

census
2021

Demographic Statistics Advisory Group

28 January 2022

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Operational report

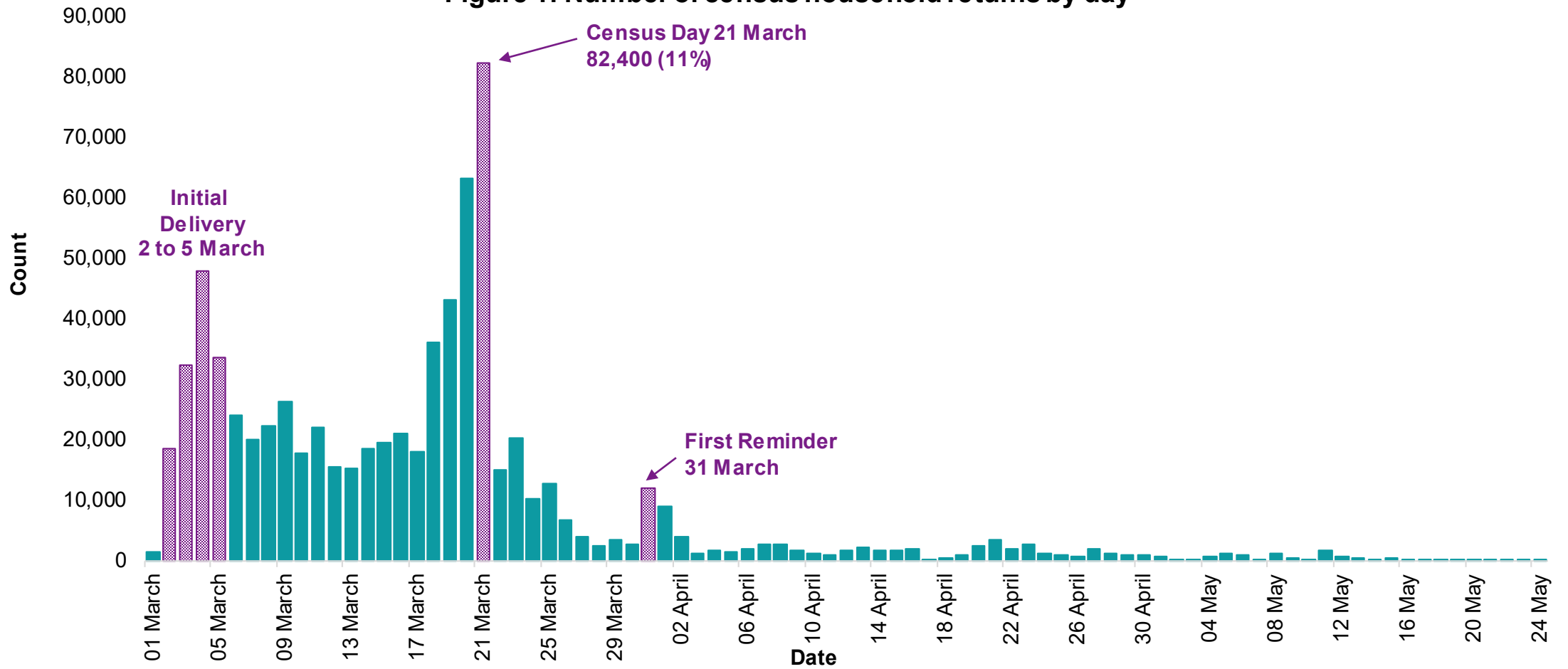
Operational report overview

Provides an account of how Census data collection was conducted and sets out a record of key elements:

- Advertising
- Stakeholder engagement
- Communications
- Address register
- Data collection services
- Contact centre
- Operational timeline
- Field operations

