



# Surveillance report

## HIV diagnoses in Scotland: summary report to 31 December 2018

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### Key Points:

- During 2018, a total of 318 reports of HIV diagnoses were recorded in Scotland: 194 first ever HIV diagnoses and 124 diagnoses which were known to have been recorded previously outwith Scotland.
- The total of 194 first ever HIV diagnoses recorded represents a 15% decrease on the number recorded in 2017 (228), but is similar to that recorded in 2016 (199).
- Of the 194 first ever HIV diagnoses, 79 (41%) were among men who have sex with men (MSM), 67 (34%) were heterosexually acquired and 14 (7%) were among people who inject drugs (PWID). Information on route of transmission is not yet available for 32 individuals.
- Of 166 first ever diagnoses, for which avidity antibody data are available, 32 (19%) had been recently acquired (i.e. in the preceding three to four months); of these, 16 were among MSM.

### Total reports of HIV diagnoses in 2018

A total of 318 reports of HIV diagnoses, notified by the NHS laboratories in Scotland, were recorded in 2018. This is a 14% decrease on the 369 reported in 2017. The 2018 total includes 194 first ever HIV diagnoses in Scotland and an additional 124 diagnoses which were known previously elsewhere, but are newly reported in Scotland. The 194 first ever diagnoses in 2018 represent 61% of the total 318 new diagnoses recorded in Scotland; this is a similar proportion to those observed over the previous five years (62% in 2017, 62% in 2016, 69% in 2015, 62% in 2014 and 71% in 2013). While the number of HIV reports among those previously diagnosed elsewhere and now reported in Scotland has fluctuated in recent years, the proportion of total reports of HIV diagnoses has remained similar at around 38% (Table 1).

In this report, the data on i) first ever diagnoses in Scotland, and ii) individuals previously diagnosed elsewhere but now reported in Scotland are discussed separately with a summary also provided of the cohort of individuals diagnosed and living with HIV in Scotland at the end of December 2018. A further report later in the year will present data on access to specialist HIV care and treatment and outcomes of infection.

Please note that to maintain patient confidentiality, cells of less than five (and those derived from them) included in the tables and figure presented in this report have been suppressed. These cells are indicated with an asterisk (\*). To prevent back-calculation of suppressed cells from totals, it may sometimes be necessary to suppress some cells which are greater than five (secondary suppression).

## First ever HIV diagnoses in 2018

During 2018, NHS Scotland laboratories reported first ever positive HIV-antibody test results for 194 individuals (Tables 1 and 2); this total represents a 15% decrease on the number recorded in 2017 (228), but is similar to that recorded in 2016 (199). As in previous years, the largest number (67/194, 35%) of first ever diagnoses was observed in NHS Greater Glasgow & Clyde. Smaller numbers were recorded in NHS Lothian, NHS Lanarkshire, and NHS Tayside with 26, 22, and 19 diagnoses, respectively, while the remaining diagnoses were spread throughout other NHS board areas (Table 2).

In 2018, men who have sex with men (MSM) accounted for 41% (79/194) of first ever diagnoses, a lower number (116) and proportion (51%) than that recorded in 2017 (Table 1). By comparison, 34% (67/194) of first ever diagnoses were recorded among heterosexuals with a further 7% (14/194) among persons who inject drugs (PWID). It should be noted that, at the time of publication, risk group information is not available for 32 (16%) individuals diagnosed for the first time in 2018; 14 (44%) of whom were diagnosed in the fourth quarter of 2018. As a result of missing information, caution should be taken when drawing comparisons with previous years. Future reports will be updated as risk information becomes available.

Of 194 new diagnoses recorded in 2018, 166 (86%) underwent avidity antibody testing to establish recency of infection. Of 166 tested, 32 (19%) had been recently acquired (i.e. in the preceding three to four months). This number and proportion is lower than that reported in 2017 (52/194, 27%) and 2015 (26%), but is the same as that recorded in 2016 (19%) (Table 3). Of 32 recently acquired infections, one half (16, 50%) were among MSM and one third (11, 34%) were in heterosexuals.

