Appendix to paper:

Unequal socioeconomic distribution of the primary care workforce: whole-population small area longitudinal study

This appendix consists of seventeen sections providing further details on and breakdowns of the results in the paper as well as results of various sensitivity analyses.

Section 1 GP supply by IMD quintile

This section presents data tables showing numbers of GPs both in terms of head count and in terms of full time equivalents broken down by IMD deprivation quintiles for years 2004/05 to 2013/14. These results are presented for total numbers of GPs as well as broken down into the three subgroups GPs excluding registrars and retainers, GP registrars only and GP retainers only. For these results GP numbers are attributed to LSOAs and then LSOAs are aggregated according to IMD scores calculated at LSOA level. This worksheet also contains results where IMD deprivation scores are attributed to GP practices and these are then used to aggregate GP numbers into population weighted fifths by deprivation. Several additional sets of data underpinning the plots in various sensitivity analyses are also given in these tables.

Section 2 Inequality Indices

This section presents the numbers of GP FTE in the richest and poorest fifths of LSOAs as well as the absolute gap, relative gap, slope index of inequality and relative index of inequality for years 2004/05 to 2013/14. Results are broken down into the same subgroups and sensitivities as in section 1.

Section 3 GP supply by PCT in 2006 and 2011

This section looks at GP supply by PCT in 2006/07 and 2011/12 the two years that we compare to evaluate whether the investment in underdoctored areas had any effect. PCTs are marked by underdoctored status as identified in the policy documents that defined where this investment would be targeted. Numbers are presented for all LSOAs as well as for only the most deprived fifth of LSOAs and least deprived fifth of LSOAs in each PCT. PCTs that do not include any LSOAs in the most or least deprived fifths have NAs in place of numbers in the relevant fields. There is also a second table in this worksheet showing similar results for GPs excluding registrars and retainers.

Section 4 Basecase results - LSOA level deprivation - excluding GP registrars and GP retainers

This section presents a full set of results expanding on those presented in the paper. The results are for GPs excluding registrars and retainers, these are attributed to LSOAs and then aggregated by LSOA level IMD scores into deprivation quintiles. The results show:

(1) the trend over time by deprivation quintile in need adjusted full time equivalent GP supply per 100,000 of population

(2) cross- sectional results for 2006/07 and 20011/12 in need adjusted full time equivalent GP supply per 100,000 of population

(3) the trends in total numbers of GP both in terms of head count and in terms of full time equivalent GPs split by deprivation quintile

(4) unadjusted and adjusted time trends in numbers of GPs in terms of head count and full time equivalents split by derpivation quintile

(5) regression results to test whether there has been a siginificant change in the slope index of inequality between 2006/07 and 2011/12

(6) distributions of changes in GP supply between 2006/07 and 2011/12 at PCT level split by under-doctored status looking at all LSOAs, the most deprived fifth of LSOAs and the least deprived fifth of LSOAs

(7) distributions of FTE practice nurses in 2013/14

(8) scatter plot of GP FTE in each LSOA plotted against deprivation in 2006/07 and 2011/12

(9) scatter plot of changes in GP FTE in each LSOA against deprivation between 2006/07 and 2011/12

(10) the trend over time in GP FTE by deprivation decile

Section 5 Sensitivity analysis including GP registrars and GP retainers

This section shows the first six sets of results as those in section 4 but looking at GP supply including GP registrars and retainers

Section 6 Sensitivity analysis looking only at GP registrars

This section shows the first five sets of results as those in section 4 but looking only at the supply of GP registrars

Section 7 Sensitivity analysis looking only at GP retainers

This section shows the first five sets of results as those in section 4 but looking only at the supply of GP registrars

Section 8 Sensitivity analysis looking at practice level deprivation quintiles rather than LSOA level deprivation quintiles excluding GP registrars and GP retainers

This section shows the first five sets of results as those in section 4 but with attibution of IMD score to GP practice and aggregation into deprivation quintiles at practice level rather than attribution of the GP supply to LSOA level and aggregation at LSOA level as done in the base case. Inaddition to this there are also plots of:
(6) trends in numbers of LSOA that practices draw their patients from over time by deprivation quintile
(7) trends in mean numbers of GPs per practice over time by deprivation quintile

Section 9 Sensitivity analysis looking at practice level deprivation quintiles including registrars and retainers

This section is the same as section 8 except it shows results for GP numbers including registrars and retainers rather than all GPs as shown in section 8.

Section 10 Sensitivity analysis London NHS CR excluding registrars and retainers

This section shows the first five sets of results as those in section 4 but looking only at LSOAs in the London NHS CR

Section 11 Sensitivity analysis North of England NHS CR excluding registrars and retainers

This section shows the first five sets of results as those in section 4 but looking only at LSOAs in the North of England NHS CR

Section 12 Sensitivity analysis Midlands and East of England NHS CR excluding registrars and retainers

This section shows the first five sets of results as those in section 4 but looking only at LSOAs in the Midland and East of England NHS CR

Section 13 Sensitivity analysis South of England NHS CR excluding registrars and retainers

This section shows the first five sets of results as those in section 4 but looking only at LSOAs in the South of England NHS CR

Section 14 Sensitivity analysis PCT level looking at trends in Nurse and GP FTE excluding registrars and retainers

This section shows trends in Nurse FTE and GP FTE with deprivation quintiles derived from population weighted PCTs. Historical data for nurse FTE was only available to us at PCT level.

Section 15 Sensitivity analysis looking at CCG level deprivation quintiles excluding registrars and retainers

This section is the same as section 4 except it shows results aggregated into deprivation quintiles based on population weighted CCGs.

Section 16 Trends in GP practices opening and closing and their impact on GP FTE

This section shows the numbers of GP practices opening and closing over time by deprivation group and the impact this has had in terms of gains and losses of GP FTE excluding registrars and retainers in these groups

Section 17 Need adjustment details and sensitivity analysis

This section explains the Carr-Hill Workload need adjustment formula used, explores its impacts on the results over time and explores the sensitivity of the results to using an alternative Nuffield person based resource allocation formula on the results.

Appendix Section 1

This section presents data tables showing numbers of GPs both in terms of head count and in terms of full time equivalents broken down by IMD deprivation quintiles for years 2004/05 to 2013/14.

These results are presented for total numbers of GPs as well as broken down into the three subgroups GPs excluding registrars and retainers, GP registrars only and GP retainers only.

For these results GP numbers are attributed to LSOAs and then LSOAs are aggregated according to IMD scores calculated at LSOA level.

This worksheet also contains results where IMD deprivation scores are attributed to GP practices and these are then used to aggregate GP numbers into population weighted fifths by deprivation.

Several additional sets of data underpinning the plots in various sensitivity analyses explored in further sections of this appendix are also given in the tables in this section. These include details of the trends in the numbers of opening and closing of GP practices over time and their impact in terms of GP FTE, trends in practice size over time and trends in practice nurse populations over time.

Table A1.1: GP Supply by IMD Quintile Including Registrars and Retainers

				All GPs (Including Registrars and Retainers)					
				GP Headcount			GP Full Time Equivalent		
Year	IMD Quintile	Population	Need adjusted population	Total	Unadjusted per 100k	Need adjusted per 100k	Total	Unadjusted per 100k	Need adjusted per 100k
2004	1 (most deprived)	9,951,665	10,327,060	6656	66.89	64.46	6045	60.74	58.54
2004	2	9,922,657	10,048,907	6562	66.14	65.31	5895	59.41	58.66
2004	3	10,032,274	10,082,658	6811	67.89	67.55	6040	60.21	59.91
2004	4	10,062,460	9,949,765	6962	69.19	69.97	6139	61.00	61.69
2004	5 (least deprived)	10,140,651	9,701,318	7067	69.69	72.84	6194	61.08	63.85
2005	1 (most deprived)	10,017,043	10,380,909	6826	68.14	65.75	6190	61.79	59.63
2005	2	9,998,176	10,114,567	6774	67.75	66.97	6062	60.63	59.94
2005	3	10,115,862	10,165,383	7047	69.66	69.32	6232	61.61	61.31
2005	4	10,133,726	10,028,822	7179	70.85	71.59	6320	62.37	63.02
2005	5 (least deprived)	10,201,355	9,776,480	7265	71.21	74.31	6360	62.35	65.06
2006	1 (most deprived)	10,061,435	10,411,858	6969	69.27	66.93	6505	64.65	62.47
2006	2	10,062,639	10,172,317	6869	68.26	67.52	6429	63.89	63.20
2006	3	10,182,896	10,234,380	7133	70.05	69.70	6631	65.12	64.80
2006	4	10,194,108	10,096,472	7251	71.13	71.82	6707	65.79	66.43
2006	5 (least deprived)	10,262,815	9,848,867	7319	71.31	74.31	6718	65.46	68.21
2007	1 (most deprived)	10,107,634	10,443,538	7036	69.61	67.37	6513	64.43	62.36
2007	2	10,132,298	10,233,624	6862	67.72	67.05	6394	63.11	62.48
2007	3	10,257,247	10,310,359	7009	68.33	67.98	6508	63.45	63.12
2007	4	10,268,083	10,180,175	7091	69.06	69.65	6556	63.85	64.40
2007	5 (least deprived)	10,340,919	9,938,486	7147	69.11	71.91	6546	63.30	65.86
2008	1 (most deprived)	10,172,305	10,490,011	7499	73.72	71.49	6757	66.43	64.41
2008	2	10,222,041	10,313,147	7301	71.42	70.79	6633	64.89	64.32
2008	3	10,336,944	10,392,001	7479	72.35	71.97	6767	65.47	65.12
2008	4	10,326,760	10,251,648	7553	73.14	73.68	6820	66.05	66.53
2008	5 (least deprived)	10,406,596	10,017,839	7603	73.06	75.90	6809	65.43	67.97
2009	1 (most deprived)	10,242,974	10,537,912	7907	77.19	75.03	7056	68.89	66.96
2009	2	10,312,215	10,390,335	7651	74.19	73.64	6896	66.87	66.37
2009	3	10,412,543	10,470,074	7805	74.96	74.55	7026	67.48	67.11
2009	4	10,376,595	10,317,632	7854	75.69	76.13	7064	68.08	68.46
2009	5 (least deprived)	10,461,735	10,091,174	7974	76.22	79.02	7127	68.12	70.62
2010	1 (most deprived)	10,336,179	10,604,558	8353	80.81	78.77	7190	69.56	67.80
2010	2	10,418,358	10,484,925	7946	76.27	75.78	6918	66.40	65.98
2010	3	10,500,292	10,561,037	8019	76.37	75.93	6961	66.29	65.91
2010	4	10,452,346	10,406,831	8040	76.92	77.25	6971	66.70	66.99
2010	5 (least deprived)	10,526,870	10,176,694	8087	76.82	79.47	6978	66.29	68.57
2011	1 (most deprived)	10,456,433	10,697,690	8485	81.14	79.31	7186	68.72	67.17
2011	2	10,543,934	10,594,848	8102	76.84	76.47	6955	65.96	65.64
2011	3	10,591,723	10,656,814	8156	77.00	76.53	6977	65.87	65.47
2011	4	10,519,160	10,489,422	8147	77.45	77.67	6975	66.31	66.50
2011	5 (least deprived)	10,579,453	10,251,929	8193	77.45	79.92	7006	66.23	68.34
2012	1 (most deprived)	10,893,479	11,062,381	8605	78.99	77.78	7342	67.40	66.37
2012	2	10,782,713	10,807,827	8227	76.29	76.12	7102	65.87	65.71
2012	3	10,694,991	10,762,883	8235	77.00	76.51	7089	66.29	65.87
2012	4	10,552,487	10,562,156	8207	77.77	77.70	7052	66.83	66.77
2012	5 (least deprived)	10,564,331	10,292,754	8165	77.29	79.33	6981	66.08	67.83
2013	1 (most deprived)	10,994,820	11,137,074	8460	76.94	75.96	7334	66.70	65.85
2013	2	10,873,567	10,885,678	8103	74.52	74.43	7077	65.08	65.01
2013	3	10,765,378	10,837,339	8062	74.89	74.39	7011	65.13	64.70
2013	4	10,610,984	10,635,953	7995	75.34	75.17	6942	65.42	65.27
2013	5 (least deprived)	10,615,169	10,363,872	7967	75.05	76.87	6888	64.88	66.46