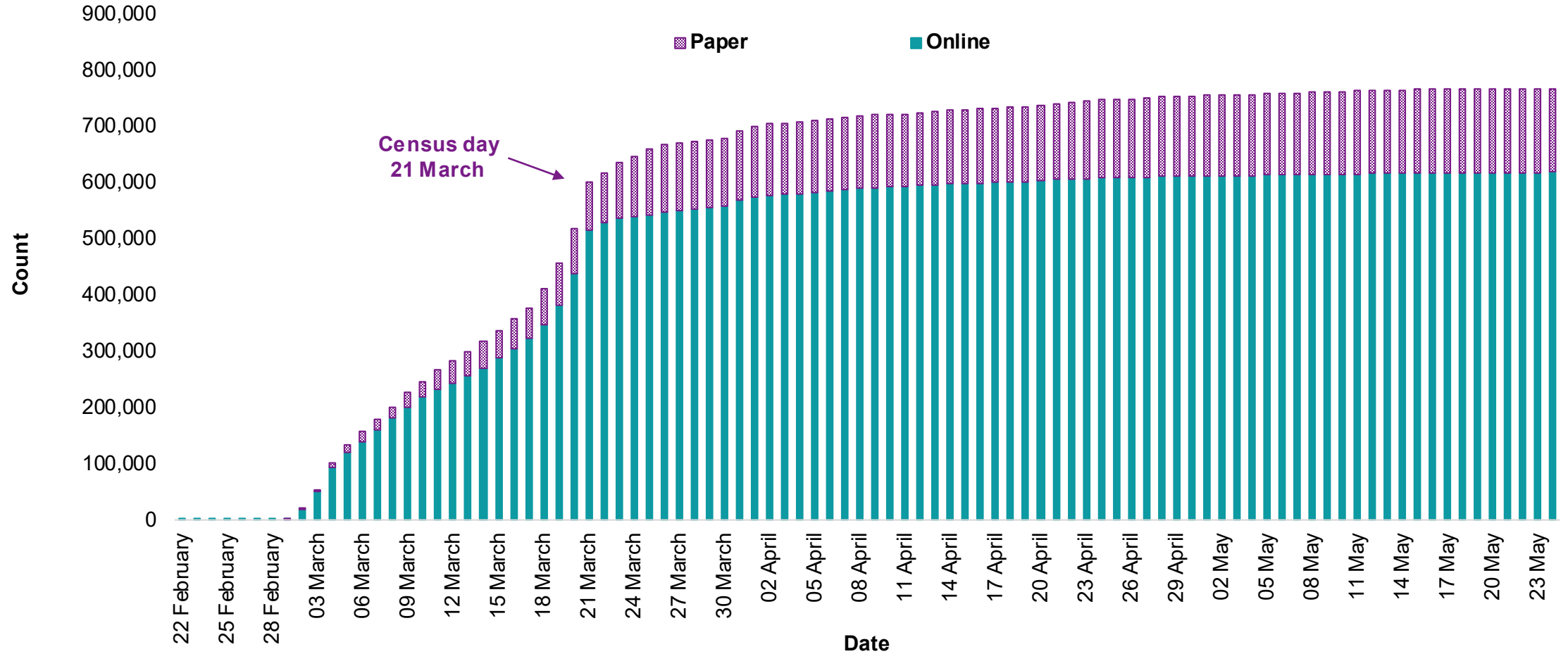
Response rate by day

Figure 1: Number of census household returns by day



Response rate by day (Cumulative)

Figure 2: Cumulative number of household returns by day and return type



Electronic Questionnaire (eQ)

- ‘Soft launch’ on 23 February 2021
- ‘Officially launched’ on Monday 1 March 2021 – closed Monday 24 May 2021
- Mode of engagement – online returns were completed via:
 - 49% on a mobile phone
 - 42% on a personal computer/laptop
 - 9% on a tablet device

Contact centre

Centre opened for telephone calls from 1 March 2021

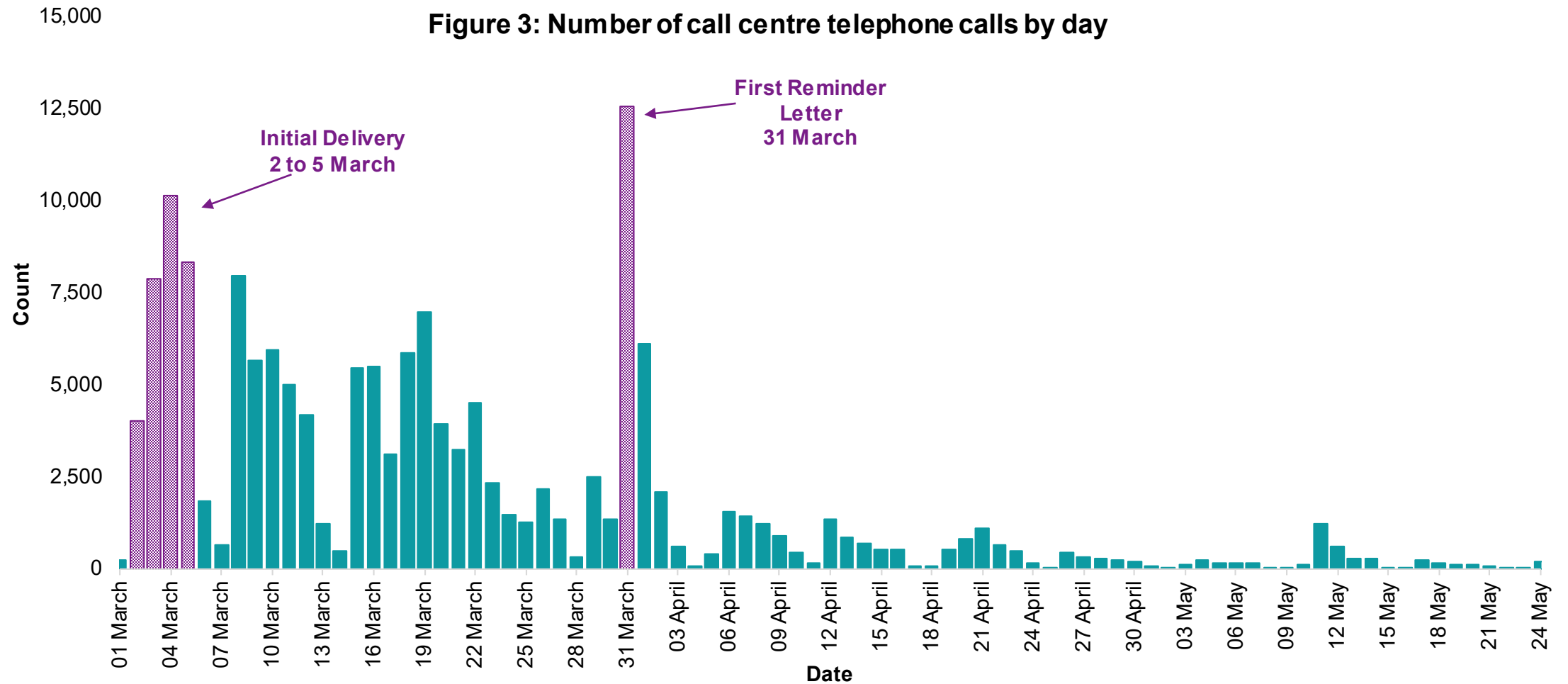
Dealt with wide range of enquiries:

