



Healthcare Pricing Office Data Quality Framework

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List of Abbreviations

Abbreviation	Definition
ABF	Activity Based Funding
HSE	Health Service Executive
HPO	Healthcare Pricing Office
ABF	Activity Based Funding
HIPE	Hospital Inpatient Enquiry System
HIQA	Health Information and Quality Authority
KPI	Key Performance Indicator
NPRS	National Perinatal Reporting System
AR-DRGs	Australian Refined Diagnosis Related Groups (also referred to generally as DRGs)



1. Introduction

The HPO is the section within the HSE that is responsible for the implementation of the Activity Based Funding (ABF) model in Irish acute hospitals. The office was established in 2014 to implement the Government's commitment to introducing an ABF model in Ireland. The Government committed to the introduction of ABF in its "Programme for Government" and in "Future Health: A Strategic Framework for Reform of the Health Service" (2012) and published details on how the model would operate in the "Policy Paper on Hospital Financing" (2013). ABF is also a key focus in the Slaintecare Implementation Strategy and Action Plan which was published in 2021. To expand ABF across acute and community care settings and plan for a shift to population-based funding in the longer-term. As well as being responsible for the implementation of ABF, the HPO is also responsible for the management of a number of national data collections (See Appendix 1 for list of HPO data collections) including the training, coding and audit functions associated with those collections. These data collections are used for the management and planning of the Irish healthcare system as well as being used for ABF purposes. It is the responsibility of the HPO to build stakeholder understanding and support for the value of ABF data across the health system and the importance of reporting good quality data in a timely manner to consistent data standards.

The HPO (Healthcare Pricing Office) Data Quality Framework sets out the purpose and objectives of the HPO's data quality activities. The HPO Data Quality Framework adheres to the National Standards for Information Management in Health and Social Care. (HIQA 2022).

The HPO Data Quality Framework sets out the approach to data quality and *audit/review in order to ensure data is of a high quality and is reflective of true activity within each hospital and is collected in accordance with national guidelines.

The HPO Data Quality Framework encompasses four main components

- Data Quality Strategy
- Data Quality Assessment
- Report on Data Quality
- Data Quality Improvement Plan

The roles and responsibilities for the Data Quality Framework are set out at both National (HPO) and hospital level. As part of the hospitals ABF structures it is advised that each hospital/hospital group to have a quality and audit/review function locally supported nationally by the Healthcare Pricing Office. It is important to note that the ownership of data quality must come from source as this is where the data is entered. Hospitals/hospital groups must take responsibility and ownership for data quality.

*The terms audit and review are used interchangeably throughout the document –Audit is specifically for the HIPE and Financial data collection process and review is for all other Healthcare Pricing Office data collections - Patient coded level data

