

Human Resource Consultancy Services (HRCS) Quality Assurance of Administrative Data (QAAD) Report

Incorporating the following statistics for the NI Civil service:

- **Sickness absence**
- **Pay**
- **Employment/Personnel**
- **Equal Opportunities**
- **Analysis of recruitment competitions**

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Section 1 – Background

The Northern Ireland Civil Service (NICS) consists of 9 Departments & the Public Prosecution Service, employing around 23,500 staff¹ located at numerous sites across Northern Ireland. The management of Human Resource (HR) functions for the NICS is coordinated by NICS HR, a centralised HR unit that was established in April 2017. A wide range of detailed information is recorded about each individual NICS staff member/employee for internal management and administrative purposes. These include details of their employment history, reporting structure, pay and allowances, pension, instances of absenteeism and performance management reviews. In addition, sensitive personal information regarding staff is also recorded for statutory equality monitoring purposes.

Within the NICS there is one central HR IT system called HRConnect, where all this information is recorded. HRConnect is an off-the-shelf HR system developed by Oracle which has been tailored to best meet the needs of the NICS. It's managed on a day-to-day basis by a private sector company (Fujitsu) under contract to the NICS. Fujitsu then sub-contract some of the administrative support work involved with the day to day management of the system to Capita who provide a call answering service giving staff advice on how to record their day-to-day HR activities on the HRConnect system. Capita also oversee the administration of all recruitment and promotion as directed by the NICS and they provide general advice and guidance on HR policy related issues. They also manage the HRConnect database and run regular data quality checks, input paper returns where required and correct errors on the system if required.

The HRConnect system was designed so that individual staff members and their line managers could record their own HR activities throughout the year on the system (i.e. self-input) thus providing a more efficient process than the previous system where teams of HR staff within each Department were responsible for updating the system by manually inputting data based on paper returns. Each staff member can access their own details on HRConnect and can use the system to request leave. Line managers also have access to some details of those staff who report to them, to enable them to record their staff's sickness absence, performance reviews and agreeing annual personal performance plans.

The vast majority of NICS staff have their personnel details recorded and managed on HRConnect. The one current exception to this is the NI Prison Service (NIPS). There are approximately 1,300 Prison Grade staff whose HR details are recorded on the NI Prison Service's separate standalone HR system (Compass). Compass is a system which is used to manage the core HR functions for NIPS and it was introduced in 2002. While the majority of administrative staff in NIPS have already transferred to HRConnect, the remaining Prison Grade staff may transfer to HRConnect in the future.

HRConnect & Compass are both administrative data systems which are designed to support the HR management function of the NICS. A by-product of the two systems is a variety of management information and official statistics sourced from them which is used to inform internal management and the wider public about various HR functions within the NICS. However, the two systems weren't designed for the production of official statistics and therefore a lot of data validation and cleansing is required to ensure that meaningful and accurate statistics can be provided from them.

Human Resources Consultancy Services (HRCS) is a branch within the Northern Ireland Statistics and Research Agency (NISRA) that is responsible for the production of official statistics on Human Resource related statistics within the NICS. There are 12 statisticians who work within HRCS and who are based in NISRA HQ at Colby House, Stranmillis Road, Belfast. The statisticians are a specialist grade within the NICS

¹ Based on the headcount number of staff in the NICS at 1st July 2021. Figures include staff in the Health and Safety Executive for Northern Ireland, the Office of the Attorney General for Northern Ireland.

[Employment in the Northern Ireland Civil Service -Quarterly Report - 1st July 2021 \(nisra.gov.uk\)](https://www.nisra.gov.uk/employment-in-the-northern-ireland-civil-service-quarterly-report-1st-july-2021)

and they work to the standards of the Code of Practice for Statistics as published by the UK Statistics Authority.

HRCS has been responsible for providing these official statistics for the NICS for the last two decades and we have continually developed our systems and processes over the years to improve data quality while also ensuring the secure handling of sensitive and personal information.

The data from HRConnect and from Compass within the NI Prison Service, are therefore used as the key source of official statistics for the following HR related statistics for the NICS;

1. Sickness absence statistics for the NICS (3 quarterly and a more detailed annual report at the end of the financial year, as well as monthly in-house management information reports)
2. Pay statistics for the NICS (annual report)
3. Employment/ personnel statistics for the NICS (quarterly reports and a more detailed annual report at the end of the reporting period)
4. Equality statistics for the NICS (annual report)
5. Analysis of recruitment competitions for the NICS (annual report) – sourced solely from HRConnect data

Status of HRCS Statistical Output

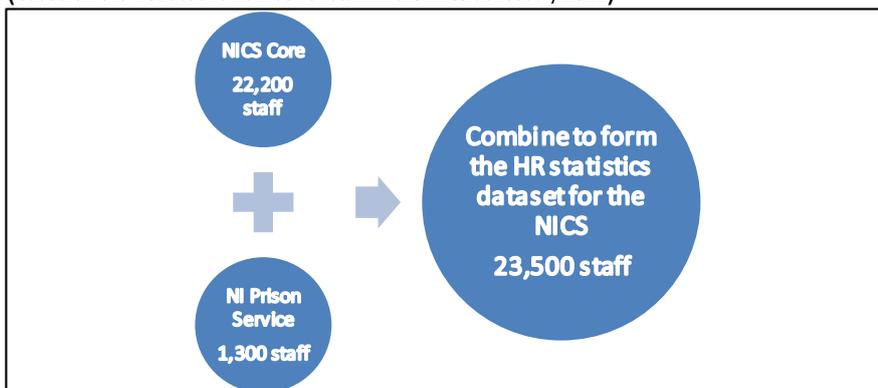
In accordance with the Statistics and Registration Act 2007, statistical outputs can be assessed for compliance with the Code of Practice for Statistics and if found compliant are then designated as National Statistics. This means that they meet the highest standards of trustworthiness, quality and value. The process of determining compliance with the Code and designation as National Statistics is known as Assessment.

Three HRCS reports were designated as ‘National Statistics’ - the annual NI Civil Service Sickness Absence Statistics on 7 August 2019; the quarterly NI Civil Service Sickness Absence Statistics on 15 November 2021; the annual Pay in the NICS on 9 December 2021. The annual and quarterly NI Civil Service Sickness Absence reports are two separate publications which differ in the level of detail given. For the purpose of this report, the annual report is referred to but note that the same level of quality assurance is applied to the quarterly report where applicable.

The 3 other statistical outputs referred to in this report are currently deemed ‘Official Statistics’.

Overview of the sources of data that are combined to form the NICS dataset

(based on the headcount number of staff in the NICS at 1st July 2021)



Section 2 – Data Quality

Administrative Data Quality Assurance – UK Statistics Authority

In 2015 the UK Statistics Authority introduced guidance on Quality Assurance for Administrative Data (QAAD) with the intention of helping statistics producers review the areas of practice for quality assurance arrangements of administrative data used to produce official statistics against the Code of Practice. This toolkit comprises;

- Quality Management Actions
- Quality Assurance Matrix
- Risk/Profile Matrix

This report aims to apply the requirements of the UK Statistic Authority’s Quality Assurance toolkit to the administrative data used by HRCS in producing the HR statistics for the NI Civil Service. The aim being to provide reassurance and transparency regarding the quality of the data underpinning these statistics and thus giving users a better understanding of the reliability and accuracy of the statistics.

The QAAD states that the critical judgement about the suitability of the administrative data for use in producing official statistics should be pragmatic and proportionate, made in the light of an evaluation of the likelihood of quality issues arising in the data that may affect the quality of the statistics, and of the nature of the public interest served by the statistics.

They recommend that the matrix below is used by producers of statistics to assess the risk profile of the statistics they produce that are derived from administrative sources. The resultant rating then determines the level of assurance required for each of the 4 stages in the Quality Assurance framework.

Risk/Profile Matrix: Administrative Data Quality Assurance Toolkit

Level of risk of quality concern	Public interest profile Lower	Public interest profile Medium	Public interest profile Higher
Low	Statistics of lower quality concern and lower public interest [A1]	Statistics of low quality concern and medium public interest [A1/A2]	Statistics of low quality concern and higher public interest [A1/A2]
Medium	Statistics of medium quality concern and lower public interest [A1/A2]	Statistics of medium quality concern and medium public interest [A2]	Statistics of medium quality concern and higher public interest [A2/A3]
High	Statistics of higher quality concern and lower public interest [A1/A2/A3]	Statistics of higher quality concern and medium public interest [A3]	Statistics of higher quality concern and higher public interest [A3]

A1 to A3 = Levels of assurance required in the UK Statistics Authority’s QA matrix (A1 = Basic assurance, A2 = Enhanced assurance, A3 = Comprehensive assurance)

Risk of Data Quality Concerns: Administrative Data Quality Assurance Toolkit

Level of Risk	Concern
Low risk	The data may have a low risk of data quality concerns in situations in which there is a clear agreement about what data will be provided, when, how, and by whom; when there is a good appreciation of the context in which the data are collected, and the producer accepts that the quality standards being applied meet the statistical needs.
Medium risk	The data may be regarded as having a medium risk of data quality concerns when high risk factors have been moderated through the use of safeguards for example, integrated financial audit and operational checks, and effective communication arrangements. It is also appropriate to consider the extent of the contribution of the administrative data to the official statistics, for example, in cases where the statistics are produced in combination with other data types, such as survey or census data.
High risk	The data may have a high risk of data quality issues when there are many different data collection bodies, intermediary data supplier bodies, and complex data collection processes with limited independent verification or oversight.

Public Interest Profile: Administrative Data Quality Assurance Toolkit

Level of public interest profile	Data Quality Assurance
Low profile	Politically neutral subject; interest limited to niche user base, and limited media interest.
Medium profile	Wider user and media interest, with moderate economic and/or political sensitivity.
High profile	Economically important, reflected in market sensitivity; high political sensitivity, reflected by Select Committee hearings; substantial media coverage of policies and statistics; important public health issues; collection required by legislation

In terms of the various statistics produced by HRCS, their associated risk/profile rating is highlighted in the table below. Each statistic is then considered in more detail below this and with an explanation of our thinking behind the rating given to each output.

Risk Profile of HRCS Statistics when QAAD Toolkit applied

HRCS Statistic	Data Quality concern	Public interest	Risk Profile rating
1. Sickness absence statistics for the NICS	Low	Medium	A2
2. Pay statistics for the NICS	Low	Medium	A2
3. Employment/personnel statistics for the NICS	Low	Low	A1
4. Equality statistics for the NICS	Low	Medium	A2
5. Analysis of recruitment competitions for the NICS	Low	Low	A1

A1 = Basic assurance, A2 = Enhanced assurance, A3 = Comprehensive assurance

The reasoning behind the risk profile rating associated with each HRCS statistical output in the above is provided below;

1. NICS sickness absence statistics

The sickness absence statistics data quality is considered to be of **low risk** as there is a formal arrangement with the data producers detailing the data requirements. The data are sourced from 2 separate HR systems (HRConnect and Compass) on a monthly basis, the data variables and time periods to be covered are agreed in longstanding arrangements with the data suppliers. Processes and systems have been developed and refined over the years to address any quality concerns that have emerged. The source administrative

information is updated by staff and line managers or by dedicated input staff in NI Prison Service, and whilst it may be subject to minor input errors, checks and balances are in place in both organisations to ensure that both organisations correctly record the sickness absence of their staff. The HRCS statisticians have developed a complex and detailed series of validation checks which are applied to the data each month/quarter/year, to ensure that any anomalies in the data are corrected.

In terms of public interest, the public good represented by the statistics is that they inform the public of the level of absenteeism in the NICS and the associated cost of lost production. Members of the NI Assembly (MLAs), representatives of public sector trade unions and representatives of private sector employers all have an interest in the statistics when they are released. The NICS absence statistics are therefore seen as a measure of the NICS's performance and help inform the public's view of whether the organisation is run efficiently and effectively.

In terms of media coverage, the annual NICS sickness absence report receives quite a bit of coverage in the Northern Ireland media at the time of publication (June each year) and is probably the highest profile statistic of the 5, receiving the most press coverage and attracting the greatest interest from senior management within the NICS.

In light of the above, the NICS sickness absence statistics are deemed to be of **medium public interest**. The overall risk profile rating attributed to the NICS sickness absence statistics is therefore **A2; Enhanced Assurance**.

2. NICS Pay statistics

In terms of data quality the NICS Pay statistics are deemed to be of **low risk** as there is a clear formal process in place to provide the required data to HRCS on a regular basis covering an agreed time period. The data are sourced from the respective HR administrative systems within NICS and the NI Prison Service and the pay details of staff and related data are included in the data extracts. Given the importance of pay to employees and the fact that employees are very likely to flag up data inaccuracies e.g. if they don't receive their pay or if they don't receive their correct level of pay, the pay data are thought to be the most complete and accurate of the 5 HRCS statistics in question.

In terms of public interest, the public good of the statistics is by informing the public of the level of pay received by civil servants in the NICS. There is a public interest in ensuring that the NICS is run efficiently and effectively and this report provides useful information that assists the general public in forming a view on this. The annual statistics are reported in December each year covering the position at March that year and recently they have received some media attention and coverage.

In light of this, the annual NICS Pay statistics are considered as being of a **medium profile**. The overall risk profile rating associated with the NICS Pay statistics is **A2; Enhanced assurance**.

3. NICS Employment/Personnel statistics

As with the Pay statistics covered above, the data quality associated with the NICS personnel statistics is assessed as being of **low risk**. The information is downloaded in agreed format on a monthly basis through a formal agreement with the data suppliers. The administrative systems are updated by line managers and by specialist HR staff with various checks and balances run to ensure that the details are correct.