- helping completion for households, individuals, visitors, vacant properties or holiday homes
- requests for paper questionnaires (PQs), individual forms, continuation forms, large print PQs, Braille and translation booklets.
- telephone completion of census over the phone.

In total the contact centre dealt with 161,616 calls up to 8 July 2021

Contact centre calls

Figure 3: Number of call centre telephone calls by day



Operational report highlights

- Describes how Census 2021 collection operation was carried out against a backdrop of a worldwide pandemic
- Huge success with an overall return rate of 97.2%
- Promoted a 'digital first' approach, 80.6% of addresses completed online and 19.4% paper
- Provides useful resource for others planning public engagement

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Data processing update

Data processing overview

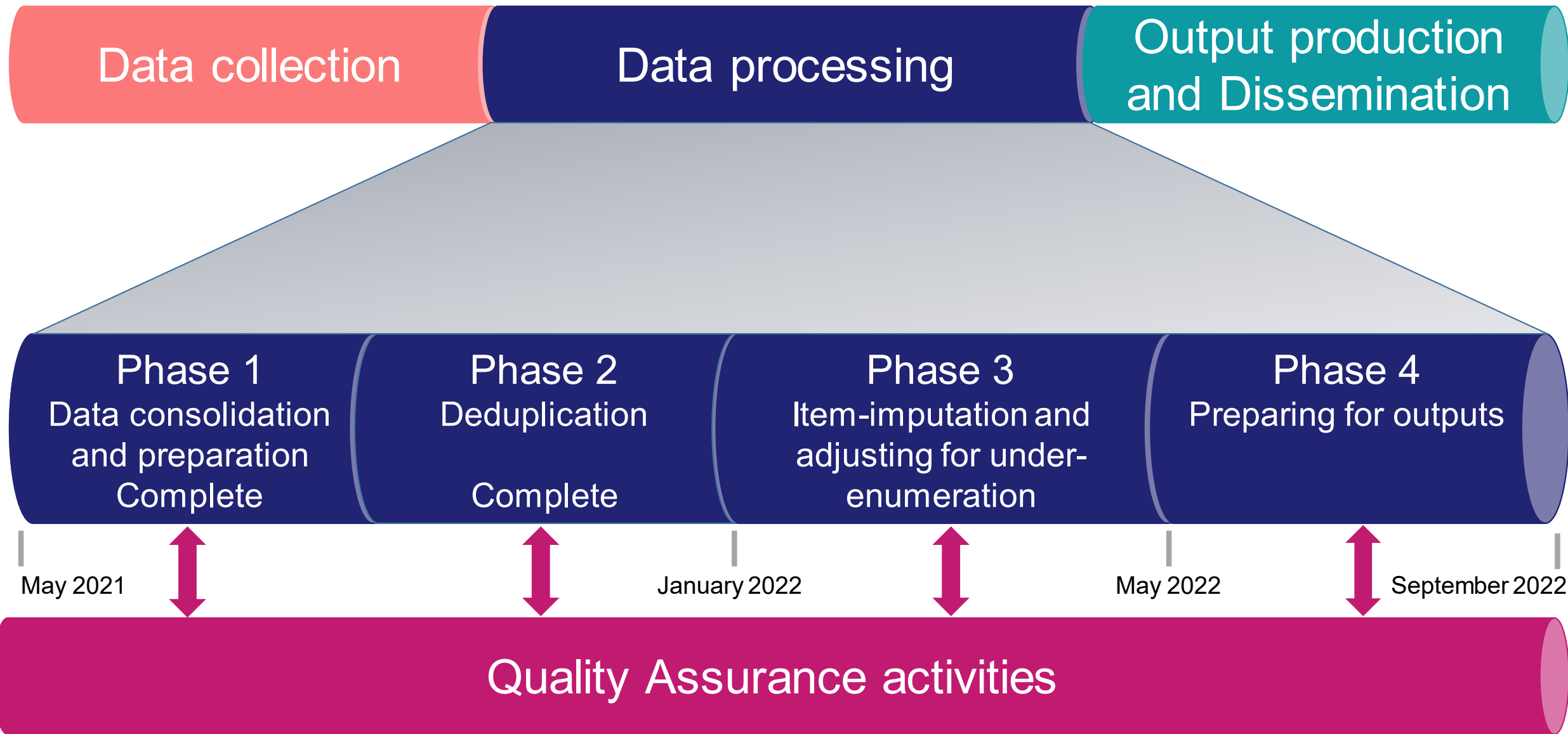
How do Quality Assurance integrate?