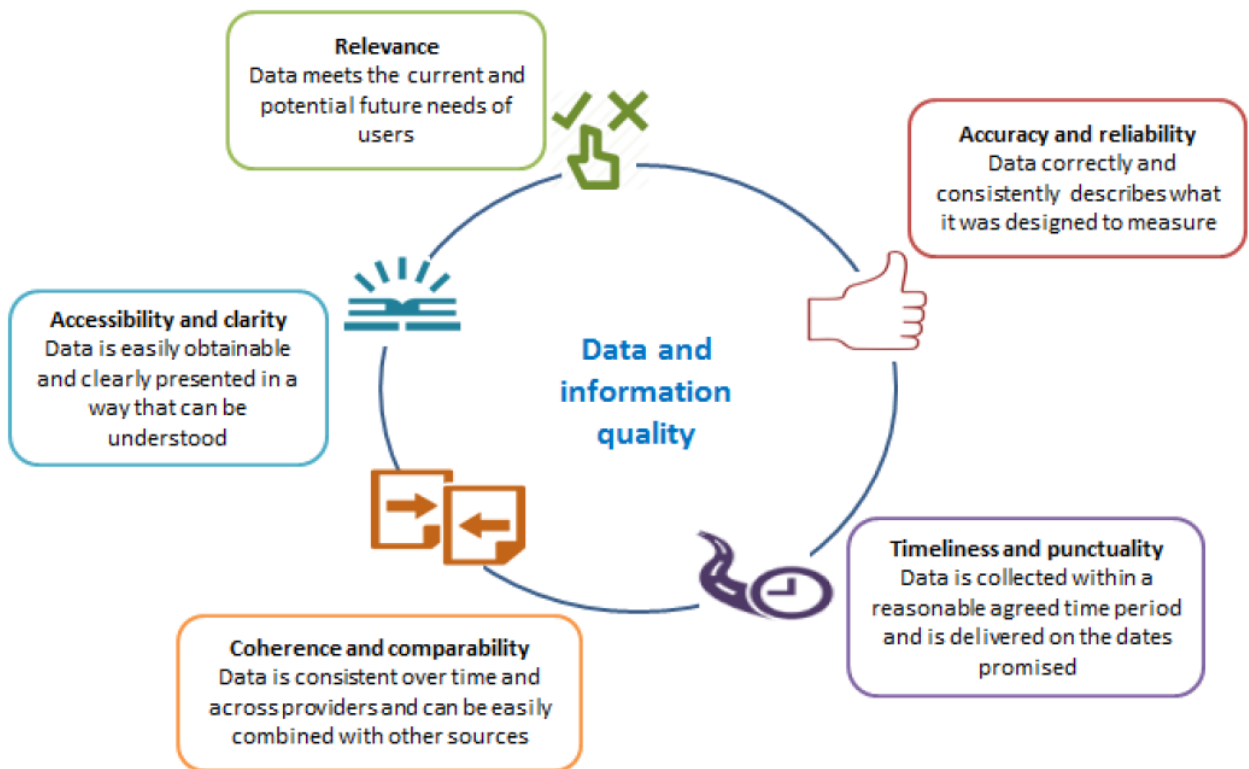
1.1 Definition of Data Quality

HIQA uses the term ‘fit for purpose’ to define quality in line with international standards and best practice.

Data quality is a measure of the condition of data based on factors such as accuracy reliability, relevance, accessibility and clarity, coherence and comparability and timeliness and punctuality. Each one of these components of data quality is just as critical as the other.

Good data quality means having confidence in the quality of the data that you record and the data you use. There are five main components of data quality and each one is just as critical as the other.

Fig 1: 5 Main Components of Data Quality – HIQA (Guidance-for-a-data-quality-framework)





When the correct data is made available in a timely manner to decision makers who can rely on it, this data is considered quality data.

- **Accuracy and Reliability** – Accurate data refers to how closely the data correctly captures what it was designed to capture
- **Relevance**– Relevant data meets the needs of the information users
- **Accessibility and Clarity** – Data is easily obtainable and clearly presented in a way that can be understood
- **Coherence and Comparability** – Data is consistent over time and across providers and can be easily combined with other sources
- **Timeliness and Punctuality** – Data is collected within a reasonable timescale and delivered on the promised dates

It is important that each data collection in the Healthcare Pricing Office is being monitored regularly and that the data adheres to the five main components of data quality as per HIQA guidelines.

See **HPO Data Quality Assessment Tool for an** Overview of five Data Quality Components as per HIQA document.

This tool gives a brief overview of the five main components of data quality and what it translates to at both a HPO and hospital level.

[Overview of Five DQ Components](#)

1.2 Purpose and Scope of the Data Quality Framework

The purpose of the HPO Data Quality Framework is to provide the appropriate tools and resources to guide improvements in data quality for all data collections within the Healthcare Pricing Office. The Framework will provide the Healthcare Pricing Office with an overarching structure to guide the strategic assessment of data quality across the organisation.

The scope of the Healthcare Pricing Office Data Quality Framework encompasses all data collections that sit with the HPO. This framework document does not focus on retention, storage and destruction of data and information. For policies in relation to the retention, storage and destruction of data and information please see www.hse.ie.

The HPO perform data quality activities at a national level including surveillance and audits/reviews of data. Hospitals will be required to perform data quality activities and reviews locally supported by the HPO.



