

## Household Analysis Review Group (HARG)

### 2010-based Communal Establishment Estimates

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**Note:** The results presented in this paper are provisional. They may differ from the final figures used in the published household projections.

## 1. Purpose

In the household projection process, the private household population is calculated by subtracting the population who reside in communal establishments from the total population. Since 2006 National Records of Scotland (NRS) have used administrative data sources, or external data collections, to update communal establishment figures which had previously been based solely on the 2001 census. This paper describes the sources of the 2010-based communal establishment estimates, revisions to the methodology since the 2008-based estimates, and summarises the draft 2010-based communal establishment estimates.

## 2. Methodology

### 2.1 Data Sources

Table 1 shows the data sources that are used for the 2010-based communal establishment estimates. The data for the majority of communal establishment types has been updated using 2010-based data sources, however where 2010-based data is unavailable older data has been used. For long-stay residents of hotels and boarding houses, hostels and 'other' accommodation there is no recent data available, and 2001 census data is used.

**Table 1: Data sources for the 2010-based communal establishment estimates**

Type of CE	Data source	Date
Children's Care	Care Inspectorate	Dec 2010
	Scottish Government (SG): Looked After Children Statistics	30 Jun 2010
Residential Schools	SG: Education Analytical Services	Sep 2010
Prison	SG: Prison Statistics	30 Jun 2010
Hospitals	Information Services Division (ISD): Scottish Morbidity Record (SMR(01))	30 Jun 2010
	ISD: SMR(04)	30 Jun 2010
	ISD: Continuing Health Care Census	Mar 2010
Student Halls of Residence	Higher Education Statistics Agency (HESA) data	2009/2010
	Further Education (FE) Colleges data collection	2006/2010
Adult Care	SG: Health Statistics Care Home Census	Mar 2007
	Care Inspectorate	Dec 2010
	ISD: Care Home Census	Mar 2010
Defence establishment (inc ships)	National Records of Scotland (NRS): Armed Forces data collection	30 Jun 2010
	Defence Analytical Services Agency (DASA): Regular Forces by Age and Sex	1 Jul 2010
Hotel and Boarding House	2001 Census	2001
Hostel	2001 Census	2001
Other	2001 Census	2001

### 2.2 Estimate methodology

In some cases, such as prisons, the data sent to us is complete, and requires no additional steps before its use in the final communal establishment dataset. In other cases some imputation must be carried out to achieve full coverage of

establishments, or to estimate the age and gender of individuals at each establishment. For the 2010-based communal establishment estimates there have been changes to the data available that have resulted in revisions to the methodology for all establishment types except prisons, defence establishments, and those derived from the 2001 census. These revisions are described below.

### 2.2.1 Children's Care

Two sources of data are used to estimate the number of long-stay residents in children's care homes:

- Care Inspectorate data (location and capacity of each establishment, as well as the age bands and genders that each home accepts).
- Scottish Government (SG) data on Looked After Children (LAC) (age, gender, placement type and length of stay).

The SG data is used to estimate the occupancy, age, gender and length of stay for each care home on the Care Inspectorate list.

In 2008 two tables from the LAC publication were used for this estimation:

- Children looked after at 31 March 2008 by age group and gender.
- Children ceasing to be looked after during 2007-08 by age group and length of time looked after.

Using these tables to estimate the age, gender and length of stay, however, is not ideal because:

- These tables contain all looked after children, regardless of the type of care received and therefore include children in community care settings such as foster care or with friends or other family members. At 31 July 2010 only 9.3% of looked after children were looked after in a residential care setting and these children do not necessarily have the same age and gender characteristics as all looked after children.
- The length of time looked after covers the total period that the care of the child is the responsibility of the Local Authority (LA). This is not equivalent to length of time in a residential placement, for those children experiencing residential care, as length of time looked after can consist of several placements which may not all have been in a residential care setting.