1. Data processing explained
2. What work has been done to date?
3. What is still left to do?

Basic census model



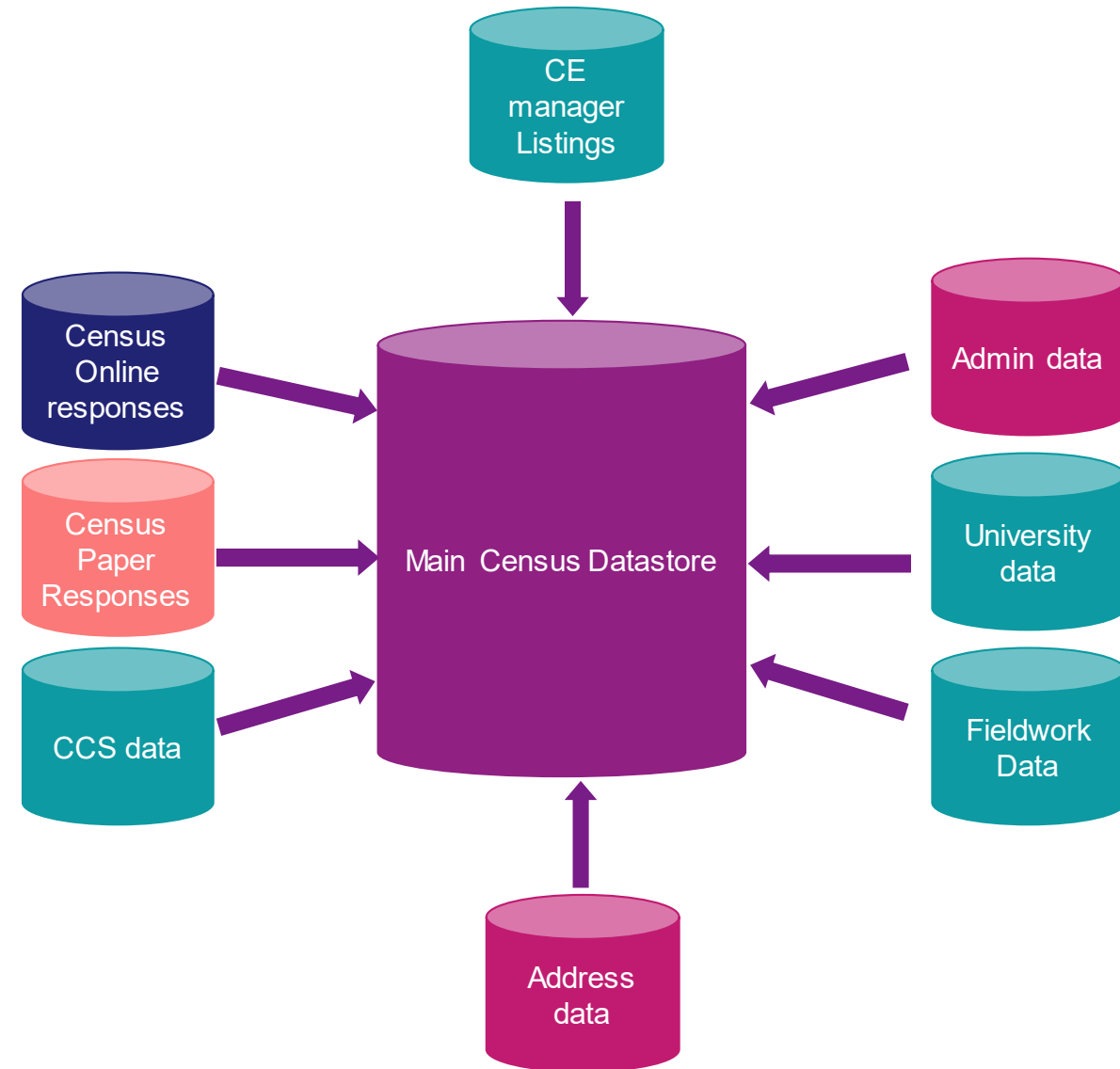
Data processing phases – progress



What did we do in Phase 1?