The statistics are published on a quarterly basis with a more detailed annual report published in July each year relating to figures as at April that year. The public good of these statistics is that they provide useful information on the number, grade and department of civil servants employed within the NICS, who are paid from public money. The NICS Employment/ Personnel statistics highlight whether NICS staff numbers are increasing, decreasing or remaining constant. Comparisons with trends in civil service employment

levels in other regions of the UK also assists in enabling members of the public form a view on whether the trend in N Ireland is in line with that across the rest of the UK.

The reports generally receive minimal coverage in the Northern Ireland media. The public interest profile of the NICS personnel statistics is assessed as **Low**. The overall risk profile rating is deemed to be **A1; Basic assurance**.

4. NICS Equality statistics

Again, the NICS Equality statistics are deemed to be of **low risk** in terms of data quality. The statistics are sourced from the same monthly downloads as the other statistics. The main equality variables (gender & community background) are complete for all cases due to the statutory requirement for this information to be reported in the annual Fair Employment Monitoring Return. Some of the other equality variables are less complete but are still deemed suitable and statisticians compare the composition of these within NICS with that of the NI population based on the most recent NI census.

The public interest is in accessing monitoring information on the composition of the NICS disaggregated by the available equality categories listed in Section 75 of the Northern Ireland Act 1998 (e.g. gender, community background, disability, etc) and so helping the public assess whether the representation of the various groups is fair. This annual Equality statistics report, in conjunction with the NICS annual Fair Employment Monitoring Return and the Article 55 and Gender Reviews completed every 3 years for the Equality Commission, provides the public with the information they require to inform them how the NICS is performing as an equal opportunities employer. The NICS Equality statistics attract a slightly higher level of media coverage given the more sensitive nature of the information covered, i.e. the community background composition of the NICS.

We have assessed the public interest profile as being **medium**. The overall risk profile of the NICS Equality statistics is therefore assessed as **A2; Enhanced Assurance**.

5. NICS Recruitment Competition statistics

These statistics are mostly sourced from the same HRConnect data however an additional file on applicants is provided by HRConnect to facilitate this report. The statistics cover all recruitment competitions that were conducted within a given year and compares the composition of applicants and appointees for each competition by gender, community background, ethnicity, disability, age group and sexual orientation. Data quality concerns are assessed as being of **low risk** as there is a statutory requirement for the NICS to monitor and report details of applicants and appointees in the annual Fair Employment Monitoring Return.

The public interest in these statistics is similar to that for the equality statistics in that they provide evidence of whether the NICS is recruiting employees on merit on the basis of fair and open competition, by assessing the performance of the various equality groups throughout the recruitment process. The report generally receives minimal coverage in the media.

We assess the public interest profile as being **low**. The overall risk profile of the NICS Recruitment competition statistics is assessed as being **A1; Basic Assurance**.

Section 3 – QAAD Quality Assurance Matrix

As all 5 HRCS statistical outputs covered in this report are sourced from the two main administrative systems (HRConnect & Compass), the same data quality procedures applied to the two IT systems therefore apply to all 5 outputs. Further details of additional checks and balances that are then applied to each of the individual 5 statistical outputs by HRCS in addition to these is covered in later sections of the report.

(i) Operational Context and administrative data collection

Description of the Administrative Systems involved in the production of the NI Civil Service's HR statistics

1. HRConnect

HRConnect is the NICS's main HR system and it has been in place since 2006/07. All NICS staff have their details recorded on HRConnect (except for approx. 1,300 NI Prison Grade staff). It is the main IT system that is used to manage and record details of NICS staff with regard to;

- Recruitment
- Equality (section 75 equality variables required for monitoring purposes)
- Personal details (bank account, home address, next of kin etc.)
- Planning recruitment competitions and internal trawls
- Sickness absence recording and management
- Staffing levels – numbers of staff in post within the NICS by Department, by grade and profession etc.
- Pay, pay scales & pay agreements
- Performance management reviews
- Requesting annual leave, special leave etc.
- Recording and claiming for overtime worked or additional allowances due

The key principle underlying the operation of HRConnect is that it relies on individual staff members and their line managers, updating the system with their own HR related activities. More sensitive information such as equality categories, pay, discipline etc. are maintained by a small team of experts within NICS HR, a centralised HR unit within the Department of Finance which is responsible for overseeing the HR function across the NICS. These more sensitive fields can only be viewed/accessed by a limited amount of people who have the required level of clearance and who need the information to monitor the NICS's compliance with equality legislation. Employee monitoring details are captured when individuals join the NICS and are recorded on HRConnect. Details of applicants are also recorded regardless of whether they are successful in getting employment or not.

HRConnect was introduced in 2006/07 and replaced the previous HRMS system which recorded many of the same personnel and equality details of individual staff members. When transferring from HRMS to HRConnect, the personal details of existing staff were transferred across from the old system to the new HRConnect system.

Fujitsu manage the technical aspects of HRConnect and are involved in fixing problems and in implementing changes to the system on behalf of NICS HR via the oversight of NICS's Enterprise Shared Service (ESS).

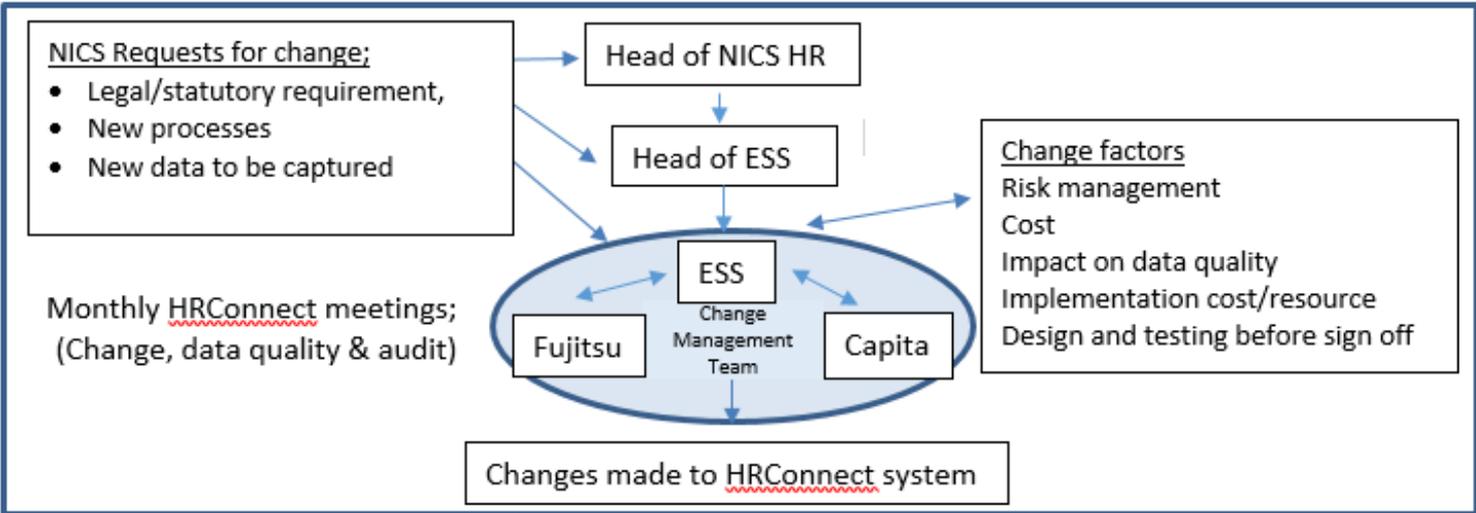
Key aspects of the information recorded on HRConnect are required for the successful day-to day management of the NICS as part of their HR management process. For example, senior managers and NICS HR staff need to be aware of the current level of absenteeism within the NICS or of the current number of

staff employed by grade and directorate within each Department. This information can be either sourced as management information via ad hoc reports run by HR staff sourced directly from the HRConnect system (Discoverer Reports) or from statistics produced by HRCS. The main difference between these two sources of information is that the Discoverer reports, while tending to be more up-to-date, are not as reliable or accurate as the official statistics. This is because they do not apply the same level of data quality checks or consistency of approach to the reporting of the management information.

In addition, monthly 'push' reports are automatically emailed to all line managers within NICS, giving details of levels of absenteeism amongst their staff and compliance with performance management review deadlines. Line managers are held to account for any non-compliance in these areas and so these 'push' emails help with identifying any anomalies in the data. Line managers can check the details recorded for their staff and then can ask to have details corrected on the system if required. These push reports are run by ESS/ITAssist within NICS and are based on the Discoverer reports mentioned above.

HRConnect Change Request Process

Requests for a change to HRConnect are generally dealt with by the HRConnect Change Management Team comprising representatives of ESS, Fujitsu and Capita which meets fortnightly. The change request is then considered against a range of change factors and if deemed viable, is then agreed, designed, tested and implemented. Larger scale changes to HRConnect are generally referred to the Head of ESS who may consult with the Head of NICS HR and with the NICS Board, before the change is agreed. HRCS would generally be informed by ESS of any changes that could affect the reliability of our statistics or data extracts during this process.



Head of NICS HR feeds into the Head of ESS who feeds into ESS. From this point ESS and Fujitsu can feed into each other as can ESS and Capita. ESS, Fujitsu and Capita make up the change management team. This team feeds into changes made to HRConnect system. NICS requests for change can feed into any stage. Risk factors feed into the change management team.

NICS Governance of HRConnect

NICS HR are the NICS 'owners' of the HRConnect system and as such, provide the strategic oversight of the contract. In practice, the day to day management of the system is overseen by the NICS's Enterprise Shared Services (ESS) directorate. Monthly meetings are held between ESS, Fujitsu and Capita which address ongoing HRConnect administration, maintenance or developmental issues. Sub groups are held to address planned changes to the system, data quality issues or data audits. The HRConnect contract was awarded in 2006 and is a 15 year contract which has been extended to 31st March 2022.

1. Compass

The Compass system is a system which is used to administer and manage the HR functions of the NI Prison Service. It was introduced in 2002 and covers the following HR functions;

- Sickness absence recording and management
- Staffing levels – numbers of staff in post within the NI Prison Service by grade and profession etc.
- Equality (records equality details of staff required for monitoring purposes under Section 75 of the N Ireland Act 1998)
- Pay, pay scales & pay agreements
- Personal details (bank account, home address, next of kin etc.)
- Training & development including provision on on-line training
- Recording and claiming for overtime worked or additional allowances due
- Requesting annual leave, special leave
- Performance management reviews

The Compass system differs from HRConnect in that it does not rely on staff and line managers inputting data or updating it with key HR related details. Instead the Compass system is managed by teams of administrative and prison grade staff within each NI Prison Service location, who update the system with details of absenteeism, discipline, overtime, pay etc. based on paper forms that are submitted by NI Prison Service staff and officers.

All of the NI Prison Service administrative staff transferred to the HRConnect system on 1st April 2017 and the remaining 1,300 Prison Grade staff may transfer to HRConnect in the future.

The Compass system is updated on a day-to-day basis by local administrative and prison grade staff in NI Prison Service with a limited number of staff in the NICS who also have secure access to the system for the purposes of managing key HR functions. These include functions such as managing and administering the pay of NI Prison staff, equality monitoring, and management of absenteeism and monitoring of staff/Prison officer numbers to ensure the effective running of the service.

All changes to staff details (new starts, promotions or staff moves etc.) are updated on the system by local input staff and are completed relatively quickly meaning that the information is kept up to date and ensures that it accurately reflects the current staffing position.

The IT system designed in 2002 is still in place, however there have been a significant amount of business changes and technical upgrades since, including a migration of the system onto a shared service hosting arrangement. There is also a support and maintenance contract in place for the system with a third party supplier, and they are tasked to assist with updates and changes to the system in conjunction with the NI Prison Service IT team.

Governance of the NI Prisons Compass System

The NI Prison Service's Compass system is overseen by their IT department who are part of the Department of Justice within the NI Civil Service. Any relatively small changes to the system are made to them by request on a case by case basis and, if necessary, they then liaise with the external contractor who support the system to see if the change is feasible and to get a cost estimate. Depending on the response, the decision to implement the change is a joint decision between the head of the NIPS IT department and the business area based on the outcome of a business case.

Larger policy decisions, such as the decision to move to the HR Connect system, would be made by senior management of the NI Prison Service in conjunction with their colleagues in the Department of Justice. The Compass system also comes under the governance of the DoJ's Audit & Risk Committee. In the past there

was a Compass User Group which met a on a regular basis and which discussed issues relating to the day-to-day running of the system, however it hasn't met since 2017.

NICS HR Official Statistics sourced from administrative data

The monthly files from HRConnect and Compass are used by the various sections of HRCS to update their respective datasets for their work area. The Absence team rely most heavily on the monthly data as they provide monthly management information updates on sickness absence rates to NICS HR and to the various Departmental Boards which meet each month. As a result, the Absence team do the initial preparatory work to the various monthly data files and then save these so that the other sections of the branch can then use them for their own work areas.

The data from HRConnect (and that from the NI Prison Service) are therefore used as the key source of official statistics for the following NICS HR related statistics;

1. Sickness absence statistics for the NICS (Annual and Quarterly - National statistics)
2. Pay statistics for the NICS (National statistics)
3. Employment/ personnel statistics for the NICS (official statistics)
4. Equality statistics for the NICS (official statistics)
5. Analysis of recruitment competitions for the NICS (official statistics)

Summary of each statistical output & classifications used

1. Sickness absence statistics (HRConnect & Compass)

These statistics are used by the NICS to monitor levels of sickness absence throughout the year. In the past, they formed a performance outcome in the NI Executive's Programme for Government (PfG) but have not been included in the most recent draft PfG. The data are recorded on HRConnect by line managers as part of the administrative process for managing sickness absence. Within the NI Prison Service, individual Prison Grade staff phone in their absence details to a team at their prison location who then update the absence details on the Compass system.

