

Census 2001

One Number Census Quality Assurance information: Quality Assurance themes

Collapsing strata

Problem

For the purposes of One Number Census (ONC) estimation the population was divided into 37 age-sex groups. In addition, each postcode was classified into one of three Hard to Count (HtC) levels, 1 being the easiest and 3 the hardest. This means that there were 111 separate estimation strata in any given Estimation Area (EA).

In some cases, however, it was not possible to estimate each of these groups separately. In these cases they were combined with another group, known as “collapsing strata”. This was due to one or more of the following reasons:

- **Zero undercount** - if no people were found in the Census Coverage Survey (CCS) for an entire age-sex group then the estimated undercount would be zero. It was considered unlikely that 100% coverage would in reality be achieved for any age-sex group.
- **Small sample size** – sometimes very few people were found by the CCS in a particular age-sex or HtC group. These were liable to produce estimates with a large variance, reducing the confidence that could be put in the figures.
- **Differing adjustments** – it would generally be expected that, except in a few known cases, the coverage levels of males and females of the same age would be similar, and also that coverage levels between two contiguous age groups would not differ by large amounts. There were some cases where the coverage levels of two groups were implausibly different on this basis.

There were particular concerns with the coverage adjustments for 0-year-olds and this age group was subjected to specific checks.

Actions

It was agreed to collapse strata when one of the following conditions was met:

- no additional people were found by the CCS for an age-sex group in all Hard to Count levels;
- the CCS sample size was small for an age-sex group or Hard to Count levels;
- coverage adjustments for an age-sex group looked implausible when compared to a contiguous age-sex group; or
- coverage adjustments for an age-sex group looked implausible when compared to the equivalent group of the opposite sex.

Although this was applied as standard for Estimation Areas it was agreed that some judgement would be required for individual cases.

When collapsing, a group containing those aged 65 and over was collapsed with another age-sex group containing people aged over 65, since the characteristics of people above and below these ages are likely to be quite different. Similarly, those aged 14 and under were collapsed with other age-sex groups containing people aged under 14.

Except when considering different adjustments between sexes, collapsing of age-sex groups always took place between contiguous groups

within the same sex. When there were two possible groups a degree of judgement was required, but generally groups with the most similar distribution of sample sizes across the hard to count levels were collapsed together.

When collapsing Hard to Count levels it was agreed that contiguous levels should be collapsed together, so that HtC1 or HtC3 would always be collapsed with HtC2. When it was necessary to collapse HtC2 with an adjacent level, a judgement was used based on the distribution of sample sizes across the age-sex groups.

Results

Each Estimation Area was subjected to these checks prior to the Quality Assurance (QA) process, with decisions to collapse additional age-sex groups or Hard to Count levels resulting from the QA meetings. A list of the HtC levels and age-sex groups collapsed by Estimation Area is shown below:

Estimation Area	Local Authorities	HtC groups collapsed	Age-sex groups collapsed
EA Mid Lincolnshire	32UB Boston 32UC East Lindsey 32UD Lincoln 32UE North Kesteven 32UF South Holland 32UG South Kesteven 32UH West Lindsey	2&3	Males 70-79 Males and females 1-4 Males and females 10-14
EB Cambridgeshire	00JA Peterborough 12UB Cambridge 12UC East Cambridgeshire 12UD Fenland 12UG South Cambridgeshire	None	Males 80+ Females 70-79 Males and females 1-4 Males and females 5-9 Males and females 10-14 Males and females 15-19 Males and females 60-64
EC North Anglia	33UC Broadland 33UD Great Yarmouth 33UE Kings Lynn and West Norfolk 33UF North Norfolk	2&3	Males 80+ Males and females 5-9 Males and females 75-79 Males 40-44
ED West Anglia	33UB Breckland 42UB Babergh 42UC Forest Heath 42UE Mid Suffolk 42UF St. Edmundsbury	2&3	Males 70-79 Females 40-49 Females 65-74 Females 80+ Males and females 5-9 Males and females 10-14
EE South Norfolk and East Suffolk	33UG Norwich 33UH South Norfolk 42UD Ipswich 42UG Suffolk Coastal 42UH Waveney	2&3	Males 70-79 Males 80+ Males and females 1-4
EF Northern Essex	22UC Braintree 22UG Colchester 22UN Tendring 22UQ Uttlesford	2&3	Males 25-34 Females 80+
EG Western Essex	00KG Thurrock 22UB Basildon 22UD Brentwood 22UH Epping Forest 22UJ Harlow	2&3	Males 65-74 Males 75-84 Females 75-84 Males and females 5-9 Males and females 85+
EH Eastern Essex	00KF Southend-on-Sea 22UE Castle Point 22UF Chelmsford 22UK Maldon 22UL Rochford	2&3	Males 80+ Males and females 1-4 Males and females 5-9
KA North Cheshire	00ET Halton 00EU Warrington 13UG Macclesfield	2&3	Males 70-79 Females 60-69 Females 70-79 Females 80+
KB South Cheshire	13UB Chester 13UC Congleton 13UD Crewe and Nantwich 13UE Ellesmere Port and Neston 13UH Vale Royal	2&3	Females 75-80 Males and females 1-4 Males and females 5-9 Males and females 85+