1.3 Roles and Responsibilities

Healthcare Pricing Office

The Healthcare Pricing office is responsible for ensuring that the Data Quality Framework is implemented and that all stakeholders are aware of the importance and relevance of high quality data. The following can be done to assist with this.

- Regular data quality education sessions – Training Programme driven by the Healthcare Pricing Office – Both online and on-site
- Promote data quality awareness thus preventing the occurrence of errors
- Data Quality Audits/Reviews on data collections by the HPO
- National data collection governance groups
- Standard Operating Procedures for all data collections and validations
- Data Dictionary for each Data collection
- National (HPO) Data Quality Statement

Hospitals

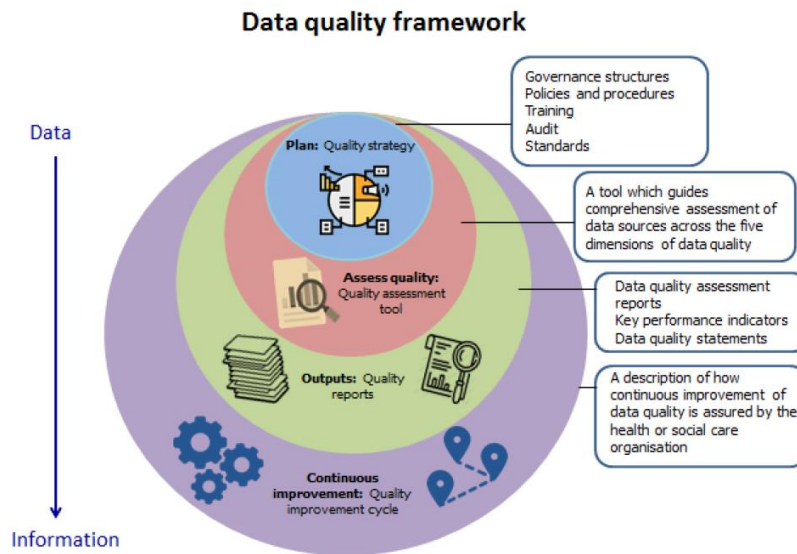
The hospitals are responsible at a local level to ensure that data is of a high quality and that all standards are being adhered to in relation to data collection. Data captured must be 'Fit for Purpose'.

It is the responsibility of the individual hospital to ensure that accurate, timely, complete and valid data is submitted in accordance with national guidelines.

- Organisations need to have executive-level responsibility so all staff members are clear on who makes decisions and who manages data quality
- Policies and Procedures – hospitals needs to develop and implement clear policies and procedures on data quality for staff that are based on legislation and standards
- Standard Procedures for data collection and validation are in place
- Attending all education sessions provided by the Healthcare Pricing Office
- Perform regular data quality reviews
- Utilisation of data quality tools
- Accountability for data quality locally
- Local Data Quality Statement

2 Healthcare Pricing Office Data Quality Framework

Fig 2. Data Quality Framework - HIQA



The HIQA Data Quality Framework encapsulates the complete data and information lifecycle from data capture to dissemination. There are four main stages in the HPO's data quality framework

1. **Data Quality Strategy** – This provides an overview of how the HPO manages and continuously improves the quality of its data
 - Governance Structures
 - Policies and Procedures
 - Training
 - Audit/Review
 - Standards
2. **Data Quality Assessment Tool** – This tool is used to assess the data that is collected by the Healthcare Pricing Office against the five dimensions of quality as outlined above
3. **Reporting on Data Quality** – These outline the findings from the data quality assessment tool – **Data Quality Statements** will be produced by the Healthcare Pricing Office. A Data Quality statement highlights the strengths and weaknesses of all data collections from the HPO.
4. **Data Quality Improvement Cycle** – Details an overarching, continuous approach used to improve the quality of the data.

2.1 Data Quality Strategy

Fig 3. Key Components of a Data Quality Strategy - HIQA



The purpose of the Healthcare Pricing Office Data Quality Strategy is to provide an over-arching framework to ensure all data that is collected by the organisation is of the highest quality attainable. This data quality strategy applies to any member of an organisation (HPO/Hospital) who records, collates or handles data as part of their professional remit.