The key measures used in monitoring sickness absence within the NICS are;

- The number of working days lost per staff year
- The percentage of available working days lost
- The total number of working days lost
- The average number of spells of absence per staff year
- The estimated lost production (£)

In addition the annual report provides;

- The proportion of working days lost due to long term absence (i.e. more than 20 consecutive working days)
- The average duration (working days) of long term absence

2. Pay statistics (HRConnect & Compass)

HRCS uses pay information on NICS staff sourced from HRConnect & Compass² to assist management in calculating the cost implications of various pay agreements it may use to negotiate with Trade Union Side each year. The branch also uses the information to conduct an Equal Pay analysis of NICS staff which it reports to NICS HR on an annual basis.

The key variables that are involved in this process are;

² This refers to a small number of NIPS staff paid on NICS payscale.

- Staff numbers (headcount) by pay band and analogous grade level
- Staff numbers (headcount) by pay band and gender
- Median pay (£) by analogous grade level and gender
- Median pay (£) by analogous grade level and community background
- Median pay (£) by analogous grade level and disability
- Median pay (£) by analogous grade level and age-group
- Median pay (£) for the last five years, by gender
- Median pay (£) by analogous grade level
- Increase in pay by analogous grade level
- Median pay (£) by age
- Median pay (£) of civil servants across the UK, by analogous grade level

3. Employment/ personnel statistics (HRConnect & Compass)

Two separate reports are produced on this area. They focus mainly on the number of civil servants employed by the NICS at any given time. The quarterly report 'Employment in the Northern Ireland Civil Service' gives the following headline figures for the latest quarter and compares these with the previous quarter;

- Permanent & Temporary/Casual employees (headcount) by department and gender
- Permanent & Temporary/Casual employees (Full Time Equivalent FTE) by department and gender
- Permanent employees (headcount) by analogous grade and department
- Permanent employees full time and part time by gender

In addition to this, an annual report is also published titled 'Personnel Statistics for the Northern Ireland Civil Service'. It provides summary statistics on staff in post within the NICS at the start of April each year along with a more detailed analysis of staff employed within the NICS and compares trends over the last 5 years. The main variables covered include;

- Staff trends (headcount) split by industrial and non-industrial staff
- Numbers of casual staff (FTE) employed for each of the last 8 years
- A profile of all staff (FTE) by grade and by department
- An analysis of part time staff by gender, by work pattern and by grade
- An analysis of leavers from the NICS along with reason for leaving

4. Equality statistics for the NICS (HRConnect & Compass)

HRCS produces an annual report on the composition of the Northern Ireland Civil Service with regard to age, gender, community background, disability and ethnicity, based on staff in post in January each year. The report focuses mostly on;

- The gender composition of the NICS compared with that of the NI economically active workforce based on the 2011 Census
- Changes in the gender composition within each analogous grade over the last 10 years
- The composition of NICS by community background compared with that of the NI economically active population (Census 2011)
- Changes in the community background composition of each analogous grade over the last 10 years within the NICS
- The composition of NICS by age within each grade compared with that of the NI economically active population over the last 10 years
- The level of staff in each grade with the disability compared to that in the economically active population over the last 10 years
- An analysis of the ethnic composition of the NI Civil Service

- An analysis of recruitment competitions and promotions within the NICS looking at applicants and appointees and comparing this to the numbers of expected appointees by gender, community background, age, disability, ethnicity and sexual orientation.
- An analysis of leavers from the NICS by gender, community background, age and disability.

5. Analysis of recruitment competitions for the NICS (HRConnect)

HRCS produces an annual report which summarises applications for and appointments from NICS recruitment competitions across various equality categories. Further analysis is presented in the report relating to the various stages of recruitment competitions between application and appointment. The report covers all recruitment competitions that closed for applications during the calendar year and focuses on the following key measures;

- An analysis of permanent and temporary recruitment competitions within the NICS by gender, community background, ethnicity, disability, age group, sexual orientation and previous employment history with the NICS with regard to;
 - profile of applicants
 - expected eligible applicants (based on proportionate success)
 - actual and expected applicants who withdrew prior to shortlisting
 - actual and expected applicants invited to interview
 - actual and expected applicants who attended interview
 - actual and expected applicants who passed interview
 - actual and expected applicants offered appointment
 - actual and expected appointees

Impact of Changes to the Administrative Data System

1. HRConnect

The HRConnect system was originally introduced in 2006/07 and has had various minor updates and modifications since then, but none which affected the quality of the statistics covered by the 5 HRCS statistical reports. Changes in the Departmental structure of the NICS occur over time with the latest occurring in May 2016. Because of the complex nature of this change, it means that trend information in the HR statistics cannot be backdated for the new Departments. Therefore, while we report headline trends in the statistics at the overall NICS level going back across the years, trend information at the new Department level is only available from 2015/16 onwards.

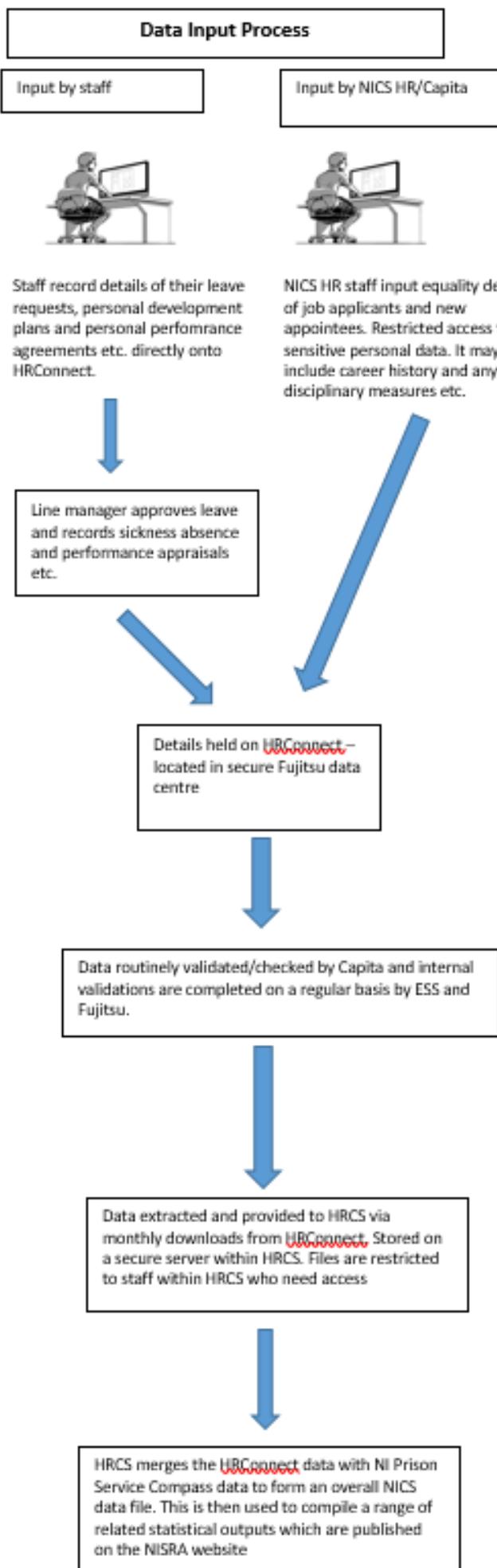
Sexual orientation became a mandatory equality monitoring field within the NICS in 2011 and this field is now complete for all recruits since that date. However, those NICS staff recruited before that date would have the variable missing/blank unless they voluntarily updated their details on the HRConnect system. As a result, the majority of staff have no completed data for this variable but it can be used for analysis of recruitment competitions since it became mandatory.

Prior to HRConnect being introduced in 2006/07, another system (HRMS) was used to capture staff HR information within the NICS. On the old system, sickness absence details were input by trained input teams within each Department whereas with HRConnect, the employee's line manager became responsible for recording the sickness absence details of their staff. At the time of the change, sickness absence levels dropped slightly and it was felt that this might have resulted from the change in recording process (i.e. meaning that the previous HRMS system was perhaps more robust as it relied on centralised units of trained staff who input these details rather than on line managers having to update the details themselves).

2. Compass

The Compass system only became part of the process in 2012 when decision was taken to include NI Prison Service staff, including Prison Grade staff, in the overall NICS figures. The Department of Justice (which includes the NI Prison Service) became part of the NICS following the devolution of policing and justice powers to the NI Executive in 2010. The main change to the system since then has been the fact that NI Prison Service administrative staff were moved across to the HRConnect system in April 2017 leaving around 1,300 Prison Grade staff on the Compass system who may move across to HRConnect.

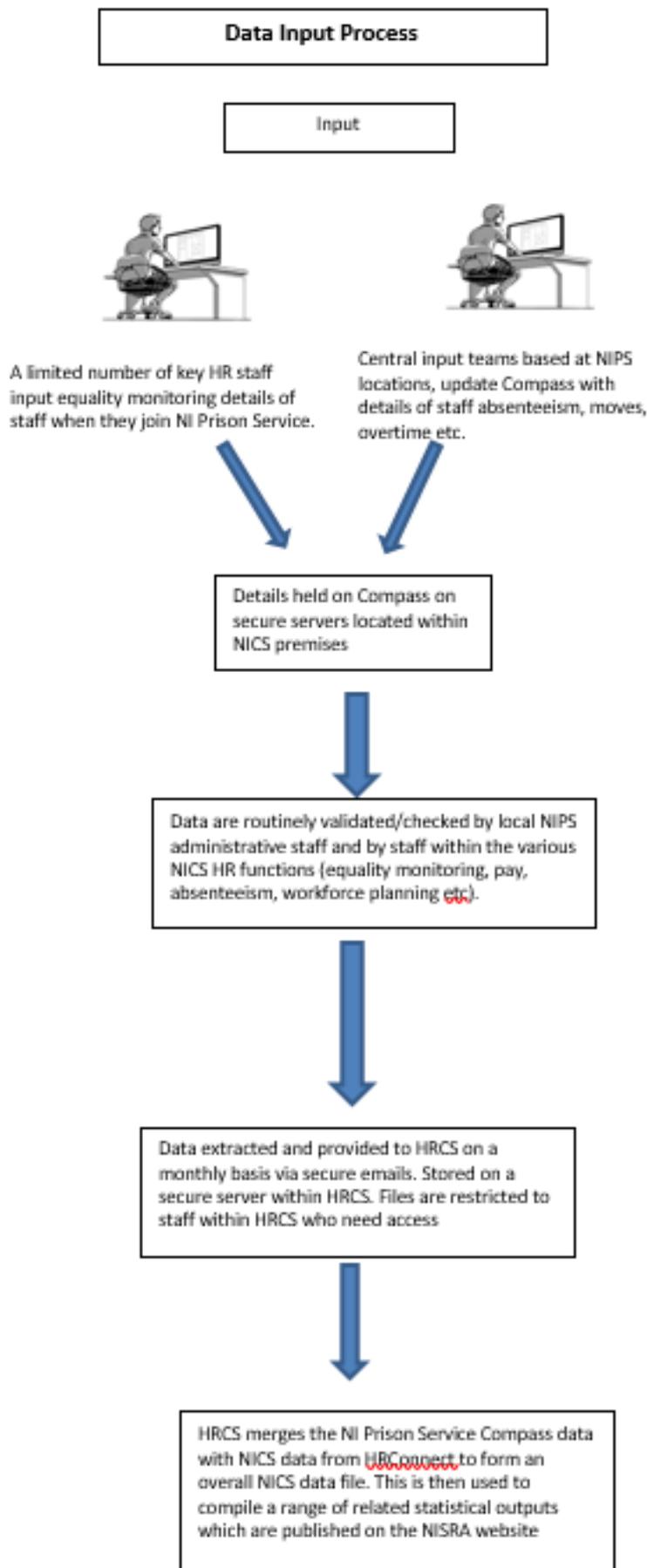
Overview of the HRConnect Process: With main Risks to Data Quality and Associated Mitigations



Risks & Mitigation
<p>Risk – inaccurate details recorded by staff on HRConnect when logging their HR activities</p> <p>Controls</p> <ul style="list-style-type: none"> Line managers are required to approve leave and to record absence details of staff Line managers held to account by senior management for completeness of figures
<p>Risk – inaccurate details recorded on recruits and applicants</p> <p>Controls</p> <ul style="list-style-type: none"> NICS HR staff with expertise in this area input details of new recruits and applicants for monitoring purposes
<p>Risk – Data Protection & Information Security requirements not complied with</p> <p>Controls</p> <ul style="list-style-type: none"> Data sharing with Fujitsu and Capita addressed by HRConnect contract and managed by formal governance process within NICS. All processes and systems now long established
<p>Risk – Secure storage and transfer of personal & sensitive data</p> <p>Controls</p> <ul style="list-style-type: none"> Fujitsu data centre accredited to ‘confidential’ security level Data transfer between data centre, Capita and ESS/NICS all take place within secure processes (Restricted level)
<p>Risk – insufficient data quality checks and validation processes incorporated into HRConnect</p> <p>Controls</p> <ul style="list-style-type: none"> Regular in-house checks on data are conducted by Capita, ESS and Fujitsu. Any anomalies are corrected Fujitsu contract has monthly error rate limits that must not be exceeded HRCS statisticians apply numerous additional validation checks and quality control measures when compiling reports.
<p>Risk – insufficient levels of internal and external auditing of data and processes</p> <p>Controls</p> <ul style="list-style-type: none"> Annual audits on data and HRConnect processes by DoF Internal Audit NI Audit Office conducts annual audit of HRConnect NICS Risk Management Committee oversees audit findings and any significant issues arising
<p>Risk – HRCS statisticians not aware of their responsibilities under the Data Protection & information security</p> <p>Controls</p> <ul style="list-style-type: none"> HRCS statisticians must complete annual mandatory data protection and information security training. They also receive training in statistical disclosure control Each report is checked by other statisticians within HRCS before published

Data Input process: Starts with either input by staff or input by NICS HR/Capita. For input by staff, staff record details of their leave request or other issue directly into HRConnect. The line manager then approves the leave or other issue. If starting with input by NICS HR/Capita, NICS HR staff input equality details of job applicants and new appointees. Both of these inputs then feed into "Details held on HRConnect located in secure Fujitsu data-centre." This then feeds into "Data routinely validated/checked by Capita and internal validations are completed on a regular basis by ESS and Fujitsu." This feeds into Data extracted and provided to HRCS via monthly downloads from HRConnect. This in turn feeds into HRCS merges the HRConnect data with NI Prison Service Compass data to form an overall NICS data file.