**Table 1:** Total reports and first ever reports of HIV diagnoses, Scotland,<sup>1</sup> by year of report, exposure category and likely area of exposure,<sup>2</sup> 2009-2018

	Area of exposure	Year of report									
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Men who have sex with men (MSM)	Within Scotland	97	108	109	92	96	92	108	70	90	47
	Rest of UK	12	9	17	18	12	12	10	7	5	7
	Outwith UK	23	12	12	18	16	14	12	9	21	16
	<b>Total first ever<sup>3</sup></b>	<b>132</b>	<b>129</b>	<b>138</b>	<b>128</b>	<b>124</b>	<b>118</b>	<b>131</b>	<b>86</b>	<b>116</b>	<b>79</b>
	<b>Total reports<sup>3</sup></b>	<b>175</b>	<b>162</b>	<b>174</b>	<b>172</b>	<b>179</b>	<b>185</b>	<b>185</b>	<b>157</b>	<b>192</b>	<b>149</b>
Sexual intercourse between men and women	Within Scotland	35	24	39	21	28	*	*	*	21	26
	Rest of UK	6	5	8	6	6	*	*	*	5	5
	Outwith UK	98	88	66	64	66	48	38	33	41	33
	<b>Total first ever<sup>3</sup></b>	<b>139</b>	<b>117</b>	<b>113</b>	<b>91</b>	<b>102</b>	<b>87</b>	<b>62</b>	<b>73</b>	<b>69</b>	<b>67</b>
	<b>Total reports<sup>3</sup></b>	<b>208</b>	<b>167</b>	<b>161</b>	<b>144</b>	<b>143</b>	<b>149</b>	<b>112</b>	<b>114</b>	<b>118</b>	<b>100</b>
PWID	<b>Total first ever<sup>3</sup></b>	<b>12</b>	<b>17</b>	<b>14</b>	<b>12</b>	<b>17</b>	<b>18</b>	<b>52</b>	<b>32</b>	<b>35</b>	<b>14</b>
	<b>Total reports<sup>3</sup></b>	<b>18</b>	<b>21</b>	<b>19</b>	<b>16</b>	<b>21</b>	<b>22</b>	<b>56</b>	<b>39</b>	<b>44</b>	<b>14</b>
All exposure categories <sup>4</sup>	Within Scotland	142	150	160	123	141	144	182	144	146	111
	Rest of UK	19	14	25	25	19	17	13	11	11	13
	Outwith UK	129	103	83	88	86	65	53	44	65	53
	<b>Total first ever<sup>3,4</sup></b>	<b>291</b>	<b>267</b>	<b>270</b>	<b>238</b>	<b>250</b>	<b>230</b>	<b>253</b>	<b>199</b>	<b>228</b>	<b>194</b>
	<b>Total reports<sup>3,4</sup></b>	<b>417</b>	<b>359</b>	<b>364</b>	<b>347</b>	<b>354</b>	<b>370</b>	<b>366</b>	<b>321</b>	<b>369</b>	<b>318</b>

1. Due to active follow-up, data on the Scottish HIV Register are constantly changing. Figures presented in this table may differ slightly from those previously published.

2. 'Area of Exposure' is based on information provided by the patient at the time of test or during subsequent follow-up. Prior to 2018, an individual was presumed to have been infected in Scotland if, after investigation, no evidence existed to the contrary. Diagnoses under investigation are excluded from all categories except the total. Area of exposure data only apply to first ever diagnoses.