For the first time in 2010 SG have collected individual data from Local Authorities (Las). While this data does not contain any information on the geographical location of residence of the individuals, it does allow us to request customised data tables to improve our estimation methodology. The table requested for the 2010-based estimation was the number of looked after children in a residential placement on 30 June 2010, by:

- Age
- Gender
- Length of Placement<sup>1</sup>
- Placement Type

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#### Footnote

1) Note that this is length of placement to date, rather than total placement length as this would require future data, but this definition is consistent with that used in the hospital tables.

This data was compared to the capacity and vacancy data provided by the Care Inspectorate, and was found to be comparable for care home and secure accommodation, but not school care accommodation. This is because the residential school data from the Care Inspectorate covers all residential school places, and the majority of these will be pupils placed in independent schools by their parents, who are not looked after children. For this reason a different method of estimation is used for school care accommodation, compared to care homes and secure accommodation.

For care homes and secure care accommodation the method used takes the total number of children in a residential placement longer than six months at 30 June 2010 and distributes them to individual care homes, according to the capacity of the home and the age and gender of child accepted in that home. This gives an estimate which does not assume that all homes are fully occupied, but where the total number of children in placements of six months or longer correspond to the actual Scottish total provided by the Scottish Government LAC statistics.

For school care accommodation, the majority of accommodation is covered by the residential schools dataset, which is the preferred data source as it contains real data on the age, gender and location of pupils. For accommodation not included in the residential schools dataset, the proportion of all students that are in school care placements of six months or longer in each age/gender group are applied to the total capacity of each establishment. This method assumes that these establishments are fully occupied.

The comparison of the 2008 and 2010-based estimates is discussed in [section 4.1.2](#).

### 2.2.2 Residential Schools

In previous years, data has been derived from the SG publications 'Pupils in Scotland' and 'Independent School Census'. The publication 'Independent School Census' has now been discontinued, however the SG still collect some data for administrative purposes and this includes the information we require on the number of residential pupils in each school, by age and gender. No additional adjustments to the data were required.

### 2.2.3 Hospitals

The 2010 hospitals data came from three Information Services Division (ISD) data sources:

- Scottish Morbidity Record (SMR 01) – Long stay acute data (at June 2010)
- Scottish Morbidity Record (SMR 04) – Long stay psychiatric data (at June 2010)
- Continuing Health Care Census (CHCC; March 2010)

These three data sources were used in 2008, supplemented by data from additional sources (Scottish Health Resource Utilisation Groups - SHRUGS and Scottish Morbidity Record (SMR 50). SHRUGS and SMR(50) have now been discontinued and ISD recommended that the data used in 2008 not be carried forward as SMR(01), SMR(04) and CHCC should now give full coverage. There is some overlap between these data sources as the continuing care census contains data on geriatric, psychiatric and other treatment types, and where there is overlap, data from CHCC was removed.

The data was considered to be overlapping where the institution and the treatment type were the same in two difference sources. It remained possible for a single institution to have several entries where the entries concerned different treatment types.

#### **2.2.4 Student Halls of Residence**

The starting point for estimating student halls of residence was the list of communal establishments compiled by NRS for enumeration of the 2011 census, which contained address and capacity information on each hall of residence. The list was split into Further Education (FE) and Higher Education (HE) establishments, as data sources for age/gender information are different. For FE establishments the age and gender breakdown for students was estimated using the 2006 NRS data collection, as in 2008. FE or HE establishments an extract of the 2009/10 Higher Education Statistics Agency (HESA) database was requested from the SG. This contained the age/gender breakdown of students who are recorded as being in halls of residence in postcodes known to contain halls of residence (from the census list). Unfortunately the coverage of the HESA data for term time residence is not complete as this list contained only 13,700 students, compared to the known capacity of 36,600 students. Because of this, HESA data could not be used directly, and was instead used to estimate the age/gender distribution of each hall of residence, assuming full occupancy.

#### **2.2.5 Adult Care Homes**

In 2008, the sole data source for adult care homes was the Care Home Census, published by SG. The responsibility for the Care Home Census has now moved to ISD and this has required us to adapt our methodology as ISD are not carrying out the imputation that the SG did (where they estimated data for homes that did not submit a return). In the 2010 Care Home Census only 80% of homes submitted a return, therefore we have estimated data for the missing homes.