Phase 1 (May 2021 – September 2021) Data consolidation and preparation

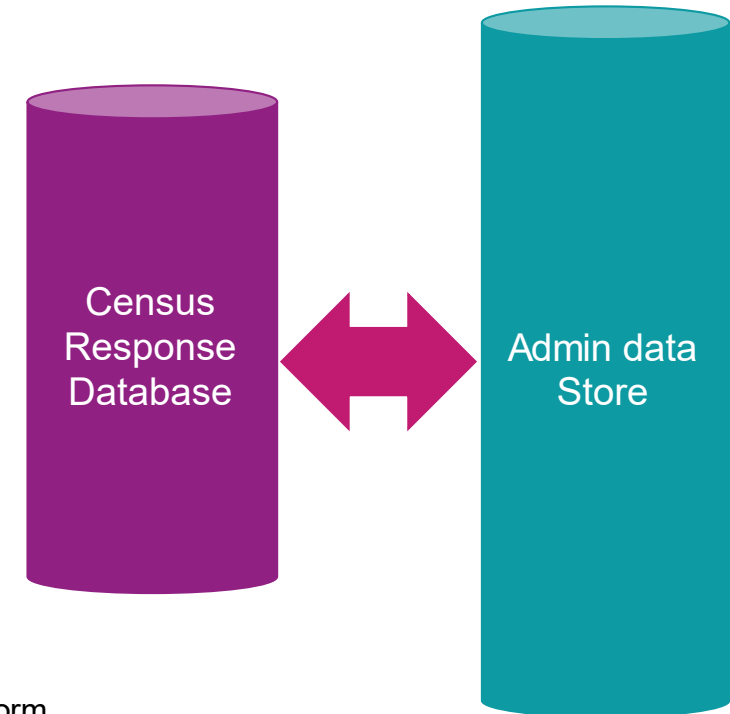
- Consolidating collected data
 - Reconciling against collection MI
- Initial tidy up
 - Removal of test cases (etc...)
 - Addition of hand-enumerated records (for example, travellers, homeless, placeholders)
 - Review of blank and late returns
 - Linking unlinked paper questionnaires
- Quality Assurance
 - Review of CE returns against manager listings
 - Review of the very old (aged 100+)
 - Analysing question response



What did we do in Phase 2?

Phase 2 (September 2021 – January 2022) Deduplication

- All response data linked to Admin data
 - Facilitated duplicate matching
 - Facilitated record level QA
- False person analysis
 - Person records with minimal info (mostly eQ “flushed returns”)
 - Retrieved info some of this group from admin data
- Deduplication
 - People duplicated at same address
 - For example, responded on paper and online, individual forms completed when already on a household form
 - People duplicated at different locations
 - For example, children of separated parents, students at home and term-time address, moved house during the Census
- Final Edits (Quality Assurance)
 - Updated DOB and age using admin sources
 - Moved students to their term-time address



Phase 2 QA: Students (1)

Moving Students to Term Time Address (TTA)

- Students difficult to enumerate in any census
- COVID meant that some weren't at normal residence
- Instruction given to include student at home address as well as term-time address
 - If home address, then give us your term-time address
- Don't 'route' students out of the online questionnaire at home address
- Couldn't capture TTA on paper questionnaire due to space limitations

Phase 2 QA: Students (2)

Rules for Moving Students to TTA	Enumeration address	Information given about TTA?	Action
Rule 1	TTA	N/A	None
Rule 2	Home	Yes	Move to TTA
Rule 3	Home and TTA	N/A	Disregard home record
Rule 4*	Home	No	Do not move

Other information that took priority over all rules

- On a CE manager listing – move to the CE
- On HESA data as outside NI – make non-usual resident
- *On University data with TTA – move to that TTA
- No information – retain at home address

Quality Assurance

- Lots of manual QA on the link between student records and admin data
- Tracking use cases through the process to ensure the 'moving' worked
- Analysis of pre and post move distributions to ensure validity
- Comparing student numbers studying in NI and outside NI with HESA data

Phase 2 QA: Date of Birth (DOB)

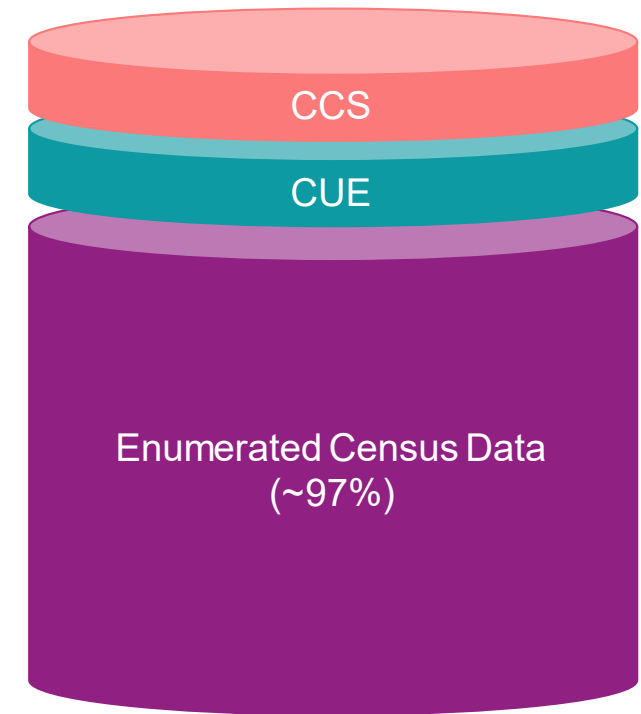
Quality Assurance DOB/Age

- Issue: too many people aged 100+ in the Census when compared to admin data
- Looked at every record in detail
 - Linked to health data
 - Are the DOBs / Names the same?
 - If on Paper, what did the image show – was info captured incorrectly?
 - Can we see birth records for any?
 - Do any of them look like duplicates?
- Outcomes
 - Some records altered to reflect the outworkings of the QA

What is planned for Phase 3?