Table A1.2: GP Supply by IMD Quintile Excluding Registrars and Retainers

				Excluding Registrars and Retainers					
				GP Headcount			GP Full Time Equivalent		
Year	IMD Quintile	Population	Need adjusted population	Total	Unadjusted per 100k	Need adjusted per 100k	Total	Unadjusted per 100k	Need adjusted per 100k
2004	1 (most deprived)	9,951,665	10,327,060	6118	61.48	59.24	5576	56.03	54.00
2004	2	9,922,657	10,048,907	6002	60.49	59.73	5424	54.66	53.98
2004	3	10,032,274	10,082,658	6164	61.44	61.14	5515	54.97	54.70
2004	4	10,062,460	9,949,765	6233	61.95	62.65	5558	55.24	55.86
2004	5 (least deprived)	10,140,651	9,701,318	6233	61.47	64.25	5548	54.71	57.19
2005	1 (most deprived)	10,017,043	10,380,909	6318	63.07	60.86	5748	57.38	55.37
2005	2	9,998,176	10,114,567	6221	62.22	61.51	5598	55.99	55.34
2005	3	10,115,862	10,165,383	6418	63.45	63.14	5709	56.44	56.16
2005	4	10,133,726	10,028,822	6470	63.84	64.51	5738	56.62	57.21
2005	5 (least deprived)	10,201,355	9,776,480	6497	63.69	66.46	5747	56.34	58.79
2006	1 (most deprived)	10,061,435	10,411,858	6484	64.44	62.28	6082	60.45	58.41
2006	2	10,062,639	10,172,317	6371	63.31	62.63	5999	59.62	58.98
2006	3	10,182,896	10,234,380	6563	64.45	64.13	6149	60.39	60.09
2006	4	10,194,108	10,096,472	6607	64.81	65.44	6173	60.55	61.14
2006	5 (least deprived)	10,262,815	9,848,867	6621	64.52	67.23	6154	59.96	62.49
2007	1 (most deprived)	10,107,634	10,443,538	6642	65.71	63.59	6161	60.95	58.99
2007	2	10,132,298	10,233,624	6460	63.76	63.13	6034	59.55	58.96
2007	3	10,257,247	10,310,359	6597	64.31	63.98	6139	59.85	59.54
2007	4	10,268,083	10,180,175	6627	64.54	65.10	6143	59.83	60.35
2007	5 (least deprived)	10,340,919	9,938,486	6670	64.50	67.11	6132	59.30	61.70
2008	1 (most deprived)	10,172,305	10,490,011	6883	67.67	65.62	6194	60.89	59.05
2008	2	10,222,041	10,313,147	6663	65.18	64.61	6053	59.21	58.69
2008	3	10,336,944	10,392,001	6785	65.64	65.29	6134	59.34	59.03
2008	4	10,326,760	10,251,648	6783	65.69	66.17	6124	59.31	59.74
2008	5 (least deprived)	10,406,596	10,017,839	6796	65.31	67.84	6098	58.60	60.87
2009	1 (most deprived)	10,242,974	10,537,912	7202	70.32	68.35	6411	62.59	60.84
2009	2	10,312,215	10,390,335	6907	66.98	66.47	6212	60.24	59.79
2009	3	10,412,543	10,470,074	6994	67.17	66.80	6286	60.37	60.04
2009	4	10,376,595	10,317,632	6967	67.14	67.52	6260	60.32	60.67
2009	5 (least deprived)	10,461,735	10,091,174	7002	66.93	69.39	6253	59.77	61.97
2010	1 (most deprived)	10,336,179	10,604,558	7609	73.61	71.75	6518	63.06	61.47
2010	2	10,418,358	10,484,925	7157	68.69	68.26	6216	59.66	59.28
2010	3	10,500,292	10,561,037	7152	68.11	67.72	6195	59.00	58.66
2010	4	10,452,346	10,406,831	7096	67.89	68.19	6149	58.83	59.09
2010	5 (least deprived)	10,526,870	10,176,694	7060	67.07	69.37	6095	57.90	59.89
2011	1 (most deprived)	10,456,433	10,697,690	7754	74.15	72.48	6543	62.57	61.16
2011	2	10,543,934	10,594,848	7309	69.32	68.99	6255	59.32	59.04
2011	3	10,591,723	10,656,814	7257	68.51	68.09	6185	58.39	58.03
2011	4	10,519,160	10,489,422	7181	68.26	68.46	6132	58.29	58.46
2011	5 (least deprived)	10,579,453	10,251,929	7128	67.37	69.53	6083	57.50	59.33
2012	1 (most deprived)	10,893,479	11,062,381	7802	71.62	70.52	6618	60.75	59.83
2012	2	10,782,713	10,807,827	7346	68.13	67.97	6310	58.52	58.39
2012	3	10,694,991	10,762,883	7283	68.09	67.67	6240	58.35	57.98
2012	4	10,552,487	10,562,156	7206	68.29	68.22	6168	58.45	58.40
2012	5 (least deprived)	10,564,331	10,292,754	7135	67.54	69.32	6081	57.56	59.08
2013	1 (most deprived)	10,994,820	11,137,074	7796	70.91	70.00	6741	61.31	60.53
2013	2	10,873,567	10,885,678	7371	67.79	67.72	6429	59.12	59.06
2013	3	10,765,378	10,837,339	7301	67.82	67.37	6346	58.95	58.56
2013	4	10,610,984	10,635,953	7213	67.97	67.81	6268	59.07	58.93
2013	5 (least deprived)	10,615,169	10,363,872	7168	67.53	69.16	6208	58.49	59.90

Table A1.3: GP Supply by IMD Quintile Registrars Only

				Registrars Only					
				GP Headcount			GP Full Time Equivalent		
Year	IMD Quintile	Population	Need adjusted population	Total	Unadjusted per 100k	Need adjusted per 100k	Total	Unadjusted per 100k	Need adjusted per 100k
2004	1 (most deprived)	9,951,665	10,327,060	456	4.58	4.41	440	4.43	4.26
2004	2	9,922,657	10,048,907	447	4.51	4.45	433	4.36	4.30
2004	3	10,032,274	10,082,658	496	4.94	4.92	474	4.73	4.71
2004	4	10,062,460	9,949,765	543	5.39	5.45	519	5.16	5.21
2004	5 (least deprived)	10,140,651	9,701,318	598	5.90	6.17	567	5.60	5.85
2005	1 (most deprived)	10,017,043	10,380,909	437	4.36	4.21	419	4.18	4.04
2005	2	9,998,176	10,114,567	452	4.52	4.47	432	4.32	4.27
2005	3	10,115,862	10,165,383	506	5.00	4.98	481	4.75	4.73
2005	4	10,133,726	10,028,822	562	5.55	5.60	533	5.26	5.31
2005	5 (least deprived)	10,201,355	9,776,480	585	5.73	5.98	550	5.39	5.62
2006	1 (most deprived)	10,061,435	10,411,858	411	4.09	3.95	395	3.93	3.80
2006	2	10,062,639	10,172,317	409	4.07	4.02	394	3.91	3.87
2006	3	10,182,896	10,234,380	450	4.42	4.40	432	4.24	4.22
2006	4	10,194,108	10,096,472	490	4.80	4.85	469	4.61	4.65
2006	5 (least deprived)	10,262,815	9,848,867	498	4.86	5.06	480	4.68	4.88
2007	1 (most deprived)	10,107,634	10,443,538	324	3.20	3.10	308	3.05	2.95
2007	2	10,132,298	10,233,624	317	3.13	3.10	304	3.00	2.97
2007	3	10,257,247	10,310,359	309	3.02	3.00	298	2.91	2.89
2007	4	10,268,083	10,180,175	333	3.25	3.27	321	3.13	3.15
2007	5 (least deprived)	10,340,919	9,938,486	303	2.93	3.05	294	2.84	2.95
2008	1 (most deprived)	10,172,305	10,490,011	558	5.49	5.32	528	5.19	5.03
2008	2	10,222,041	10,313,147	567	5.54	5.49	536	5.24	5.19
2008	3	10,336,944	10,392,001	604	5.84	5.81	577	5.58	5.55
2008	4	10,326,760	10,251,648	651	6.30	6.35	622	6.02	6.07
2008	5 (least deprived)	10,406,596	10,017,839	638	6.13	6.37	608	5.84	6.07
2009	1 (most deprived)	10,242,974	10,537,912	651	6.35	6.18	612	5.97	5.81
2009	2	10,312,215	10,390,335	679	6.59	6.54	640	6.21	6.16
2009	3	10,412,543	10,470,074	726	6.97	6.93	682	6.55	6.51
2009	4	10,376,595	10,317,632	778	7.49	7.54	730	7.04	7.08
2009	5 (least deprived)	10,461,735	10,091,174	819	7.83	8.11	769	7.35	7.62
2010	1 (most deprived)	10,336,179	10,604,558	698	6.76	6.59	654	6.33	6.17
2010	2	10,418,358	10,484,925	728	6.99	6.94	678	6.51	6.46
2010	3	10,500,292	10,561,037	786	7.48	7.44	733	6.98	6.94
2010	4	10,452,346	10,406,831	842	8.05	8.09	782	7.48	7.51
2010	5 (least deprived)	10,526,870	10,176,694	896	8.51	8.80	829	7.88	8.15
2011	1 (most deprived)	10,456,433	10,697,690	687	6.57	6.42	626	5.99	5.85
2011	2	10,543,934	10,594,848	738	7.00	6.96	679	6.44	6.40
2011	3	10,591,723	10,656,814	828	7.82	7.77	764	7.22	7.17
2011	4	10,519,160	10,489,422	879	8.35	8.38	809	7.69	7.72
2011	5 (least deprived)	10,579,453	10,251,929	955	9.03	9.32	881	8.33	8.59
2012	1 (most deprived)	10,893,479	11,062,381	765	7.03	6.92	706	6.48	6.38
2012	2	10,782,713	10,807,827	832	7.72	7.70	769	7.13	7.11
2012	3	10,694,991	10,762,883	890	8.32	8.27	820	7.66	7.62
2012	4	10,552,487	10,562,156	922	8.74	8.73	846	8.02	8.01
2012	5 (least deprived)	10,564,331	10,292,754	934	8.84	9.07	854	8.09	8.30
2013	1 (most deprived)	10,994,820	11,137,074	626	5.70	5.62	576	5.24	5.17
2013	2	10,873,567	10,885,678	685	6.30	6.29	628	5.77	5.77
2013	3	10,765,378	10,837,339	708	6.58	6.54	642	5.96	5.92
2013	4	10,610,984	10,635,953	716	6.74	6.73	645	6.08	6.06
2013	5 (least deprived)	10,615,169	10,363,872	717	6.76	6.92	643	6.06	6.21

Table A1.4: GP Supply by IMD Quintile Retainers Only

				Retainers Only					
				GP Headcount			GP Full Time Equivalent		
Year	IMD Quintile	Population	Need adjusted population	Total	Unadjusted per 100k	Need adjusted per 100k	Total	Unadjusted per 100k	Need adjusted per 100k
2004	1 (most deprived)	9,951,665	10,327,060	83	0.83	0.80	28	0.29	0.28
2004	2	9,922,657	10,048,907	113	1.14	1.12	38	0.39	0.38
2004	3	10,032,274	10,082,658	151	1.51	1.50	51	0.51	0.51
2004	4	10,062,460	9,949,765	186	1.85	1.87	61	0.61	0.62
2004	5 (least deprived)	10,140,651	9,701,318	235	2.32	2.42	78	0.77	0.81
2005	1 (most deprived)	10,017,043	10,380,909	71	0.71	0.68	23	0.23	0.22
2005	2	9,998,176	10,114,567	101	1.01	1.00	33	0.33	0.33
2005	3	10,115,862	10,165,383	123	1.21	1.21	42	0.41	0.41
2005	4	10,133,726	10,028,822	148	1.46	1.47	50	0.49	0.49
2005	5 (least deprived)	10,201,355	9,776,480	183	1.79	1.87	63	0.62	0.65
2006	1 (most deprived)	10,061,435	10,411,858	74	0.74	0.71	28	0.27	0.26
2006	2	10,062,639	10,172,317	89	0.88	0.87	36	0.36	0.35
2006	3	10,182,896	10,234,380	121	1.18	1.18	50	0.49	0.49
2006	4	10,194,108	10,096,472	154	1.51	1.53	65	0.63	0.64
2006	5 (least deprived)	10,262,815	9,848,867	199	1.94	2.02	84	0.82	0.85
2007	1 (most deprived)	10,107,634	10,443,538	70	0.70	0.67	44	0.43	0.42
2007	2	10,132,298	10,233,624	84	0.83	0.82	56	0.55	0.55
2007	3	10,257,247	10,310,359	103	1.00	1.00	72	0.70	0.69
2007	4	10,268,083	10,180,175	131	1.27	1.28	91	0.89	0.90
2007	5 (least deprived)	10,340,919	9,938,486	174	1.68	1.75	120	1.16	1.21
2008	1 (most deprived)	10,172,305	10,490,011	57	0.56	0.55	35	0.34	0.33
2008	2	10,222,041	10,313,147	71	0.70	0.69	45	0.44	0.44
2008	3	10,336,944	10,392,001	90	0.87	0.87	56	0.55	0.54
2008	4	10,326,760	10,251,648	119	1.15	1.16	74	0.72	0.72
2008	5 (least deprived)	10,406,596	10,017,839	169	1.63	1.69	102	0.98	1.02
2009	1 (most deprived)	10,242,974	10,537,912	54	0.52	0.51	33	0.33	0.32
2009	2	10,312,215	10,390,335	65	0.63	0.63	43	0.42	0.42
2009	3	10,412,543	10,470,074	86	0.83	0.82	58	0.56	0.56
2009	4	10,376,595	10,317,632	110	1.06	1.07	74	0.71	0.72
2009	5 (least deprived)	10,461,735	10,091,174	153	1.47	1.52	104	1.00	1.03
2010	1 (most deprived)	10,336,179	10,604,558	46	0.45	0.43	18	0.17	0.17
2010	2	10,418,358	10,484,925	62	0.59	0.59	24	0.23	0.23
2010	3	10,500,292	10,561,037	82	0.78	0.78	33	0.31	0.31
2010	4	10,452,346	10,406,831	102	0.98	0.98	41	0.39	0.39
2010	5 (least deprived)	10,526,870	10,176,694	131	1.25	1.29	53	0.51	0.52
2011	1 (most deprived)	10,456,433	10,697,690	44	0.43	0.42	17	0.16	0.16
2011	2	10,543,934	10,594,848	55	0.52	0.52	21	0.20	0.20
2011	3	10,591,723	10,656,814	71	0.67	0.67	28	0.26	0.26
2011	4	10,519,160	10,489,422	88	0.84	0.84	34	0.32	0.32
2011	5 (least deprived)	10,579,453	10,251,929	110	1.04	1.08	43	0.40	0.42
2012	1 (most deprived)	10,893,479	11,062,381	38	0.35	0.34	19	0.17	0.17
2012	2	10,782,713	10,807,827	49	0.45	0.45	23	0.21	0.21
2012	3	10,694,991	10,762,883	62	0.58	0.58	30	0.28	0.27
2012	4	10,552,487	10,562,156	79	0.75	0.75	38	0.36	0.36
2012	5 (least deprived)	10,564,331	10,292,754	97	0.91	0.94	46	0.43	0.45
2013	1 (most deprived)	10,994,820	11,137,074	37	0.34	0.34	17	0.15	0.15
2013	2	10,873,567	10,885,678	46	0.42	0.42	20	0.19	0.19
2013	3	10,765,378	10,837,339	53	0.49	0.49	23	0.22	0.22
2013	4	10,610,984	10,635,953	66	0.63	0.62	29	0.28	0.28
2013	5 (least deprived)	10,615,169	10,363,872	82	0.77	0.79	36	0.34	0.35