In order to attain high quality data within the Healthcare Pricing Office we need to understand the challenges involved in achieving this outcome. The HPO Data Quality Strategy has been developed to guide this process and put a structure in place for all data collections in the organisation.

In the HIQA document, guidance for a data quality framework a data quality strategy is defined as “a cluster of decisions centred on organisational data quality goals that determine the data processes to improve, solutions to implement, and people to engage”. This strategy will define how the HPO manages their data but also how the HPO will continuously work on improving their data quality.

Also having a data strategy in place will standardise the controls and the quality expectations for all future data collections.



The main objectives of the Healthcare Pricing Office Data Quality Strategy are

- Outline the need for clear governance structures to be in place in relation to data quality both nationally and locally at a hospital level
- Outline the importance of having clear policies and procedures in place in order to achieve a high level of data quality both nationally and locally
- Creation of a Training and Education Programme – Requirement to have training driven nationally by the HPO in regards to data quality. Emphasis on training locally at a hospital level also.
- Data quality reviews to be performed regularly. Initial review to be the driver for data quality improvement initiative which will be detailed later in the Data Quality Framework document.
- Creation and implementation of data quality standards – e.g. Data dictionary for each data collection

2.1.1 Governance Structures

Excellent quality of care is dependent on good quality data. This is unachievable without the right governance and management structures in place. Data governance specifies the framework for decision rights and accountabilities to encourage desirable behaviour in the use of data. HIQA in their guidance document recognise the importance of data quality and the effect it has on quality of care and improved outcomes.

The HPO has separate governing groups in place for each of the activity datasets. Work is underway to develop separate governance groups to oversee the development of new emergency and outpatient care classification systems. The Specialty Costing and PLC datasets are managed by the HPO in partnership with hospitals and groups. It is important therefore to have a focus on data quality and have the structures in place to ensure data is of a high standard.

The data quality manager is an active member of all governance groups in place in the Healthcare Pricing Office. The role of the data quality manager is to ensure procedures are in place so that the quality of the data can be monitored within the HPO and also to increase data quality awareness both internally within the HPO and also to the hospitals and hospital groups.

The main objectives of the governing group(s) are outlined below

- To enable strategic decisions to be made on data collections
- To ensure that trusted data is being used at all times
- To ensure data is used effectively
- Policies and standards are defined and implemented
- The availability, usability and integrity of the data are managed continuously
- Procedures for data security and privacy regulation are established
- Data Quality is maintained at a high standard

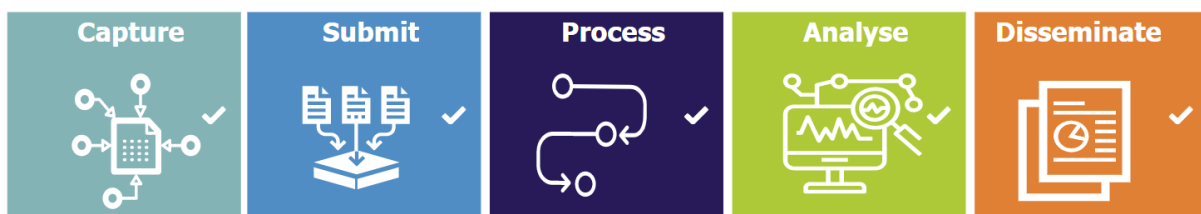
2.1.2 Data Policies and Procedures

Both nationally and at a local hospital level there should be clear policies and procedures in place in regards to the organisations approach to data quality and how it will be managed.

There should be well-defined policies and procedures in relation to data quality that reference each dimension of data quality and consider all stages of the data and information lifecycle.

When data becomes information, this is referred to as the “Data and Information Lifecycle”.

Fig 4: 5 Stages of the Data and Information Lifecycle - HIQA



2.1.3 Training and Education Programme

In order to improve and maintain data quality, it is important that an ongoing training, education and development programme is in place which focuses specifically on data quality. It is imperative that staff at a national and local level have the necessary skills and competencies to ensure high quality data is being collected and processed.