3. Total includes diagnoses currently under investigation.

4. Total includes diagnoses outwith the three main risk groups.

**Table 2:** First ever HIV diagnoses, Scotland, by year of report and NHS board, 2009-2018

NHS Board <sup>1</sup>	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ayrshire & Arran	7	12	12	9	16	11	12	4	6	8
Borders	*	*	*	*	*	*	*	*	*	*
Dumfries & Galloway	5	*	*	*	*	*	*	*	*	6
Fife	15	8	16	9	*	8	13	8	9	7
Forth Valley	12	10	12	6	12	8	7	13	*	6
Grampian	21	22	20	21	35	18	17	25	22	12
Greater Glasgow & Clyde	126	96	90	88	80	76	96	75	88	67
Highland	8	9	7	10	*	9	9	5	5	12
Lanarkshire	25	22	28	19	29	22	29	24	27	22
Lothian	51	60	61	55	45	60	46	32	50	26
Tayside	19	23	20	14	21	12	16	9	14	19
Orkney/ Shetland/ Western Isles	*	*	*	*	*	*	*	*	*	*
<b>Scotland</b>	<b>291</b>	<b>267</b>	<b>270</b>	<b>238</b>	<b>250</b>	<b>230</b>	<b>253</b>	<b>199</b>	<b>228</b>	<b>194</b>

1. Unless otherwise specified, individuals are assigned to a specific NHS board based on the patient's postcode of residence or, where this is not known, their NHS board of treatment/care.

## First ever HIV diagnoses in MSM

Consistent with previous years, MSM are the group most affected by HIV infection. The 79 first ever HIV diagnoses among MSM reported in 2018 represents the lowest total recorded in this risk group over the previous five years (116 in 2017, 86 in 2016, 131 in 2015, and 118 in 2014). Of the 79 MSM who were diagnosed for the first time in 2018, the median age was 34 years (ranging from 20 to 66 years); this figure has remained relatively unchanged over the previous few years (35 years in 2017 and 37 years in 2016). Among the 79 MSM, 16% (13) were aged 15-24 years, 35% (28) were aged 25-34 years, 19% (15) were aged 35-44 years and 29% (23) were aged 45 years and over. Over the previous five years, those aged 25-34 years have consistently accounted for the largest proportion of MSM diagnoses (with the exception of 2016 when a larger proportion was observed among MSM aged 45 years and over). Although smaller, it is important to note the proportion of young MSM (16%) aged between 15 and 24 years who were diagnosed for the first time in 2018; this is a similar proportion to that observed in 2017 (15%) and compares with 10%, 16% and 11% in 2016, 2015 and 2014, respectively. In the absence, however, of data on the numbers being tested in each age group, comparisons are limited. Note that since July 2017, there has been an increase in testing among MSM, notably in those presenting to sexual health clinics who wish to consider using HIV pre-exposure prophylaxis (PrEP).<sup>1</sup>

In 2018, of 70 MSM diagnosed for the first time with HIV and for whom likely area of exposure was known, the majority (47, 67%) were likely to have acquired their infection in Scotland; however, the proportion recorded is the lowest observed in recent years (an average of 80% was recorded between 2014 and 2017) (Table 1). Of 16 MSM who acquired their infection outwith the UK in 2018, various areas of exposure were reported, including Eastern Europe, South and South-East Asia, and Sub-Saharan Africa.

Furthermore, 24% of MSM (16/67), whose HIV infection was diagnosed in 2018 and who underwent avidity antibody testing, had acquired the virus in the preceding three to four months; this proportion compares with 32% in 2017, 21% in 2016 and 35% in 2015 (Table 3). There has, however, been a reduction in the number of recently acquired HIV infections in 2018 compared to 2017.

## Heterosexually acquired first ever HIV diagnoses

In 2018, first ever diagnoses of heterosexually acquired HIV infection were recorded in 67 individuals; of these, 55% (37) were male and 45% (30) were female. These proportions have remained relatively stable over the previous five years (49% men in 2017, 40% in 2016, 50% in 2015 and 47% in 2014). Male heterosexuals had a median age of 44 years (ranging from 22 to 72 years), an increase compared to the median age of 39 years observed in 2017, but similar to the median age in 2016 (46 years). By comparison, the median age of female heterosexuals was 37 years (ranging from 18 to 62 years); this is lower than the median age reported in 2017 (43 years), but is similar to the median recorded in 2016 (36 years).