Table A1.5: GP Supply by IMD Quintile Including Registrars and Retainers Practice Level Aggregation

				ALL GPs (Practice Level Aggregation)					
				GP Headcount			GP Full Time Equivalent		
Year	IMD Quintile	Population	Need adjusted population	Total	Unadjusted per 100k	Need adjusted per 100k	Total	Unadjusted per 100k	Need adjusted per 100k
2004	1 (most deprived)	9,951,665	10,327,060	6509	64.93	63.53	5943	59.29	58.01
2004	2	9,922,657	10,048,907	6574	65.57	64.70	5931	59.16	58.37
2004	3	10,032,274	10,082,658	6662	66.50	66.13	5950	59.39	59.06
2004	4	10,062,460	9,949,765	7117	71.01	71.52	6209	61.95	62.39
2004	5 (least deprived)	10,140,651	9,701,318	7197	71.84	74.35	6280	62.69	64.88
2005	1 (most deprived)	10,017,043	10,380,909	6681	66.15	64.78	6085	60.25	59.00
2005	2	9,998,176	10,114,567	6782	67.21	66.34	6107	60.52	59.74
2005	3	10,115,862	10,165,383	6868	68.07	67.66	6112	60.57	60.21
2005	4	10,133,726	10,028,822	7362	72.93	73.45	6414	63.54	63.99
2005	5 (least deprived)	10,201,355	9,776,480	7398	73.31	75.83	6447	63.89	66.08
2006	1 (most deprived)	10,061,435	10,411,858	6813	67.08	65.76	6371	62.73	61.49
2006	2	10,062,639	10,172,317	6863	67.57	66.70	6411	63.12	62.30
2006	3	10,182,896	10,234,380	7029	69.25	68.85	6574	64.76	64.39
2006	4	10,194,108	10,096,472	7412	72.99	73.44	6883	67.77	68.19
2006	5 (least deprived)	10,262,815	9,848,867	7424	73.17	75.67	6752	66.55	68.82
2007	1 (most deprived)	10,107,634	10,443,538	6956	68.04	66.77	6437	62.97	61.79
2007	2	10,132,298	10,233,624	6912	67.61	66.77	6427	62.87	62.08
2007	3	10,257,247	10,310,359	6894	67.47	67.07	6436	62.99	62.61
2007	4	10,268,083	10,180,175	7159	69.99	70.36	6665	65.16	65.51
2007	5 (least deprived)	10,340,919	9,938,486	7223	70.72	73.09	6551	64.14	66.29
2008	1 (most deprived)	10,172,305	10,490,011	7375	71.64	70.40	6636	64.46	63.35
2008	2	10,222,041	10,313,147	7411	71.95	71.06	6742	65.46	64.65
2008	3	10,336,944	10,392,001	7330	71.23	70.81	6667	64.80	64.41
2008	4	10,326,760	10,251,648	7613	73.97	74.32	6894	66.99	67.30
2008	5 (least deprived)	10,406,596	10,017,839	7707	74.92	77.34	6846	66.55	68.70
2009	1 (most deprived)	10,242,974	10,537,912	7856	75.75	74.56	6985	67.35	66.29
2009	2	10,312,215	10,390,335	7627	73.64	72.79	6902	66.64	65.87
2009	3	10,412,543	10,470,074	7650	73.83	73.40	6907	66.66	66.28
2009	4	10,376,595	10,317,632	7952	76.77	77.05	7179	69.31	69.55
2009	5 (least deprived)	10,461,735	10,091,174	8107	78.26	80.67	7196	69.47	71.61
2010	1 (most deprived)	10,336,179	10,604,558	8327	79.69	78.60	7134	68.28	67.34
2010	2	10,418,358	10,484,925	7947	76.07	75.22	6959	66.61	65.86
2010	3	10,500,292	10,561,037	7780	74.48	74.06	6789	64.99	64.63
2010	4	10,452,346	10,406,831	8200	78.48	78.69	7106	68.01	68.19
2010	5 (least deprived)	10,526,870	10,176,694	8191	78.43	80.70	7030	67.31	69.26
2011	1 (most deprived)	10,456,433	10,697,690	8469	80.33	79.42	7121	67.55	66.78
2011	2	10,543,934	10,594,848	8037	76.21	75.43	6970	66.09	65.41
2011	3	10,591,723	10,656,814	7918	75.19	74.74	6792	64.49	64.11
2011	4	10,519,160	10,489,422	8277	78.57	78.69	7068	67.10	67.20
2011	5 (least deprived)	10,579,453	10,251,929	8382	79.55	81.69	7148	67.84	69.66
2012	1 (most deprived)	10,893,479	11,062,381	8414	78.61	78.14	7132	66.63	66.23
2012	2	10,782,713	10,807,827	8119	75.85	75.18	7062	65.98	65.39
2012	3	10,694,991	10,762,883	8087	75.66	75.18	7001	65.50	65.08
2012	4	10,552,487	10,562,156	8413	78.61	78.55	7223	67.49	67.43
2012	5 (least deprived)	10,564,331	10,292,754	8405	78.64	80.40	7150	66.89	68.39
2013	1 (most deprived)	10,994,820	11,137,074	8281	76.83	76.49	7144	66.29	66.00
2013	2	10,873,567	10,885,678	7964	73.93	73.33	7016	65.13	64.60
2013	3	10,765,378	10,837,339	7910	73.41	72.98	6907	64.10	63.73
2013	4	10,610,984	10,635,953	8184	76.02	75.87	7095	65.91	65.78
2013	5 (least deprived)	10,615,169	10,363,872	8247	76.58	78.18	7089	65.83	67.21

Table A1.6: GP Supply by IMD Quintile Excluding Registrars and Retainers Practice Level Aggregation

				Excluding Registrars and Retainers (Practice Level Aggregation)					
				GP Headcount			GP Full Time Equivalent		
Year	IMD Quintile	Population	Need adjusted population	Total	Unadjusted per 100k	Need adjusted per 100k	Total	Unadjusted per 100k	Need adjusted per 100k
2004	1 (most deprived)	9,951,665	10,327,060	6040	60.25	58.95	5526	55.13	53.94
2004	2	9,922,657	10,048,907	5990	59.75	58.96	5433	54.20	53.48
2004	3	10,032,274	10,082,658	6095	60.84	60.50	5473	54.63	54.32
2004	4	10,062,460	9,949,765	6350	63.36	63.82	5607	55.94	56.35
2004	5 (least deprived)	10,140,651	9,701,318	6276	62.64	64.84	5582	55.72	57.67
2005	1 (most deprived)	10,017,043	10,380,909	6240	61.78	60.50	5698	56.42	55.25
2005	2	9,998,176	10,114,567	6195	61.39	60.60	5606	55.56	54.84
2005	3	10,115,862	10,165,383	6313	62.57	62.19	5639	55.88	55.55
2005	4	10,133,726	10,028,822	6618	65.56	66.03	5809	57.54	57.96
2005	5 (least deprived)	10,201,355	9,776,480	6558	64.99	67.22	5788	57.36	59.33
2006	1 (most deprived)	10,061,435	10,411,858	6379	62.81	61.57	5989	58.97	57.81
2006	2	10,062,639	10,172,317	6369	62.71	61.89	5982	58.90	58.14
2006	3	10,182,896	10,234,380	6493	63.97	63.60	6110	60.19	59.85
2006	4	10,194,108	10,096,472	6723	66.20	66.61	6311	62.15	62.53
2006	5 (least deprived)	10,262,815	9,848,867	6682	65.86	68.10	6164	60.76	62.83
2007	1 (most deprived)	10,107,634	10,443,538	6608	64.64	63.43	6130	59.96	58.84
2007	2	10,132,298	10,233,624	6474	63.33	62.54	6035	59.03	58.29
2007	3	10,257,247	10,310,359	6497	63.58	63.21	6069	59.39	59.04
2007	4	10,268,083	10,180,175	6700	65.50	65.85	6259	61.18	61.51
2007	5 (least deprived)	10,340,919	9,938,486	6716	65.76	67.96	6117	59.90	61.90
2008	1 (most deprived)	10,172,305	10,490,011	6847	66.51	65.36	6152	59.76	58.72
2008	2	10,222,041	10,313,147	6706	65.10	64.30	6103	59.25	58.52
2008	3	10,336,944	10,392,001	6679	64.91	64.52	6065	58.94	58.59
2008	4	10,326,760	10,251,648	6850	66.55	66.87	6201	60.24	60.53
2008	5 (least deprived)	10,406,596	10,017,839	6829	66.38	68.53	6083	59.13	61.04
2009	1 (most deprived)	10,242,974	10,537,912	7234	69.76	68.65	6412	61.83	60.85
2009	2	10,312,215	10,390,335	6849	66.12	65.37	6189	59.75	59.06
2009	3	10,412,543	10,470,074	6890	66.50	66.11	6208	59.91	59.56
2009	4	10,376,595	10,317,632	7048	68.04	68.29	6362	61.42	61.64
2009	5 (least deprived)	10,461,735	10,091,174	7051	68.07	70.16	6253	60.36	62.22
2010	1 (most deprived)	10,336,179	10,604,558	7695	73.65	72.64	6556	62.74	61.89
2010	2	10,418,358	10,484,925	7093	67.89	67.14	6203	59.38	58.72
2010	3	10,500,292	10,561,037	6974	66.76	66.39	6065	58.06	57.73
2010	4	10,452,346	10,406,831	7235	69.24	69.43	6266	59.97	60.13
2010	5 (least deprived)	10,526,870	10,176,694	7076	67.75	69.71	6083	58.24	59.93
2011	1 (most deprived)	10,456,433	10,697,690	7867	74.62	73.78	6589	62.50	61.79
2011	2	10,543,934	10,594,848	7196	68.23	67.53	6226	59.03	58.43
2011	3	10,591,723	10,656,814	7064	67.08	66.68	6042	57.37	57.03
2011	4	10,519,160	10,489,422	7286	69.17	69.27	6201	58.87	58.96
2011	5 (least deprived)	10,579,453	10,251,929	7215	68.47	70.32	6139	58.26	59.84
2012	1 (most deprived)	10,893,479	11,062,381	7714	72.07	71.64	6498	60.71	60.35
2012	2	10,782,713	10,807,827	7246	67.69	67.10	6278	58.65	58.13
2012	3	10,694,991	10,762,883	7151	66.90	66.48	6153	57.57	57.20
2012	4	10,552,487	10,562,156	7361	68.78	68.72	6295	58.82	58.77
2012	5 (least deprived)	10,564,331	10,292,754	7299	68.29	69.82	6193	57.95	59.25
2013	1 (most deprived)	10,994,820	11,137,074	7678	71.24	70.92	6603	61.26	60.99
2013	2	10,873,567	10,885,678	7254	67.34	66.79	6381	59.24	58.75
2013	3	10,765,378	10,837,339	7185	66.68	66.29	6270	58.19	57.85
2013	4	10,610,984	10,635,953	7357	68.34	68.21	6379	59.25	59.14
2013	5 (least deprived)	10,615,169	10,363,872	7375	68.48	69.92	6359	59.05	60.28

Table A1.7: GP Supply by IMD Quintile Related to Opening and Closing of Practices