Data from the Care Home Census 2010 was matched with a complete list of care homes registered with the Care Inspectorate by service number. Where data was not available from the 2010 census the home was then matched with the SG 2007 Care Home Census, the dataset used for the 2008-based projections. Where the total capacity in 2007 was close to the registered capacity for 2010, long-stay residents from the 2007 census were carried forward to 2010. Where the registered capacity of the home had changed between 2007 and 2010 or where no information was available in either census, the occupancy and age/gender breakdown was estimated from the registered capacity using proportions based on all adult care homes where data was complete. Additionally, for 8.7% of residents in care homes in the 2010 census, the age was given, but not gender, therefore gender was also imputed for these individuals.

### **3. Consultation with Population and Migration Statistics members**

Local authority members of Population and Migration Statistics (PAMS) have been consulted regarding the draft figures. Twelve Local Authorities (LAs) have responded to the consultation and a small number of revisions have been made, largely relating to changes of address or duplicate establishments.

Several LAs also suggested that our estimate of long-term residents in adult care homes is low, compared to the known capacities of the homes, given that the majority of residents entering a care home will intend to stay there permanently. The adult care home estimates presented in this paper, for both 2008 and 2010, are based upon the number of individuals in each care home that have been resident for six months or more. The intention in using the six month cut-off for all communal establishments is to align with the census definition of residence. The [census definition](#) (available on the Scotland's Census website), however, indicates that individuals 'staying, or expecting to stay, in a residential establishment for six months or more; should be counted at their communal establishment'.

The data we have used in 2008, and for these draft 2010 estimates, only counts those who have actually been resident for six months or more at the time of the Care Home Census for 2010. This effectively excludes those who are expecting to stay more than six months, but who have only recently moved in, and there is concern that for adult care in particular this might be a relatively large number of individuals.

Close examination of the guidance for completion of the [Care Home Census](#) (available on the Scottish Government website) revealed that Information Services Division (ISD) only collect individual information for long-stay residents. The data they send us is a subset of this, effectively 'long-stay residents that have been resident for over six months to date'. ISD defines long-stay residents as 'those whose intention when they entered the home was to stay as a permanent resident, regardless of how long they stayed' although they go on to specify 'It may be that some residents enter the home with the intention of only staying for a short time. If you have any residents whose intention was only to stay for a short time but have been resident for more than six weeks, then these residents should be counted as long-stay residents for the purposes of this census.' Their definition of long-stay, therefore, specifically excludes individuals whose intention is for a short stay only (six weeks or under) or who are resident for respite care only, but may include individuals who intend to stay longer than six weeks, but less than six months, and who would not, therefore, be counted as resident by the census.

After discussion with ISD we would like to move to including all the residents that ISD define as long-stay in our estimate of long-term residents in adult care, although the possibility of including only those residents defined as long-stay by ISD who have actually stayed for more than six weeks also exists.

**Note:** We would welcome Household Analysis Review Group (HARG) members' views on this change in methodology.

## 4. Results

### 4.1 Scotland

We currently estimate that there are 93,710 residents in communal establishments in Scotland in 2010, a decrease of 3,110 compared to 2008. [Figure 1](#) compares the total number of communal establishment residents in Scotland for 2008 and 2010, by establishment type. There have been large percentage changes in hospitals (-49%), children's care (-23%), defence (-21%), hostels (-13%) and prisons (+12%).

### 4.1.1 Hospitals

The large decrease in long-stay residents in hospitals occurred between 2008 and 2009, with numbers remaining stable between 2009 and 2010. This was almost entirely down to decreased numbers reported in the Scottish Morbidity Record (SMR04) (psychiatric) dataset. The data supplier indicated that while this may be in part due to increased community initiatives, they have also been involved in a data cleaning exercise on this dataset, including updates to the national file (submission of discharge records) that may have affected lengths of stay. The decrease has resulted in large percentages decreases in all local authorities except Dundee City, East Renfrewshire, Midlothian, South Ayrshire and West Lothian.

