend figures for consistency. While there is no set measure of tolerance in terms of quarterly/annual differences, records of back series comparisons help the statistical producer to judge if particular data is out of kilter with historical trend. If significant anomalies in the data are found, SQL code used is first reviewed and if correct, this is then fed back to the Data Analyst Team to ensure that all data has been captured correctly using SSIS. If it is confirmed to be correct then the Ophthalmic Payment Team/ SPPG Ophthalmic Advisors would be asked for an explanation for the change in trend.

FPS Statisticians have created detailed SOPs for the above processes and checks. In addition, official publications include information on Data sources, Definitions and User Guidance to help users use the data.

NHAIS

As the main source of GP Patient Registration data is independent contractors, statistical producers' ability to influence the data collection quality assurance is more limited than would be the case if we were dealing with other public bodies. Influence involves providing advice on data quality issues uncovered and proposing solutions. The HSC R1 form used to capture GP Patient Registrations at contractor side was designed with the aid of statisticians to ensure that all relevant data was captured in a consistent format to serve both primary and secondary purposes.

The main validation checks on GP Patient Registration Data within the BSO are carried out by the Registrations team prior to import of data into SQL tables used by statistical producers. On a quarterly basis when data is imported into tables held in Microsoft SQL Server Management Studio from NHAIS code is run to produce outputs. This code includes checks to ensure that data is robust such as comparing counts of Registrations, Deductions, Amendments etc. with trend figures for consistency as well as quantifying data gaps e.g. country of origin for non-UK registrations. While there is no set measure of tolerance in terms of quarterly/annual differences, records of back series comparisons help the

statistical producer to judge if particular data is out of kilter with historical trend. If significant anomalies in the data are found, this is first fed back to the IT Team responsible for producing the SQL Tables to ensure that all data has been captured correctly.

Issues identified with individual records are fed back initially to the BSO Registrations team for investigation and if necessary to the data supplier. Examples include:

Missing country of origin data is quantified and fed back to FPS Registration team to trigger manual searches against registration forms to populate the missing data.

Issues arising from GRO Death data not matching NHAIS data are fed back to the BSO Registrations team who will investigate and if required communicate back to the data supplier.

Overall counts of Registered Patients are checked against Global Sum payment calculation lists to ensure that all patients are allocated to the correct practice and that relevant practices are included. Practice data comes from the Common Practitioner Model (CPM) which serves many purposes and for administrative or clinical reasons a practice may appear still functional on CPM e.g. to allow for outstanding payments or test results to be returned. Checking against Global Sum data ensures that only active practice data is included in published statistics for a given point in time.

Statisticians also carrying out hierarchical matching of NHAIS addresses against the Land and Property Services Pointer Address List to create a Master Address File that includes a Unique Property Reference Number (UPRN) for each address recorded. However, the majority of data cleansing happens outside the NHAIS system.

FPS Statisticians have created detailed SOPs for the above processes and checks.

Ophthalmic Masterfile

As the data suppliers and administrators of the Ophthalmic Masterfile are the Professional Support Team, statistical producers' ability to influence the data collection quality assurance is more limited. Influence involves providing advice on data quality issues uncovered and proposing solutions.

The main validation checks on the Ophthalmic Masterfile within BSO are carried out as they are entered onto the system and these changes pass through to OCS via vFire requests to DXC to make changes to the background data on OCS. This is a live system which statisticians have access to via Microsoft SQL Server Management Studio tables. On a quarterly basis data held in Microsoft SQL Server Management Studio is run to produce official statistic outputs. As part of this process there are checks to ensure that data is robust such as comparing counts of Optometrists/Ophthalmic Medical Practitioners and

Ophthalmic practices with trend figures for consistency. While there is no set measure of tolerance in terms of quarterly/annual differences, records of back series comparisons help the statistical producer to judge if particular data is out of kilter with historical trend. If significant anomalies in the data are found, SQL code used is first reviewed and if correct, this is then fed back to the Professional Support Team to ensure that all data has been captured correctly and an explanation provided for the change in trend. Finally the derived figures are signed off with Professional Support Team staff to ensure that they agree with their records.