Estimation Area	Local Authorities	HtC groups collapsed	Age-sex groups collapsed
KC Shropshire and Herefordshire	00GA Herefordshire 00GF Telford and Wrekin 39UB Bridgnorth 39UC North Shropshire 39UD Oswestry 39UE Shrewsbury and Atcham 39UF South Shropshire	2&3	Males 30-39 Males 75-84 Males and females 45-49
KD Gloucestershire	23UB Cheltenham 23UC Cotswold 23UD Forest of Dean 23UE Gloucester 23UF Stroud 23UG Tewkesbury	None	Males 70-79 Males 80+ Females 65-74
KE Worcestershire	47UB Bromsgrove 47UC Malvern Hills 47UD Redditch 47UE Worcester 47UF Wychavon 47UG Wyre Forest	2&3	Males 65-74 Males 75-84 Females 70-79 Females 80+
KF West Staffordshire	00GL Stoke on Trent 41UG Newcastle under Lyme 41UE Stafford	None	Males 40-49 Males 60-69 Males 70-79 Males 80+ Females 80+ Males and females 30-34
KG East Staffordshire	41UB Cannock Chase 41UC East Staffordshire 41UD Lichfield 41UF South Staffordshire 41UH Staffordshire Moorlands 41UK Tamworth	2&3	Males 40-49 Males 75-84 Females 50-59 Females 65-74 Females 75-84 Males and females 85+
KH Dales and North Derbyshire	17UC Bolsover 17UD Chesterfield 17UF Derbyshire Dales 17UH High Peak 17UJ North East Derbyshire 17UK South Derbyshire	2&3	Babies and males 1-4 Males 5-14 Females 5-14 Females 20-29 Females 65-74 Males and females 35-39
KI East Derbyshire	00FK Derby 17UB Amber Valley 17UG Erewash	2&3	Males 50-59 Males 65-74 Males 80+ Females 40-49 Females 50-59 Females 65-74 Females 80+ Males and females 1-4 Males and females 5-9
KJ North Nottinghamshire	37UB Ashfield 37UC Bassetlaw 37UE Gedling 37UF Mansfield 37UG Newark and Sherwood	2&3	Females 65-74 Males and females 1-4 Males and females 10-14 Males and females 15-19 Males and females 20-24 Males and females 25-29 Males and females 80-84 Males and females 85+