### 4.1.2 Children's Care

The estimated number of residents in children's care have decreased between 2008 and 2010, from 1,510 to 1,160 residents, with the decrease being entirely in children in care homes, rather than secure accommodation or school care accommodation. This change is largely due to the changes in methodology described above where:

- the length of stay is now based only on those who are in residential placements, rather than all looked after children;
- the length of stay is now based only on the current placement, rather than the total length of time a child is considered looked after;
- the total number of children in care homes and secure accommodation are now constrained to the Scottish total supplied by Scottish Government (SG), effectively incorporating an estimate of occupancy into the methodology.

It is likely that the 2008 numbers overestimated the number of children in long-term residential placements. The 2010 data may exclude a small number of children who had not been in a residential placement for six months at 30 June 2010, but who go on to stay for at least six months in their placement, but it should be noted that the SG data already shows the majority (62%) of children in care homes as staying over six months at 30 June 2010.

### 4.1.3 Defence

There was a decrease of 1,180 armed forces personnel resident in communal establishments between 2008 and 2010. The decrease was mainly due to large decreases at Faslane (Argyll and Bute, 680) and in Edinburgh (240), Highland (160) and Moray (120).

### 4.1.4 Hostels

There was a decrease of 310 residents in hostels in Scotland. These figures are derived from the 2001 census, therefore figures for individual establishments have not changed, however five establishments were removed from the 2001 list, either due to duplication or closure. The largest of these was the closure of a hostel in Glasgow with 240 residents, and the duplication of the Dunoon School Hostel (40 residents), which was also covered in the children's care dataset in 2010.



### 4.1.5 Prisons

There was a large increase in total prisoner numbers between 2008 and 2010 (660 prisoners, 12%) the majority of which is associated with the opening of the new prison, HMP Addiewell in West Lothian. This prison has places for 796 males, but in 2010 housed 558 prisoners with sentences of six months or over.

## 4.2 Local Authorities

Figure 2 shows how these changes impact on local authorities, comparing the total number of communal establishment residents in Scotland for 2008 and 2010 by local authority. Table 3 shows the 2010 communal establishment figures for Scotland by local authority and by type of establishment. The largest percentage changes were in West Lothian (42%), due to the opening of HMP Addiewell, Argyll and Bute (26%) largely due to the decreases at Faslane and Angus (21%), which is mainly due to the changes in hospital numbers.

Table 4 shows the 2010 communal establishment figures for Scotland by local authority and age group, and Figure 3 compares the Scottish figures for 2008 and 2010. The largest differences between 2008 and 2010 can be seen in the 16-19 and 20-24 age groups. This difference has been caused by differences in the age distribution derived from Higher Education Statistics Agency (HESA) data between 2008 and 2010. This distribution is used to estimate the age/gender breakdown of students in halls of residence. This can be seen below:

**Table 2: Age distribution of higher education students, 2008 and 2010**

Age Group	0-15	16-19	20-24	25-29	30+
2008	0.2%	38.2%	44.3%	10.9%	6.3%
2010	0.0%	57.5%	26.6%	7.6%	8.2%

In 2008 most students recorded in halls of residence were in the 20-24 age group, whereas in 2010 the majority of students were in the 16-19 age group. There are known issues with the quality of the term-time residence information in HESA data, and these will continue to be monitored in future years. Students are most likely to live in halls of residence in their first year of university, and are therefore likely to be amongst the youngest students at university, so I would have expected more students in halls of residence to be in the 16-19 age group, rather than the 20-24 age group. For this reason the 2010 HESA data has been used to estimate the age/gender breakdown of the halls of residence capacities.

Small decreases in the 0-15 age group and the 65+ age groups are largely due to the decreases in the number of long-stay residents in children's care and hospitals described above, with decreases in the number of residents in adult care also contributing to the decreases in the older age groups.

## 5. Conclusion

We currently estimate that in 2010 there were 93,710 residents in communal establishments in Scotland, a decrease of 3,110 compared to 2008. There have been changes in the methodology between 2008 and 2010, largely due to changes in data availability, that have contributed to this decrease.

