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# **Psychotropic drugs and people with learning disabilities or autism**

## **Annexes**

**Table 1: Prescribing rates as percentage of patients prescribed drugs from each of the drug groups, by gender, age group and patient group**

Drug group and age group		Learning disabilities (with or without autism)		Autism (without learning disabilities)	
		Female	Male	Female	Male
<b>Antipsychotics</b>	00 to 09	0 (0- 0.89)	0.43 (0.15- 1.25)	0.13 (0.02- 0.74)	0.24 (0.12- 0.48)
	10 to 17	2.81 (1.81- 4.35)	4.19 (3.24- 5.4)	2.03 (1.3- 3.15)	2.5 (2.05- 3.05)
	18 to 24	7.05 (5.54- 8.94)	10.62 (9.19- 12.24)	5.84 (3.92- 8.61)	4.66 (3.71- 5.82)
	25 to 44	12.6 (11.31- 14.02)	16.17 (14.88- 17.54)	11.45 (8.14- 15.88)	9.44 (7.62- 11.64)
	45 to 64	22.99 (21.24- 24.84)	23.71 (22.08- 25.42)	11 (6.25- 18.63)	12.89 (9.33- 17.55)
	65 and over	25.08 (21.88- 28.57)	23.05 (20.07- 26.33)	-	15.62 (6.86- 31.75)
<b>All Antidepressants</b>	00 to 09	0 (0- 0.89)	0 (0- 0.55)	0 (0- 0.5)	0.03 (0.01- 0.17)
	10 to 17	2.22 (1.35- 3.63)	1.57 (1.03- 2.39)	4.27 (3.15- 5.76)	2.15 (1.73- 2.67)
	18 to 24	11.6 (9.65- 13.89)	7.88 (6.65- 9.32)	22.59 (18.74- 26.97)	9.96 (8.57- 11.55)
	25 to 44	20.69 (19.08- 22.39)	14.41 (13.19- 15.72)	37.02 (31.4- 43.02)	24.26 (21.45- 27.32)
	45 to 64	28.08 (26.2- 30.04)	19.23 (17.74- 20.82)	38 (29.1- 47.79)	32.03 (26.62- 37.98)
	65 and over	26.17 (22.92- 29.7)	18.44 (15.73- 21.5)	40 (16.82- 68.73)	18.75 (8.89- 35.31)
<b>Anxiolytics</b>	00 to 09	1.17 (0.5- 2.72)	0.57 (0.22- 1.46)	0 (0- 0.5)	0.06 (0.02- 0.22)
	10 to 17	2.07 (1.24- 3.45)	1.42 (0.91- 2.21)	0.21 (0.06- 0.77)	0.11 (0.04- 0.28)
	18 to 24	5.23 (3.95- 6.91)	4.07 (3.2- 5.16)	3.3 (1.94- 5.56)	0.91 (0.54- 1.51)
	25 to 44	8.82 (7.73- 10.05)	9.25 (8.26- 10.34)	6.87 (4.39- 10.6)	4.66 (3.41- 6.33)
	45 to 64	13.33 (11.94- 14.85)	11.76 (10.55- 13.08)	8 (4.11- 15)	4.69 (2.7- 8.01)
	65 and over	12.15 (9.84- 14.9)	9.51 (7.55- 11.92)	0 (0- 27.75)	6.25 (1.73- 20.15)
<b>All Antiepileptics</b>	00 to 09	11.03 (8.4- 14.36)	6.43 (4.84- 8.49)	1.71 (1- 2.9)	1.03 (0.74- 1.43)
	10 to 17	14.22 (11.79- 17.06)	10.18 (8.67- 11.92)	2.56 (1.73- 3.78)	1.8 (1.42- 2.28)
	18 to 24	19.68 (17.19- 22.44)	15.89 (14.17- 17.78)	5.58 (3.72- 8.31)	3.3 (2.52- 4.31)
	25 to 44	23.03 (21.36- 24.8)	22.58 (21.11- 24.12)	9.54 (6.55- 13.71)	4.9 (3.62- 6.61)
	45 to 64	26.65 (24.81- 28.59)	27.63 (25.91- 29.41)	10 (5.52- 17.44)	7.42 (4.8- 11.3)
	65 and over	23.05 (19.96- 26.47)	23.92 (20.89- 27.23)	0 (0- 27.75)	18.75 (8.89- 35.31)