				Opening and Closing of GP Practices					
				GP Practices Opening		GP Practices Closing		Net Change in GP Practices	
Year	IMD Quintile	Population	Need adjusted population	Number of Practices	Number of GP FTE	Number of Practices	Number of GP FTE	Number of Practices	Number of GP FTE
2004	1 (most deprived)	9,951,665	10,327,060	-	-	-	-	-	-
2004	2	9,922,657	10,048,907	-	-	-	-	-	-
2004	3	10,032,274	10,082,658	-	-	-	-	-	-
2004	4	10,062,460	9,949,765	-	-	-	-	-	-
2004	5 (least deprived)	10,140,651	9,701,318	-	-	-	-	-	-
2005	1 (most deprived)	10,017,043	10,380,909	38	25.00	59	20.00	-21	5.00
2005	2	9,998,176	10,114,567	21	19.60	36	11.60	-15	8.00
2005	3	10,115,862	10,165,383	12	25.60	31	15.20	-19	10.40
2005	4	10,133,726	10,028,822	8	9.20	31	6.60	-23	2.60
2005	5 (least deprived)	10,201,355	9,776,480	10	9.40	32	15.60	-22	-6.20
2006	1 (most deprived)	10,061,435	10,411,858	16	25.30	56	13.80	-40	11.50
2006	2	10,062,639	10,172,317	9	26.60	35	9.80	-26	16.80
2006	3	10,182,896	10,234,380	8	15.39	17	5.00	-9	10.39
2006	4	10,194,108	10,096,472	6	6.00	14	12.20	-8	-6.20
2006	5 (least deprived)	10,262,815	9,848,867	4	6.00	15	2.00	-11	4.00
2007	1 (most deprived)	10,107,634	10,443,538	18	10.04	48	13.00	-30	-2.96
2007	2	10,132,298	10,233,624	4	9.17	36	8.92	-32	0.25
2007	3	10,257,247	10,310,359	6	19.67	34	27.08	-28	-7.41
2007	4	10,268,083	10,180,175	5	8.19	24	9.91	-19	-1.72
2007	5 (least deprived)	10,340,919	9,938,486	6	3.00	26	9.06	-20	-6.06
2008	1 (most deprived)	10,172,305	10,490,011	11	8.20	42	16.00	-31	-7.80
2008	2	10,222,041	10,313,147	4	5.05	18	8.25	-14	-3.20
2008	3	10,336,944	10,392,001	3	1.00	18	7.00	-15	-6.00
2008	4	10,326,760	10,251,648	2	4.66	6	5.00	-4	-0.34
2008	5 (least deprived)	10,406,596	10,017,839	1	6.86	6	7.68	-5	-0.82
2009	1 (most deprived)	10,242,974	10,537,912	80	51.59	39	24.01	41	27.58
2009	2	10,312,215	10,390,335	56	28.87	22	27.31	34	1.56
2009	3	10,412,543	10,470,074	49	11.44	22	11.02	27	0.42
2009	4	10,376,595	10,317,632	18	1.60	13	7.75	5	-6.15
2009	5 (least deprived)	10,461,735	10,091,174	17	4.11	5	6.00	12	-1.89
2010	1 (most deprived)	10,336,179	10,604,558	99	191.98	30	24.49	69	167.49
2010	2	10,418,358	10,484,925	38	89.25	19	7.96	19	81.29
2010	3	10,500,292	10,561,037	17	32.11	10	5.88	7	26.23
2010	4	10,452,346	10,406,831	14	35.53	17	13.22	-3	22.31
2010	5 (least deprived)	10,526,870	10,176,694	7	16.95	14	7.71	-7	9.24
2011	1 (most deprived)	10,456,433	10,697,690	18	46.11	37	20.59	-19	25.52
2011	2	10,543,934	10,594,848	7	22.26	27	20.52	-20	1.74
2011	3	10,591,723	10,656,814	2	2.59	23	10.82	-21	-8.23
2011	4	10,519,160	10,489,422	4	4.28	19	12.88	-15	-8.60
2011	5 (least deprived)	10,579,453	10,251,929	1	3.00	13	9.18	-12	-6.18
2012	1 (most deprived)	10,893,479	11,062,381	10	19.26	61	74.45	-51	-55.19
2012	2	10,782,713	10,807,827	1	4.00	31	30.77	-30	-26.77
2012	3	10,694,991	10,762,883	0	0.00	23	28.52	-23	-28.52
2012	4	10,552,487	10,562,156	1	3.96	21	25.40	-20	-21.45
2012	5 (least deprived)	10,564,331	10,292,754	0	0.00	11	10.32	-11	-10.32
2013	1 (most deprived)	10,994,820	11,137,074	5	3.89	130	69.20	-125	-65.31
2013	2	10,873,567	10,885,678	3	6.97	76	23.75	-73	-16.78
2013	3	10,765,378	10,837,339	5	9.56	93	39.10	-88	-29.54
2013	4	10,610,984	10,635,953	4	13.81	61	40.30	-57	-26.50
2013	5 (least deprived)	10,615,169	10,363,872	2	5.84	46	32.35	-44	-26.51

Table A1.8: GP Supply by IMD Quintile Other Sensitivity Analyses

				Other Sensitivity Analyses			
Year	IMD Quintile	Population	Need adjusted population	Mean GP FTE per Practice	Mean LSOAs per Practice	Nurse FTE (PCT level Data)	Nurse FTE per 100k need adjusted (PCT level Data)
2004	1 (most deprived)	9,951,665	10,327,060	2.47	116	2,750.12	27.05
2004	2	9,922,657	10,048,907	3.10	97	2,877.33	26.73
2004	3	10,032,274	10,082,658	3.46	77	2,698.58	25.95
2004	4	10,062,460	9,949,765	3.79	63	2,801.97	26.87
2004	5 (least deprived)	10,140,651	9,701,318	4.03	53	619.36	5.90
2005	1 (most deprived)	10,017,043	10,380,909	2.56	114	2,827.48	25.30
2005	2	9,998,176	10,114,567	3.24	96	3,084.49	28.97
2005	3	10,115,862	10,165,383	3.58	77	2,444.92	25.17
2005	4	10,133,726	10,028,822	3.92	63	2,766.40	25.65
2005	5 (least deprived)	10,201,355	9,776,480	4.22	53	2,870.08	26.48
2006	1 (most deprived)	10,061,435	10,411,858	2.75	112	2,379.12	24.72
2006	2	10,062,639	10,172,317	3.50	95	627.92	6.02
2006	3	10,182,896	10,234,380	3.90	76	1,784.83	16.89
2006	4	10,194,108	10,096,472	4.29	63	2,970.37	26.93
2006	5 (least deprived)	10,262,815	9,848,867	4.54	53	2,709.54	25.80
2007	1 (most deprived)	10,107,634	10,443,538	2.81	113	2,743.65	26.81
2007	2	10,132,298	10,233,624	3.61	95	3,069.98	27.66
2007	3	10,257,247	10,310,359	3.89	76	2,998.94	27.82
2007	4	10,268,083	10,180,175	4.27	63	1,853.89	17.63
2007	5 (least deprived)	10,340,919	9,938,486	4.52	53	1,290.83	13.01
2008	1 (most deprived)	10,172,305	10,490,011	2.87	112	1,305.49	13.06
2008	2	10,222,041	10,313,147	3.65	94	3,304.54	31.27
2008	3	10,336,944	10,392,001	3.89	77	2,913.88	27.46
2008	4	10,326,760	10,251,648	4.24	63	2,837.45	28.24
2008	5 (least deprived)	10,406,596	10,017,839	4.51	53	2,795.96	27.67
2009	1 (most deprived)	10,242,974	10,537,912	2.97	111	3,102.89	29.14
2009	2	10,312,215	10,390,335	3.74	97	2,953.78	27.61
2009	3	10,412,543	10,470,074	3.98	77	2,579.57	25.49
2009	4	10,376,595	10,317,632	4.37	63	2,278.37	23.01
2009	5 (least deprived)	10,461,735	10,091,174	4.66	53	559.31	5.73
2010	1 (most deprived)	10,336,179	10,604,558	2.91	110	570.55	5.80
2010	2	10,418,358	10,484,925	3.67	97	2,767.23	27.92
2010	3	10,500,292	10,561,037	3.90	77	2,249.80	22.48
2010	4	10,452,346	10,406,831	4.28	63	2,990.75	27.35
2010	5 (least deprived)	10,526,870	10,176,694	4.53	53	2,393.42	23.66
2011	1 (most deprived)	10,456,433	10,697,690	2.93	112	3,151.84	28.72
2011	2	10,543,934	10,594,848	3.71	98	2,672.13	26.18
2011	3	10,591,723	10,656,814	3.91	78	2,942.80	27.44
2011	4	10,519,160	10,489,422	4.28	64	2,274.21	23.18
2011	5 (least deprived)	10,579,453	10,251,929	4.56	54	2,843.30	25.95
2012	1 (most deprived)	10,893,479	11,062,381	3.06	114	2,575.48	25.02
2012	2	10,782,713	10,807,827	3.85	100	189.61	1.99
2012	3	10,694,991	10,762,883	4.01	80	2,646.99	25.74
2012	4	10,552,487	10,562,156	4.35	65	2,787.59	27.90
2012	5 (least deprived)	10,564,331	10,292,754	4.62	55	2,716.02	26.99
2013	1 (most deprived)	10,994,820	11,137,074	3.18	119	2,558.39	25.07
2013	2	10,873,567	10,885,678	3.99	102	2,751.39	26.68
2013	3	10,765,378	10,837,339	4.11	83	2,691.70	24.76
2013	4	10,610,984	10,635,953	4.48	67	183.18	1.93
2013	5 (least deprived)	10,615,169	10,363,872	4.80	57	2,610.09	24.05

Appendix Section 2

This section presents the numbers of GP FTE in the richest and poorest fifths of areas as well as the absolute gap, relative gap, slope index of inequality and relative index of inequality for years 2004/05 to 2013/14.

In the tables that follow Q1 refers to the most deprived fifth of areas and Q5 refers to the least deprived fifth of areas. ABS_GAP referes to the absolute gap between these two groups of areas i.e. Q5 - Q1 this is similar to the slope index of inequality (SII) which models this gap but also takes into account the levels observed in the other three fifths of the distribution. REL_GAP refers to the relative gap between the most and least deprived groups calculated as ABS_GAP/Q5 and is somewhat similar to the relative index of inequality (RII) which expresses the SII as a proportion of the national average.

Table A2.1: Inequality Indices GPs FTE Including Registrars and Retainers

	All GPs (Including Registrars and Retainers)					
Year	**Q1**	**Q5**	**ABS_GAP**	**REL_GAP**	**SII**	**RII**
2004	58.54	63.85	5.31	8%	6.90	11.39%
2005	59.63	65.06	5.43	8%	7.08	11.46%
2006	62.47	68.21	5.74	8%	7.40	11.38%
2007	62.36	65.86	3.50	5%	4.50	7.06%
2008	64.41	67.97	3.56	5%	4.72	7.19%
2009	66.96	70.62	3.66	5%	4.75	7.00%
2010	67.80	68.57	0.77	1%	1.32	1.98%
2011	67.17	68.34	1.17	2%	1.66	2.49%
2012	66.37	67.83	1.46	2%	1.99	3.00%
2013	65.85	66.46	0.61	1%	0.77	1.18%

Table A2.2: Inequality Indices GPs FTE Excluding Registrars and Retainers

	Excluding Registrars and Retainers					
Year	**Q1**	**Q5**	**ABS_GAP**	**REL_GAP**	**SII (95% CI)**	**RII (95% CI)**
2004	54.00	57.19	3.19	6%	4.19 (3.10 to 5.28)	7.60% (5.63 to 9.57)
2005	55.37	58.79	3.42	6%	4.44 (3.26 to 5.62)	7.85% (5.77 to 9.94)
2006	58.41	62.49	4.08	7%	5.22 (4.66 to 5.77)	8.66% (7.74 to 9.58)
2007	58.99	61.70	2.71	4%	3.45 (2.53 to 4.36)	5.75% (4.22 to 7.28)
2008	59.05	60.87	1.82	3%	2.42 (1.38 to 3.46)	4.07% (2.32 to 5.82)
2009	60.84	61.97	1.13	2%	1.59 (0.02 to 3.16)	2.62% (0.03 to 5.21)
2010	61.47	59.89	-1.58	-3%	-1.65 (-3.87 to 0.57)	-2.77% (-6.49 to 0.95)
2011	61.16	59.33	-1.83	-3%	-2.10 (-4.41 to 0.21)	-3.55% (-7.45 to 0.35)
2012	59.83	59.08	-0.75	-1%	-0.75 (-2.38 to 0.88)	-1.28% (-4.06 to 1.50)
2013	60.53	59.90	-0.63	-1%	-0.68 (-2.46 to 1.11)	-1.14% (-4.15 to 1.87)

Table A2.3: Inequality Indices GPs FTE Registrars Only

	Registrars Only					
Year	Q1	Q5	ABS_GAP	REL_GAP	SII	RII
2004	4.26	5.85	1.59	27%	2.05	42.08%
2005	4.04	5.62	1.58	28%	2.12	44.10%
2006	3.80	4.88	1.08	22%	1.46	34.14%
2007	2.95	2.95	0.00	0%	0.09	2.94%
2008	5.03	6.07	1.04	17%	1.46	26.20%
2009	5.81	7.62	1.81	24%	2.30	34.60%
2010	6.17	8.15	1.98	24%	2.54	36.03%
2011	5.85	8.59	2.74	32%	3.43	47.97%
2012	6.38	8.30	1.92	23%	2.40	32.04%
2013	5.17	6.21	1.04	17%	1.21	20.73%

Table A2.4: Inequality Indices GPs FTE Retainers Only

	Retainers Only					
Year	Q1	Q5	ABS_GAP	REL_GAP	SII	RII
2004	0.28	0.81	0.53	65%	0.66	127.43%
2005	0.22	0.65	0.43	66%	0.51	122.80%
2006	0.26	0.85	0.59	69%	0.73	140.95%
2007	0.42	1.21	0.79	65%	0.96	127.32%
2008	0.33	1.02	0.69	68%	0.83	136.07%
2009	0.32	1.03	0.71	69%	0.87	142.08%
2010	0.17	0.52	0.35	67%	0.44	134.83%
2011	0.16	0.42	0.26	62%	0.32	117.20%
2012	0.17	0.45	0.28	62%	0.35	120.38%
2013	0.15	0.35	0.20	57%	0.24	102.56%

Table A2.5: Inequality Indices GPs FTE Including Registrars and Retainers Practice Level Aggregation

	ALL GPs (Practice Level Aggregation)					
Year	Q1	Q5	ABS_GAP	REL_GAP	SII	RII
2004	58.01	64.88	6.87	11%	8.63	14.26%
2005	59.00	66.08	7.08	11%	9.15	14.81%
2006	61.49	68.82	7.33	11%	10.06	15.46%
2007	61.79	66.29	4.50	7%	6.00	9.42%
2008	63.35	68.70	5.35	8%	6.48	9.86%
2009	66.29	71.61	5.32	7%	7.06	10.39%
2010	67.34	69.26	1.92	3%	2.69	4.02%
2011	66.78	69.66	2.88	4%	3.48	5.23%
2012	66.23	68.39	2.16	3%	2.82	4.24%
2013	66.00	67.21	1.21	2%	1.51	2.31%

Table A2.6: Inequality Indices GPs FTE Excluding Registrars and Retainers Practice Level Aggregation

	Excluding Registrars and Retainers (Practice Level Aggregation)					
Year	Q1	Q5	ABS_GAP	REL_GAP	SII	RII
2004	53.94	57.67	3.73	6%	4.97	9.02%
2005	55.25	59.33	4.08	7%	5.58	9.86%
2006	57.81	62.83	5.02	8%	7.05	11.71%
2007	58.84	61.90	3.06	5%	4.53	7.56%
2008	58.72	61.04	2.32	4%	3.25	5.46%
2009	60.85	62.22	1.37	2%	2.56	4.21%
2010	61.89	59.93	-1.96	-3%	-1.57	-2.62%
2011	61.79	59.84	-1.95	-3%	-1.96	-3.30%
2012	60.35	59.25	-1.10	-2%	-1.09	-1.86%
2013	60.99	60.28	-0.71	-1%	-0.73	-1.23%