Household Analysis Review Group (HARG) members are asked whether they are satisfied with methodology described in this paper and whether they would like the

revision in the definition of a long-term resident in adult care establishments to be implemented in the 2010-based household projections.

**6. Next Steps**

If Household Analysis Review Group (HARG) members are satisfied with the communal establishment estimates and the proposed change to the methodology regarding adult care, the communal establishment estimates will be revised and incorporated into the 2010-based household projections.

NRS: Household estimates and projections branch  
March 2012

**Table 3: Number of communal establishment residents in Scotland in 2010, by establishment type and local authority area**

Local Authority	Children's Care	Residential School	Student Hall of Residence	Adult Care	Hospital	Prison	Defence	Hostels	Hotels and Boarding Houses	Other	Total
Aberdeen City	50	70	6,260	1,540	160	130	0	160	140	130	8,630
Aberdeenshire	10	40	0	1,450	20	300	20	0	180	10	2,040
Angus	20	20	0	800	60	90	0	0	50	0	1,030
Argyll & Bute	160	60	0	450	40	0	1,360	30	250	120	2,460
Clackmannanshire	0	90	0	210	10	650	0	0	0	10	970
Dumfries & Galloway	30	20	70	790	50	150	0	10	100	190	1,420
Dundee City	10	0	4,420	760	60	0	0	220	30	70	5,570
East Ayrshire	30	60	0	690	30	450	0	30	0	20	1,300
East Dunbartonshire	0	20	0	400	50	0	0	0	10	40	520
East Lothian	10	360	800	480	40	0	0	0	60	40	1,790
East Renfrewshire	0	0	0	420	60	0	0	0	0	50	530
Edinburgh	60	1,040	9,450	2,430	310	590	1,020	360	160	210	15,620
Eilean Siar	0	0	30	150	20	0	10	0	10	0	220
Falkirk	20	0	0	790	140	600	0	30	10	20	1,620
Fife	40	190	3,610	2,000	150	0	510	120	90	100	6,830
Glasgow City	140	10	8,510	3,480	810	840	0	620	80	170	14,660
Highland	160	0	100	1,580	40	70	320	90	430	350	3,150
Inverclyde	20	0	160	680	120	190	0	50	0	20	1,240
Midlothian	10	10	40	480	50	0	280	0	10	30	890
Moray	10	460	40	430	20	0	1,030	20	20	90	2,130
North Ayrshire	30	30	0	840	10	0	0	50	60	60	1,080
North Lanarkshire	20	20	140	1,420	210	540	0	50	0	140	2,540
Orkney	80	0	0	80	0	0	0	0	10	0	180
Perth & Kinross	0	1,010	70	1,220	40	660	0	80	600	60	3,740
Renfrewshire	40	80	670	1,100	110	0	0	10	10	70	2,100
Scottish Borders	0	30	200	590	30	0	0	10	90	20	970
Shetland Islands	80	0	30	110	0	0	0	30	30	20	290
South Ayrshire	10	0	180	780	100	0	10	20	100	90	1,290
South Lanarkshire	40	10	160	2,000	110	0	0	60	0	40	2,400
Stirling	20	310	2,940	520	20	260	0	30	200	60	4,340
West Dunbartonshire	10	0	0	460	20	0	0	10	10	30	540
West Lothian	20	30	180	660	90	560	0	40	10	30	1,610
Scotland	1,160	3,970	38,050	29,800	2,970	6,070	4,570	2,120	2,750	2,250	93,710