Overview of the NI Prison Service/Compass Process: With main Risks to Data Quality and Associated Mitigations



Risks & Mitigation

Risk – inaccurate details recorded on Compass by input teams.

Controls –

- Overtime, absenteeism and other HR details are reported by line managers to input staff. Details are validated/checked before inputting. Monthly validation checks carried out by input staff to flag up and correct any anomalies.

Risk – inaccurate details recorded on recruits and applicants

Controls

- Staff with expertise in this area input details of new recruits and applicants for monitoring purposes

Risk – Data Protection & Information Security requirements not complied with

Controls

- Data sharing agreement in place with HRCS
- Data transferred securely to HRCS
- HRCS store data on a secure server and delete files in accordance with their retention and disposal policy

Risk – Secure storage and transfer of personal & sensitive data

Controls

- Compass system is accredited at 'Impact Level 4'
- Data transfer between NIPS and HRCS all take place via secure processes and data sharing agreement in place

Risk – insufficient data quality checks and validation processes incorporated into Compass

Controls

- Data input by a small group of trained and experienced data inputters
- Monthly validation checks undertaken

Risk - insufficient levels of internal and external auditing of data and processes

Controls

- Annual audit conducted by DdJ Internal Audit unit
- External audits by NI Audit Office every 2 or 3 years

Risk – HRCS statisticians not aware of their responsibilities under regarding the Data Protection & information security

Controls

- HRCS statisticians must complete annual mandatory data protection and information security training. They also receive training in statistical disclosure control
- Each report is checked by other statisticians within HRCS before published

Data input process: Starts with either “A limited number of key HR staff input equality monitoring details of staff when they join NI Prison Service. “ or “Central input teams based at NIPS locations, update Compass with details of staff absenteeism, moves, overtime etc.”. Both of these feed into “Details held on Compass on secure servers located within NICS premises”. This in turn feeds into “Data routinely validated/checked by Capita and internal validations are completed on a regular basis by ESS and Fujitsu.” This feeds into Data extracted and provided to HRCS via monthly downloads from HRConnect. This in turn feeds into HRCS merges the HRConnect data with NI Prison Service Compass data to form an overall NICS data file.

Potential Sources of Bias & Error

1. HRConnect

As the HRConnect system mostly relies on staff and line managers to self-complete details of various HR activities on the system, like many administrative systems, the resultant statistics can be prone to human error or to the system not being able to cater for every scenario encountered. These can range from entries not being recorded on the system to multiple duplicate records being created mistakenly. Other issues can relate to new branches or units being created in the NICS before the hierarchy is updated on HRConnect to reflect that staff are now working in these new units. Another challenge is that the HRConnect data also includes some non-NICS staff who have to be excluded from the HRCS data files.

These data quality issues are generally mitigated by the following:

1. Detailed guidance on how to use HRConnect is available to all staff on-line via the HRConnect portal. Capita also provide a telephone and email helpline and provide advice/guidance and can correct minor errors that staff report to them.
2. ESS, Fujitsu and Capita all run a series of monthly checks to ensure that the data for a range of key variables is complete and correct. Where errors are identified, these are corrected where possible.
3. Reports are emailed to all line managers across the NICS on a monthly basis summarising key statistics for staff under their line management relating to periods of absence, completion of return to work interviews and completion of performance management review stages. This enables line managers to identify discrepancies and to get them corrected on the system
4. The Internal Audit unit within the Department of Finance undertakes a series of annual audits of HRConnect in agreement with ESS, Fujitsu & Capita. Any areas of poor performance or weaknesses which are identified are considered by the ESS Service Management Division and actioned/addressed as deemed appropriate.
5. Monthly reports are produced for Departmental Board meetings giving details of levels of compliance with deadlines for performance management review stages completed by their staff. These are fed back to directorates and branches with a view to improving the data quality on HRConnect.
6. Improved processes for creating a new NICS Branch/Unit, via a centralised NICS HR team, ensuring HR Connect hierarchy is updated correctly.

2. Compass System

The NI Prison Service's Compass system is used to manage the operational and HR activities of some 1,300 Prison Grade staff. Due to the nature of their work, the system has two administrative teams that use the information recorded on the system. An operational team use the information to manage the day-to-day deployment of prison staff to ensure the effective management of NI Prisons. This includes managing prison staff duty rosters, day to day staffing levels part of which includes taking details from Prison Grade staff who report in with sickness absence.

Another administrative team update the system with key HR details such as leave, promotions, appraisals and they also update the system with additional staff absence details. Because the information is key to the running & management of NI Prisons and because of the trained inputters who update the system, the data quality is considered as being more accurate, reliable

and timely that the equivalent information on HRConnect. There is also a Pay and Travel team who process payments on Compass and implement pay awards.

However, data quality issues can still occur and are generally addressed by the following:

1. Monthly checks of headcount and Full Time Equivalent staff numbers are run at the 1st of each month and compared with joiner and leaver information to ensure that details are correct for NI Prisons monthly management broad meetings.
2. Pay details are checked each month and compared with those from the previous month, before the monthly pay run takes place. This ensures that any anomalies can be corrected before the pay is issued.
3. When data entry inputters are updating details for a Prison Grade staff, the details are locked down until the update is complete. The inputter is supposed to check that the updated details are correct before unlocking the individual's details again. This is to ensure that two people can't update the same person record at the same time.

While each of the above apply to all of the HRCS statistical outputs some sources of bias can be specific to particular statistical outputs;

Absence statistics in the NICS - Potential sources of bias & error

1. Under-recording.

We are unable to identify the level of under-recording of sickness absence within the NICS (i.e. we cannot be sure that when a member of staff is off due to sickness absence that this is recorded accurately on the system 100% of the time). There is no way of comparing the actual absence of staff with that recorded on the system. However, we have no reason for thinking that any level of under-recording of sickness absence is worse than that for any other comparably sized organisation.

2. Reason for Sickness absence

The HRConnect system encourages line managers to record the reason for any sickness absence by using drop down lists on HRConnect. For sicknesses that are self-certified (i.e. no medical professional has been involved) then this is reliant on the staff member who is absent providing an accurate reason for their absence. There may be instances where staff may be reluctant to reveal the actual reason for their absence. Similarly, where a medical certificate is provided, the line manager has to update HRConnect to reflect the reason given on the certificate. Again there can occasionally be problems in matching the reason given on the certificate to the closest match on the system, especially given the lack of medical expertise of the staff involved.

Pay statistics in the NICS - Potential sources of bias & error.

The NICS's pay statistics are the most accurate and robust as staff have a vested interest in ensuring that they receive their correct pay. Hence any inaccuracies are usually quickly rectified. There is also some potential for delays or errors in updating HR Connect data when staff change post or are promoted, etc. This is particularly an issue when a member of staff is, for example, temporarily promoted or experiences multiple moves over a short period of time.

In addition, a small proportion of NICS staff are not yet included in HR Connect (1,300 Prison Grade staff), and data for these staff are sourced from the NI Prison's Compass system. The sourcing of data from two different IT systems can lead to delays to the provision of data and correcting errors. Furthermore, the pay data that comes from NI Prisons often requires extra processing and validation to allow comparability with HR Connect data

Employment/ Personnel statistics in the NICS - Potential sources of bias & error.

1. Department

Department is a variable derived from the organisation name and if incorrectly recorded staff could be omitted from a department's figures.

2. Analogous grade

Analogous grade is derived from substantive grade. In a small minority of cases when an employee is on temporary promotion substantive grade information is missing and the employee could be assigned the wrong analogous grade.

3. Reason for leaving

In a small minority of cases no reason for leaving is recorded and these cases are assigned to the 'Other category'.

Equality statistics in the NICS - Potential sources of bias & error

Details on age, gender and community background are generally complete for all staff within the NICS on HRConnect and on Compass. However, details collated on disability, ethnicity, dependents, sexual orientation and marital status are less complete.

1. Ethnicity

Ethnicity data are missing for 10.9% of staff (2021). Of staff for whom ethnicity is available, 0.3% were from ethnic minorities. Potentially, therefore, the true proportion of ethnic minority staff could be as high as 11.2% (on the most extreme scenario where all missing data related to minority ethnic staff). However, even if ethnic minority staff were as much as four times as likely to have their ethnicity unrecorded as white staff, the true proportion of ethnic minority staff would still be less than 1%.

2. Disability

Disability data are missing for 54.6% of staff (2021) on HRConnect. Some 5.6% of all staff were recorded as disabled. It is assumed that those who have details missing on the system, don't have a disability and that this is a combination of staff who recorded no disability and staff with missing disability information on a legacy HR system. Based on this assumption the levels of disability amongst NICS staff are approximately half to that recorded within the working population in N Ireland as recorded in the NI census. Disability details on Prison Grade staff sourced from the Compass system are 100% complete.

3. Dependents

Information on dependents has been recorded for new staff recruited since 2011. Coverage across the NICS remains low, representing 18% of staff.

4. Sexual orientation

Information on sexual orientation has been recorded for new staff recruited since 2011. Coverage across the NICS remains low, representing 16% of staff.

5. Marital Status

Marital status data is missing or unknown for approximately 7% of staff. As marital status can change it is the employees' responsibility to notify HR Connect (data provider) of any updates. Information could therefore be inaccurate.

6. Reason for leaving

In a small minority of cases no reason for leaving is recorded and these cases are assigned to the 'Other category'.

Analysis of Recruitment Competitions in the NICS - Potential sources of bias & error

1. Accurate competition list

While care is taken to ensure the competition list is accurate, it is possible that competitions could be included when they should be omitted or vice versa. However this process is managed by the statisticians within HRCS and it is felt that the risk of this happening is relatively low.

2. Missing Values

While the vast majority of entries are complete, there can be missing values, particularly when a paper application is made. These are all footnoted in the report and no assumptions are made once all avenues for completion have been exhausted.

3. Reporting on competitions before they have been closed.

The report includes competitions which close for applications up to 31st December and the download is taken at 1st February, so there may have been limited time for the competition to progress through all its stages. While tables with updates to appointee figures for competitions from the two previous years are included in reports, information on key interim stages may be missing from the publications. This information however would form part of the reports on individual competitions provided to NICS HR.

4. Overall picture conceals detail

The overall picture may be influenced by one large competition. Similarly differences between actual and expected outcomes may cancel each other out – e.g. one competition with more males than expected appointed cancelled out in the tables by another with more females than expected appointed.

(ii) Communication with Data Suppliers

HRCS Data Requirements from HRConnect - documentation

When HRConnect was introduced in 2006/07, its functionality was rolled out incrementally over a number of years. HRCS was already reporting the same HR statistics sourced from the previous IT system. Therefore, when the HRConnect system was introduced, HRCS staff were closely involved in the implementation process so that we could continue to provide these statistics on a comparable basis. Part of this process involved agreement with NICS (ESS) and HRConnect (Fujitsu and Capita) about the data variables that would be downloaded/made available to HRCS.

The agreement of the HRCS data requirement from HRConnect was a lengthy process and took a number of years before being finalised. It involved submitting formal data requests to ESS to get the required variables made available in the required format in a regular data download from HRConnect to HRCS. The process involved;

- The identification of the required variables from HRConnect for the various HRCS statistical outputs and to enable them to provide day-to-day support to NICS HR
- Working out the most suitable method of securely downloading and transferring the data from HRConnect to HRCS on a monthly/quarterly/annual basis
- Agreeing the system for HRCS requesting/initiating the monthly/quarterly/annual downloads
- HRCS having to test the process and checking the statistics at the beginning of the process to ensure that they were correct and consistent with the statistics previously reported (i.e. fit for purpose) and,
- ensuring that the monthly/quarterly downloads were complete and accurate with processes in place to address/correct any problems encountered.

The HRCS data requirement from HRConnect is now long established and fully documented. The requirements have been amended over the years to ensure that changes to the processes or systems can be included/allowed for in the statistics.

HRCS Data Requirements from Compass - documentation

The NI Prison Service became part of the NICS within Department of Justice in 2012 when a decision was taken to include NI Prison Service staff, including Prison Grade staff, in the overall NICS figures. The Department of Justice (which includes the NI Prison Service) became part of the NICS following the devolution of policing and justice powers to the NI Executive in 2010. It was at this time that HRCS began working with colleagues within the NI Prison Service to arrange for the monthly file sharing to incorporate the NI Prison Service HR and Pay data along with the other NICS HR data sourced from HRConnect. As HRConnect had been introduced 4 or 5 years earlier, HRCS already had refined the data extract process for their statistics and were better placed to liaise with the NI Prison Service in order to get the required data from their system.