Compared to MSM diagnosed for the first time in 2018, heterosexual men and women, whose likely area of exposure was known, were less likely to have acquired their infection in Scotland (41% (26/64) (Table 1)). Information available indicates that 52% (33/64) of heterosexuals were likely to have acquired their infection abroad; one third (34%, 12/35) of heterosexual men and almost one half (48%, 14/29) of heterosexual women were likely to have acquired their infection in Sub-Saharan Africa. The men and women infected in Scotland also reported being born in Scotland and identified as being of White Scottish ethnicity while those men and women infected in Sub-Saharan Africa were also born there and reported being of Black-African ethnicity.

Among heterosexual men and women diagnosed for the first time, and for whom avidity antibody data are available, the number and proportion who had recently acquired their infection has remained relatively stable at 19% (11/58) (compared to 18% in both 2017 and 2016) (Table 3).

In 2018, the majority of both male and female heterosexuals, diagnosed for the first time, were tested in hospital settings (65% (24/37) of men and 53% (16/30) of women). A greater proportion of women compared to men (23% (7/30) versus 8% (3/37)) were diagnosed in the sexual health clinic setting while small numbers (five or fewer men and women, respectively) were diagnosed by their general practitioner.

## First ever HIV diagnoses among PWID

During 2018, 14 PWID were diagnosed for the first time (10 of whom reside or attend specialist services in NHS Greater Glasgow & Clyde); this represents 7% of all first ever HIV diagnoses in 2018. The number of diagnoses in this risk group has decreased in 2018 compared to recent years (35 in 2017, 32 in 2016 and 52 in 2015) and is now comparable to the number reported in the years prior to the HIV outbreak among PWID in NHS Greater Glasgow & Clyde which was first identified in 2015 (Table 1). A detailed analysis of the risk factors associated with this outbreak are discussed in a recent publication.<sup>2</sup>

Of the newly diagnosed infections in PWID, and for which avidity antibody testing data are available, less than 15% were recently acquired in 2018 compared to 33% in 2017, 21% in 2016 and 28% in 2015 (Table 3).

**Table 3:** Number and proportion of recently acquired<sup>1,2</sup> HIV infections in Scotland by year of report and exposure category, 2015-2018

Exposure Category	2015			2016			2017			2018		
	Diagnoses tested for avidity	Recently acquired	Proportion recent	Diagnoses tested for avidity	Recently acquired	Proportion recent	Diagnoses tested for avidity	Recently acquired	Proportion recent	Diagnoses tested for avidity	Recently acquired	Proportion recent
Men who have sex with men (MSM)	125	44	35%	81	17	21%	95	30	32%	67	16	24%
Sexual intercourse between men and women	60	*	*	67	12	18%	61	11	18%	58	11	19%
People who inject drugs (PWID)	50	14	28%	28	6	21%	33	11	33%	14	*	*
Other/NK	8	*	*	5	0	0%	5	0	0%	27	*	*
<b>Scotland</b>	<b>243</b>	<b>64</b>	<b>26%</b>	<b>181</b>	<b>35</b>	<b>19%</b>	<b>194</b>	<b>52</b>	<b>27%</b>	<b>166</b>	<b>32</b>	<b>19%</b>

1. The data to the end of December 2018 are provisional. Note that new diagnoses are tested for recency using the avidity antibody test; this is performed on new diagnoses when a sample is available. This test was rolled out across all NHS Boards from April 2014.
2. The avidity test is used on specimens from those who are not previously known to be HIV positive (i.e. first ever diagnoses). The data presented includes only those infections considered to be new after active follow-up by HPS.