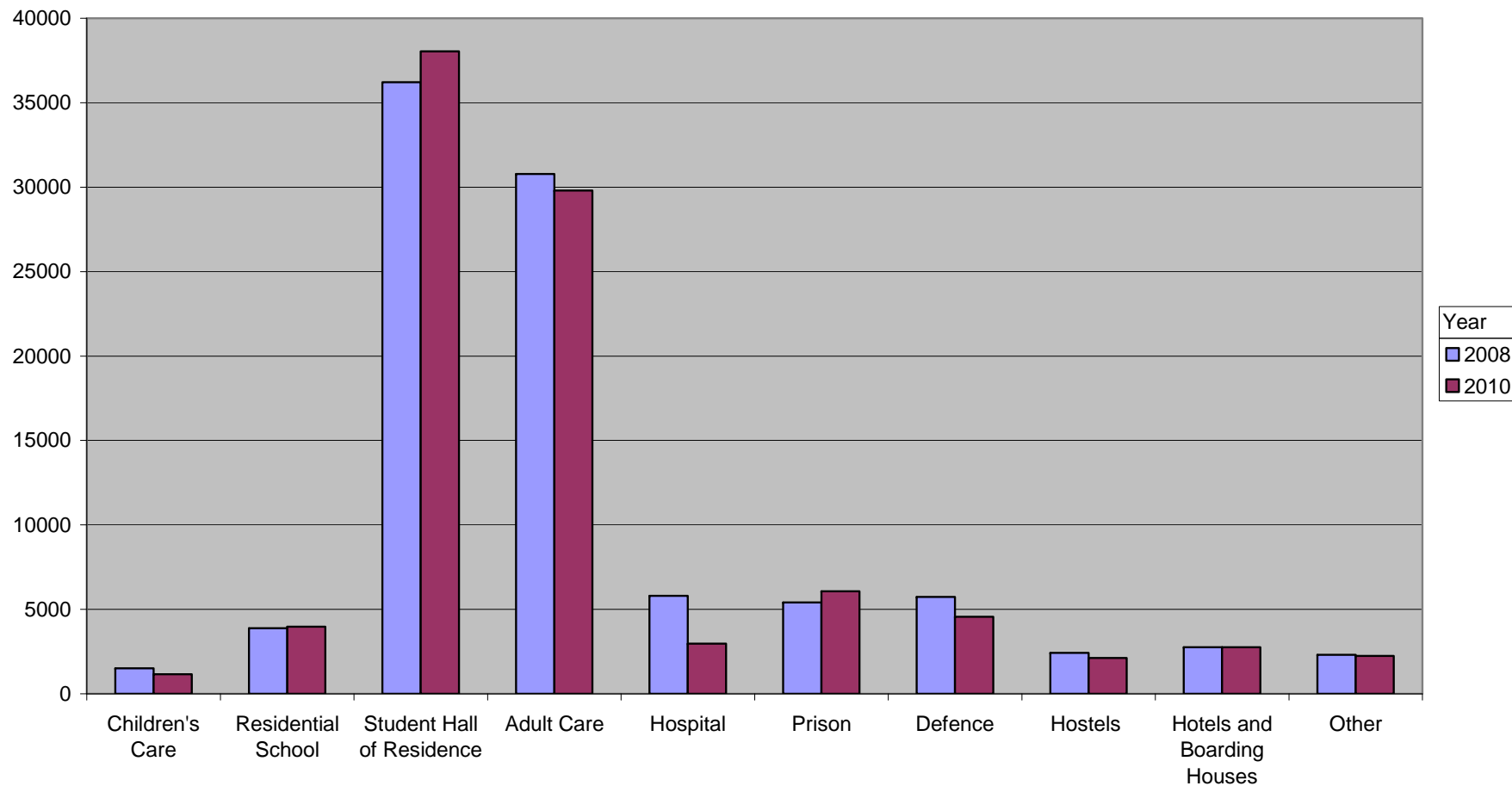
Figures are rounded to the nearest 10

**Table 4: Number of communal establishment residents in Scotland in 2010, by age group and local authority area**

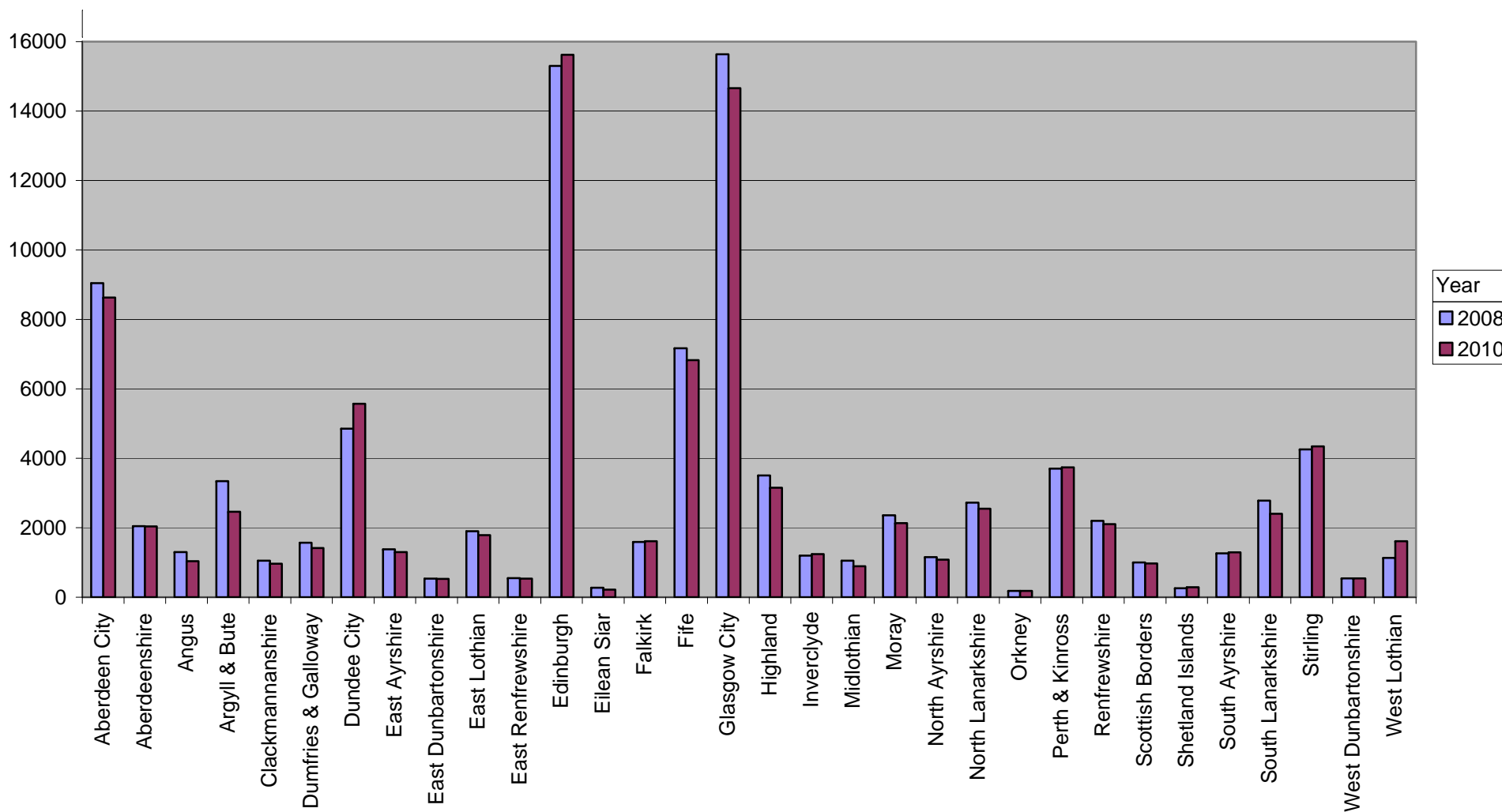
Local Authority	0-15	16-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+	Total
Aberdeen City	100	3,690	1,940	460	350	200	180	150	140	90	100	80	110	180	260	310	290	8,630
Aberdeenshire	70	30	60	60	60	70	80	80	70	70	70	60	90	180	260	350	360	2,040
Angus	20	20	20	20	30	20	30	30	30	30	30	40	60	90	160	190	220	1,030
Argyll & Bute	160	190	380	350	230	250	190	120	70	30	20	20	30	50	110	120	130	2,460
Clackmannanshire	40	50	130	150	120	100	100	70	40	20	10	10	10	20	30	40	30	970
Dumfries & Galloway	50	80	70	70	70	50	40	50	70	40	40	40	50	90	170	210	230	1,420
Dundee City	10	2,530	1,280	400	250	70	40	60	90	40	60	70	70	100	140	190	160	5,570
East Ayrshire	40	40	110	110	100	70	70	40	30	20	40	30	40	100	140	170	140	1,300
East Dunbartonshire	10	20	0	10	10	10	20	20	20	20	20	30	30	50	80	90	90	520
East Lothian	240	510	260	150	40	30	0	20	10	10	10	20	20	80	110	140	150	1,790