Phase 3 (January 2022 – May 2022) Item-imputation and adjusting for under-enumeration

- Item-imputation (underway)
 - Editing responses where question routing hasn't been followed
 - Applying hard edits (for example, mother cannot be younger than daughter)
 - Addressing 'missingness' (Imputing missing values)
 - Imputing missed relationships & determining family variables
 - Mostly paper responses – Online responses excellent quality
- Adjusting for under-enumeration (in development)
 - Admin data enumerations (CUE) - completed
 - Coverage estimation and adjustment (using CCS data)
 - Post-coverage item imputation
- Quality Assurance (in development)
 - Internal process to sign off estimates
 - External panel to review estimates
- Outputs
 - First release to be taken within this phase



What is involved in Phase 4?

Phase 4 (May 2022 – September 2022) Preparing for outputs

- Derived variables for outputs
 - Creating variables required for outputs (for example, Economic activity, Living Arrangements, HH structure)
 - Testing them and adding them to the database
- Adding Output Geographies
 - Geography review underway
 - New statistical geographies being developed
 - All need added to the database when ready
- Disclosure Control
 - Record Swapping (as was done in 2011)
 - Helps to create doubt in the data and reduce risk of disclosure of any individual
- Quality Assurance
 - QA at every stage to assure the process and to track the Census output numbers
 - Macro and micro level – important to QA from the bottom up as well as top down

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Outputs update

Outline

- Outputs plans
 - Outputs Consultation
 - Outputs Prospectus
- Output Geography
- National Statistics accreditation

Outputs plan

- Next Stage of census is sharing plans for results and outputs
- 31 January 2022 publication of documents:
 - Operational report
 - Outputs prospectus – informed by the consultation

Outputs Consultation

- Outputs consultation closed Tuesday 30 November 2021
- 43 consultation returns
- Responses to be published in “You said” report shortly
- Respondents:
 - Broadly content with the plans in the consultation
 - Some requests for additional tables

Consultation Topics (1)

Priority ordering of topics

- Does the list of topics that will be included in the second and third releases meet your data user needs?

List of topics in second and third releases meet needs

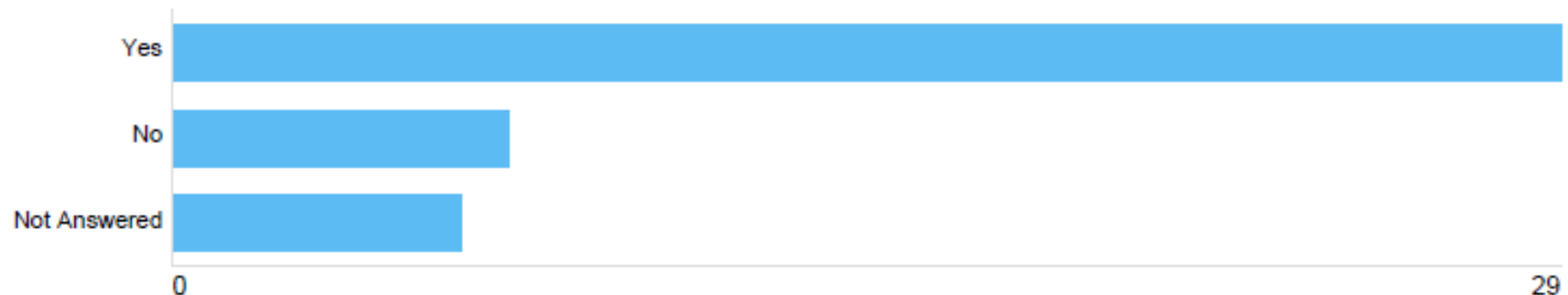


Consultation Topics (2)

Approach to releases – staggered / big bang

- Does the proposal to publish all topics in the second and third releases simultaneously meet your data user needs?

Proposal to publish all topics in second and third release meeting needs



Consultation Topics (3)

Most important elements of each topic, for example, user needs, tables, analysis, what geography, etc.

- Does the proposed list of multivariate, ready-made tables meet your requirements?

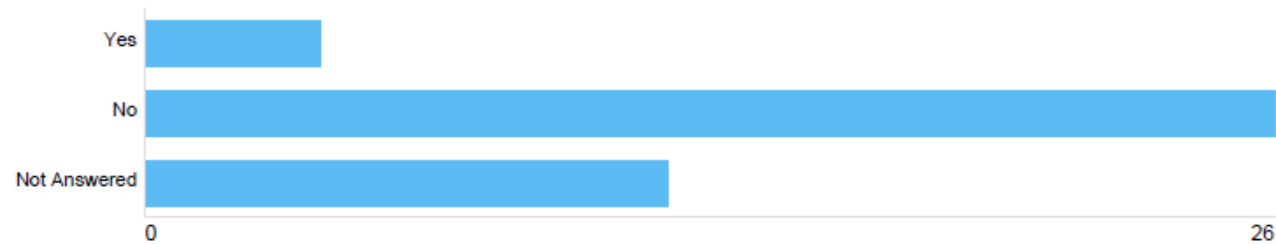
Proposed list of multivariate, ready-made tables meeting requirements