## Previously known HIV diagnoses newly reported in Scotland

In 2018, 124 HIV positive individuals, who were previously diagnosed elsewhere, were newly reported in Scotland; of these, 100 (81%) were male and 24 were female and the majority (73, 59%) were aged between 25 and 44 years. Sexual intercourse between men was the transmission route for 69 (56%) of the known diagnoses while heterosexual intercourse accounted for 27% (33). None of the individuals previously diagnosed elsewhere and newly reported in Scotland were PWID and there were 18 for whom no transmission risk is available. Of 67 MSM for whom likely area of exposure was known, 26 (39%) were thought to have acquired their infection in other parts of the UK, 14 (21%) in Western Europe and seven (10%) in North America. Of those who acquired their infection heterosexually, 13 (39%) were likely to have acquired their infection in Sub-Saharan Africa and five (15%) were likely to have acquired their infection in other parts of the UK. Area of exposure is consistent with the reported ethnicity of the individuals who acquired HIV heterosexually (Black-African ethnicity 50% (15/30) and White Other ethnicity 23% (7/30). Most of the MSM who were previously known to be HIV positive were of White Other (31/61, 51%) and White Other British (10, 16%) ethnicities.

## The HIV cohort in Scotland; individuals diagnosed and living with HIV as at end December 2018

It is estimated (as at the end of December 2018) that there are 5375 individuals diagnosed and living with HIV in Scotland, of whom almost three quarters (73%, 3935) are male and 1440 are female. The majority of these individuals reside or are attending specialist HIV services in the two most populous NHS boards in Scotland; 31% in NHS Greater Glasgow & Clyde and 28% in NHS Lothian. A further 9% of those diagnosed reside or attend services in NHS Lanarkshire, 8% in NHS Grampian and 7% in NHS Tayside (Table 4).

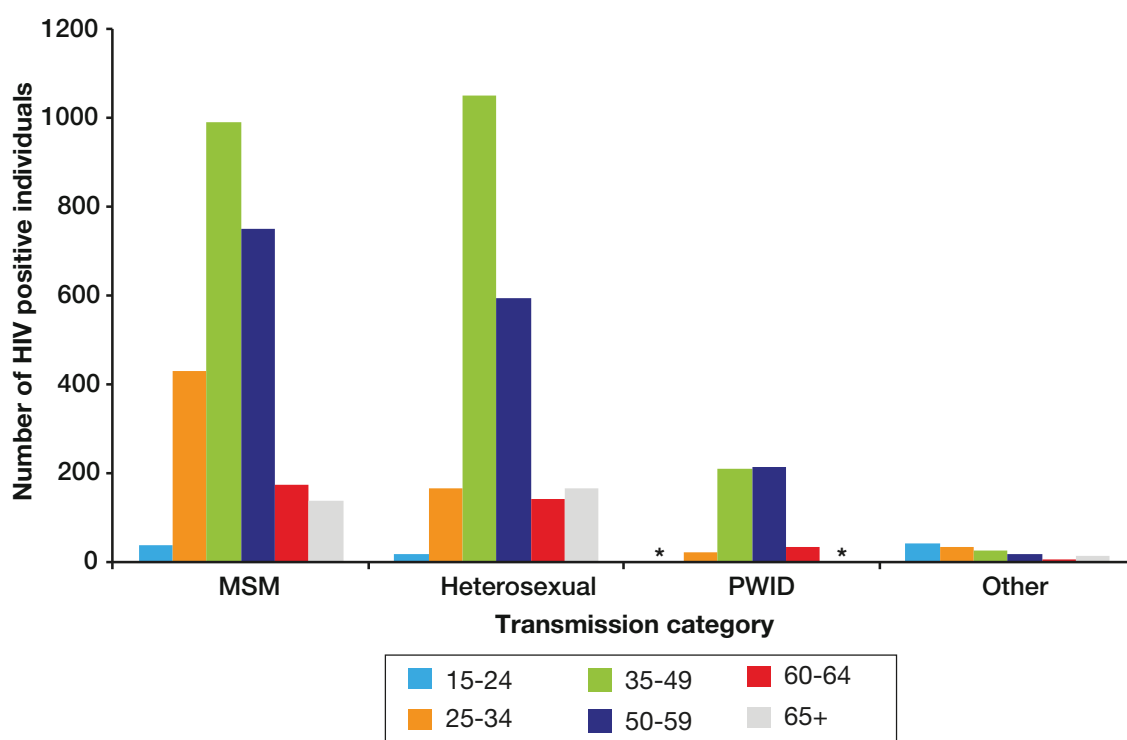
**Table 4:** NHS board and exposure category of individuals diagnosed and living with HIV in Scotland to 31 December 2018

