

REPORT OF A BREACH OF THE CODE OF PRACTICE FOR STATISTICS



1. Core Information

This breach affected a number of Northern Ireland (NI) Producers of official statistics – information has been presented for all affected outputs:

Economic and Labour Market Statistics (ELMS), Department of Finance (DoF)

Title and link to statistical output	Annual Business Inquiry Reporting Unit Results 2018 https://www.nisra.gov.uk/statistics/business-statistics/annual-business-inquiry
Name of producer organisation	Northern Ireland Statistics and Research Agency (NISRA), Economic and Labour Market Statistics Branch
Name and contact details of person dealing with report	Ross Hume ross.hume@nisra.gov.uk 02890 255173
Link to published statement about the breach (if relevant)	n/a*
Date of breach report	29 November 2019

*A statement has not been published as the overall delay was 1 minute. Publishing such a statement would, on balance, undermine rather than enhance public confidence.

Vital Statistics and Administrative Research and Support Branch (VARs), Department of Finance (DoF)

Title and link to statistical output	Monthly Births – October 2019 Monthly Deaths – October 2019 https://www.nisra.gov.uk/publications/monthly-births https://www.nisra.gov.uk/publications/monthly-deaths
Name of producer organisation	Northern Ireland Statistics and Research Agency (NISRA), Vital Statistics and Administrative Research and Support Branch
Name and contact details of person dealing with report	Elaine Longden elaine.longden@nisra.gov.uk 02890 388492
Link to published statement about the breach (if relevant)	https://www.nisra.gov.uk/publications/monthly-births https://www.nisra.gov.uk/publications/monthly-deaths
Date of breach report	29 November 2019

Department of Health (DoH)

Title and link to statistical output	Quarterly Direct Payment Statistics for Northern Ireland September 2019 https://www.health-ni.gov.uk/publications/quarterly-direct-payments-statistics-september-2019
Name of producer organisation	Community Information Branch, Information Analysis Directorate, Department of Health NI (DoH)
Name and contact details of person dealing with report	Heidi Rodgers heidi.rodgers@health-ni.gov.uk Tel 02890 522580
Link to published statement about the breach (if relevant)	https://www.health-ni.gov.uk/publications/quarterly-direct-payments-statistics-september-2019
Date of breach report	29 November 2019

Overall contact: Ruth Fulton, NISRA Statistical Support Branch (SSB)

Ruth.Fulton@nisra.gov.uk

Tel: 02890 388466

2. Circumstances of breach

Although the underlying problem was the same for all producers, the impact on the individual branches differed. This has been outlined below:

Relevant principle(s) and practice(s)	Code of Practice: Trustworthiness T3.6 Statistics should be released to all users at 9.30am on a weekday.
Date of occurrence of breach	29 November 2019
<p><u>What happened?</u></p> <p>The Drupal content management system which supports the NISRA website and the Northern Ireland Civil Service Departmental websites experienced 'site under maintenance' issues on the morning of 29 November 2019. This meant that staff were unable to upload their publications at 9.30am and also that publications scheduled to go live at 9.30am didn't.</p> <p>ELMS & VARS - who were manually uploading their publications to the NISRA website - continued to persevere with the website, as well as getting their publications out by alternative means (NINIS¹ for ELMS and GOV.UK² for VARS).</p> <p>DoH – who had scheduled the publication to automatically go live on the DoH website – switched to a manual upload which was successful.</p> <p>The ELMS publication went live on the NISRA website at 9.31am; the DoH publication went live on the DoH website at 9.48am and the VARS publications went live on the GOV.UK website at 10.15am. Further details of each individual timeline are provided below.</p> <p>Both ELMS and Dissemination Branch (DB) who manage NINIS, contacted IT Assist. ELMS contacted IT Assist at 8.55am and DB at 9.15am. Before this, DB had tried to contact directly the team dealing a similar incident logged the previous day, but were unsuccessful. A new Priority 1 incident was logged at 9.33am.</p> <p>Statistical Support Branch (SSB) contacted all NISRA producers due to publish on the day to check if they were having difficulty. SSB provided advice and support on alternative options (such as GOV.UK).</p> <p>The root cause of this disruption was an Internet bot going through the Northern Ireland Civil Service (NICS) websites. A bot is an automated application that is frequently used for malicious purposes, although in this case it was innocuous and merely mapping NICS websites. While the bot was active, resources were taken up to the point that the application and Gluster File Store servers were impinged, preventing new content from being uploaded. The websites were affected from approximately 08:00 to 11:00am.</p> <p>¹Northern Ireland Neighbourhood Information System – a website run by NISRA which provides contains datasets on a range of socio-economic themes at small-area statistical geographies.</p> <p>²GOV.UK – this contains the UK-wide official and National Statistics calendar, including links to all NI National statistics and most NI official statistics. Publications can be loaded directly on to this website.</p> <p><u>Timeline for ELMS (as reported by ELMS)</u></p> <p>The NISRA website experienced unexpected maintenance issues on the morning of 29 November 2019. Access to the content management system was affected and the ability to upload new content. In ELMS, nominated statisticians upload publications onto the NISRA website for the whole branch.</p>	

As the normal website and system for publishing appeared to be working at a much slower rate, ELMS staff persevered with normal practices while monitoring time. With the publishing deadline approaching, ELMS staff took emergency steps to get their publications out by alternative means. This was facilitated by NISRA's Dissemination Branch where they uploaded the publication to NINIS and used social media to inform of its new/temporary location. The new location was also advertised on GOV.UK as well as being sent to stakeholder/key users via email.