Estimation Area	Local Authorities	HtC groups collapsed	Age-sex groups collapsed
KK South Nottinghamshire	00FY Nottingham 37UD Broxtowe 37UJ Rushcliffe	None	Males 25-34 Males 55-64 Males 80+ Males and females 5-9
KL Central Leicestershire	00FN Leicester 31UJ Oadby and Wigston 31UC Charnwood	None	Males 20-29 Males 75-84 Females 60-69 Males and females 15-19 Males and females 85+
KM Outer Leicestershire	00FP Rutland 31UB Blaby 31UD Harborough 31UE Hinckley and Bosworth 31UG Melton 31UH North West Leicestershire	2&3	Males 74-79 Males 80+
KN Warwickshire	44UB North Warwickshire 44UC Nuneaton and Bedworth 44UD Rugby 44UE Stratford upon Avon 44UF Warwick	2&3	Males and females 1-4 Males and females 5-9 Males and females 80-84 Males and females 85+
KO Coventry and Solihull	00CQ Coventry 00CT Solihull	None	Babies and 1-4 Males 70-79 Males 80+ Females 70-79 Females 80+ Males and females 15-19
KP Birmingham	00CN Birmingham	None	Males 80+ Males and females 5-9 Males and females 60-64
KQ Sandwell and Walsall	00CS Sandwell 00CU Walsall	None	Males 80+ Males and females 15-19
KR Dudley and Wolverhampton	00CR Dudley 00CW Wolverhampton	None	Males 55-64 Males 70-79 Males 80+
KS Oxfordshire	38UB Cherwell 38UC Oxford 38UD South Oxfordshire 38UE Vale of White Horse 38UF West Oxfordshire	None	Males 30-39 Males 65-74 Males 80+ Males and females 20-24
KT Northamptonshire	34UB Corby 34UC Daventry 34UD East Northamptonshire 34UE Kettering 34UF Northampton 34UG South Northamptonshire 34UH Wellingborough	2&3	Babies and 1-4 Males 75-84 Females 75-84 Males and females 5-9 Males and females 15-19 (HtC2 only) Males and females 60-64 Males and females 70-74
KU Milton Keynes, Bedford and Huntingdonshire	00MG Milton Keynes 09UD Bedford 12UE Huntingdonshire	None	Males 80+ Females 80+ Males and females 20-24 Males and females 25-29

Estimation Area	Local Authorities	HtC groups collapsed	Age-sex groups collapsed
KV Mid and South Bedfordshire and Luton	00KA Luton 09UC Mid Bedfordshire 09UE South Bedfordshire	None	Males 80+
KW Buckinghamshire	11UB Aylesbury Vale 11UC Chiltern 11UE South Bucks 11UF Wycombe	None	Males and females 15-19 Males and females 20-24 Males and females 30-34 Males and females 80-84 Males and females 85+
KX North and West Hertfordshire	26UC Dacorum 26UF North Hertfordshire 26UG St Albans 26UH Stevenage 26UK Watford	None	Males 75-84 Females 80+
KY South and East Hertfordshire	26UD East Hertfordshire 26UE Hertsmere 26UJ Three Rivers 26UL Welwyn Hatfield	2&3	Babies and 1-4 Males 55-64 Males 80+ Males and females 20-24
LA Central London	00AA City of London 00AG Camden 00AW Kensington and Chelsea 00BK Westminster	1&2	Males 80+ Males and females 1-4 Males and females 10-14
LB Islington, Hackney and Tower Hamlets	00AM Hackney 00AU Islington 00BG TowerHamlets	1&2	Males 20-29 Males 80+ Males and females 1-4 Males and females 15-19
LC Lambeth and Southwark	00AY Lambeth 00BE Southwark	2&3	Males 65-74 Females 10-19
LD Hammersmith and Fulham and Wandsworth	00AN Hammersmith and Fulham 00BJ Wandsworth	1&2	Males and females 40-44 Males and females 75-79 Males and females 85+
LE Ealing and Hounslow	00AJ Ealing 00AT Hounslow	1&2	Males 80+ Females 80+ Males and females 1-4(HtC2 only) Males and females 5-9 Males and females 20-24(HtC2 only) Males and females 50-54 Males and females 65-69(HtC2 only) Males and females 75-79(HtC2 only)
LF Richmond, Kingston upon Thames and Merton	00AX Kingston upon Thames 00BA Merton 00BD Richmond upon Thames	1&2	Babies and 1-4 Males and females 5-9
LG Sutton and Croydon	00AH Croydon 00BF Sutton	None	Males 80+ Females 30-39 Males and females 1-4
LH Bromley and Lewisham	00AF Bromley 00AZ Lewisham	None	Males 80+ Males and females 1-4 Males and females 5-9 Males and females 20-24(HtC2 only)