East Renfrewshire	0	0	0	0	0	0	0	0	0	10	0	10	30	60	110	140	150	530
Edinburgh	600	7,010	2,390	1,210	610	390	310	190	160	140	140	160	160	300	560	620	680	15,620
Eilean Siar	0	20	10	10	0	0	0	0	0	0	10	10	10	30	30	50	50	220
Falkirk	10	410	230	20	20	20	30	40	30	30	40	40	70	100	170	200	170	1,620
Fife	120	2,230	1,370	350	170	140	120	100	90	70	70	80	150	260	450	520	500	6,830
Glasgow City	140	5,110	2,520	1,010	580	440	350	340	230	260	250	300	390	550	730	780	680	14,660
Highland	130	230	350	240	160	120	100	100	100	70	80	90	120	190	320	390	360	3,150
Inverclyde	10	110	90	60	50	50	60	60	50	40	40	50	60	80	120	160	150	1,240
Midlothian	10	60	90	70	60	50	30	30	20	30	30	30	30	50	110	110	110	890
Moray	220	340	200	230	170	170	150	90	60	30	20	20	30	50	100	120	130	2,130
North Ayrshire	70	40	40	40	20	10	20	20	30	20	20	40	60	100	180	200	190	1,080
North Lanarkshire	30	110	120	130	120	110	90	90	50	50	60	100	160	250	370	390	320	2,540
Orkney	60	30	0	0	0	0	0	0	0	0	0	0	10	10	20	20	30	180
Perth & Kinross	620	580	320	260	170	130	140	130	110	80	70	60	80	130	230	300	320	3,740
Renfrewshire	90	130	190	90	70	80	70	60	40	70	50	60	100	170	260	300	250	2,100