Table A2.7: Inequality Indices GPs FTE Excluding Registrars and Retainers CCG Level Aggregation

	Excluding Registrars and Retainers					
Year	Q1	Q5	ABS_GAP	REL_GAP	SII (95% CI)	RII (95% CI)
2004	54.17	57.34	3.17	6%	4.63 (2.07 to 7.19)	0.08 (0.04 to 0.13)
2005	55.97	58.81	2.84	5%	4.82 (1.66 to 7.98)	0.08 (0.03 to 0.14)
2006	58.16	62.72	4.56	7%	6.49 (3.79 to 9.18)	0.11 (0.06 to 0.15)
2007	59.00	61.88	2.88	5%	4.37 (2.17 to 6.58)	0.07 (0.04 to 0.11)
2008	58.88	61.12	2.24	4%	3.11 (0.53 to 5.70)	0.05 (0.01 to 0.10)
2009	60.49	62.87	2.38	4%	3.06 (-0.62 to 6.75)	0.05 (-0.01 to 0.11)
2010	61.22	60.69	-0.53	-1%	-0.35 (-4.55 to 3.86)	-0.01 (-0.08 to 0.06)
2011	60.80	60.53	-0.27	0%	-0.40 (-4.81 to 4.01)	-0.01 (-0.08 to 0.07)
2012	59.29	59.37	0.08	0%	-0.18 (-4.40 to 4.04)	0.00 (-0.07 to 0.07)
2013	60.21	59.98	-0.23	0%	-0.32 (-5.61 to 4.98)	-0.01 (-0.09 to 0.08)

Table A2.8: Carr-Hill Adjustment Relative Need Gap Compared to Most Affluent Fifth

	Relative Need Gap Compared to Q5			
YEAR	Q1	Q2	Q3	Q4
2004	8.47%	5.86%	5.05%	3.36%
2005	8.14%	5.56%	4.86%	3.27%
2006	7.83%	5.34%	4.73%	3.20%
2007	7.51%	5.09%	4.59%	3.16%
2008	7.13%	4.81%	4.43%	3.13%
2009	6.66%	4.46%	4.24%	3.07%
2010	6.13%	4.10%	4.04%	2.99%
2011	5.58%	3.69%	3.83%	2.90%
2012	4.23%	2.88%	3.29%	2.73%
2013	3.75%	2.54%	3.11%	2.67%

Appendix Section 3

This section looks at GP supply by PCT in 2006/07 and 2011/12 the two years that we compare to evaluate whether the investment in underdoctored areas had any effect. PCTs are marked by underdoctored status as identified in the policy documents that defined where this investment would be targeted. Numbers are presented for all LSOAs as well as for only the most deprived fifth of LSOAs and least deprived fifth of LSOAs in each PCT. PCTs that do not include any LSOAs in the most or least deprived fifths have NAs in place of numbers in the relevant fields. There is also a second table in this worksheet showing similar results for GPs excluding registrars and retainers.

Table A3.1: GP supply by PCT 2006 and 2011 excluding registrars and retainers

		Full Time Equivalent GPs Excluding Registrars and Retainers (per 100,000 need adjusted population)								
		All LSOAs			Most Deprived Fifth of LSOAs			Least Deprived Fifth of LSOAs		
PCT	Under-Doctored PCT	2006	2011	Change 2011-2006	2006	2011	Change 2011-2006	2006	2011	Change 2011-2006
Ashton, Leigh and Wigan	1	54.52	54.04	-0.48	53.01	55.05	2.04	62.08	55.76	-6.32
Barking and Dagenham	1	41.72	47.99	6.27	40.58	48.78	8.20	NA	NA	NA
Barnet	0	66.07	55.37	-10.70	63.80	51.39	-12.41	68.14	55.31	-12.83
Barnsley	1	54.57	65.97	11.40	52.12	69.98	17.86	74.95	76.78	1.83
Bassetlaw	0	53.19	54.69	1.50	51.21	58.25	7.04	60.31	61.43	1.12
Bath and North East Somerset	0	61.45	59.86	-1.59	60.95	56.33	-4.62	60.35	58.82	-1.53
Bedfordshire	0	62.89	60.38	-2.51	58.52	67.38	8.86	64.71	59.20	-5.51
Berkshire East	0	56.59	57.73	1.14	53.92	60.99	7.07	60.08	59.75	-0.33
Berkshire West	0	61.35	58.24	-3.11	54.97	53.93	-1.04	62.86	58.81	-4.05
Bexley	0	44.50	48.86	4.36	44.88	50.15	5.27	45.39	50.00	4.61
Birmingham East and North	1	54.98	55.30	0.32	55.53	56.99	1.46	54.45	54.05	-0.40
Blackburn with Darwen Teaching	1	47.14	59.48	12.34	46.47	58.52	12.05	48.69	65.93	17.24
Blackpool	1	51.62	60.01	8.39	53.82	65.90	12.08	NA	NA	NA
Bolton Teaching	1	54.00	58.88	4.88	54.16	60.23	6.07	58.18	61.66	3.48
Bournemouth and Poole Teaching	0	65.05	58.21	-6.84	68.33	63.73	-4.60	65.04	57.31	-7.73
Bradford and Airedale Teaching	0	64.45	64.29	-0.16	64.11	64.87	0.76	62.53	62.43	-0.10
Brent Teaching	0	69.34	70.45	1.11	73.02	70.83	-2.19	NA	NA	NA
Brighton and Hove City	0	62.60	56.20	-6.40	60.56	58.90	-1.66	68.46	56.71	-11.75
Bristol	0	62.75	59.64	-3.11	64.96	63.77	-1.19	66.35	57.20	-9.15
Bromley	0	55.83	54.52	-1.31	50.54	53.38	2.84	58.41	55.75	-2.66
Buckinghamshire	0	66.22	62.92	-3.30	NA	NA	NA	67.47	63.39	-4.08
Bury	0	60.91	57.50	-3.41	55.61	59.66	4.05	67.98	59.07	-8.91
Calderdale	1	51.24	49.28	-1.96	50.30	46.14	-4.16	51.55	53.32	1.77
Cambridgeshire	0	69.26	61.34	-7.92	59.14	57.94	-1.20	70.01	61.38	-8.63
Camden	0	72.35	76.71	4.36	68.98	79.29	10.31	79.27	81.99	2.72
Central and Eastern Cheshire	0	59.42	54.14	-5.28	58.07	53.56	-4.51	60.23	53.91	-6.32
Central Lancashire	0	54.39	50.69	-3.70	53.04	51.02	-2.02	56.89	52.79	-4.10
City and Hackney Teaching	0	72.61	71.61	-1.00	74.43	72.63	-1.80	38.94	37.84	-1.10
Cornwall and Isles of Scilly	0	70.47	59.92	-10.55	70.65	63.96	-6.69	79.89	51.14	-28.75
County Durham	0	62.62	62.12	-0.50	59.30	62.99	3.69	72.35	64.64	-7.71
Coventry Teaching	0	58.81	60.95	2.14	62.35	65.95	3.60	50.87	57.05	6.18
Croydon	0	66.99	66.70	-0.29	68.77	66.31	-2.46	69.20	64.72	-4.48
Cumbria Teaching	0	63.22	64.60	1.38	59.44	62.00	2.56	63.48	64.23	0.75
Darlington	0	67.44	69.31	1.87	66.26	69.88	3.62	67.24	67.29	0.05
Derby City	0	56.09	52.19	-3.90	56.85	56.71	-0.14	57.79	52.39	-5.40
Derbyshire County	0	60.21	55.51	-4.70	56.90	56.08	-0.82	62.15	56.40	-5.75
Devon	0	80.32	79.07	-1.25	83.49	84.89	1.40	76.50	75.07	-1.43
Doncaster	0	55.31	60.27	4.96	55.25	64.11	8.86	63.13	63.78	0.65
Dorset	0	68.43	57.28	-11.15	70.55	67.62	-2.93	65.63	54.86	-10.77
Dudley	1	55.76	57.39	1.63	57.96	62.94	4.98	55.34	55.46	0.12
Ealing	0	56.10	61.98	5.88	53.10	62.48	9.38	59.66	64.07	4.41
East Lancashire Teaching	0	50.93	55.67	4.74	48.94	57.44	8.50	51.12	54.46	3.34
East Riding of Yorkshire	0	61.55	52.53	-9.02	55.21	54.40	-0.81	65.75	51.83	-13.92
East Sussex Downs and Weald	0	59.38	60.48	1.10	56.76	68.12	11.36	61.58	61.39	-0.19
Eastern and Coastal Kent	0	55.35	54.37	-0.98	54.32	53.18	-1.14	59.46	57.18	-2.28
Enfield	0	58.18	59.16	0.98	54.60	59.21	4.61	57.13	53.07	-4.06
Gateshead	0	58.88	63.80	4.92	62.30	64.89	2.59	53.85	64.24	10.39
Gloucestershire	0	62.86	59.13	-3.73	60.89	64.65	3.76	65.16	59.24	-5.92
Great Yarmouth and Waveney	0	55.05	58.30	3.25	52.27	61.58	9.31	55.14	57.43	2.29
Greenwich Teaching	1	48.44	61.68	13.24	49.85	64.73	14.88	NA	NA	NA
Halton and St Helens	1	51.90	54.45	2.55	52.39	53.08	0.69	52.63	55.77	3.14
Hammersmith and Fulham	1	60.47	72.94	12.47	59.66	72.70	13.04	NA	NA	NA
Hampshire	0	58.50	57.62	-0.88	61.21	57.23	-3.98	58.94	58.28	-0.66
Haringey Teaching	0	61.40	71.93	10.53	59.47	71.60	12.13	NA	NA	NA

Harrow	0	63.86	64.33	0.47	61.57	57.58	-3.99	62.01	65.12	3.11
Hartlepool	1	50.56	58.29	7.73	50.57	57.24	6.67	53.39	60.37	6.98
Hastings and Rother	0	55.17	59.11	3.94	55.11	64.38	9.27	59.20	58.79	-0.41
Havering	1	49.75	47.10	-2.65	50.06	47.70	-2.36	51.99	45.84	-6.15
Heart of Birmingham Teaching	1	60.39	63.59	3.20	62.87	67.78	4.91	NA	NA	NA
Herefordshire	0	64.95	59.60	-5.35	60.03	57.64	-2.39	65.82	58.39	-7.43
Hertfordshire	0	63.07	58.05	-5.02	56.54	54.75	-1.79	65.72	59.78	-5.94
Heywood, Middleton and Rochdale	1	56.55	53.68	-2.87	57.16	55.77	-1.39	53.84	45.51	-8.33
Hillingdon	0	58.55	58.29	-0.26	59.65	60.11	0.46	57.69	59.07	1.38
Hounslow	1	50.83	59.94	9.11	48.83	69.99	21.16	51.56	62.67	11.11
Hull Teaching	1	54.05	52.88	-1.17	54.59	53.08	-1.51	55.12	56.52	1.40
Isle of Wight National Health Service	0	52.33	52.81	0.48	57.66	52.89	-4.77	48.88	49.23	0.35
Islington	0	75.96	79.83	3.87	76.58	82.33	5.75	NA	NA	NA
Kensington and Chelsea	0	61.81	56.55	-5.26	56.57	60.73	4.16	85.05	66.99	-18.06
Kingston	0	70.41	71.81	1.40	68.80	75.22	6.42	74.26	71.85	-2.41
Kirklees	0	56.67	55.14	-1.53	57.05	54.23	-2.82	61.51	58.04	-3.47
Knowsley	1	47.63	60.33	12.70	48.40	63.87	15.47	NA	NA	NA
Lambeth	0	77.15	75.82	-1.33	76.17	76.64	0.47	NA	NA	NA
Leeds	0	57.60	54.92	-2.68	58.88	57.12	-1.76	60.27	56.11	-4.16
Leicester City	1	49.23	60.00	10.77	50.58	60.76	10.18	47.47	68.17	20.70
Leicestershire County and Rutland	0	58.79	61.58	2.79	62.00	76.25	14.25	60.61	61.79	1.18
Lewisham	0	68.23	65.68	-2.55	69.23	66.98	-2.25	NA	NA	NA
Lincolnshire Teaching	0	50.27	51.58	1.31	48.40	53.74	5.34	53.07	53.27	0.20
Liverpool	1	61.49	62.82	1.33	60.80	63.59	2.79	70.89	67.12	-3.77
Luton	1	55.39	58.15	2.76	59.62	64.56	4.94	52.20	51.58	-0.62
Manchester Teaching	1	56.60	55.70	-0.90	56.49	55.75	-0.74	64.20	55.88	-8.32
Medway	1	49.84	54.67	4.83	46.91	56.67	9.76	49.22	50.93	1.71
Mid Essex	0	59.08	58.55	-0.53	53.06	59.09	6.03	59.49	60.38	0.89
Middlesbrough	0	56.57	61.90	5.33	57.84	66.51	8.67	57.12	58.26	1.14
Milton Keynes	0	66.86	62.28	-4.58	65.13	65.12	-0.01	68.12	61.80	-6.32
Newcastle	1	56.46	56.90	0.44	56.16	59.51	3.35	58.36	56.86	-1.50
Newham	0	72.22	72.89	0.67	71.97	72.89	0.92	NA	NA	NA
Norfolk	0	66.77	63.02	-3.75	67.27	66.26	-1.01	72.48	65.40	-7.08
North East Essex	0	53.84	50.83	-3.01	38.84	39.80	0.96	63.36	59.32	-4.04
North East Lincolnshire	0	57.26	59.43	2.17	57.58	61.87	4.29	60.09	59.09	-1.00
North Lancashire Teaching	1	56.09	52.87	-3.22	54.68	52.51	-2.17	54.72	51.49	-3.23
North Lincolnshire	0	58.80	54.34	-4.46	61.60	59.09	-2.51	59.42	55.75	-3.67
North Somerset	0	52.76	56.18	3.42	51.72	60.08	8.36	59.37	58.38	-0.99
North Staffordshire	0	54.49	56.90	2.41	52.59	58.50	5.91	56.66	59.97	3.31
North Tyneside	0	56.00	61.81	5.81	56.45	63.18	6.73	56.17	59.08	2.91
North Yorkshire and York	0	65.09	61.15	-3.94	65.64	66.15	0.51	65.18	60.60	-4.58
Northamptonshire Teaching	0	56.28	52.24	-4.04	55.73	53.22	-2.51	59.46	54.18	-5.28
Northumberland	0	83.05	65.97	-17.08	79.31	63.96	-15.35	84.62	69.63	-14.99
Nottingham City	1	51.65	49.09	-2.56	51.76	49.68	-2.08	51.18	51.75	0.57
Nottinghamshire County Teaching	0	54.52	54.23	-0.29	51.94	55.67	3.73	58.78	56.67	-2.11
Oldham	1	46.89	52.47	5.58	44.94	56.31	11.37	53.08	50.15	-2.93
Oxfordshire	0	63.34	63.18	-0.16	58.10	70.88	12.78	63.74	60.55	-3.19
Peterborough	0	60.38	61.92	1.54	59.48	62.55	3.07	56.87	59.24	2.37
Plymouth Teaching	0	71.72	68.30	-3.42	72.52	70.01	-2.51	67.51	63.17	-4.34
Portsmouth City Teaching	0	51.75	50.07	-1.68	52.24	49.93	-2.31	55.46	56.92	1.46
Redbridge	0	51.42	47.27	-4.15	51.27	50.91	-0.36	65.13	49.72	-15.41
Redcar and Cleveland	1	56.85	63.35	6.50	57.85	66.23	8.38	61.93	63.65	1.72
Richmond and Twickenham	0	70.38	62.98	-7.40	NA	NA	NA	72.97	65.45	-7.52
Rotherham	0	56.14	58.69	2.55	55.43	60.31	4.88	58.65	56.99	-1.66
Salford	1	48.72	54.20	5.48	46.76	53.19	6.43	53.06	56.49	3.43
Sandwell	1	52.23	49.78	-2.45	52.35	51.04	-1.31	NA	NA	NA
Sefton	1	54.60	48.72	-5.88	53.86	51.54	-2.32	54.88	48.91	-5.97
Sheffield	0	68.64	68.76	0.12	69.46	74.14	4.68	72.72	68.71	-4.01
Shropshire County	0	60.87	55.96	-4.91	60.66	60.93	0.27	59.70	52.87	-6.83
Solihull	0	62.64	56.85	-5.79	63.05	55.01	-8.04	67.08	60.88	-6.20
Somerset	0	70.67	60.05	-10.62	69.99	63.53	-6.46	73.55	60.49	-13.06
South Birmingham	0	60.36	58.85	-1.51	58.80	58.72	-0.08	71.35	63.84	-7.51
South East Essex	0	54.20	53.49	-0.71	52.01	45.99	-6.02	55.10	56.77	1.67
South Gloucestershire	0	64.57	61.71	-2.86	45.55	55.51	9.96	64.34	60.06	-4.28
South Staffordshire	0	57.15	57.66	0.51	58.88	56.10	-2.78	59.08	60.22	1.14
South Tyneside	1	58.94	61.39	2.45	56.87	61.01	4.14	65.20	62.24	-2.96