NHS Board <sup>1</sup>	MSM	Heterosexual	PWID	Other/Not known	Total
Ayrshire & Arran	90	51	9	14	164
Borders	21	17	*	8	51
Dumfries & Galloway	40	26	11	5	82
Fife	117	107	13	11	248
Forth Valley	98	55	6	9	168
Grampian	180	227	15	27	449
Greater Glasgow & Clyde	738	688	189	63	1678
Highland	66	73	*	*	153
Lanarkshire	224	192	36	17	469
Lothian	794	519	153	41	1507
Tayside	143	170	46	23	382
Orkney/Shetland/ Western Isles	6	12	*	*	24
<b>Scotland</b>	<b>2517</b>	<b>2137</b>	<b>486</b>	<b>235</b>	<b>5375</b>

1. Unless otherwise specified, individuals are assigned to a specific NHS board based on the patient's postcode of residence or, where this is not known, their NHS board of referral.

Of the 5289 individuals diagnosed and living with HIV and for whom information regarding their likely route of acquisition is available, almost half (48%) are thought to have acquired their infection through sexual intercourse between men, 40% acquired HIV heterosexually, 9% via injecting drug use and 3% through other routes including mother to child transmission. Similar to the cohort as a whole, most diagnosed MSM live or attend specialist HIV services in NHS Lothian (32%) and NHS Greater Glasgow & Clyde (29%). This is also similar for those individuals that acquired HIV heterosexually and PWID; however, a higher proportion live or receive specialist HIV care in NHS Greater Glasgow & Clyde (32% and 39% respectively) compared to NHS Lothian (24% and 31% respectively). Currently, 43% (2321) of the cohort are aged between 35 and 49 years and a further 42% (2275) are aged 50 years and over, indicating that this is an ageing cohort (Figure 1).

**Figure 1:** Current ages of the diagnosed HIV cohort at the end of December 2018.



Just over half of the 5310 individuals for whom likely area of exposure is known are thought to have acquired their infection within Scotland (this includes approximately 84% of PWID and 65% of MSM with diagnosed HIV infection). Exposure in Sub-Saharan Africa accounts for 17% of all HIV diagnoses and, notably, 40% of all heterosexual diagnoses. A further 11% of diagnoses were diagnosed in other parts of the UK and Ireland.

## Summary

Between 2017 and 2018, the total number of reports of HIV diagnoses, notified by the NHS laboratories in Scotland, decreased from 369 in 2017 to 318 in 2018; this represents a reduction in both those first ever HIV diagnoses (from 228 to 194) and those who were previously diagnosed elsewhere and newly reported in Scotland (from 141 to 124). The number of first ever HIV diagnoses has been decreasing steadily (notwithstanding the decrease in PWID following the outbreak in NHS Greater Glasgow & Clyde) and the total in 2018 is the lowest recorded in the past ten years; this is most notable among MSM. Of the reports among those who were previously diagnosed elsewhere and now reported in Scotland, there has been an almost 50% decrease in those who acquired HIV through heterosexual intercourse since



2014 and a small increase in reports among MSM. HIV diagnoses among PWID have returned to pre-2015 levels observed prior to the recent outbreak among PWID in NHS Greater Glasgow & Clyde - the largest in the UK for over 30 years. It serves as a reminder that HIV testing and treatment of those at risk, alongside HIV prevention and harm reduction measures, is essential in preventing another such outbreak.<sup>2</sup>

In Scotland, while a decrease in first time diagnoses has been observed, MSM remain the group most at risk of HIV infection. HIV transmission is occurring and recent infections continue to be detected; however, there are early indications that this is reducing in number among MSM (from 30 in 2017 to 16 in 2018) and is stable (at around 11 per year) in those acquiring HIV via heterosexual intercourse. Testing of those at risk remains a key public health priority.