These additional measures were introduced whilst ELMS staff also attempted normal procedures in a two pronged effort. The NISRA website was back up at 9.31am at which point the publication was available; the NINIS website at 9.32am also had the report available to view. During this period, the NISRA site was working intermittently and it seemed as if full functionality had returned by around 10.30.

Timeline for VARS (as reported by VARS)

The Drupal content management system which supports the NISRA website failed on the morning of 29 November 2019. The documents would not upload to the website and the team were given 'site under maintenance' error reports. In VARS, the relevant statistician uploads the publication onto the NISRA website.

The branch took steps to get the publications out by alternative means, via GOV.UK. Indeed, the information was posted on GOV.UK at 10.15am.

At 11.45am, the team were finally able to upload to the NISRA website.

Timeline for DoH (as reported by DoH)

The official statistics "Quarterly Direct Payment Statistics for Northern Ireland" are published by DoH. These statistics are produced by Community Information Branch (CIB), one of the four NISRA branches within Information and Analysis Directorate (IAD) in DoH. The IAD administrative support team upload publications on to the website.

At 10am on 28 November 2019 (the day before publication), the relevant DoH statistician sent an e-mail to the IAD administrative support team with instructions to publish the tables and related material at 9:30am on 29 November 2019.

As requested, the administrative support officer placed the material on the DoH website with set details of going live at 9:30am on 29 November 2019.

At 9:30am on 29 November 2019, the administrative support officer checked to ensure that the statistics had gone live. It was soon discovered that the upload had not taken place because the website software Drupal was "under maintenance".

The administrative support officer immediately informed the responsible statistician of the problems with Drupal while still working on trying to access the site and upload the documents.

At 9.44 the publication was manually published. At 9.48 the page refreshed and the publication was live.

3. Impact of the breach (as reported by the producers)

ELMS - No impact due to the delay being only 1 minute. Only possible damage is to reputation.

VARs - As the publication was not available at the proposed time of release, there may have been customers expecting access who could not have obtained the report. The impact is thought to be minimal as the release tends not to get wide interest. No complaints are expected and none have been made to date.

DoH - As the statistical tables were not available at the proposed time of release, there may have been customers expecting access who could not have obtained the report. The impact is thought to be minimal as the release is policy specific and tends not to get wide interest. No complaints are expected and none have been made to date.

4. Corrective actions (taken or planned) to prevent re-occurrence

A range of short-term actions were employed to get the publications out by alternative means (including NINIS supported by social media and GOV.UK). These measures were carried out in tandem with normal procedures to maximise the chance of publishing. One of the branches (ELMS) who had experienced a similar issue several months ago, had the contingency measures implemented prior to the 9.30am deadline. DoH who had the publication scheduled for automatic publication, promptly switched to manual uploading (when it did not go live at 9.30am) taking just 14 minutes to manually upload the publication (and 4 minutes for the page to refresh). The different approaches are detailed above.

Prompt action was also taken to notify IT Assist of the issue, with calls placed in advance of the 9.30am deadline and the incident logged as a Priority 1 incident. This reflected the advice provided by IT Assist as a result of a previous incident:

NISRA have been advised that these incidents should be logged as 'public facing' (Priority 1) rather than 'impacting one or more staff' which will raise their priority and escalate their resolution.

NISRA Statistical Support Branch (SSB) also proactively contacted all branches with publications due to be released that on 29 November 2019 checking whether they were affected, providing advice and sharing solutions.

Following the incident, SSB contacted the IT Assist Incident Manager to establish what had caused the problem. They had not been made aware of the issue, but immediately started an investigation. SSB were able to direct them to the incident call. The Incident Manager provided initial feedback around lunchtime and also advised that they had asked the Problem management team to open a "Problem" and start the root cause investigations.

Full details of what happened and why it happened have now been investigated by IT Assist who have prepared a Post Incident Root Cause Analysis (PIRCA) report. This outlines what happened, why it happened and what steps could be taken to reduce the possibility of it happening again. These include lowering the 'request' threshold for the Web Access Firewall (but this could restrict genuine traffic) or transferring to a newer Web Access Firewall (which would involve extensive testing by Departments to ensure everything works properly). The second option is the preferred way forward but the Drupal hosting is being re-tendered in January 2020 so this work would not be complete prior to the migration. It should also be noted that the current IT Assist infrastructure was designed for five sites and there are now over fifty sites being hosted, which is why Internet bots have recently had an impact. The new environment will be designed for the current level of hosting requirements and be scaled accordingly thus reducing the risk. In the interim, IT Assist will ensure that should such an incident re-occur, IT Assist Comms Security will be approached to investigate the type of traffic and whether it could be cut off which was not done on 29 November.

There was also an issue with how effectively calls were dealt with by IT Assist, with an incident with the NISRA website which occurred the previous day (reported by Dissemination Branch) being logged by IT Assist as a Priority 4 and staff experiencing difficulty in escalating the call/ logging a call as Priority 1. It is not clear whether or not the incident the previous day was related to this breach, but there were similarities. Initial discussions have already been held with IT Assist and it is recommended that users explicitly request that the call is logged as Priority 1 to avoid any miscommunication. Helpdesk operators will also be alerted to the agreed procedures.

SSB will also prepare guidance to circulate to all NISRA producers (including those using non-Drupal websites and in other organisations) advising them of the correct procedures to follow should such an incident happen in the future. This will include advice on timing as well as guidance and advice on alternative methods of getting the publication out. It will include advice on logging calls with IT Assist, for those users covered by this service.