<b>Hypnotics</b>	00 to 09	3.76 (2.32- 6.01)	4.29 (3.02- 6.05)	3.68 (2.56- 5.27)	3.66 (3.07- 4.35)
	10 to 17	5.19 (3.75- 7.13)	7.04 (5.78- 8.53)	5.12 (3.89- 6.73)	6.48 (5.73- 7.32)
	18 to 24	2.84 (1.93- 4.16)	3.56 (2.75- 4.59)	3.55 (2.13- 5.88)	2.59 (1.91- 3.5)
	25 to 44	3.17 (2.53- 3.97)	2.83 (2.3- 3.5)	4.58 (2.64- 7.83)	3.19 (2.18- 4.63)
	45 to 64	5.05 (4.19- 6.07)	4.04 (3.33- 4.88)	7 (3.43- 13.75)	5.08 (2.99- 8.49)
	65 and over	4.98 (3.55- 6.95)	3.17 (2.1- 4.75)	0 (0- 27.75)	3.12 (0.55- 15.74)
<b>CNS Stimulants</b>	00 to 09	0.7 (0.24- 2.05)	1.86 (1.09- 3.15)	1.45 (0.81- 2.57)	2.54 (2.06- 3.13)
	10 to 17	3.7 (2.52- 5.41)	8.53 (7.15- 10.15)	5.34 (4.07- 6.97)	9.36 (8.46- 10.34)
	18 to 24	1.71 (1.04- 2.8)	4.26 (3.37- 5.37)	3.81 (2.32- 6.19)	4.27 (3.37- 5.4)
	25 to 44	0.13 (0.04- 0.38)	0.64 (0.41- 1)	1.53 (0.6- 3.86)	1.59 (0.93- 2.71)
	45 to 64	-	-	1 (0.18- 5.45)	0.39 (0.07- 2.18)
<b>Antimanics</b>	10 to 17	-	-	-	-
	18 to 24	-	-	-	-
	25 to 44	0.39 (0.21- 0.74)	0.37 (0.21- 0.66)	0.38 (0.07- 2.13)	0.25 (0.07- 0.89)
	45 to 64	0.81 (0.51- 1.29)	0.84 (0.55- 1.28)	1 (0.18- 5.45)	0.78 (0.21- 2.8)
	65 and over	0.78 (0.33- 1.81)	0.58 (0.22- 1.47)	-	0 (0- 10.72)

**Table 2: Percentage of patients prescribed each of the drug groups, who were prescribed more than one drug on a study day, by drug group, gender, age group and patient group**

		Learning disabilities (with or without autism)		Autism (without autism)	
		Female	Male	Female	Male
<b>Antipsychotics</b>	00 to 09	-	0 (0- 56.15)	0 (0- 79.35)	0 (0- 32.44)
	10 to 17	0 (0- 18.43)	3.64 (1- 12.32)	0 (0- 17.59)	0 (0- 4.01)
	18 to 24	3.28 (0.9- 11.19)	4.79 (2.45- 9.17)	4.35 (0.77- 20.99)	2.78 (0.77- 9.57)
	25 to 44	8.65 (5.93- 12.46)	10.27 (7.86- 13.32)	3.33 (0.59- 16.67)	5.26 (2.07- 12.77)
	45 to 64	10.6 (8.16- 13.67)	12.2 (9.8- 15.09)	0 (0- 25.88)	6.06 (1.68- 19.61)
	65 and over	8.12 (4.81- 13.4)	9.43 (5.8- 14.98)	-	0 (0- 48.99)
<b>All</b>	10 to 17	0 (0- 20.39)	0 (0- 15.46)	0 (0- 8.97)	1.25 (0.22- 6.75)