Changes in approach, primarily in the area of prevention, including the early initiation of HIV antiretroviral therapy in Scotland since January 2016, the [Undetectable equals Untransmittable \(U=U\)](#) campaign messages and, since July 2017, the availability of NHS-funded HIV pre-exposure prophylaxis (PrEP) for individuals at high risk of sexual HIV acquisition<sup>1</sup> have impacted on the epidemiology of HIV. In the first year of the PrEP programme, 1855 (99%) of the 1872 individuals prescribed PrEP were MSM and the potential impact of PrEP availability on HIV infection (and other sexually transmitted infections (STIs)) in Scotland is being evaluated; it is too early to make detailed conclusions as to its impact at this stage. Furthermore, during the second year of the programme, efforts will be made to widen the availability of PrEP to all at high risk of HIV, including women, transgender/trans people, and heterosexual men.

The data presented indicate an ageing cohort of individuals diagnosed and living with HIV in Scotland with over 40% now aged 50 or over. Previous reports<sup>3</sup> have indicated a large proportion (over 90%) are accessing high quality HIV treatment and care and with undetectable levels of virus. The public health challenge is to ensure that the health and social care needs of those living with HIV are being met now and in the future.

## References

1. Health Protection Scotland and Information Services Division. Implementation of HIV PrEP in Scotland; First Year Report. [<https://www.hps.scot.nhs.uk/web-resources-container/implementation-of-hiv-prep-in-scotland-first-year-report/>]
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3. Health Protection Scotland. HIV infection in Scotland: quarterly report to 30 September 2018. Health Protection Scotland, National Services Scotland: Glasgow, November 2018. <https://www.hps.scot.nhs.uk/web-resources-container/hiv-infection-and-aids-quarterly-report-to-30-september-2018/>

Note: The HIV diagnosis database is under continual review and modification as additional information becomes available; this can result in the enhancement of records with additional epidemiological information from one report to the next. As a consequence, figures presented in current and previously published tables may differ.

Supplementary tables and figures will be available in due course on the HPS website.

The BBV/STI team at HPS welcomes feedback from stakeholders regarding content. Please direct any correspondence to [NSS.HPS-BBVSTIReporting@nhs.net](mailto:NSS.HPS-BBVSTIReporting@nhs.net).

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## Terms and definitions

**NHS board:** Unless otherwise specified, individuals are assigned to a specific NHS board based on the patient's postcode of residence or, where this is not known, their NHS board of referral/treatment and care.

**Data suppression:** To maintain patient confidentiality, cells of less than five (and those derived from them) are suppressed. These cells are indicated with an asterisk (\*). To prevent back-calculation of suppressed cells from totals, it may sometimes be necessary to suppress some cells which are greater than five (secondary suppression).

**Transmission category:** Individuals are assigned to a transmission category based on a clinical assessment of their most likely method of exposure and subsequent infection.

**Estimated number of diagnosed persons living in Scotland:** This estimate is calculated by subtracting the individuals known to have died, those who are known to have left Scotland, and those who have failed to attend for 10 or more years from the cumulative number of diagnosed cases ever recorded.

### NHS board abbreviations

AA Ayrshire & Arran	BR Borders	DG Dumfries & Galloway	GGC Greater Glasgow & Clyde
FF Fife	FV Forth Valley	GR Grampian	HG Highland
LO Lothian	LN Lanarkshire	OR Orkney	SH Shetland
TY Tayside	WI Western Isles		

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