Data Quality training and education will be led from the HPO.

- Data Quality Workshops
- Online Training on HSEland or other platforms
- Quality training with each hospital where required
- Data Dictionary and definitions available for each dataset – Information sessions on these tools
- Training on data quality tools where applicable
- Regular communication with stakeholders in regards to data quality
- Data quality reporting –Dashboards available to hospitals/Reporting on DRG variances
- Regular communication with all stakeholders in regards to their data collections



2.1.4 Data Quality Review Function

It is important that as part of the data quality strategy there is a procedure in place in the HPO to perform quality reviews on a regular basis. This is to ensure good quality data is maintained and monitored so any major data quality issues are flagged at submission stage before the data is processed.

It is advisable to perform regular data quality reviews at both a national and local level.

HPO Data Quality Audit/Review Recommendations – All Data Collections

- Ensure high quality audits/reviews are performed at regular intervals for all data collections
- Ensure preventative measures are taken to prevent recurrence of issues identified by audit
- Assist hospitals with addressing issues identified
- Ensure any issues identified are incorporated into the training and education programmes
- Audit/Review findings to be reported to HPO data governance group, relevant managers, data quality manager, hospital data governance group and senior hospital management

Hospital Data Quality Audit/Review Recommendations

- Hospital management must ensure that all data quality tools are utilised regularly and that data reviews/ audits are also performed
- Attend all HPO quality and audit/review workshops
- Liaise with the HPO to ensure all data collection protocols are adhered to
- HPO to provide feedback to individual hospitals on any data quality issues that may arise
- Regularly reviewing data and responding to queries raised regarding data quality
- Staffing and resourcing the role of data quality and audit at hospital level
- Liaising with hospital colleagues to ensure the integrity and quality of data from other systems such as IPIMS, laboratory reports etc.
- Take action to ensure and demonstrate that national guidance is followed as set out by the HPO in relation to data collection and reporting
- Take action to ensure and demonstrate that that only valid activity is reported



2.1.5 Standards for Data Quality

The HPO adheres to all national standards as per HIQA document “2022 Draft-National-Standards-for-Information-Management-in-Health-and-Social-Care-Public-Consultation”. At a national and HPO level good information practices are essential also to provide assurances to all stakeholders that their data is being stored safely, managed appropriately and most importantly is fit for purpose.

Organisations must take a strategic approach to data quality and security. Quality is a standard in the responsiveness section of the document. As per document it is stated that **responsiveness** is ensuring that an organisation has arrangements in place to ensure it can adapt and respond to the changing health information landscape, takes a systematic approach to information governance, and ensures that maximum benefit is achieved from its data and information.

Fig 5. Key Components of a Data Quality Strategy – HIQA

Standard 3.4 Data quality	
<p>What an individual should expect: I am confident that the organisation has policies and procedures in place to ensure a systematic approach to assessing, improving and maintaining the quality of its data to ensure it is 'fit for purpose'.</p>	<p>What an organisation should do to achieve this: The organisation takes a strategic approach to managing and improving data quality across the data and information lifecycle, and systematically assesses, documents and improves the quality of the data it holds through the use of a data quality framework.</p>

In order to meet the HIQA data quality standard the Healthcare Pricing Office must have certain features in place.

See link below for more detail on Data Quality Standards

[DQ Standards & Final Checklist](#)



2.2 Data Quality Assessment

In order to monitor the quality of the data collections in the Healthcare Pricing Office there needs to be a methodology of assessment of data quality. In HIQA's document "Guidance-for-a-data-quality-framework" it details the need for a data quality assessment tool. The HIQA data quality tool was developed to monitor and assess the five dimensions of data quality

- Relevance
- Accuracy and reliability
- Timeliness and punctuality
- Coherence and comparability
- Accessibility and clarity

The HIQA data quality assessment tool was developed in line with international standards and shows the "fitness for purpose" of any of the HPO's data collections. The tool can be modified depending on specific dataset requirements.

Each dimension of data quality is assessed by characteristics of that dimension. Each characteristic is made up of a set of criteria presented as questions. The HPO will answer Yes/No/Partially where applicable for all data collections.