Estimation Area	Local Authorities	HtC groups collapsed	Age-sex groups collapsed
LI Greenwich and Newham	00AL Greenwich 00BB Newham	1&2	Males 20-29 Males 50-59 Males 70-79 Males 80+ Females 20-29 Females 80+ Males and females 1-4 Males and females 15-19
LJ Barking and Dagenham, Redbridge and Waltham	00AB Barking and Dagenham 00BC Redbridge 00BH Waltham Forest	None	None
LK Haringey and Brent	00AE Brent 00AP Haringey	None	None
LL Barnet and Enfield	00AC Barnet 00AK Enfield	1&2	Males 20-29 Males and females 70-74
LM Harrow and Hillingdon	00AQ Harrow 00AS Hillingdon	2&3	Males 20-29 Males 30-39 Males 75-84 Males and females 5-9 Males and females 65-69 Males and females 70-74 Males and females 40-44(HtC2 only) Males and females 85+
LN Bexley and Havering	00AD Bexley 00AR Havering	2&3	Males 55-64 Females 30-39 Females 60-69 Females 80+ Males and females 1-4 Males and females 5-9
NA North Tyne and Wear	00CK North Tyneside 35UB Alnwick 35UC Berwick upon Tweed 35UD Blyth Valley 35UE Castle Morpeth 35UF Tynedale 35UG Wansbeck	2&3	Males 25-34 Males 75-84 Females 25-34 Females 75-84 Males and females 85+
NB Cumbria	16UB Allerdale 16UC Barrow in Furness 16UD Carlisle 16UE Copeland 16UF Eden 16UG South Lakeland	2&3	Males 20-29 Males 70-79
NC Newcastle and Gateshead	00CH Gateshead 00CJ Newcastle upon Tyne	None	Males 70-79 Males 80+ Females 80+ Males and females 1-4
ND South Tyneside and Sunderland	00CL South Tyneside 00CM Sunderland	2&3	Males 70-79 Males 80+ Females 65-74 Females 80+ Males and females 5-9

Estimation Area	Local Authorities	HtC groups collapsed	Age-sex groups collapsed
NE Durham	20UB Chester le Street 20UD Derwentside 20UE Durham 20UF Easington 20UG Sedgefield 20UH Teesdale 20UJ Wear Valley	2&3	Males 50-59 Males 60-69 Males 70-79 Females 80+ Males and females 5-9
NF Tees Valley	00EB Hartlepool 00EC Middlesbrough 00EE Redcar and Cleveland 00EF Stockton on Tees 00EH Darlington	None	Males 1-9 Males 25-34 Females 40-49 Males and females 15-19
NG County of North Yorkshire	36UB Craven 36UC Hambleton 36UD Harrogate 36UE Richmondshire 36UF Ryedale 36UG Scarborough 36UH Selby	None	Males 30-39 Males 70-79 Males 80+ Females 65-74 Males and females 1-4 Males and females 5-9 Males and females 10-14
NH North Lancashire	00EY Blackpool 30UF Fylde 30UH Lancaster 30UL Ribble Valley 30UQ Wyre	None	Males 80+ Females 15-24 Females 80+ Males and females 5-9
NI West Lancashire	30UE Chorley 30UK Preston 30UN South Ribble 30UP West Lancashire	2&3	Males 20-29 Males 70-79 Males 80+ Females 20-29 Females 70-79 Males and females 15-19
NJ East Lancashire	00EX Blackburn with Darwen 30UD Burnley 30UG Hyndburn 30UJ Pendle 30UM Rossendale	None	Babies and 1-4 Males 70-79 Males 80+ Females 70-79 Females 80+ Males and females 1-4 Males and females 35-39 Males and females 60-64
NK Bradford	00CX Bradford	None	Males 35-44 Males 65-74 Females 65-74 Males and females 80-84 Males and females 85+
NL Leeds	00DA Leeds	None	Males 70-79 Males 80+ Females 75-84 Males and females 1-4 Males and females 5-9 Males and females 10-14 Males and females 15-19 Males and females 40-44 Males and females 45-49