South West Essex	0	50.10	49.50	-0.60	49.31	43.98	-5.33	52.29	53.85	1.56
Southampton City	0	58.95	54.83	-4.12	59.22	57.86	-1.36	64.89	58.85	-6.04
Southwark	0	72.20	70.87	-1.33	70.72	72.51	1.79	51.03	38.59	-12.44
Stockport	0	54.15	50.59	-3.56	54.79	55.46	0.67	54.89	49.27	-5.62
Stockton-on-Tees Teaching	0	59.59	54.98	-4.61	64.07	59.23	-4.84	59.41	54.64	-4.77
Stoke on Trent	1	46.99	54.56	7.57	44.37	55.87	11.50	52.42	50.85	-1.57
Suffolk	0	60.84	56.81	-4.03	59.81	49.20	-10.61	61.03	57.85	-3.18
Sunderland Teaching	1	56.90	60.35	3.45	57.10	59.02	1.92	57.43	63.14	5.71
Surrey	0	63.26	64.31	1.05	65.76	64.42	-1.34	64.47	65.26	0.79
Sutton and Merton	0	66.45	67.50	1.05	60.60	63.97	3.37	71.72	71.72	0.00
Swindon	0	65.56	63.55	-2.01	62.68	66.10	3.42	67.69	58.87	-8.82
Tameside and Glossop	1	53.20	51.57	-1.63	51.59	54.65	3.06	56.80	49.83	-6.97
Telford and Wrekin	0	56.30	53.68	-2.62	56.52	55.03	-1.49	56.86	52.38	-4.48
Torbay	0	67.19	61.49	-5.70	68.30	67.15	-1.15	65.26	61.35	-3.91
Tower Hamlets	0	66.79	81.77	14.98	66.58	86.46	19.88	61.91	64.14	2.23
Trafford	0	54.28	57.39	3.11	56.84	57.47	0.63	54.74	57.29	2.55
Wakefield District	0	57.30	55.04	-2.26	55.57	55.42	-0.15	59.72	56.77	-2.95
Walsall Teaching	1	50.50	56.98	6.48	50.04	59.27	9.23	53.25	52.07	-1.18
Waltham Forest	0	64.28	60.14	-4.14	62.79	58.91	-3.88	NA	NA	NA
Wandsworth	0	74.48	81.43	6.95	81.55	92.06	10.51	73.22	82.76	9.54
Warrington	0	59.86	55.90	-3.96	63.19	57.34	-5.85	58.44	57.57	-0.87
Warwickshire	0	60.84	60.13	-0.71	51.03	62.70	11.67	63.43	60.99	-2.44
West Essex	0	59.39	59.62	0.23	52.50	58.94	6.44	64.90	63.25	-1.65
West Kent	0	55.95	55.20	-0.75	49.21	51.07	1.86	57.47	55.59	-1.88
West Sussex	0	63.52	55.74	-7.78	56.09	56.69	0.60	65.80	55.89	-9.91
Western Cheshire	0	65.25	61.10	-4.15	67.40	63.42	-3.98	63.48	60.76	-2.72
Westminster	0	63.06	54.21	-8.85	67.87	65.58	-2.29	NA	NA	NA
Wiltshire	0	69.53	64.29	-5.24	71.23	67.58	-3.65	68.96	63.11	-5.85
Wirral	0	64.33	58.40	-5.93	69.03	62.08	-6.95	59.14	54.25	-4.89
Wolverhampton City	1	47.47	52.81	5.34	46.98	55.17	8.19	47.85	48.16	0.31
Worcestershire	0	61.92	63.55	1.63	64.13	63.11	-1.02	62.44	64.99	2.55

Table A3.2: GP supply by PCT 2006 and 2011 including registrars and retainers

		Full Time Equivalent GPs Including Registrars and Retainers (per 100,000 need adjusted population)								
		All LSOAs			Most Deprived Fifth of LSOAs			Least Deprived Fifth of LSOAs		
PCT	Under-Doctored PCT	2006	2011	Change 2011-2006	2006	2011	Change 2011-2006	2006	2011	Change 2011-2006
Ashton, Leigh and Wigan	1	56.77	54.04	-2.73	55.52	55.05	-0.47	64.58	55.76	-8.82
Barking and Dagenham	1	44.04	53.25	9.21	43.05	54.45	11.40	NA	NA	NA
Barnet	0	70.62	61.66	-8.96	67.15	56.60	-10.55	73.76	63.48	-10.28
Barnsley	1	54.66	71.92	17.26	52.17	74.84	22.67	74.95	87.39	12.44
Bassetlaw	0	59.69	64.75	5.06	56.38	65.29	8.91	70.35	76.55	6.20
Bath and North East Somerset	0	63.64	71.32	7.68	62.85	69.43	6.58	62.73	68.88	6.15
Bedfordshire	0	65.68	68.21	2.53	60.82	74.21	13.39	67.91	68.64	0.73
Berkshire East	0	62.86	65.88	3.02	60.94	69.36	8.42	66.65	67.48	0.83
Berkshire West	0	64.68	63.59	-1.09	56.93	56.72	-0.21	66.23	64.30	-1.93
Bexley	0	46.75	55.02	8.27	46.43	51.64	5.21	48.04	58.51	10.47
Birmingham East and North	1	58.86	64.95	6.09	58.68	65.94	7.26	61.89	68.19	6.30
Blackburn with Darwen Teaching	1	47.26	59.48	12.22	46.48	58.52	12.04	49.60	65.93	16.33
Blackpool	1	54.17	60.01	5.84	56.25	65.90	9.65	NA	NA	NA
Bolton Teaching	1	59.88	59.03	-0.85	58.76	60.44	1.68	64.12	61.71	-2.41
Bournemouth and Poole Teaching	0	74.68	70.14	-4.54	78.27	74.34	-3.93	73.95	73.67	-0.28
Bradford and Airedale Teaching	0	71.53	74.14	2.61	68.76	73.60	4.84	72.34	70.88	-1.46
Brent Teaching	0	77.18	79.94	2.76	83.03	81.34	-1.69	NA	NA	NA
Brighton and Hove City	0	65.67	60.90	-4.77	62.59	62.28	-0.31	71.69	60.73	-10.96
Bristol	0	63.85	66.58	2.73	66.29	72.93	6.64	67.52	59.53	-7.99
Bromley	0	59.40	59.84	0.44	52.77	55.77	3.00	62.37	61.59	-0.78
Buckinghamshire	0	73.22	74.16	0.94	NA	NA	NA	75.06	75.90	0.84
Bury	0	66.81	57.51	-9.30	58.55	59.66	1.11	78.45	59.08	-19.37
Calderdale	1	54.85	55.36	0.51	51.12	48.21	-2.91	59.14	66.43	7.29
Cambridgeshire	0	72.60	71.57	-1.03	61.43	60.67	-0.76	72.93	72.50	-0.43
Camden	0	84.42	88.87	4.45	78.66	92.50	13.84	92.73	90.51	-2.22
Central and Eastern Cheshire	0	66.36	62.76	-3.60	61.55	60.20	-1.35	68.38	63.28	-5.10
Central Lancashire	0	57.57	50.72	-6.85	56.39	51.02	-5.37	60.08	52.79	-7.29
City and Hackney Teaching	0	76.14	82.80	6.66	78.12	84.19	6.07	38.99	46.59	7.60
Cornwall and Isles of Scilly	0	74.02	67.19	-6.83	73.18	71.53	-1.65	86.01	62.95	-23.06
County Durham	0	69.09	70.58	1.49	63.94	68.17	4.23	83.44	79.68	-3.76
Coventry Teaching	0	63.23	69.99	6.76	65.24	74.60	9.36	55.60	64.79	9.19
Croydon	0	72.85	76.10	3.25	72.09	71.59	-0.50	76.56	78.88	2.32
Cumbria Teaching	0	66.32	72.05	5.73	62.30	68.16	5.86	66.60	71.57	4.97
Darlington	0	68.57	73.18	4.61	67.31	74.05	6.74	68.14	70.80	2.66
Derby City	0	59.27	58.01	-1.26	61.22	63.08	1.86	59.73	57.30	-2.43
Derbyshire County	0	65.01	65.72	0.71	60.90	65.68	4.78	66.11	65.88	-0.23
Devon	0	86.02	87.85	1.83	91.29	95.00	3.71	82.47	86.16	3.69
Doncaster	0	60.49	68.47	7.98	60.11	71.89	11.78	76.01	81.14	5.13
Dorset	0	73.82	64.12	-9.70	74.18	71.17	-3.01	72.45	63.61	-8.84
Dudley	1	63.70	64.51	0.81	65.34	69.76	4.42	65.59	65.08	-0.51
Ealing	0	59.18	69.16	9.98	55.73	67.99	12.26	62.67	74.45	11.78
East Lancashire Teaching	0	52.74	56.58	3.84	49.57	57.66	8.09	51.92	54.58	2.66
East Riding of Yorkshire	0	65.07	58.83	-6.24	57.41	58.26	0.85	69.72	57.58	-12.14
East Sussex Downs and Weald	0	63.84	67.99	4.15	59.54	76.10	16.56	66.17	67.94	1.77
Eastern and Coastal Kent	0	59.03	60.16	1.13	56.54	58.18	1.64	64.24	64.96	0.72
Enfield	0	60.87	63.11	2.24	55.34	61.26	5.92	62.80	59.29	-3.51
Gateshead	0	66.67	73.29	6.62	70.48	76.40	5.92	59.06	68.56	9.50
Gloucestershire	0	68.54	67.35	-1.19	64.94	69.54	4.60	72.14	68.62	-3.52
Great Yarmouth and Waveney	0	56.55	66.98	10.43	53.53	69.26	15.73	55.35	64.16	8.81
Greenwich Teaching	1	53.21	69.50	16.29	53.80	72.41	18.61	NA	NA	NA
Halton and St Helens	1	56.03	54.48	-1.55	57.17	53.09	-4.08	55.00	55.77	0.77
Hammersmith and Fulham	1	65.55	79.02	13.47	63.83	78.38	14.55	NA	NA	NA
Hampshire	0	64.86	66.32	1.46	65.58	64.69	-0.89	65.93	67.86	1.93
Haringey Teaching	0	67.61	77.80	10.19	63.77	74.87	11.10	NA	NA	NA
Harrow	0	73.31	73.97	0.66	69.31	67.27	-2.04	74.63	75.33	0.70
Hartlepool	1	55.81	60.40	4.59	55.64	59.27	3.63	59.20	62.82	3.62
Hastings and Rother	0	58.78	64.05	5.27	57.16	68.99	11.83	67.26	65.38	-1.88
Havering	1	55.56	53.95	-1.61	56.51	56.49	-0.02	59.88	51.48	-8.40
Heart of Birmingham Teaching	1	65.52	74.77	9.25	68.33	78.72	10.39	NA	NA	NA