Various meetings were held between HRCS staff and NI Prison Service representatives to identify the relevant variables that needed to be shared on a monthly basis to provide comparative statistics with those already produced from HRConnect. This process was documented and then implemented and refined, where necessary, over subsequent years. HR data on administrative staff within NI Prison Service were transferred from Compass to the HRConnect system in April 2017 leaving around 1,300 Prison Grade staff on the Compass system who may transfer across in the future.

The agreed documented procedures are stored on Content Manager (CM), the NICS's electronic document storage and retrieval system. Any changes over time are agreed with NI Prison Service and the associated documentation is updated to reflect this.

Communication with Data Suppliers

1. HRConnect

While the data download process for HRCS receiving data from HRConnect has been long established, there is still regular communication between HRCS staff and the relevant staff within NICS HR, ESS, Fujitsu and Capita. This communication can range from informal telephone/email queries to resolve data or system problems, to HRCS staff attending formal meetings with the respective organisations to address larger scale project board or working group meetings.

NICS HR act as the data controller of the NICS information on HRConnect and oversee/approve all changes or improvements to the system. ESS oversee the main day-to-day contact with HRConnect regarding operational issues and therefore in practice, act on behalf of NICS HR with regard to most of the technical aspects. Larger changes to the HRConnect system would be decided on by NICS HR with agreement from Strategic HR Business Partners who represent the interests of the 9 NICS Departments.

HRCS staff would regularly be in touch with their customers in NICS HR regarding their data needs. The vast majority of these are covered by the variables included in the monthly data downloads from HRConnect. Any additional variables or ad hoc data requirements from HRConnect would be arranged via discussions with colleagues in ESS and Fujitsu.

Any problems experienced with the timing of or completeness of the monthly downloads are raised by HRCS staff with colleagues within ESS and Fujitsu as soon as they come to light.

2. Compass

Four separate file types are forwarded to HRCS from NI Prisons each month. Hierarchy information is sent by NI Prison Service IT team and then files on personnel data, absence data and leavers data are forwarded by the NI Prison Service unit within NICS HR. Each type of file can consist of numerous files (59 per month in total). The monthly file process is long established and works well with few problems occurring. If any issues come up the relevant HRCS staff liaise with their corresponding contact in NI Prison Service for each of the 4 files, dependent on which is associated with the problem.

Legal Basis for data supply

HRConnect - The Department of Finance within the NICS is deemed the data controller with regard to the data held on the HRConnect system. Fujitsu and Capita are both data processors. The NICS collects personal information on staff;

- in order to meet its legal obligations and public functions and to enable it to deliver its services,
- in order to maintain its accounts and records, to support and manage Northern Ireland Civil service staff, and
- for the purposes of litigation and legal advice.

Compass – NI Prison Service is part of the Department of Justice which in turn is part of the NI Civil Service. NI Prison Service/DoJ is the data controller and they share the information with NICS HR to ensure that a NICS-wide overview of HR related matters is made available to them. As with the wider NICS, NI Prison Service have a variety of legal reasons for recording and

processing personal information on its staff (i.e. in order to meet its legal obligations and public functions and to enable it to deliver its services, in order to maintain its accounts and records, to support and manage Northern Ireland Civil service staff, and for the purposes of litigation and legal advice).

The sharing of NI Prison Service data with HRCS for statistical purposes is covered by a data sharing agreement.

Data Protection

HRCS act as data processors to the NICS Department of Finance (NICS HR) data controller and data sharing arrangements are stipulated within the Memorandum of Understanding (MoU) between NICS HR and HRCS. NI Prison Service is part of the Department of Justice within NICS, and as part of their HR records are stored on Compass, a separate data sharing agreement is in place between the NI Prison Service and HRCS outlining the arrangements in place for the secure transfer of the data.

The HRCS Head of Branch acts as the Information Asset Owner for the branch and is required to ensure that branch procedures are in place and staff are adequately trained in data protection requirements. All HRCS staff must complete mandatory on-line data protection and information security training on joining the branch and complete further annual refresher training.

HRCS ensures that procedures are updated and reviewed on a six-monthly basis and has Local Systems Operating Procedures in place to protect the confidentiality, integrity and availability of NISRA Human Resource Consultancy Services (HRCS) data by outlining the data handling and security procedures that HRCS staff must comply with.

Data sharing arrangements for the handling of HRConnect data are in place and transfer of the data is via secure electronic links between Fujitsu, ESS and HRCS. Once received, data files are stored on a secure HRCS server within HRCS with access restricted solely to those staff within the branch who need it.

HRCS staff apply statistical disclosure control to all data sourced from HRConnect and Compass to ensure that no one is identifiable from the data nor any sensitive information relating to them. The only exception being where NICS HR staff need more detailed information for operational reasons. In this instance, the data is protectively marked as 'official sensitive' and the recipient is reminded that the information cannot be shared outside of their unit.

Administrative Data Downloads/Transfer Arrangements/Sign Off

The data extracts from HRConnect and from the NI Prison Service's Compass systems, are generally taken on a monthly basis and are transferred in an agreed format to the secure server within HRCS. The details of the variables included in the data extract from both systems have been developed and amended over the years with the respective policy and IT experts for both systems. The relevant documentation is stored on the NICS's Content Manager.

1. HRConnect Monthly Data Extract Process

A series of agreed files are downloaded from HRConnect over various stages during the month. These fall into three key dates;

- around 8th of each month – 8 files (absence month, absence Year-To-Date(YTD), career month, career YTD, snapshot, hierarchy, leavers, joiners)
- 20th of the month every Quarter – 4 files (snapshot, hierarchy, leavers, joiners)
- 23rd of each month - 4 files (paybill, salary history, snapshot, hierarchy)

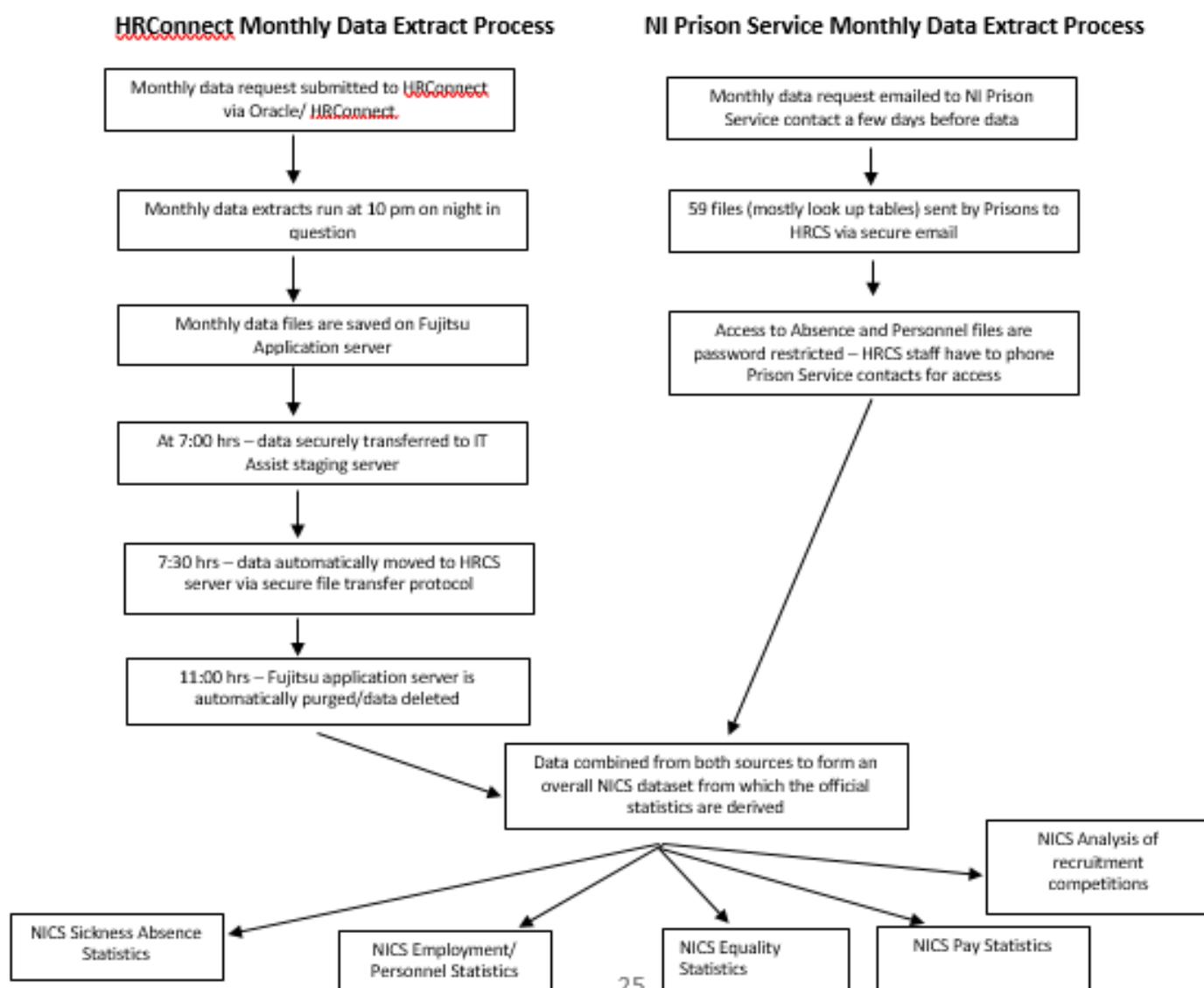
Other files relating to internal promotion and external recruitment competitions, are also shared with HRCS throughout the year whenever the competitions are complete. In addition, various pay related files (SOPCA & Outturn files) are also shared with HRCS on a weekly or monthly basis which are then linked to the above files to produce the NICS Pay statistics.

These files are each requested by statisticians within HRCS via HRConnect a few days or weeks in advance of the required download date. The request includes details of the data parameters and the dates to be covered.

2. NI Prisons Monthly Data Extract Process

An agreed dataset is shared with HRCS on a monthly basis to fit in with the same dates as the data obtained from HRCS. Around 59 files are shared with HRCS each month by secure email and are then stored on the HRCS sever.

Overview of HRCS Data Extract Process



The flow chart depicts the HRCS data extraction process. It has two main streams; the HRConnect Monthly data extract process and the NI Prison Service Monthly data extract. The HRConnect process starts with “Monthly data request submitted to HRConnect via Oracle/HRConnect” which feeds into “Monthly data extracts run at 10 pm on night in question” which goes into “Monthly data files are saved on Fujitsu Application server” followed by “At 7:00 hrs – data securely transferred to IT Assist staging server” and then “7:30 hrs – data automatically moved to HRCS server via secure file transfer protocol” and then into “11:00 hrs – Fujitsu application server is automatically purged/data deleted”. At this point the two extract processes merge. The separate part of the NI Prison extract starts with “Monthly data request emailed to NI Prison Service contact a few days before data” which feeds into “59 files (mostly look up tables) sent by Prisons to HRCS via secure email” and then into “Access to Absence and Personnel files are password restricted – HRCS staff have to phone Prison Service contacts for access”. At this point the NI Prison extract merges with the HRConnect extract, both feeding in to “Data combined from both sources to form an overall NICS dataset from which the official statistics are derived”. From here there are five off-shots: “NICS Sickness Absence Statistics”, “NICS Analysis of recruitment competitions”, “NICS Employment/ Personnel Statistics”, “NICS Pay Statistics” and “NICS Equality Statistics”.

User Consultation/Experiences of statistics users

HRCS conducts a regular survey of the users of our statistical publications to ascertain their views of the statistics we produce, how well they meet their needs and whether they have any suggested improvements.

Whilst the majority of HRCS work is undertaken for key users of our statistics within NICS HR, a range of other users of the statistics both within the NICS, the wider public sector and members of the general public are also included in the survey. The most recent survey was conducted in February 2021 and the results are summarised on the [HRCS section](#) of the NISRA website. The survey was sent out to 167 users of our statistics and 33 questionnaires were completed giving a response rate of 20%.

The key findings of the most recent HRCS User Satisfaction Survey are highlighted below;

Rating of whether each HRCS statistical output meets user needs (2021 HRCS User Survey)

	They fully meet their needs	Mostly meet their needs	Partly meet their needs	Don't meet their needs at all
Sickness absence statistics for the NICS	43%	43%	14%	0%
Pay statistics for the NICS	64%	27%	9%	0%
Employment statistics for the NICS	55%	36%	9%	0%
Personnel statistics for the NICS	67%	25%	8%	0%
Equality statistics for the NICS	63%	31%	6%	0%
Analysis of recruitment competitions for the NICS	83%	0%	17%	0%

Overall satisfaction levels which each HRCS statistical output (2021 HRCS User Survey)

	Satisfied	Neither	Dissatisfied
Sickness absence statistics for the NICS	79%	7%	14%
Pay statistics for the NICS	82%	18%	0%
Employment statistics for the NICS	91%	0%	9%
Personnel statistics for the NICS	92%	0%	8%
Equality statistics for the NICS	82%	18%	0%
Analysis of recruitment competitions for the NICS	83%	0%	17%

Any suggested improvements or problems identified for each statistical output in the survey are presented in the survey report along with a response from HRCS. All suggested improvements or problems identified are considered by HRCS and are implemented where possible. If the change is not feasible, an explanation is provided as to why that is the case.