Creation and implementation of a data quality assessment tool is an important feature in regards to assessing and improving on data quality within the organisation.

See document below for sample data quality assessment tool as per HIQA guidelines.

<https://www.higa.ie/sites/default/files/2018-10/Interactive-Data-Quality-Assessment-Tool.pdf>

[HPO Data Quality Assessment Tool](#)



2.3 Report on Data Quality

It is important that once a data quality assessment is done that whether the data is “fit for purpose” is communicated to all stakeholders. Reporting on data quality can be either done internally or externally.

Reporting on data quality can include the below methods

- **Data Quality Assessment Reports**
 - This is a report based on the findings of the data quality assessment – Is the data “fit for Purpose”
- **Key Performance Indicators (KPI’s)** – Creation of quality KPI ‘s – Quantifiable indicators to measure the quality of the data collection – There can be multiple KPI’s that measure each of the 5 dimensions of data quality
- **Data Quality Statements** – Every published data output should have an accompanying data quality statement. This will detail all the strengths and weaknesses of the data collection.
- There will be feedback to each designated person or group within the hospital detailing the quality of the data in the collection.
- The feedback can be in many formats and is important that feedback is given to the hospitals in order to drive improvements in the data.
- There needs to be an accountable group/person in the hospital/organisation who will deal with any data quality issues on-site with a view to improving the data.

2.3.1 Data Quality Assessment Reports

A Data Quality Assessment report is report based on the findings of a data quality assessment. It can be a report based on the five main components of data quality and how the data measures up against these components. A sample data quality assessment report can be found in the below location.

[Data Quality Assessment Report](#)

2.3.2 Key Performance Indicators (KPI)

Key Performance Indicators are quantifiable indicators to measure the quality of the data collection. Creation of a data quality scorecard for each data collection using pre-agreed data quality KPI’s is important for any data collection.



2.3.3 Data Quality Statements

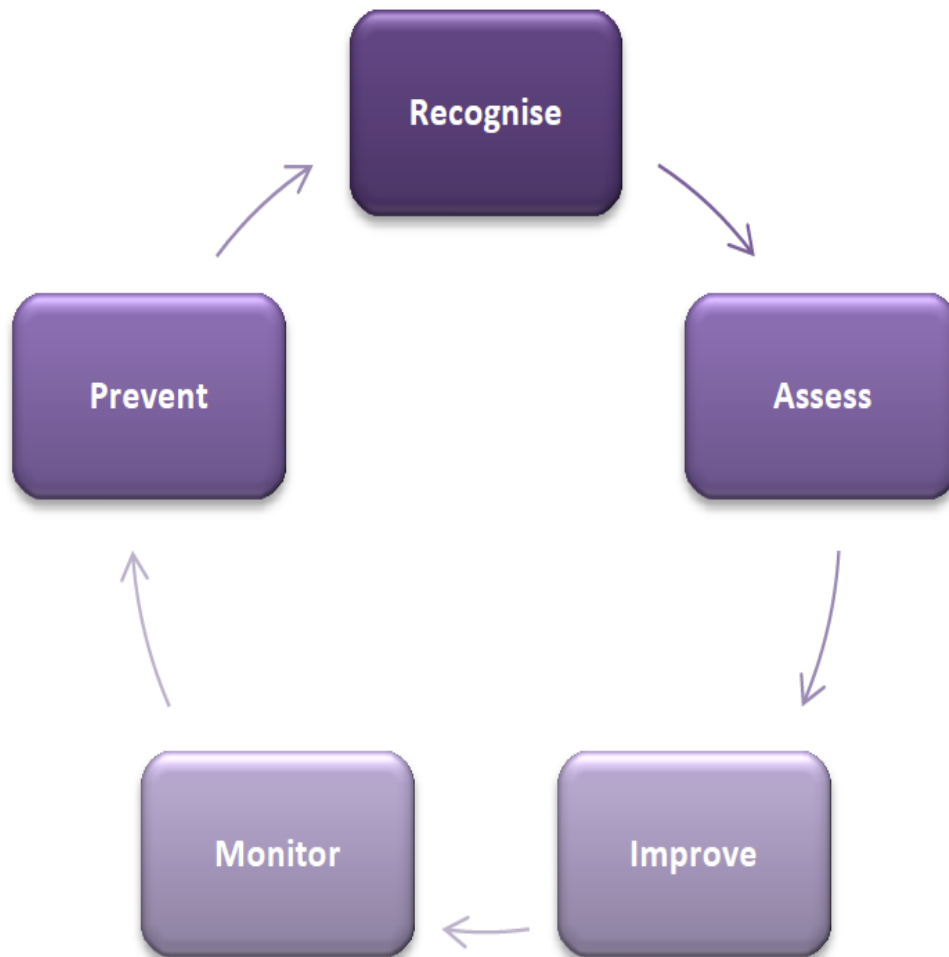
Every published data output should have an accompanying data quality statement. This will detail all the strengths and weaknesses of the data collection. Click on link below to see a sample template of a data quality statement as per HIQA guidelines.