Estimation Area	Local Authorities	HtC groups collapsed	Age-sex groups collapsed
NM East Riding and York	00FB East Riding of Yorkshire 00FF York	2&3	Males 65-74 Males 75-84 Females 5-14 Females 50-59 Females 70-79 Males and females 85+
NN Hull and North Lincolnshire	00FA Kingston upon Hull 00FC North East Lincolnshire 00FD North Lincolnshire	None	Males 80+ Females 50-59 Females 80+ Males and females 5-9 Males 20-29
NO Doncaster and Rotherham	00CE Doncaster 00CF Rotherham	None	Males 60-69 Females 70-79 Females 80+
NP Barnsley and Wakefield	00CC Barnsley 00DB Wakefield	None	Males 80+ Females 55-64 Females 65-74 Females 80+ Males and females 10-14 Males and females 20-24
NQ Calderdale and Kirklees	00CY Calderdale 00CZ Kirklees	None	Males 30-39 Males and females 5-9 Males and females 10-14 Males and females 20-24 Males and females 50-54 Males and females 65-69 Males and females 80-84
NR North Greater Manchester	00BM Bury 00BP Oldham 00BQ Rochdale	None	Males 70-79 Males 80+ Females 70-79 Females 80+ Males and females 1-4 Males and females 20-24 Males and females 30-34 Males and females 45-49
NS Bolton and Wigan	00BL Bolton 00BW Wigan	None	Males 70-79 Males 80+ Females 60-69 Females 70-79 Females 80+ Males and females 1-4 Males and females 5-9 Males and females 20-24
NT St.Helens and Sefton	00BZ St Helens 00CA Sefton	1&2	Males 79-84 Females 70-79 Males and females 10-14 Males and females 15-19 Males and females 20-24 Males and females 85+
NU Liverpool	00BY Liverpool	None	Males 80+ Females 80+ Females 30-39

Estimation Area	Local Authorities	HtC groups collapsed	Age-sex groups collapsed
NV Wirral and Knowsley	00BX Knowsley 00CB Wirral	2&3	Males 25-34 Females 25-34 Females 70-79 Females 80+ Males and females 55-59
NW Salford and Trafford	00BR Salford 00BU Trafford	None	Males 55-64 Males and females 85+ Males and females 35-39
NX Manchester	00BN Manchester	1&2	Males 70-79 Males 80+ Females 70-79 Males and females 1-4 Males and females 5-9 Males and females 10-14 Males and females 55-59
NY Stockport and Tameside	00BS Stockport 00BT Tameside	2&3	Males 70-79 Males 80+ Females 45-54 Females 75-84 Males and females 1-4 Males and females 5-9
NZ Sheffield	00CG Sheffield	None	None
SA Cornwall and Scilly	15UB Caradon 15UC Carrick 15UD Kerrier 15UE North Cornwall 15UF Penwith 15UG Restormel 15UH Isles of Scilly	2&3	Males 70-79 Males 80+
SB North Devon	18UB East Devon 18UC Exeter 18UD Mid Devon 18UE North Devon 18UK Torridge 18UL West Devon	2&3	Males 65-74 Females 25-34 Females 65-74 Males and females 1-4
SC South Devon and Teignbridge	00HG Plymouth 00HH Torbay 18UG South Hams 18UH Teignbridge	None	Males 80+ Females 80+ Males and females 1-4
SD Somerset	40UB Mendip 40UC Sedgemoor 40UD South Somerset 40UE Taunton Deane 40UF West Somerset	2&3	Males 80+ Females 60-69
SE Avon	00HA Bath and North East Somerset 00HC North Somerset 00HD South Gloucestershire	2&3	Males 65-74 Males 80+ Females 70-79 Females 80+
SF Bristol	00HB Bristol	None	Males 65-74 Males 75-84 Females 60-69 Females 80+ Males and females 1-4 Males and females 45-49