Strengths

Ophthalmic Payment System

- The data are used to inform payments to contractors and hence are subject to extensive scrutiny and periodic audit.
- Data are collected in a consistent format using OCS or Paper submission which contains detailed completion guidance/training along with relevant links and contacts.
(<https://bso.hscni.net/directorates/operations/family-practitioner-services/ophthalmic-services/ophthalmic-contractors/bso-optometry-portal-2/user-guides/>)
- Unit record data are available, allowing patient level matching and a greater depth of analysis to be undertaken.
- Ophthalmic data are subject to monthly KPI reporting by BSO. This ensures that focus on data quality within BSO is maintained on an ongoing basis.
- Data suppliers and producers are in regular communication to aid understanding of processes and facilitate resolution of issues.
- These data provide policy makers with the necessary information to formulate and evaluate health services and are helpful in assessing the effectiveness of resource allocation in providing services that are fully responsive to patients' needs. Additionally, ophthalmic information is used to inform the media, special interest groups and academics and to answer ad-hoc queries from the public.
- Data are published not only within the annual publication, but are also available in quarterly downloadable Excel spreadsheets that allow more detailed and historical analyses of data to be undertaken.

NHAIS

- The GP Registered Patients Index is a comprehensive source of information that can be used to present demographic characteristics of patients at Geographical Level.

- The data are used to inform payments to contractors and hence are subject to extensive scrutiny and periodic audit.
- Data are collected in a consistent format using the HSC R1 form (<https://bso.hscni.net/wp-content/uploads/2022/09/HSCR-1-ENGLISH.pdf>) which contains detailed completion guidance along with relevant links and contacts. GP Practices are also provided with additional guidance and training to aid standard completion of the form.
- Unit record data are available, allowing patient level matching and a greater depth of analysis to be undertaken.
- The process for collection, quality assurance and storage of GP Registered Patient data has been recently audited and audit recommendations are being actioned.

Ophthalmic Masterfile

- The required data is not onerous to input.
- An eform was developed to ensure all necessary data is received in the first instance avoiding unnecessary queries.

Weaknesses

Ophthalmic Payment System

- Not all ophthalmic activity is collected by BSO. This data does not cover private work.
- Due to the security patches to operating systems and server components underpinning the entire Ophthalmic solution having ceased, with the extended support for the Windows server 2008 R2 expiring in Jan 2020, this poses a significant threat to the enterprise system environment and the ongoing supportability of the system. When considered alongside the cost of adding additional enhanced schemes to the current system, a more robust longer term solution is required. The system has started to show evidence of becoming unstable as outages and reboots have become a regular basis risking reputational damage to both BSO and SPPG.
- The system has not evolved accordingly to maximise effective business continuity. Some of this work including enhanced services, have been taken forward via workarounds which preferably need standardised and normalised with standard governance and controls applied.
- An ophthalmic practice can submit a claim for payment up to 6 months after activity took place. Therefore breakdown of activity by financial year are based on the payment year and this is not necessarily the year it was carried out. Also it allows for duplicate claims across practices to be submitted and not rejected due to how OCS/OVS were designed.

- The level of quality can potentially vary across different service areas in Ophthalmic depending on whether the claim is submitted (i) via OCS and has long established validation rules e.g. sight tests; (ii) if the system requires manual intervention to help process and validate claims e.g. NIPEARS; or (iii) if services are still using paper claims with manual checks performed to ensure it meets the specification criteria e.g. OHT. Whilst extensive validation is in place to help mitigate against any impact on data quality from these various processes, and any quality differences are likely to be minimal, it is still worth bearing in mind when using data from these different sources. The planned future transition to an FPPS based system for Ophthalmic should help standardise processes and reduce data quality risks.
- In order to produce statistics by patient's gender/home address, a matching exercise was carried out by Information Unit a number of years ago using the patient's forename, surname and date of birth to the index of registered patients (NHAIS) to obtain the HCN and patient demographics. This carried a risk of attaching the wrong HCN number or not having a HCN number assigned to some claims. It should be noted, however, that the HCN coverage is no longer considered a material issue.

NHAIS

- Not all outflows are measured fully by the GP Registered Patients Index as they require the patient to notify the GP or BSO.
- It is assumed that there is a lag between the date of arrival in Northern Ireland and appearing on the GP Registered Patients Index. Similarly, it is assumed that there is a lag between leaving Northern Ireland and deregistration.
- Free text input of data in the existing system can lead to some error and inconsistencies but this will only have minimal impact on the overall statistics.
- The GP Registered Patients Index is subject to list discrepancy of approximately +6%. However this is only a weakness if using to inform Northern Ireland Population counts but remains an accurate count of number of live GP Registrations.

Ophthalmic Masterfile

- Optometrists/Ophthalmic Medical Practitioners and Ophthalmic Practices need to keep BSO and SPPG up to date if their details change. They are required to complete [documentation](#) and give either immediate notice or at least 14 working days depending on the change. Some examples are if they change practice details, new staff, names of optometrists accredited for enhanced service(s), provision change etc.