In addition to the regular user survey, HRCS staff would liaise and meet with the key users of their statistics on a regular basis throughout the year. In practice this tends to be in the form of small ad hoc meetings with a number of specialist staff within NICS HR who have responsibility for the relevant work area. In addition to these meetings, HRCS staff would also have regular telephone and email contact with key users to respond to urgent queries or to provide NICS HR colleagues with relevant statistics or associated advice and guidance.

HRCS has a Service Level Agreement (SLA) with NICS HR which stipulates the work they require from the branch for the current financial year. During 2017/18, there was a major review of the HRCS work programme following the centralisation of the HR function in the NICS and the establishment of NICS HR. As a result, detailed user consultation was undertaken to agree the HRCS work programme to ensure that it met with the changed needs of the new arrangements.

This SLA is reviewed and updated on an annual basis to ensure that the statistics provided by HRCS meet customer needs. Additional Service Level Agreement (SLAs) are in place for other statistical products that we provide to customers outside of the NICS HR remit. These tend to be with individual NICS Departments or with other public sector bodies, for paybill modelling services or for our specialist Equal Pay analysis services. Again, we liaise closely with these customers regarding the service required from HRCS.

The vast majority (76%) of respondents to the customer survey worked for the NICS; remaining responses came from other non-NICS public sector employees. In general, the most frequently stated reasons for using all five publications were policy making/monitoring, responding to information requests and performance monitoring.

Uses of the Statistics

The statistics are mainly used by NICS management to monitor staff numbers, equality issues, pay bill costs and absenteeism. In addition, the NI Civil Service Commissioners use the Analysis of NICS Recruitment Competitions report to enable them to ensure that appointments to the Northern Ireland Civil Service (NICS) are made on merit on the basis of fair and open competition.

1. Sickiness absence statistics for the NICS: Uses of the statistics

The NICS sickness absence statistics are published annually and receive quite a bit of local media coverage in the days following their publication. The main focus being on the increasing levels of absenteeism in recent years and the associated cost to the NICS. However the sharp decline in 2020/21 was a notable change of trend. Local Ministers, MLAs and the main NICS union (NIPSA) representatives would generally have an interest in the figures and would comment on them.

The detailed annual report also gives NICS HR colleagues a better insight into emerging trends within the NICS absence data which they may then decide to further investigate to see what the reasons behind this are. For example, the headline absence figure for 2020/2021 was 9.8 days (average days lost per staff year), a considerable decrease from 12.9 days in the previous year. The absence level for 2020/2021 was the lowest absence level recorded for over 22 years. This finding is part of the rationale for developing a new NICS Remote Working Policy.

The statistics have also been used in the past by the NI Audit Office to inform its evaluation of the NICS's management of sickness absence. In addition a Ministerial Target and Programme for Government Strategic targets have been previously agreed using the sickness absence figures.

In response to requests for more frequent sickness absence figures, HRCS developed the Experimental Statistics, "Quarterly Sickness Absence in the NICS", first published in December 2020. This was followed by two more experimental publications in March 2021 and September 2021. Following an assessment by the Office for Statistics Regulation, in combination with user feedback, it was agreed for the quarterly report to be awarded National Statistic accreditation from December 2021. This assessment was based on the fact the same methodology and sources were used to produce the quarterly report as the annual report, which was designated as National Statistic in August 2019.

In addition to the annual statistics that are published, HRCS also produces monthly management information reports on in-year levels of absenteeism across the NICS. This enables NICS HR and senior managers within NICS Departments to monitor absence levels in their work areas and to identify trends and to take corrective action if required.

2. Pay statistics for the NICS: Uses of the statistics

The NICS Pay Statistics publication produced by HRCS provides details of the average (median) pay received by NI civil servants during the year in question and compares this with the previous year and reports on the level of percentage increase. It also highlights the percentage increase experienced across each analogous grade level compared with the previous year as well comparing this with trends across the rest of the UK and with the private sector.

NICS paybill colleagues use the HRCS statistics to model various annual paybill change scenarios across the NICS each year during its negotiations with Trade Union Side as part of the annual pay negotiations. In addition, the statistics also form the basis of an Equal Pay review of NICS pay that is conducted by HRCS each year to identify any differences in the pay of staff within NICS by gender, community background, age and by disability.

The Annual NICS pay statistics receive media coverage at the time of publication which mostly focuses on the level of pay increase across the NICS with a focus on any particularly high increases within a specific grade level of staff. The average (median) salary level within the NICS also gets media coverage.

3. Employment/personnel statistics for the NICS: Uses of the statistics

The employment in the NICS quarterly reports and the annual NICS Personnel Statistics reports receive some media coverage around the dates of their publication. This tends to focus on the total numbers of civil servants employed and whether the trend is increasing, decreasing or remaining constant.

The statistics are key to supporting NICS HR colleagues in strategic workforce planning. They assist in monitoring current staff numbers at grade level across NICS departments and directorates and in anticipating vacancies allowing the NICS to be able to plan promotion boards and recruitment competitions in order to ensure that the required staff levels are maintained. The statistics are also used within NICS to respond to FOIs, AOs, PQs or to general queries from the public about NICS staff numbers.

4. Equality statistics for the NICS: Uses of the statistics

The Equality statistics are published annually and tend to receive media coverage at that time which may relate to the change in community background composition of the NICS or in the

gender composition of senior civil service posts. The statistics are also used by NICS HR to monitor its compliance with Equality legislation and in compiling the NICS's annual Fair Employment Monitoring Return to the Northern Ireland Equality Commission. A further use is to conduct Equality Impact Assessments for new policies involving NICS staff (e.g. relocation of offices).

The equality statistics are also used to answer FOIs, AQs, PQs and general queries received by the public about equality within the NICS and the composition of NICS staff across the main equality categories of community background, gender, age, ethnicity and disability.

5. Analysis of recruitment competitions for the NICS: Uses of the statistics

The annual report on the analysis of recruitment competitions for the NICS is used mostly by the NI Civil Service Commissioners in compiling their annual report on recruitment to the NICS. The statistics covered by the report are based on the requirements of the Commissioners which are communicated to HRCS via colleagues within NICS HR.

The statistics don't generally get a lot of media coverage. NICS HR colleagues also closely monitor these statistics throughout the year to ensure that ongoing recruitment competitions are being conducted fairly and that no problems have arisen that need action taken to address.

(iii) Quality Assurance Principles and checks applied by data suppliers

HRConnect

HRCS staff met with representatives of data suppliers on Wednesday 10th January 2018 to discuss their quality assurance procedures for the purposes of the completion of this quality assurance report. NICS (ESS), Fujitsu and Capita were represented at the meeting by experienced staff who have extensive knowledge of the processes and systems in place, each of whom have been in post since the establishment of HRConnect in 2006/07.

The HRConnect contract commenced in 2006 and was rolled out across NICS with additional functionality made available in subsequent years. It provided NICS with an integrated payroll and HR solution and replaced the old HRMS system which relied on HR staff within each Department to centrally input and manage staff information for their Department.

Due to the nature of the system, where staff HR activities are recorded by individual staff members or by their line manager, it means that thousands of staff input data to the system. Regardless of how well designed the system is, it will struggle to accommodate every scenario that needs to be recorded. In addition, human error will occur as staff will not always record their details accurately.

As a result, NICS HR, ESS, Fujitsu and Capita have a range of data quality processes that they run on a monthly basis, to identify and correct errors or anomalies in a range of key variables. NICS HR/ESS run regular Business Intelligence reports that check for a range of data quality issues. Any errors or mistakes that are identified from these are then referred onto the Shared Service Centre (Capita) for amendment/correction.

In addition to this, further checks are hard coded into the HRConnect system (MD050s). These are internal validation checks that look for consistency in the data recorded on HRConnect.

The Shared Service Centre (Capita) has ISO 9001 accreditation. Registration to ISO 9001 provides objective proof that a business has implemented an effective quality management system, and that it satisfies all of the requirements of the applicable standard. An external, impartial expert called a registrar or Certification Body conducts an on-site audit to determine whether or not a company is in conformance to the standard.

If they are found to be in conformance, they will be issued with an ISO 9001 certificate showing their address, scope of operations and the seals of the accreditation bodies that give the registrar its legitimacy.

The ISO 9001 audit process focuses on;

- Documentation control
- Records being kept
- Staff and management conformance to the system
- How the system is working in each area of the organisation
- Staff training necessary to meet the requirements

The accreditation is reviewed every 3 years by independent auditors who adopt a risk based approach to the areas that they assess.

Independent Audits - HRConnect

In addition to the various quality control checks run by ESS and Fujitsu and Capita, the NICS Department of Finance Internal Audit Unit also have an annual programme of audits that they run on HRConnect. These are agreed with ESS and Fujitsu at the start of the financial year and tend to focus on areas that have caused recent problems. The Internal Audit Unit would normally conduct around 6-8 such audits on HRConnect each year. They check procedures, processes and audit data on the HRConnect system.

There is also an annual audit by the Northern Ireland Audit Office (NIAO) which focuses on a different aspect of HRConnect each year with its main focus being on the NICS's compliance regarding security and access control arrangements. The NIAO audit findings and recommendations are shared with the ESS Board and the Risk Management Committee.

The HRConnect system is also subject to independent security accreditation where independent IT experts come in and test the HRConnect system for weaknesses and vulnerabilities. This is conducted every 3 years with the next one due in November 2018.

There is also regular disaster recovery testing on HRConnect so that if the system goes down they can switch to a secondary site which should enable the functionality to be maintained. System back-ups are conducted regularly and are copied to the disaster recovery side and synchronised with the live site. All risk management is documented on RMDS – risk management document system.

Compass

HRCS staff met with colleagues in NI Prison Service on 23rd February and 9th March 2018. As highlighted previously, the Compass system differs from HRConnect in that the key HR information is input by central teams of trained staff within each NI Prison Service location whereas on HRConnect, staff and line managers are required to input their own details for many HR functions. There are two separate input teams involved. One team (Central Detail Office) is managed by Prison Grade staff who oversee the day-to-day running of the NI Prison Service. Their focus is on ensuring that sufficient numbers of trained staff are available for duty each day, so they're mainly interested in managing the duty roster system and in trying to get cover for people who report in sick.

The other team consists of administrative staff who manage the updating of the system with details of sickness absence, annual/special leave, performance appraisals, promotion, new starts and leavers. A third team located within the NICS centralised HR unit (NICS HR) also has access to the system with their key function being to update equality monitoring information of any new starts, to manage transfers between establishments, to undertake quality assurance checks on a monthly basis and to provide the NICS with relevant management information as required. There is also a Pay and Travel team who process payments on Compass and implement pay awards.

Independent Audits – Compass

In addition to the above, the DoJ Internal Audit unit would regularly inspect and check aspects of the policy and practice regarding the Compass system. This includes checking whether data recorded on the system is accurate and correct. These internal audit reports are presented to the NI Prison Service IT team and to NI Prison Service senior management for consideration and appropriate action. The NI Audit Office would also regularly inspect the NI Prison Service pay system and these reports would be made available to NI Prison Service and to DoJ senior management.

(iv) Producer's Quality Assurance investigations and documentation

Data Quality Assurance

HRCS also applies an additional series of quality assurance checks to the data they receive from HRConnect and to that received from the NI Prison Service Compass system.

As mentioned previously when describing the monthly data extract process, the various data files are mostly transferred to HRCS each month (some files are transferred on a weekly, quarterly or annual basis). The main HRConnect files are automatically deposited in the HRCS server that only HRCS staff can access. The Compass files are forwarded by secure email. HRCS staff then move the files to another secure drive on the HRCS server which has restricted access. Each file is then opened and the parameters checked to ensure they are correct before the file is then renamed with a standard naming convention for reuse by HRCS staff.

Each month some 8 files are received for the absence statistics and a further 4 files for the Paybill statistics. Four files are received for the Personnel statistics on a quarterly basis. Additional files relating to recruitment competitions also appear in the HRCS server when applications have closed.

Separate files on the details of applicants to external NICS recruitment competitions are also sourced from HRConnect at various times throughout the year. At the end of each calendar year, these are used to compile the 'Analysis of Recruitment Competitions for the NICS' report. The files are transferred through the same process to the staging server and are then moved across to the relevant drive on the HRCS secure server. Applicants to posts in the NI Prison Service are included in the HRConnect files (i.e. there is no requirement for a separate file from NI Prisons on their applicant details).

The Pay statistics team receive additional pay and financial files (Summary of Payment Cost Analysis (SOPCA) files and Outturn files). These enable them to match pay, overtime and allowance payments to staff when compiling their statistics. The SOPCA files are provided by ESS and are placed in a secure Content Manager folder in a password protected file. The Outturn files are requested via the HRConnect portal and are then accessed through the statistician's login to the HRConnect system. The files are then moved to the relevant folders on the HRCS secure server.