<b>Antidepressants</b>	18 to 24	4.95 (2.13- 11.07)	2.46 (0.84- 6.98)	5.68 (2.45- 12.62)	3.9 (1.8- 8.24)
	25 to 44	7.79 (5.7- 10.55)	4.94 (3.25- 7.44)	9.38 (5.01- 16.87)	6.6 (3.9- 10.96)
	45 to 64	7.99 (6.06- 10.47)	4.58 (3.05- 6.84)	21.62 (11.39- 37.2)	9.88 (5.09- 18.3)
	65 and over	6.02 (3.3- 10.73)	3.94 (1.69- 8.89)	0 (0- 56.15)	0 (0- 43.45)
<b>All Antiepileptics</b>	00 to 09	42.22 (28.97- 56.7)	42.86 (29.12- 57.79)	27.27 (9.75- 56.56)	15.62 (6.86- 31.75)
	10 to 17	37.63 (28.46- 47.79)	32.09 (24.78- 40.4)	21.74 (9.66- 41.9)	19.7 (11.89- 30.84)
	18 to 24	42.94 (35.74- 50.46)	32.66 (27.13- 38.72)	19.05 (7.67- 40)	14 (6.95- 26.19)
	25 to 44	41.4 (37.28- 45.64)	39.28 (35.65- 43.04)	12.5 (4.34- 31)	15.79 (7.44- 30.42)
	45 to 64	38.96 (35- 43.07)	39.33 (35.75- 43.03)	44.44 (18.88- 73.33)	11.11 (3.1- 32.8)
	65 and over	35.62 (28.31- 43.66)	32.93 (26.2- 40.44)	-	0 (0- 43.45)
<b>Anxiolytics</b>	10 to 17	-	-	-	0 (0- 48.99)
	18 to 24	0 (0- 8.03)	0 (0- 5.75)	0 (0- 22.81)	0 (0- 21.53)
	25 to 44	5.45 (3.07- 9.49)	4.76 (2.8- 7.98)	5.56 (0.99- 25.76)	2.7 (0.48- 13.82)
	45 to 64	4.66 (2.74- 7.81)	5.12 (3.13- 8.27)	0 (0- 32.44)	0 (0- 25.88)
	65 and over	3.9 (1.33- 10.84)	3.08 (0.85- 10.54)	-	-

**Table 3: Percentage of patients prescribed psychotropic drugs, by number of drug groups prescribed on a given day, gender and patient group**

		<b>Learning disabilities (with or without autism)</b>		<b>Autism (without learning disabilities)</b>	
		<b>Female</b>	<b>Male</b>	<b>Female</b>	<b>Male</b>
<b>0 groups</b>	00 to 09	85.68 (88.69- 82.04)	88.57 (90.72- 86)	93.56 (95.1- 91.59)	93.56 (94.35- 92.68)
	10 to 17	76.3 (79.35- 72.94)	74.7 (76.96- 72.3)	84.31 (86.5- 81.84)	82.71 (83.89- 81.46)
	18 to 24	64.73 (67.82- 61.52)	67.9 (70.16- 65.55)	65.74 (70.25- 60.92)	80.21 (82.12- 78.15)
	25 to 44	54.8 (56.83- 52.76)	56.87 (58.64- 55.08)	51.15 (57.14- 45.12)	65.56 (68.74- 62.24)
	45 to 64	41.84 (43.96- 39.74)	45.98 (47.94- 44.04)	52 (61.54- 42.32)	56.64 (62.57- 50.52)
	65 and over	42.52 (46.38- 38.75)	48.85 (52.56- 45.14)	50 (76.34- 23.66)	53.12 (69.13- 36.45)
<b>1 group</b>	00 to 09	11.66 (8.95- 15.06)	9.05 (7.15- 11.41)	5.7 (4.26- 7.58)	5.38 (4.66- 6.2)
	10 to 17	17.81 (15.11- 20.88)	18.79 (16.78- 20.97)	12.29 (10.34- 14.54)	12.89 (11.85- 14)
	18 to 24	25.03 (22.27- 27.99)	21.37 (19.42- 23.47)	26.39 (22.28- 30.95)	14.95 (13.26- 16.82)