Scottish Borders	40	170	70	20	20	20	30	20	10	20	20	20	30	70	80	140	190	970
Shetland Islands	60	50	20	10	10	10	10	0	0	0	0	10	10	10	20	40	30	290
South Ayrshire	10	60	100	50	30	30	30	30	40	40	40	40	60	100	190	210	230	1,290
South Lanarkshire	30	80	60	30	20	40	50	60	60	80	90	90	130	250	390	460	480	2,400
Stirling	270	1,500	970	320	190	190	160	110	90	50	30	30	30	80	90	110	130	4,340
West Dunbartonshire	10	10	0	0	0	0	0	10	10	10	10	30	40	60	100	100	130	540
West Lothian	30	120	240	150	110	90	80	40	40	20	30	40	60	110	160	150	150	1,610
<b>Scotland</b>	<b>3,320</b>	<b>25,570</b>	<b>13,640</b>	<b>6,090</b>	<b>3,820</b>	<b>2,970</b>	<b>2,580</b>	<b>2,180</b>	<b>1,790</b>	<b>1,510</b>	<b>1,520</b>	<b>1,700</b>	<b>2,330</b>	<b>3,950</b>	<b>6,220</b>	<b>7,310</b>	<b>7,230</b>	<b>93,710</b>

Figures are rounded to the nearest 10

**Figure 1: Number of communal establishment residents by establishment type, 2008 and 2010**



**Figure 2 : Number of residents in communal establishments by local authority, 2008 and 2010**



**Figure 3: Number of communal establishment residents in Scotland in 2008 and 2010, by age group**