HR Connect– Files transferred to HRCS

Type of Files transferred	Date file transferred to HRCS & period covered	What the files are used for	Statistical outputs derived from files
Absence, absence year to date, career history, career history year to date, snapshot, hierarchy, leavers and joiners files	<p><u>Transfer:</u> Around 8th of the month (1st of following month for quarter)</p> <p><u>Coverage:</u> Snapshot/Hierarchy - as at 1st of that month. Absence and Career History - previous month. Year to Date files, Leavers and Joiners – 1st April to end of previous month.</p>	The absence files enable calculations of absence levels this year compared to the previous year across NICS and Departments. The career history files allow HRCS staff to adjust absence rates to reflect staff moves across Departments. The Joiners and Leavers files are used to ensure that these staff movements are accurately reflected in the statistics	Annual and quarterly NICS Absence statistics
Snapshot, hierarchy, leavers and joiners files	<p><u>Transfer:</u> 20th of the month (each quarter).</p> <p><u>Coverage:</u> Snapshot/Hierarchy - as at 1st of that month. Leavers and Joiners - 1st April to end of previous month.</p>	These files are extracted with a 3 week time lag to ensure the data are as complete and accurate as possible for the quarterly 'Employment in the NICS' publications (i.e. allowing time for staff to update HRConnect with staff movements during the reporting period).	<ol style="list-style-type: none"> 1. Quarterly NICS Employment statistics. 2. Annual Personnel Statistics for the NICS reports (April file). 3. Annual Equality statistics for the NICS report (January file).
Paybill, salary history, snapshot and hierarchy files	<p><u>Transfer:</u> 23rd of the month.</p> <p><u>Coverage:</u> Snapshot/Hierarchy as at 23rd of that month. Paybill – current month. Salary History – 1st April to end of current month.</p>	The Paybill file gives pay details of each NICS staff member and is created on 23 rd to coincide with finalised pay details on HRConnect for that month. The Snapshot file contains details of each staff member's grade, work location & start date. These Snapshot and Hierarchy files are also used to provide an up-to-date picture of the NICS' organisational structure on HRConnect for validation by NICS HR.	<p>NICS Pay statistics</p> <p>NICS hierarchy – for validation by NICS HR.</p>
Applicant data	At various stages throughout the year	This file give detailed information on external applicants to the NICS in response to recruitment competitions. The file contains details of their success at the various stages of the process along with their equality monitoring details. These files are then used in combination with the snapshot, hierarchy, leavers and joiners files to produce the analysis of recruitment competitions report.	Annual analysis of recruitment competitions for the NICS report
Summary of Payment Cost Analysis (SOPCA) files; Industrial and Non-Industrial	The industrial files are generated weekly on the day the pay is issued. The non-industrial files are sent on after the monthly pay is issued (date changes slightly each month)	The SOPCA files contain details of every payment made to industrial and non-industrial staff during that month.	Pay statistics
Outturn – with details of each payment made by NICS to staff (Industrial and Non Industrial)	Downloaded on a weekly basis for industrial staff and on a monthly basis for non-industrial staff	The Outturn files are similar to the SOCPA files but contain details of pay information that is a cost to NICS but which is not part of the NICS paybill cost (e.g. PAYE)	Pay statistics

A setup file is then run on each of the main absence, paybill and personnel files (excluding the recruitment, promotion, vacancy, SOPCA and Outturn files which are handled directly by the statisticians responsible for the respective work areas). This takes the raw data file from HRConnect or Compass and converts it into an SPSS database file and creates variable names and value labels. The setup process recodes the variables and removes any test or missing variables. It also is programmed to check for any anomalies or errors in the data such as the length of string variables or for any new categories created in any of the variables. The setup files correct some errors and flags up others for manual intervention. The process automatically creates an Excel spreadsheet that highlights each anomaly or error identified and this is fed back to ESS for the data to be corrected on the live system.

Some examples of the checks undertaken during the initial file set up process are;

- The length of the string variables in the files is checked to see if any new values would exceed the current max length of each variable. For example, a new organisational group is set up with a very long title)
- Duplicate records for individuals are flagged up and then statisticians within HRCS manually examine the records and determine which record should be included and which should be removed from the data file.
- Changes to the categories options for variables are checked to see if any new ones have been created
- The set up process also checks for missing 'organisation' or missing 'assignment' status in the data and flags this up for further checking by statisticians or by ESS.

In total during this initial set up process each month within HRCS between 10 and 13 files are set up with approximately 360-430 checks applied to the variables in total.

A series of validation checks are also applied to the data each month. Some of these checks are applied when the files are first received and then further checks are run which are specific to each individual statistical output i.e. by the different statistical teams within the branch. These checks have been developed over the years and are amended and updated as required.

NI Prison Service files – transferred to HRCS

For the NI Prison Service, the files are forwarded to HRCS via secure email around the 8th of each month containing data either i) as at 1st of that month; ii) for previous month; or iii) from 1st April to end of previous month. Fifty-nine files are received each month from NI Prison Service, most of which are look-up files giving details of the variable names and value labels associated with the main data files.

The key NI Prison data files provided on a monthly basis for Prison Grades and non-Prison Grades (a few non-Prison Grades are included in the Compass figures) are;

- Details of any absence recoded during this period
- Details of staff on maternity leave
- Details of the number of working days available for each staff member during the period in question
- Details of grade, location, salary and payment information for NI Prison staff (Prison Grades and non-Prison Grades)

As with the HRConnect files, the monthly files received from NI Prison Service are taken from the secure email and stored on the relevant folder of the HRCS server with access restricted to the relevant staff. The files then have a similar set-up procedure to convert them into a similar format to the HRConnect files and converts them to SPSS data files with associated variable names and value labels.

During the set up process some 11 checks are incorporated into the syntax to ensure that no new values appear in the monthly datasets. Ten variables are also recoded at this point so that their values match those from

HRConnect. Any anomalies arising from this are then further investigated and corrected as necessary. Additional pay related files are forwarded by the NI Prison Service directly to HRCS staff in the paybill team.

Additional quality assurance measures carried out specific to each statistical output

1. Sickness absence statistics for the NICS

In addition to the extensive quality checks carried out by the ESS, Fujitsu & Capita, data used to produce sickness absence statistics are also subject to quality assurance procedures using SPSS syntax. This syntax is regularly updated to take account of updated employer's National Insurance and Superannuation rules, Public Holidays and changes to the NICS organisational structure.

In addition to the set-up checks that are carried out when the files are received from HRConnect and Compass, the Absence team undertake further quality assurance checks as follows,

- (i) Ensuring that any staff who should not be included in the data, or periods of time during the analysis period that should not be included, are identified. These include:
 - staff on career break or secondment,
 - staff in certain NDPBs/organisations.
 - Home Civil Service staff
 - direct employees,
 - Employment Support Scheme placed staff,
 - staff recorded as 'Payroll Only'
 - Special Advisers,
 - Contingent workers,
- (ii) Identifying and removing duplicate records from the dataset to ensure that each individual member of staff is not in post for the same period on more than one occasion;
- (iii) Identifying and removing overlapping periods of absence or absences that do not fall in the period being analysed;
- (iv) Ensuring sickness absence reasons are on the validated list of options;
- (v) Ensuring that periods of absence are covered by periods of employment;
- (vi) Checking that essential data fields are completed for all staff. The completion rate for certain fields, such as available days, days lost, Department, branch/ organisation, gender, grade, age, full-time equivalence (FTE), length of service and pay rate must be 100%.

Any anomalies or errors identified as a result of the certification checks are referred back to HRConnect or the NI Prison Service to be corrected at source by the data supplier on their IT systems.

Time-series checks are carried out to compare, on a monthly basis, the number of staff in each Department as well as the current and projected absence levels. Any significant and unexplained increases or decreases which occur are investigated with the data supplier and either confirmed or corrected. There is no set measure of tolerance in terms of the change which would trigger a query to the data supplier, but the time-series comparisons provide a useful indication of whether the data are consistent with historical trends or not.

2. Pay statistics for the NICS

In addition to the extensive quality checks carried out by ESS, Fujitsu & Capita, Paybill data are also subject to quality assurance procedures using SPSS syntax. This syntax is regularly updated to take account of new branches, grade, cost-centre codes and changes to the NICS organisational structure.

In addition to the set-up checks that are carried out when the files are received from HRConnect and Compass, the Paybill team undertake further quality assurance checks as follows:

- (i) Ensuring that any staff who should not be included in the data, or periods of time during the analysis period that should not be included, are identified. These include:

- staff on career break or secondment,
 - staff in certain NDPBs/organisations.
 - Home Civil Service staff
 - direct employees,
 - Employment Support Scheme placed staff,
 - staff recorded as 'Payroll Only'
 - Special Advisers,
 - Contingent workers,
- (ii) Identifying and removing duplicate records from the data set to ensure that there is only one record in the final dataset for each individual member of staff,
 - (iii) Checking that essential data fields are completed for all staff. The completion rate for certain fields, such as salary information and staff number, must be 100%.
 - (iv) Checking that an individual's salary is within the correct scale for their grade,
 - (v) Checking that an individual's salary is on a valid step on the pay scale for their grade,
 - (vi) Checking that staff have not moved up more scale steps than would normally be appropriate (e.g. more than one step in any reporting year)
 - (vii) Checking that staff have not changed grade more than would normally be appropriate (e.g. DP to G6),
 - (viii) Checking that all staff have a salary commensurate with their working pattern (full-time or part-time),
 - (ix) Checking that all staff have an appropriate Full-Time Equivalence (FTE) and, where this is missing, re-calculate as necessary,
 - (x) Checking that salary information refers to salary only and does not include a non-salary component (e.g. allowance). In cases where a non-salary component is detected, salary is re-calculated correctly.
 - (xi) Checking that all staff are assigned valid grade descriptors/codes,
 - (xii) Checking that all staff are assigned a valid Department code
 - (xiii) Checking that all staff are assigned a valid Branch code
 - (xiv) Checking that all staff are assigned a valid cost-centre code

Any anomalies are queried with NICS HR and a valid explanation must be provided prior to any further processing or analysis. Any errors identified as a result of these checks are referred back to HRConnect or the NI Prison Service to be corrected at source by the data supplier on their IT systems, or for HRCS look-up tables (e.g. for Branch codes) to be updated and amended appropriately.

Time-series checks are carried out to compare on a monthly and quarterly basis, the number of staff and the associated paybill for each Department and major sub-divisions within each Department (e.g. Directorates). Any significant and unexplained increases or decreases which occur, either in percentage or absolute terms, are investigated with the data supplier and either confirmed or corrected. There is no set measure of tolerance in terms of absolute/percentage change which would trigger a query to the data supplier, but the time-series comparisons provide a useful indication if the data are consistent with historical trends.

3. Employment/ personnel statistics for the NICS

In addition to the extensive quality checks carried out by ESS, Fujitsu & Capita, data used to produce personnel statistics are also subject to quality assurance procedures using SPSS syntax. This syntax is regularly updated to take account of new branches, grade, cost-centre codes and changes to the NICS organisational structure.

In addition to the set-up checks that are carried out when the files are received from HRConnect and Compass, the Personnel team undertake further quality assurance checks as follows,

- (i) Ensuring that any staff who should not be included in the data, or periods of time during the analysis period that should not be included, are identified. These include:

- staff on career break or secondment,
 - staff in certain NDPBs/organisations.
 - Home Civil Service staff
 - direct employees,
 - Employment Support Scheme placed staff,
 - staff recorded as 'Payroll Only'
 - Special Advisers,
 - Contingent workers,
- (ii) Identifying and removing duplicate records from the data set to ensure that there is only one record in the final dataset for each individual member of staff,
 - (iii) Checking that essential data fields are completed for all staff. The completion rate for certain fields, such as gender, grade, permanent/temporary contract, full or part-time status, must be 100%.
 - (iv) Checking that all staff have an appropriate Full-Time Equivalence (FTE) and, where this is missing, re-calculate as necessary,
 - (v) Checking that all staff are assigned valid grade descriptors/codes,
 - (vi) Checking that all staff are assigned a valid Department code
 - (vii) Checking that all staff are assigned a valid Branch code

Any anomalies or errors identified as a result of these checks are referred back to HRConnect or NI Prison Service to be corrected at source by the data supplier on their IT systems, or for HRCS look-up tables (e.g. for assigning organisation name to department) to be updated and amended appropriately.

Time-series checks are carried out to compare on a monthly and quarterly basis, the number of staff in each Department, major sub-divisions within each Department (e.g. Directorates), grade level and occupation. Any significant and unexplained increases or decreases which occur, either in percentage or absolute terms, are investigated with the data supplier and either confirmed or corrected. There is no set measure of tolerance in terms of absolute/percentage change which would trigger a query to the data supplier, but the time-series comparisons provide a useful indication if the data are consistent with historical trends.

Annual leavers files are also created. The checks which are carried out are the same as for the snapshot files outlined above, with similar inclusions and exclusions and essential data fields. In addition, further checks are carried out to try to ensure the reason for leaving is completed for all leavers. Other checks that are undertaken include ensuring that the leaving date is within the period under consideration, and that only valid ages (i.e. 60+) are recorded as leaving due to age retirement.

The number (or composition) of staff leaving the NICS can vary from year to year depending on the economic conditions or other external influences (e.g. the availability of the NICS voluntary exit scheme in 2015 and 2016 meant that the number of age retirements and voluntary resignations was lower in those years, since availing of the NICS voluntary exit scheme was more lucrative). However when there are large variations in a particular category for year to year, these are investigated with the data supplier.

4. Equality statistics for the NICS

In addition to the extensive quality checks carried out by ESS, Fujitsu & Capita, data used to produce equality statistics are also subject to quality assurance procedures using SPSS syntax. This syntax is regularly updated to take account of new branches, grade, cost-centre codes and changes to the NICS organisational structure.