	25 to 44	28.39 (26.58- 30.27)	26.29 (24.74- 27.91)	31.09 (25.79- 36.93)	23.7 (20.91- 26.74)
	45 to 64	31.71 (29.76- 33.73)	30.56 (28.79- 32.4)	24.9 (17.46- 34.2)	28.3 (23.14- 34.11)
	65 and over	32.63 (29.11- 36.35)	29.9 (26.62- 33.41)	40.1 (16.88- 68.81)	29.41 (16.53- 46.69)
<b>2 groups</b>	00 to 09	2.66 (1.5- 4.66)	2.27 (1.4- 3.66)	0.76 (0.35- 1.68)	1.04 (0.75- 1.45)
	10 to 17	4.91 (3.52- 6.81)	5.47 (4.37- 6.82)	2.77 (1.89- 4.02)	3.73 (3.17- 4.39)
	18 to 24	7.65 (6.07- 9.59)	7.65 (6.44- 9.07)	5.83 (3.91- 8.6)	3.84 (2.99- 4.92)
	25 to 44	11.26 (10.03- 12.62)	11.57 (10.47- 12.78)	13.6 (9.97- 18.28)	7.9 (6.24- 9.96)
	45 to 64	16.91 (15.37- 18.57)	15.67 (14.3- 17.15)	17.64 (11.41- 26.27)	10.13 (7.01- 14.44)
	65 and over	16.82 (14.12- 19.91)	15.35 (12.86- 18.22)	15.6 (3.78- 46.51)	12.31 (4.86- 27.84)
	<b>3 groups</b>	00 to 09	0.49 (0.14- 1.72)	0.31 (0.09- 1.07)	0.1 (0.01- 0.69)
10 to 17		0.9 (0.41- 1.94)	0.92 (0.53- 1.59)	0.64 (0.3- 1.39)	0.64 (0.43- 0.95)
18 to 24		2.22 (1.43- 3.42)	2.4 (1.75- 3.28)	1.58 (0.73- 3.35)	0.85 (0.5- 1.44)
25 to 44		4.18 (3.43- 5.07)	4.2 (3.54- 4.98)	3.15 (1.62- 6.03)	2.26 (1.44- 3.53)
45 to 64		7.16 (6.14- 8.35)	5.96 (5.09- 6.95)	4.72 (1.99- 10.8)	4.23 (2.37- 7.44)
65 and over		6.42 (4.77- 8.59)	5.03 (3.64- 6.92)	-	6.62 (1.9- 20.65)
<b>More than 3 groups</b>	00 to 09	-	0.07 (0.01- 0.68)	-	-
	10 to 17	0.2 (0.04- 0.91)	0.25 (0.09- 0.69)	0.07 (0.01- 0.55)	0.06 (0.02- 0.2)
	18 to 24	0.46 (0.18- 1.18)	0.7 (0.39- 1.25)	0.65 (0.2- 2.04)	0.17 (0.06- 0.54)
	25 to 44	1.41 (1- 1.98)	1.1 (0.78- 1.55)	1.31 (0.48- 3.56)	0.6 (0.26- 1.41)
	45 to 64	2.43 (1.86- 3.18)	1.86 (1.4- 2.47)	1.05 (0.19- 5.53)	0.8 (0.22- 2.83)
	65 and over	1.93 (1.12- 3.31)	1.07 (0.53- 2.15)	-	0.94 (0.06- 12.33)

**Table 4: Percentage of people prescribed none of the drugs, by age and patient group**

<b>Age group</b>	<b>Learning disabilities (with or without autism)</b>	<b>Autism (without learning disabilities)</b>
00 to 09	87.39 (89.2 -85.32)	93.54 (94.25 -92.74)
10 to 17	75.19 (77.03 -73.25)	83.01 (84.06 -81.91)
18 to 24	66.76 (68.6 -64.87)	77.27 (79.08 -75.35)
25 to 44	55.95 (57.28 -54.6)	61.97 (64.82 -59.03)
45 to 64	44.07 (45.51 -42.64)	55.34 (60.42 -50.14)
65 and over	45.73 (48.41 -43.08)	52.38 (66.64 -37.72)

**Table 5: Estimated case numbers for Power analysis**

Thin database	Population	Likely number in study dataset	Source
Proportion of population covered by database		4%	University of Birmingham ( <a href="http://www.birmingham.ac.uk/research/activity/mds/projects/HaPS/PCCS/THIN/more-about-thin/index.aspx">www.birmingham.ac.uk/research/activity/mds/projects/HaPS/PCCS/THIN/more-about-thin/index.aspx</a> )
Total GP lists in England	56,817,654	2,272,706	NHS Digital Quality and Outcomes Framework 2015/16
GP learning disability registers in England	263,588	10,544	NHS Digital Quality and Outcomes Framework 2015/16
Increase for other ID diagnoses (+10%)	289,947	11,598	Glover et al (2015)
Proportion of LD register patients in relevant age range:	88%		NHS Digital 2016
Adults on GP learning disability registers or with relevant diagnosis	255,153.18	10,206	
Initially taking antidepressants or antipsychotics	17%		Glover et al (2015)
Adults on each drug type	43,376.04	1,735.04	