Herefordshire	0	71.41	66.68	-4.73	67.88	65.14	-2.74	71.76	66.57	-5.19
Hertfordshire	0	67.81	66.50	-1.31	58.24	58.57	0.33	71.89	70.00	-1.89
Heywood, Middleton and Rochdale	1	58.18	53.68	-4.50	58.56	55.77	-2.79	55.21	45.51	-9.70
Hillingdon	0	64.62	64.26	-0.36	60.77	61.26	0.49	68.81	72.59	3.78
Hounslow	1	51.12	64.01	12.89	48.98	76.88	27.90	51.86	65.16	13.30
Hull Teaching	1	54.05	56.33	2.28	54.59	55.78	1.19	55.15	59.93	4.78
Isle of Wight National Health Service	0	54.68	58.08	3.40	60.10	58.21	-1.89	53.39	53.99	0.60
Islington	0	80.35	86.18	5.83	80.88	88.65	7.77	NA	NA	NA
Kensington and Chelsea	0	70.83	73.70	2.87	58.75	69.29	10.54	108.97	102.92	-6.05
Kingston	0	78.33	79.56	1.23	73.19	84.10	10.91	83.29	81.23	-2.06
Kirklees	0	60.02	62.44	2.42	59.66	59.18	-0.48	65.48	68.12	2.64
Knowsley	1	48.54	61.08	12.54	48.89	64.29	15.40	NA	NA	NA
Lambeth	0	80.65	77.10	-3.55	79.74	77.43	-2.31	NA	NA	NA
Leeds	0	62.92	62.54	-0.38	63.65	64.32	0.67	66.46	64.59	-1.87
Leicester City	1	51.69	66.80	15.11	52.84	67.82	14.98	51.03	74.49	23.46
Leicestershire County and Rutland	0	68.35	73.29	4.94	77.97	87.97	10.00	68.96	73.44	4.48
Lewisham	0	74.24	66.16	-8.08	77.55	67.44	-10.11	NA	NA	NA
Lincolnshire Teaching	0	50.65	57.23	6.58	48.44	58.88	10.44	53.95	60.87	6.92
Liverpool	1	67.46	67.31	-0.15	66.20	67.78	1.58	75.58	71.23	-4.35
Luton	1	59.33	76.73	17.40	64.30	86.93	22.63	55.16	68.26	13.10
Manchester Teaching	1	61.44	55.91	-5.53	61.44	55.91	-5.53	68.03	55.89	-12.14
Medway	1	52.74	62.01	9.27	48.17	60.47	12.30	51.97	57.72	5.75
Mid Essex	0	62.70	66.28	3.58	56.29	70.21	13.92	64.35	69.60	5.25
Middlesbrough	0	59.24	66.71	7.47	60.34	71.64	11.30	60.37	62.89	2.52
Milton Keynes	0	69.56	67.48	-2.08	65.35	66.54	1.19	71.60	68.76	-2.84
Newcastle	1	63.01	67.32	4.31	62.83	68.25	5.42	65.91	71.41	5.50
Newham	0	73.55	82.22	8.67	73.31	81.98	8.67	NA	NA	NA
Norfolk	0	70.02	68.79	-1.23	70.22	72.24	2.02	74.91	70.68	-4.23
North East Essex	0	53.96	57.17	3.21	38.85	41.64	2.79	63.56	65.14	1.58
North East Lincolnshire	0	60.25	64.21	3.96	60.50	66.37	5.87	63.28	63.84	0.56
North Lancashire Teaching	1	63.31	53.47	-9.84	61.58	52.92	-8.66	60.80	52.07	-8.73
North Lincolnshire	0	61.29	61.99	0.70	62.98	65.10	2.12	63.64	68.62	4.98
North Somerset	0	53.50	64.71	11.21	51.72	68.18	16.46	60.59	68.36	7.77
North Staffordshire	0	57.53	67.07	9.54	54.87	63.52	8.65	59.93	72.94	13.01
North Tyneside	0	62.40	71.33	8.93	62.58	73.44	10.86	62.44	68.24	5.80
North Yorkshire and York	0	73.71	68.94	-4.77	73.44	73.60	0.16	73.95	68.40	-5.55
Northamptonshire Teaching	0	60.01	64.91	4.90	59.44	68.98	9.54	62.95	66.23	3.28
Northumberland	0	99.46	76.95	-22.51	91.70	69.52	-22.18	104.30	82.90	-21.40
Nottingham City	1	54.92	53.90	-1.02	55.35	54.79	-0.56	53.42	55.61	2.19
Nottinghamshire County Teaching	0	58.96	71.22	12.26	55.54	74.57	19.03	65.27	77.55	12.28
Oldham	1	48.61	52.47	3.86	47.38	56.31	8.93	53.66	50.15	-3.51
Oxfordshire	0	67.80	72.36	4.56	63.94	80.27	16.33	67.02	69.67	2.65
Peterborough	0	60.54	68.12	7.58	59.48	67.08	7.60	57.87	67.01	9.14
Plymouth Teaching	0	72.88	72.38	-0.50	73.38	72.96	-0.42	69.44	68.50	-0.94
Portsmouth City Teaching	0	57.62	56.99	-0.63	58.09	54.74	-3.35	62.48	63.37	0.89
Redbridge	0	56.36	56.29	-0.07	56.12	60.73	4.61	73.37	58.26	-15.11
Redcar and Cleveland	1	60.06	68.46	8.40	59.51	70.28	10.77	67.39	73.64	6.25
Richmond and Twickenham	0	79.46	76.66	-2.80	NA	NA	NA	81.94	79.99	-1.95
Rotherham	0	61.06	69.35	8.29	60.39	70.72	10.33	63.14	65.92	2.78
Salford	1	52.60	54.20	1.60	50.92	53.19	2.27	59.20	56.49	-2.71
Sandwell	1	58.36	56.15	-2.21	58.52	57.81	-0.71	NA	NA	NA
Sefton	1	59.01	49.76	-9.25	57.91	51.79	-6.12	58.80	49.71	-9.09
Sheffield	0	78.38	80.95	2.57	83.23	89.92	6.69	78.11	74.99	-3.12
Shropshire County	0	66.04	62.38	-3.66	64.45	64.63	0.18	69.37	62.12	-7.25
Solihull	0	69.54	64.48	-5.06	65.40	60.07	-5.33	79.42	71.31	-8.11
Somerset	0	72.98	69.37	-3.61	73.19	75.09	1.90	75.92	70.79	-5.13
South Birmingham	0	71.07	69.67	-1.40	69.10	69.80	0.70	82.56	71.77	-10.79
South East Essex	0	56.91	60.97	4.06	53.56	48.73	-4.83	59.04	69.96	10.92
South Gloucestershire	0	65.56	66.06	0.50	45.55	58.97	13.42	65.45	65.23	-0.22
South Staffordshire	0	61.36	64.94	3.58	62.68	63.54	0.86	64.34	69.50	5.16
South Tyneside	1	64.01	67.83	3.82	62.04	67.52	5.48	71.16	69.57	-1.59
South West Essex	0	52.39	54.40	2.01	51.24	47.14	-4.10	54.23	60.71	6.48
Southampton City	0	62.73	61.49	-1.24	62.77	63.47	0.70	68.31	64.10	-4.21
Southwark	0	74.23	71.00	-3.23	72.44	72.53	0.09	51.09	38.63	-12.46
Stockport	0	59.74	51.76	-7.98	60.24	56.02	-4.22	61.49	50.51	-10.98
Stockton-on-Tees Teaching	0	62.99	61.77	-1.22	67.74	66.32	-1.42	62.68	61.15	-1.53

Stoke on Trent	1	49.26	58.16	8.90	46.36	59.19	12.83	54.34	53.21	-1.13
Suffolk	0	65.31	64.08	-1.23	65.77	58.43	-7.34	64.97	64.68	-0.29
Sunderland Teaching	1	61.61	65.57	3.96	61.05	63.55	2.50	62.36	67.72	5.36
Surrey	0	71.89	74.96	3.07	77.20	72.15	-5.05	72.98	75.54	2.56
Sutton and Merton	0	73.99	75.20	1.21	65.96	70.18	4.22	79.39	79.85	0.46
Swindon	0	66.35	70.13	3.78	64.13	75.88	11.75	67.93	65.41	-2.52
Tameside and Glossop	1	57.17	51.85	-5.32	55.13	54.98	-0.15	63.71	49.86	-13.85
Telford and Wrekin	0	62.47	57.04	-5.43	65.33	58.86	-6.47	61.01	54.89	-6.12
Torbay	0	69.88	66.37	-3.51	70.64	70.77	0.13	70.30	69.80	-0.50
Tower Hamlets	0	73.25	94.10	20.85	73.93	99.25	25.32	65.84	77.06	11.22
Trafford	0	55.85	57.63	1.78	57.77	57.66	-0.11	56.05	57.49	1.44
Wakefield District	0	65.10	67.54	2.44	63.18	66.90	3.72	68.10	69.62	1.52
Walsall Teaching	1	54.82	64.88	10.06	52.94	65.50	12.56	59.31	64.25	4.94
Waltham Forest	0	69.98	69.35	-0.63	66.91	66.36	-0.55	NA	NA	NA
Wandsworth	0	80.97	92.01	11.04	89.84	105.91	16.07	83.39	96.74	13.35
Warrington	0	59.87	61.99	2.12	63.19	62.34	-0.85	58.45	64.93	6.48
Warwickshire	0	67.67	71.19	3.52	54.26	69.08	14.82	71.62	74.49	2.87
West Essex	0	68.60	73.07	4.47	57.79	72.17	14.38	75.90	77.21	1.31
West Kent	0	62.93	63.88	0.95	53.37	58.26	4.89	65.85	65.44	-0.41
West Sussex	0	67.22	67.68	0.46	57.66	62.90	5.24	70.39	69.00	-1.39
Western Cheshire	0	75.75	68.31	-7.44	78.16	72.46	-5.70	72.77	67.79	-4.98
Westminster	0	64.98	60.82	-4.16	68.82	71.47	2.65	NA	NA	NA
Wiltshire	0	70.63	73.22	2.59	72.52	78.04	5.52	69.94	72.26	2.32
Wirral	0	67.01	59.71	-7.30	69.94	62.72	-7.22	65.07	56.55	-8.52
Wolverhampton City	1	52.79	62.02	9.23	52.02	64.88	12.86	51.73	53.48	1.75
Worcestershire	0	68.97	71.68	2.71	71.17	71.57	0.40	69.47	72.62	3.15

Appendix Section 4

Results calculated by attributing GP supply to LSOAs and aggregating based on fifths of LSOAs ranked by IMD score - **GP registrars and retainers excluded from the calculation - these are the basecase results used in the paper**

Figure A4.1: Trend in FTE GP supply over time excluding registrars and retainers

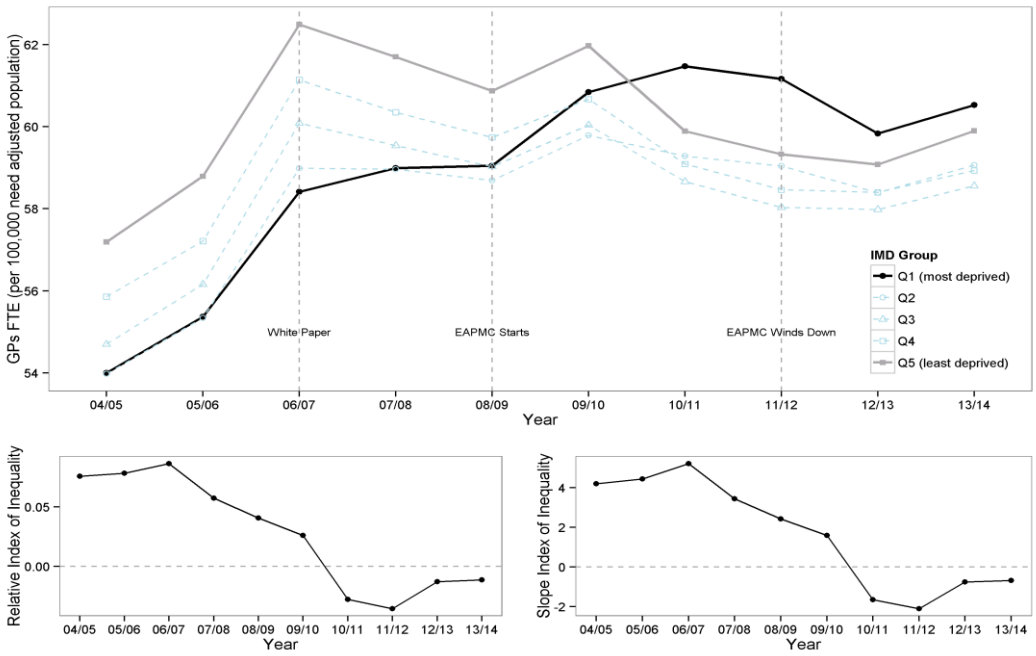


Figure A4.2: FTE GP supply in 2006/07 and 2011/12 excluding registrars and retainers