In addition to the set-up checks that are carried out when the files are received from HRConnect and Compass, the Equality team undertake further quality assurance checks as follows,

- (viii) Ensuring that any staff who should not be included in the data, are identified. These staff include:
 - staff on career break or secondment,

- staff in certain NDPBs such as the NI Electoral Office, Agri-Food and Biosciences Institute, NI Public Services Ombudsman, The Consumer Council, NI Policing Board, NI Audit Office
 - Staff in the Planning Appeals Commission/Water Appeals Commission in the Department of Justice
 - Home Civil Service staff
 - direct employees,
 - ES Scheme staff ,
 - staff recorded as 'Payroll Only'
 - Fee Paid Office Holders,
 - Board members,
 - Special Advisers,
 - Contingent workers, and
 - Any staff not being paid (for whatever reason)
- (ix) Identifying and removing duplicate records from the data set to ensure that there is only one record in the final dataset for each individual member of staff,
- (x) Checking that essential data fields are completed for all staff. The completion rate for certain fields, such as gender, community background, age-group, grade, permanent/temporary contract, full or part-time status, must be 100%.
- (xi) Checking that all staff are assigned valid grade descriptors/codes,
- (xii) Checking that all staff are assigned a valid Department code
- (xiii) Checking that all staff are assigned a valid Branch code

Any anomalies or errors identified as a result of these checks are referred back to HRConnect or NI Prison Service to be corrected at source by the data supplier on their IT systems, or for HRCS look-up tables (e.g. for assigning organisation name to department) to be updated and amended appropriately. Where community background is missing, updates from previous datafiles are incorporated. Once this exercise is complete, a list of staff with missing community background is provided to Diversity and Inclusion Branch in NICS HR who provide HRCS with the missing details and arrange for an Automated Data Loader file to be sent to Fujitsu for the information to be updated in later downloads.

Time-series checks are carried out to compare on a quarterly and annual basis, the composition by equality category of staff (including missing values) in each Department, major sub-divisions within each Department (e.g. Directorates), grade level and occupation. Any significant and unexplained increases or decreases which occur, either in percentage or absolute terms, are investigated with the data supplier and either confirmed or corrected. There is no set measure of tolerance in terms of absolute/percentage change which would trigger a query to the data supplier, but the time-series comparisons provide a useful indication if the data are consistent with historical trends.

Annual leavers files are also created. The checks which are carried out are the same as for the snapshot files outlined above, with similar inclusions and exclusions and essential data fields. In addition, further checks are carried out to try to ensure the reason for leaving is completed for all leavers. Other checks that are undertaken include ensuring that the leaving date is within the period under consideration, and that only valid ages (i.e. 60+) are recorded as leaving due to age retirement.

The number (or composition) of staff leaving the NICS can vary from year to year depending on the economic conditions or other external influences (e.g. the availability of the NICS voluntary exit scheme in 2015 and 2016 meant that the number of age retirements and voluntary resignations was lower in those years, since availing of the NICS voluntary exit scheme was more lucrative). However when there are large variations in a particular category for year to year, these are investigated with the data supplier.

A further section of the report reports on NICS recruitment competitions. The methodology is largely the same as for the separate publication on recruitment competitions for the NICS and is outlined in the subsection below.

Analysis of promotion competitions within the NICS is also included in the report. The quality assurance procedures employed are similar to those undertaken for recruitment competitions. SPSS syntax is used and regularly updated to take account of aspects such as new competitions, grade, new application status, changes to the NICS organisational structure.

The analysis is restricted to Promotion Boards and Trawls open to NICS employees only. Competitions not appearing in the Weekly Opportunities Bulletins are considered for inclusion and where appropriate an examination of the Candidate Information Booklet determines whether a competition should be included.

In terms of equality information, candidates for promotion competitions are NICS staff and as such the data relating to disability and ethnicity are missing for some staff. Missing data are checked against relevant snapshot files to ensure the information is as complete as possible. It will only generally be complete for age, gender and community background. Information on other aspects such as sexual orientation is only available for recent appointees and so is excluded from analysis as coverage is too low.

Calculation of expected number of successful applicants forms part of the report. Where there are large differences between the actual and expected figures, in-depth analysis by competition is undertaken to ensure these differences can be explained by the data.

5. Analysis of recruitment competitions for the NICS

In addition to the extensive quality checks carried out by ESS, Fujitsu & Capita, data used to produce recruitment statistics are also subject to quality assurance procedures using SPSS syntax. This syntax is regularly updated to take account of new competitions, grade, new application status, changes to the NICS organisational structure.

In addition to the set-up checks that are carried out when the files are received from HRConnect, the team responsible for the recruitment report undertake further quality assurance checks as follows,

- (i) Ensuring that the competition list for a particular year is complete. Competitions with a closing date for applications in the relevant time period (currently the calendar year) are identified and compared with lists of competitions derived from Weekly Opportunities Bulletins distributed to NICS staff. The following competitions are removed:
 - Competitions for non-NICS posts, e.g. posts in Agri-Food and Biosciences Institute, The Consumer Council, Commission for Victims and Survivors, Director/Deputy Director of the Public Prosecution Service, Northern Ireland Policing Board, Board members of public bodies;
 - Competitions for posts not usually counted in NICS staffing figures, e.g. NISRA Survey Interviewers; and
 - Competitions with a closing date for applications outside the reporting period.
- (ii) For competitions with a missing closing date for applications, the date applications were received together with the actual closing date in the Candidate Information Booklet is used to assess inclusion.
- (iii) Competitions not appearing in the Weekly Opportunities Bulletins are considered for inclusion and an examination of the Candidate Information Booklet determines whether a competition should be included. (The only recent examples are Education Inspectors, where it is unlikely internal NICS staff will have the required skills and experience.)
- (iv) To ensure linkage between the reference numbers of parent competitions (the competition an applicant will apply for) and competitions which are used to make offers to candidates for specific

posts a single variable relating to the overall competition is created, which means for candidates offered specific posts there will be two entries.

- (v) Ensuring that each applicant is counted only once in each competition, by removing duplicate entries. This is first of all done by creating an aggregated file, for which the aggregation is done using candidate reference number. Once this aggregated file is created, it is examined for duplicate entries of National Insurance number within each competition. In entries for which National Insurance Numbers are not recorded, date of birth is examined to help determine if the entries refer to different people. If the date of birth is the same, other attributes such as gender, community background and home postcode are used to determine whether the entries refer to different candidates. Another aggregated file is then created, aggregating on NINO and date of birth.
- (vi) Ensuring that for each applicant the most recent status is selected through the aggregation process.
- (vii) Where the status is ambiguous (Checks in Progress, Death, Invite to Informal Discussion, On hold, Regret – Medical, Regret – Vetting Requirements, Regret – Withdrawal, Regret – Withdrawn, Terminate Application), the previous status is chosen as the relevant status for the competition.
- (viii) For each relevant status for the competition, a recode is undertaken to the 9 categories reported on. If there is no existing category for a particular status one is assigned.
- (ix) Where candidates are offered a job and the start date is by the date the file is being prepared, and there is no regret status, these candidates are deemed appointed. This is further confirmed through searches for staff in the personnel files (and possibly leaver files if they left soon after joining) for the relevant dates.
- (x) Checking that all staff are assigned equality information: gender, community background, date of birth, sexual orientation, disability, ethnicity. Missing data are populated during the aggregation process if information is missing from one of the entries but present in another.

Applicant files which are available following the closure of applications for a competition are checked for missing information, as are earlier files which may hold equality information which is not available if it is missing from later applications. Any anomalies, errors or missing information identified as a result of these checks are referred to ESS who in turn contact HRConnect to be corrected at source by the data supplier on their IT systems.

Updates of information from previous years forms part of the report. In these cases, the lists of competitions identified in the previous years' reports are used and the above procedures are followed. Checks are made to ensure that appointments from previous years are at least as high as reported in previous reports.

Calculation of expected numbers of successful applicants at each stage also form part of the report. Where there are large differences between the actual figures and the expected figures, in-depth analysis by competition is undertaken to determine the reason to ensure these differences can be explained by the data.

Strengths and weaknesses of the Administrative Data sourced from HRConnect

Strengths

- The information is captured on HRConnect, an e-HR system specifically designed to manage and record HR processes for large organisations, with key HR details of all NICS staff recorded on it (except for details of NI Prison Grade staff which are sourced from a separate system for security reasons)
- NICS has comprehensive guidance for staff on how to input their HR details – to ensure that all staff and line managers record details accurately and on a consistent basis.
- Senior managers monitor key HR statistics across the NICS on a monthly basis and help ensure that the figures are accurate and robust. Any emerging anomalies or discrepancies are investigated and data corrected where required.
- Monthly data validation checks and quality assurance checks are run by ESS, Fujitsu and Capita to identify and correct any missing values or inaccuracies in the data
- The key HR statistics are recorded on a similar basis to other organisations
- The data are sourced from an administrative data system and therefore are a complete record of all NICS staff (i.e. are not based on a sample of staff)

Weaknesses/Limitations

- The HRConnect system is dependent on line managers accurately inputting staff details onto HRConnect. Problems can occur if the line manager doesn't update the details on a timely basis or if input errors are made.
- With regard to the Sickness Absence statistics, we are unable to assess the extent of any unreported absence on the system. In other words, we cannot cross reference a person's actual absence with that recorded on the system.
- The HRConnect system is dependent on the individuals work area details being updated on a timely basis. With transfers/promotions possible across the NICS, staff roles and locations can change regularly and are dependent on the individual and their line manager ensuring that this is accurately reflect on HRConnect. Again, it is difficult to ascertain the extent of any related inaccuracies.
- Some of the variables on HRConnect have a high percentage of missing values due to legacy practices or changes in mandatory fields over the years. A high proportion of disability information is missing for NICS staff. Similarly, sexual orientation recording only became mandatory in recent years which means it can be used to analyse recent recruitment competitions but is not complete enough for the majority of NICS staff whose monitoring details were recorded before this became mandatory.

Strengths and weaknesses of the Administrative Data sourced from the NI Prison Service Compass System

Strengths

- The information recorded on the compass system is felt to be more reliable and accurate than that on HRConnect as;
 - the system is more manageable with only 1,300 Prison Grade staff
 - the information is input by trained staff and not reliant on staff/line manager input
 - there is an operational need to have accurate and up-to-date details on Prison staff numbers to ensure that they can manage the staffing of the prisons on a day-to-day basis. It's very important that the system is kept up to date and is accurate
- The system works well and is trusted by the staff who use it. It is reliable and needs minimal maintenance.
- A small number of key personnel are involved in managing the Compass system and have developed a high level of competence and experience of the system
- The key HR statistics are recorded on a similar basis to other organisations
- The data are sourced from an administrative data system and therefore are a complete record of all NI Prison Service staff (i.e. they are not based on a sample of staff)

Weaknesses/Limitations

- The Compass system is quite dated. As a result of speculation about the system being replaced there has been minimal development to or investment in the system in recent years and official staff training course on the system are no longer available.
- Since the NI Prisons joined the Department of Justice, the governance of the Compass system has become more complex with DoJ policy, finance and IT colleagues all now partly involved in the decision making process. This has been further complicated by the centralisation of the NICS HR function in 2017 when NI Prison Service HR staff were moved to NICS HR in May of that year. The Compass User Group has not met since 2017.
- As time goes on and key staff move, there has been a decline in the number of staff with expertise in the system. The level of corporate knowledge of the background to the system and its operation, has therefore diminished over the years.

Degree of risk to the quality of the administrative data

The risk to the quality of the administrative data varies depending on the completeness of the data associated with each individual statistical output.

1. **Sickness Absence statistics** – the risk is thought to be minimal as strict policies are in place to ensure that sickness absence is recorded accurately within the NICS. The onus is on line managers to ensure that they record the sickness absence of their staff. Individual staff cannot affect or influence the accuracy of the figures. Line managers could be disciplined if found not to be recording their staffs' sickness absence accurately. There is a high level of monitoring of sickness absence figures throughout the year with monthly automated email reports being sent to all line managers and also detailed reports made available to monthly Departmental board meetings. The absence figures from the Compass system are felt to be robust given the processes involved and the critical importance of recording this information accurately given the need for the NI Prison Service to have sufficient numbers of Prison staff on duty each day.
2. **Pay statistics** – again these tend to have minimal risk associated with them as any inaccuracies in pay are readily flagged up by individual staff or are caught by monthly checks conducted by Capita or ESS. Any claims for allowances or overtime payments have to be checked and authorised by line managers on HRConnect before payment is made. Within the Compass system, similar checks are run each month before the payments are made.
3. **Employment in the NICS/Personnel statistics** - These figures tend to be accurate & reliable at the NICS and Departmental level with the focus being on the number staff in post by gender and grade (headcount or Full time equivalent, Full-time or part time). The figures are sometime less reliable at branch level where new branches are created within a department and it can take weeks or months for the new structure to be reflected on the HRConnect system. Similarly for Prison Grade staff on the Compass system, this information is felt to be robust and accurate.
4. **Equality statistics**. – The key equality statistics regarding gender, community background, age, ethnicity and disability are felt to be suitable for analysis purposes. While 55% of staff have missing disability data, this is due to recording procedures on the legacy system. Information regarding sexual orientation is incomplete and only became mandatory in recent years and hasn't been retrospectively applied to all staff who joined prior to that date. For some categories, staff can go into HRConnect and update their equality information where it is missing, but this is on a voluntary basis and it isn't mandatory for all staff. Within the Compass system, again this aspect is quite robust and accurate with one staff member who has the responsibility for updating all this information for new starts and who has considerable experience in this role.
5. **Analysis of NICS Recruitment Competition Statistics** – The data are based on good quality/complete monitoring information for each competition. Candidates' progress through the competition is accurately recorded by HRConnect staff (Capita) and input onto the system. The monitoring information is required to be completed by candidates before they are eligible to take part in the competition – as it forms part to the NICS's Fair Employment Monitoring Requirement.