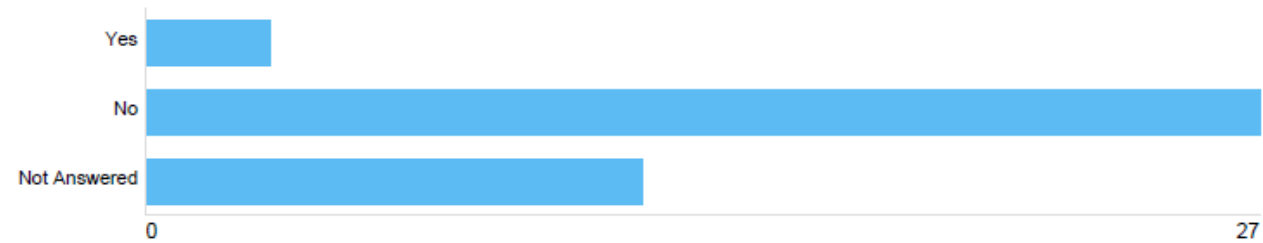
Consultation Topics (4)

New questions what do users want to see:

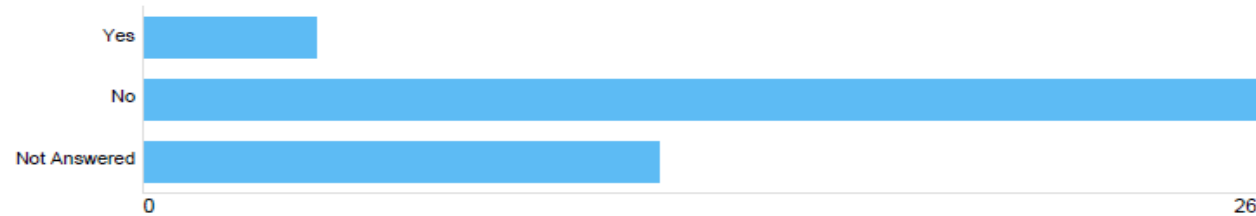
Requirements for additional cross-tabulations for renewable energy systems



Are additional cross-tabulations for sexual orientation required



Any additional cross-tabulations for UK Armed Forces veterans



Consultation Topics (5)

- Priority ordering of topics
- Approach to releases – staggered / big bang
- Most important elements of each topic, user needs, tables, analysis, what geography etc.
- New questions what do users want to see
- Specific groups of interest

Outputs prospectus

- Summary of the release plans
- Updated excel detailing the current plans for tables in each phase
- Setting out plans for a release every other month after first statistical release

Summary of release plans

Release	Title and content	Planned release	Geography
Release 1	Population Statistics: <ul style="list-style-type: none"> Headline population statistics by age and sex, number of households with usual residents, and communal establishment population 	By June 2022	NI & LGD
Release 2 – Phase 1	Key Statistics (1): <ul style="list-style-type: none"> Key univariate statistics for demography; ethnicity; country of birth; passports held; religion; religion or religion brought up in; national identity; language; sexual orientation; and health, disability and unpaid care 	Autumn 2022	NI & LGD
Release 2 – Phase 2	Key Statistics (2): <ul style="list-style-type: none"> Key univariate statistics for highest level of qualifications, labour market, communal establishment, and households 	Winter 2022/23	NI & LGD
Release 3	Standard Tables: <ul style="list-style-type: none"> Standard tables with multivariate statistics for the key census variables. A specification of the standard tables will be released in advance 	Spring 2023	NI & LGD
Release 4	Flexible Table Builder: <ul style="list-style-type: none"> All main census topics in the initial two releases will be available in a table builder application. This will allow users to access a host of tables on the census 	Spring/summer 2023	NI & LGD
Final staged releases	Final Releases (staged): <ul style="list-style-type: none"> Census 2021 statistics from releases 2 and 3 will become available for remaining smaller geographies. The extra geographies will include Towns and Villages of Northern Ireland and a number of other smaller geographies The Census 2021 commissioned table service will start The Census 2021 grid square product will also be released 	Summer 2023	All available geographies

Release platforms

- Initially working with NISRA Dissemination Branch on the system which will replace NINIS
- Also working with ONS on a more flexible, user self-service solution, which will incorporate disclosure control

Geography review

Census Geography drives outputs for many other parts of NISRA and NICS

Including:

- Resource allocation
- Mid-year estimates and projections
- Deprivation indicators

Current output geography

Originally from 2001 based on 1992 Council Geography

- 890 Super Output Areas (SOA)
- 5022 Census Output Areas (OA)

Subject to maintenance after Census 2011

- 890 Super Output Areas (SOA)
- 4537 Small Areas (SA)

Issues with current geography

A number of issues have arisen with the current geography based on a number of factors including:

- Local government boundary review replaced the 26 LGDs with 11
- Significant population change in NI since 2001
- Significant building across NI since 2001
- Social homogeneity of the areas has degraded
- Geographies weren't 'perfect' to begin with

Developing a new geography

Census office will be able to:

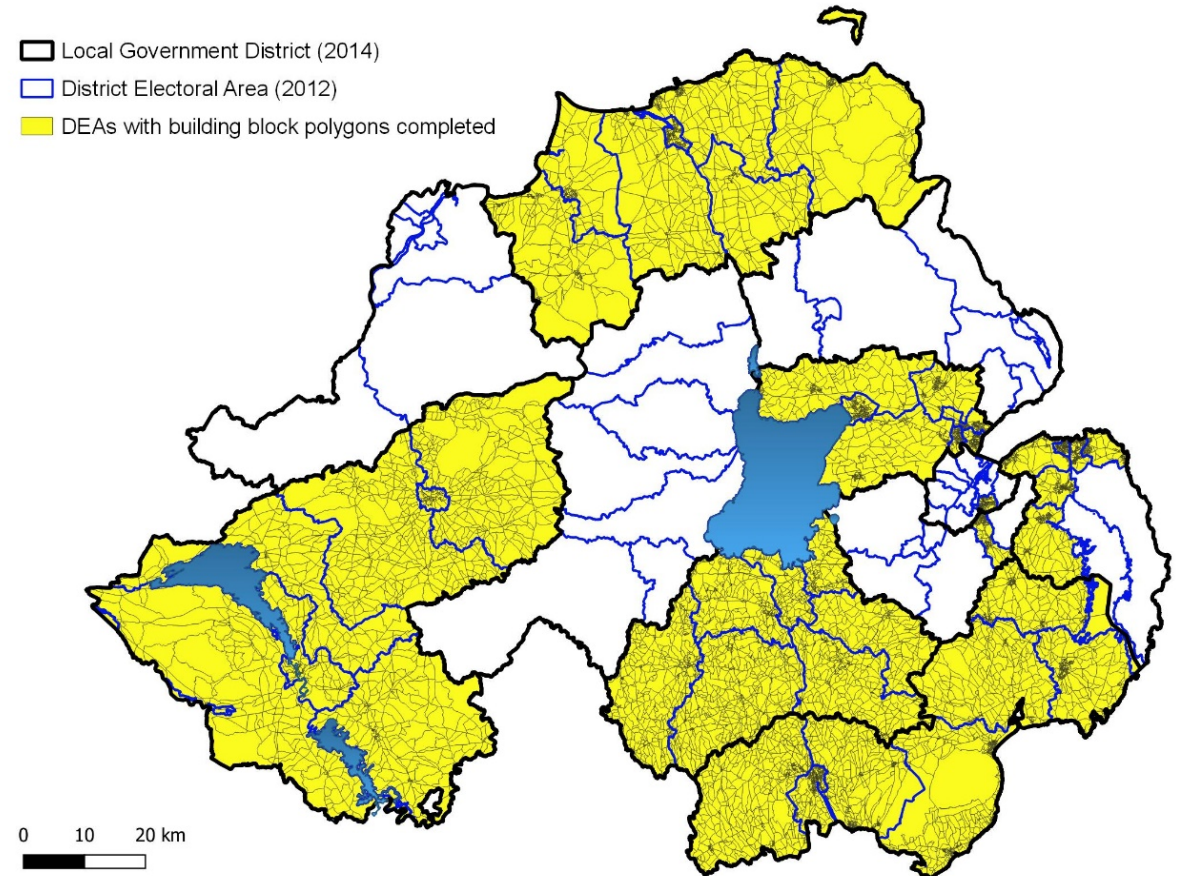
- Ensure new LGD nesting
- Compensate for population growth
- Restore homogeneity of the areas
- Incorporate new buildings into geographies
- Remove intersection of the boundaries with existing building/property
- Improve alignment with landscape features – roads, rivers etc.

Geography review – progress

Significant work on output

geography taking place:

- Complete redesign of statistical output geographies (Small Area and Super Output Area)
- Building “Lego” to make the new geographies
- Testing use of specialised zoning software (A-Z tool) to build new areas



Mitigation – Grid Square

- Outputs consultation confirmed user needs for additional “non-statistical” geographies
- In developing a new geography we see the need for the old to be maintained in some way – while managing disclosure risks
- Since 1971 Census results have been disseminated at 100m and 1km Grid squares
- Plan to produce new mappings to existing / legacy geographies
- Variance on average at settlement 1%

National Statistics Accreditation (1)

Office for Statistics Regulation (OSR) published its Phase 2 assessment report for Census 2021 in November 2021

The report detailed 6 recommendations, in summary:

- Communicating any potential impacts of Covid-19
- Communicating on UK Census data
- Information on quality and methods
- Engagement activities
- Timely release of outputs
- Census web pages on NISRA website

National Statistics Accreditation (2)

Ongoing engagement with OSR to present evidence of how NISRA is addressing its recommendations

- Website review initiated
- Advertising resources identified to promote results via social media
- Comprehensive QA documentation
- Publishing prospectus – sharing plans
- External QA (ONS – NISRA)

OSR decision on designation of National Statistics status to NI Census 2021 outputs due in early spring 2022

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Quality Assurance update

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Quality Assurance

- Position in ONS
- Internal Assurance
- External Assurance panel

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Thank you