[Data Quality Statement](#)

2.4 Data Quality Improvement Plan

A data quality improvement plan is probably the most important piece of the data quality framework within the HPO. This is a continuous programme of quality improvement and a structure is in place in the HPO to ensure that data and data quality is continuously monitored and improved on. Incorporating feedback from the data users will be key in this improvement plan.

Fig 5: 5 Data Quality Improvement Cycle – HIQA



The HIQA document “five-quality-improvement-tools-for-national-data-collections” detail five tools that will aid the data quality improvement task in the HPO.

All national (HPO) and local data collections (Hospitals/Groups) should have quality improvement tools in place in order to improve and monitor the data quality.

It would be advisable that each national data collection in the Healthcare Pricing Office should have quality improvement tools in place in order to improve and monitor the data quality.

- **Statement of Purpose** - A publicly available document which succinctly captures why an organisation such as a national health and social care data collection exists and clearly outlines its stated objectives.



- **Statement of Information Practices** - a generic document, made publicly available in an accessible format that provides an overview of the use of information within the national health and social care data collection. It outlines the information practices undertaken by that particular data collection at a high.
- **Data Quality Framework** - A Data quality framework outlines the approach and provides the tools that can be used by organisations to systematically assess, document and improve data quality.
- **Data Quality Statement** - A data quality statement is a statement prepared to accompany each published output from the national data collection that highlights the dimensions of data quality, including strengths and weaknesses of the data in each output.
- **Data Dictionary** - A data dictionary is a descriptive list of names (also called representations or displays), definitions and attributes of data elements to be collected in an information system or database. A data dictionary standardises definitions and ensures they are used consistently (HIQA)

See link below for list of data quality improvement tools as per HIQA.

[Data Quality Improvement Tools](#)

The initial data collections assessment will provide a baseline against future data collections. The HPO will report back to individual hospitals in regards to data quality so that it can be improved on. This will be done through reporting, dashboards, on site visits and the existence of both local and national governance groups.

As the HPO are taking on more national data collections it is imperative that these structures and plans are in place to ensure high quality data.

For more information on the quality improvement tools see HIQA document below.

<https://www.higa.ie/sites/default/files/2017-03/five-quality-improvement-tools-for-national-data-collections.pdf>



3 Conclusion

The implementation of a data quality framework is important for the healthcare pricing office as the organisation manages a number of key datasets. It means that we can define our data quality goals and standards with a view to meeting and improving on them. The implementation of a data quality framework also creates an awareness of the importance of data quality for all datasets.

This framework provides a guide to all data users of the standards and procedures that should be in place where possible to ensure data is of a high quality whilst constantly monitoring and improving the data that we have ownership for.



Appendix 1 – HPO Data Collections

Data Collection	Description
HIPE	Patient-level data on admitted activity including the diagnoses, procedures and demographic information necessary to group patients into AR-DRGs
Speciality Costing Data	Activity and Cost activity by speciality
Patient Level Costing Data	Patient Level activity data
NPRS	Data on birth records from maternity units and community midwives. Also provides national statistics on perinatal events.



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