Estimation Area	Local Authorities	HtC groups collapsed	Age-sex groups collapsed
SG Wiltshire	46UB Kennet 46UC North Wiltshire 46UD Salisbury 46UF West Wiltshire	2&3	Males 70-79 Females 35-44 Females 50-59 Females 60-69 Females 70-79 Females 80+ Males and females 1-4 Males and females 20-24
SH Wessex	19UD East Dorset 19UE North Dorset 19UG Purbeck 19UH West Dorset 19UJ Weymouth and Portland 24UJ New Forest	None	Males and females 1-4
SI South East Dorset and Isle of Wight	00HN Bournemouth 00HP Poole 00MW Isle of Wight 19UC Christchurch	None	Males 45-54 Males 65-74 Males 75-84 Males and females 5-9 Males and females 10-14 Males and females 20-24 Males and females 85+
SJ Eastleigh and Southampton and Test Valley	00MS Southampton 24UD Eastleigh 24UN Test Valley	None	Females 55-64 Females 65-74 Females 80+ Males and females 1-4 Males and females 5-9
SK South Hampshire	00MR Portsmouth 24UE Fareham 24UF Gosport 24UH Havant	None	Males 65-74 Females 55-64 Females 80+
SL North Hampshire	24UB Basingstoke and Deane 24UC East Hampshire 24UG Hart 24UL Rushmoor 24UP Winchester	2&3	Males 65-74 Males 80+ Females 65-74 Males and females 1-4
SM Swindon and West Berkshire	00HX Swindon 00MB West Berkshire 00MC Reading	None	Males 30-39 Males 50-59 Males and females 1-4
SN East Berkshire	00MA Bracknell Forest 00MD Slough 00ME Windsor and Maidenhead 00MF Wokingham	2&3	Babies and 1-4 Females 30-39 Males and females 1-4 Males and females 75-79 Males and females 80-84 Males and females 85+
SO Northern Surrey	43UB Elmbridge 43UC Epsom and Ewell 43UG Runnymede 43UH Spelthorne 43UJ Surrey Heath 43UM Woking	2&3	Males 75-84 Females 40-49 Males and females 1-4 Males and females 30-34
SP Southern Surrey	43UD Guildford 43UE Mole Valley 43UF Reigate and Banstead 43UK Tandridge 43UL Waverley	2&3	None

Estimation Area	Local Authorities	HtC groups collapsed	Age-sex groups collapsed
SQ North Sussex	45UD Chichester 45UE Crawley 45UF Horsham 45UG Mid Sussex	None	Babies and 1-4 Males 15-24 Males 55-64 Males 80+ Females 80+
SR South Sussex	00ML Brighton and Hove 45UB Adur 45UC Arun 45UH Worthing	None	Males and females 1-4 Males and females 15-19(HtC2 only)
SS County of East Sussex	21UC Eastbourne 21UD Hastings 21UF Lewes 21UG Rother 21UH Wealden	None	Males and females 1-4
ST Southern Kent	29UB Ashford 29UH Maidstone 29UK Sevenoaks 29UP Tonbridge and Malling 29UQ Tunbridge Wells	None	Males 80+ Females 70-79 Males and females 1-4 Males and females 15-19 Males and females 65-69
SU Northern Kent	00LC Medway 29UD Dartford 29UG Gravesham 29UM Swale	None	Males 65-74 Females 35-44 Females 80+
SV Eastern Kent	29UC Canterbury 29UE Dover 29UL Shepway 29UN Thanet	None	Males 70-79 Males 80+ Females 5-14 Females 80+ Males and females 20-24 Males and females 25-29
WA East Wales	00NN Powys 00PL Blaenau Gwent 00PM Torfaen 00PP Monmouthshire	2&3	Males 50-59 Males 80+ Females 50-59 Females 65-74 Females 80+
WB Welsh Valleys	00PF Rhondda, Cynon and Taff 00PH Merthyr Tydfil 00PK Caerphilly	2&3	Males 80+ Females 70-79
WC Cardiff and Newport	00PD Vale of Glamorgan 00PR Newport 00PT Cardiff	None	Males 45-54 Males 70-79 Females 40-49 Males and females 1-4 Males and females 30-34 Males and females 80-84
WD Swansea, Bridgend and Port Talbot	00NX Swansea 00NZ Neath Port Talbot 00PB Bridgend	2&3	Males 25-34 Females 60-69 Males and females 85+
WE West Wales	00NA Isle of Anglesey 00NC Gwynedd 00NQ Ceredigion 00NS Pembrokeshire 00NU Carmarthenshire	None	Males 80+ Females 80+ Males and females 5-9 Males and females 20-24
WF North East Wales	00NE Conwy 00NG Denbighshire 00NJ Flintshire 00NL Wrexham	2&3	Males 80+ Males and females 1-4 Males and females 5-9 Males 50-59