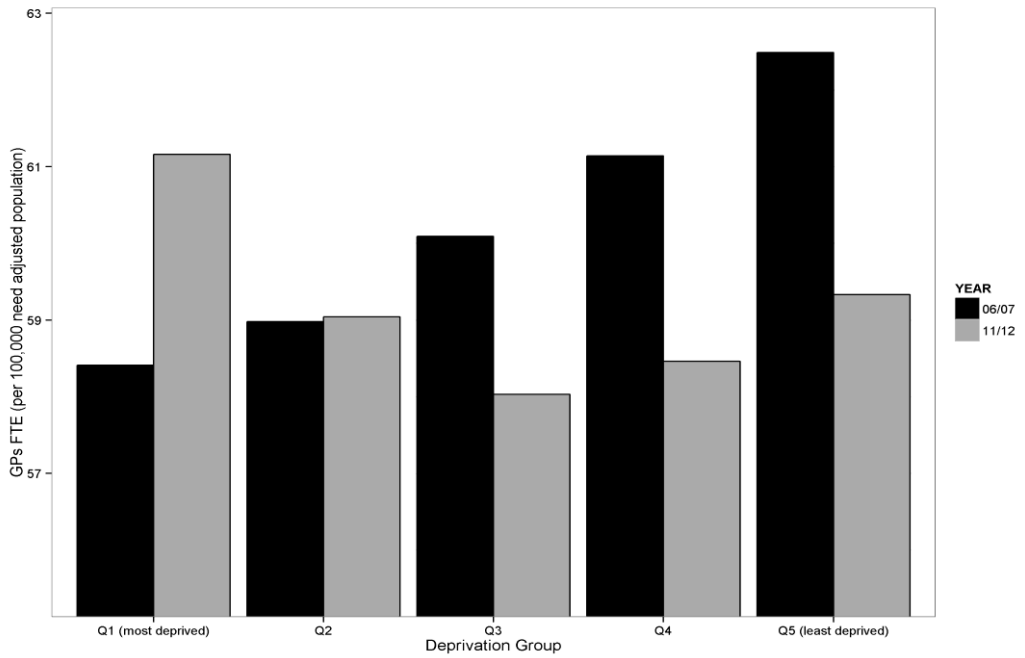


Figure A4.3: Trend in total headcount and FTE GP supply over time excluding registrars and retainers

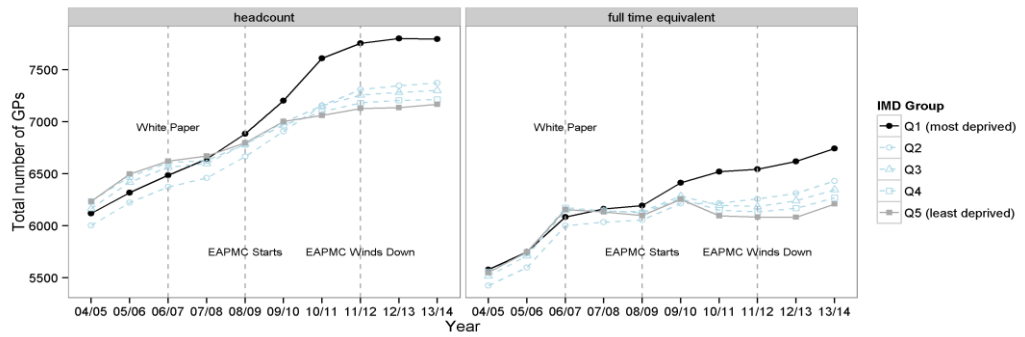
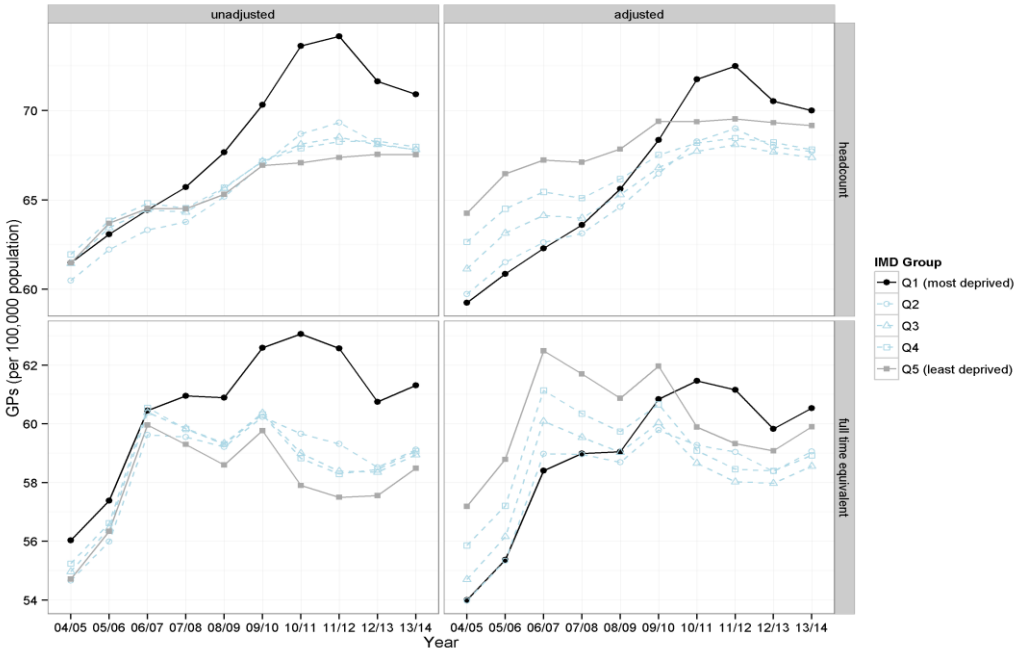


Figure A4.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time excluding registrars and retainers



Regression A4.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
     Min       1Q   Median       3Q      Max
-1.27994 -0.31105  0.01673  0.26021  1.44945

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)         57.3527     0.5315 107.910  < 2e-16 ***
YEAR2011             3.0080     0.7516   4.002  0.00103 **
IMD_DECILE           5.2152     0.8566   6.088 1.57e-05 ***
YEAR2011:IMD_DECILE -7.3164     1.2114  -6.040 1.72e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
Residual standard error: 0.778 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.719
F-statistic:  17.2 on 3 and 16 DF,  p-value: 2.917e-05
```

Figure A4.5: Distribution of change in FTE GP supply in PCTs between 2006/07 and 2011/12 by underdoctored status excluding registrars and retainers

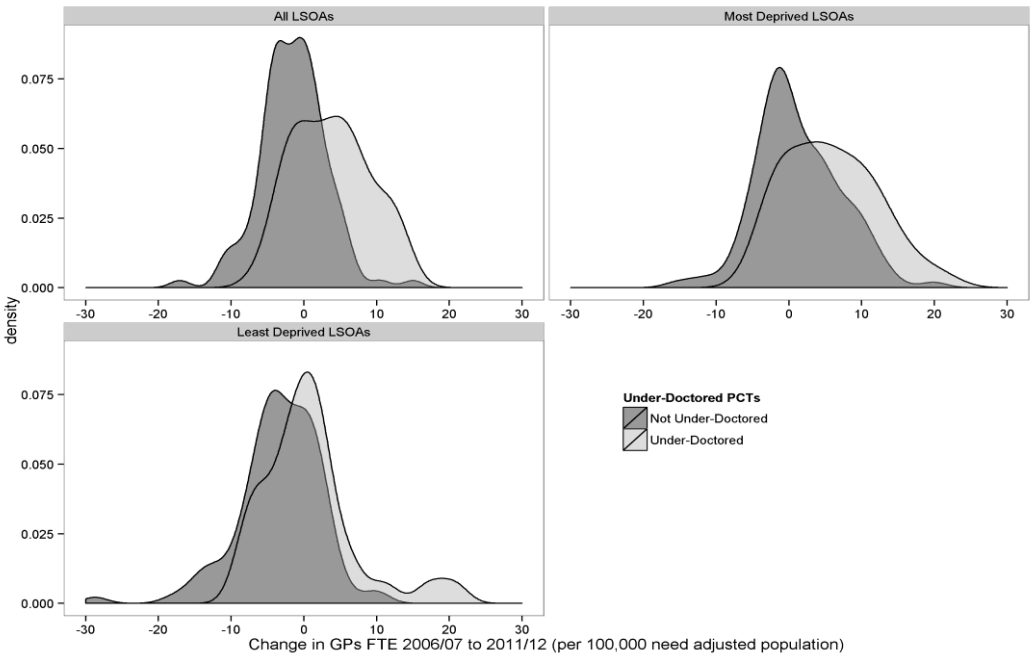


Figure A4.6: Distribution of GP Supply and Practices Nurses in 2013/14

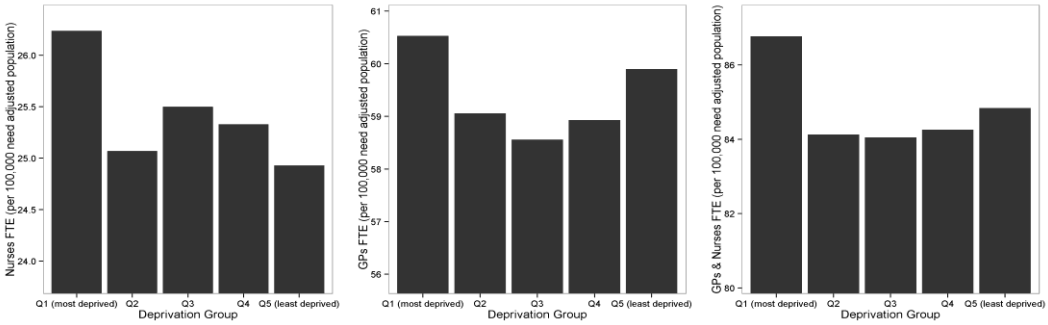


Figure A4.7: Distribution of GP Supply and Practices Nurses in 2013/14 (zeroed scale)

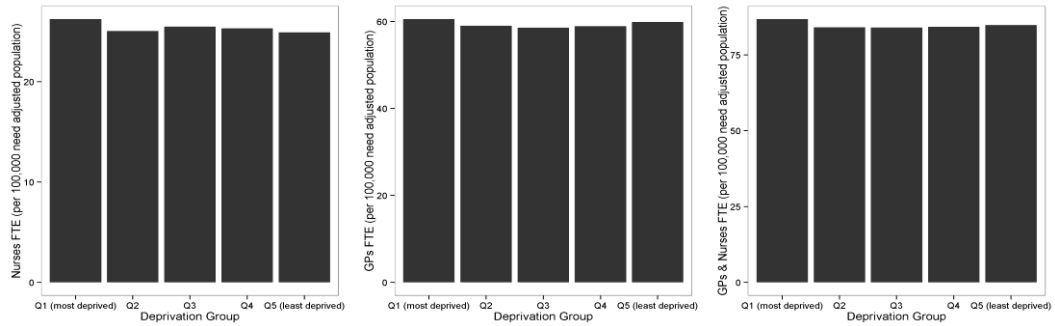


Figure A4.8: GP FTE per 100,000 at LSOA level in 2006/07 and 2011/12

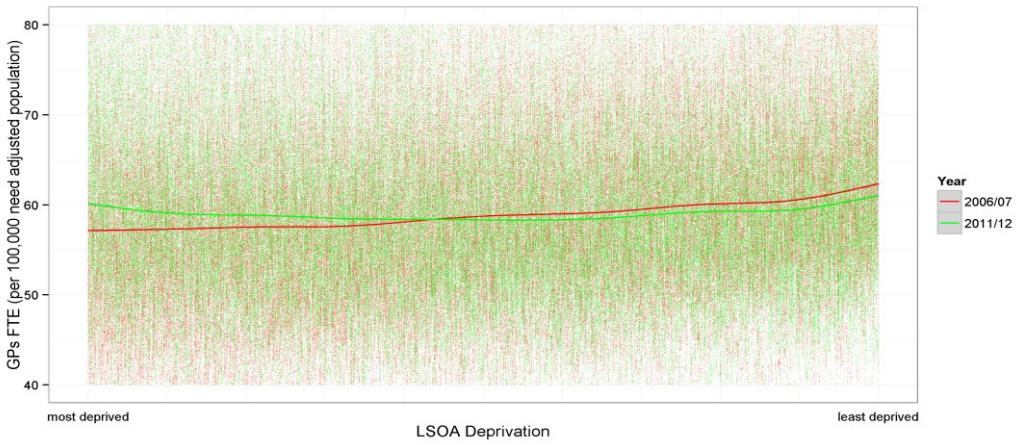


Figure A4.9: Change in GP FTE per 100,000 at LSOA level between 2006/07 and 2011/12

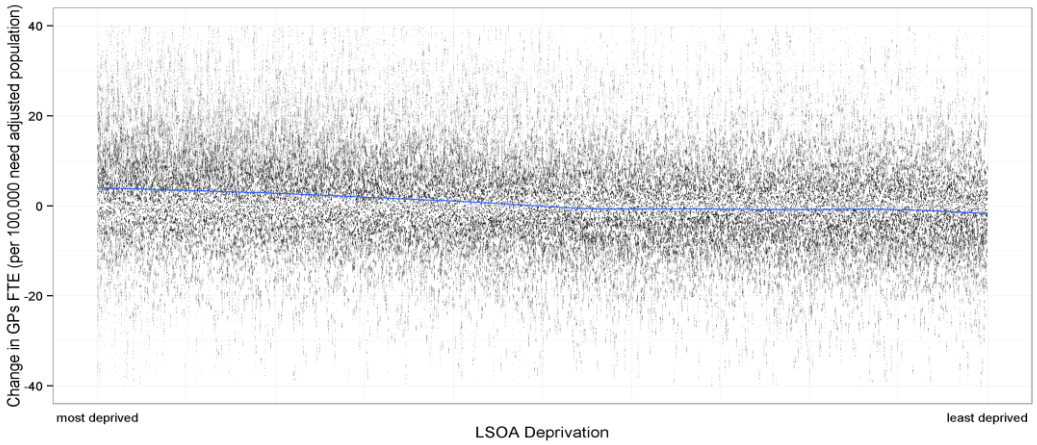
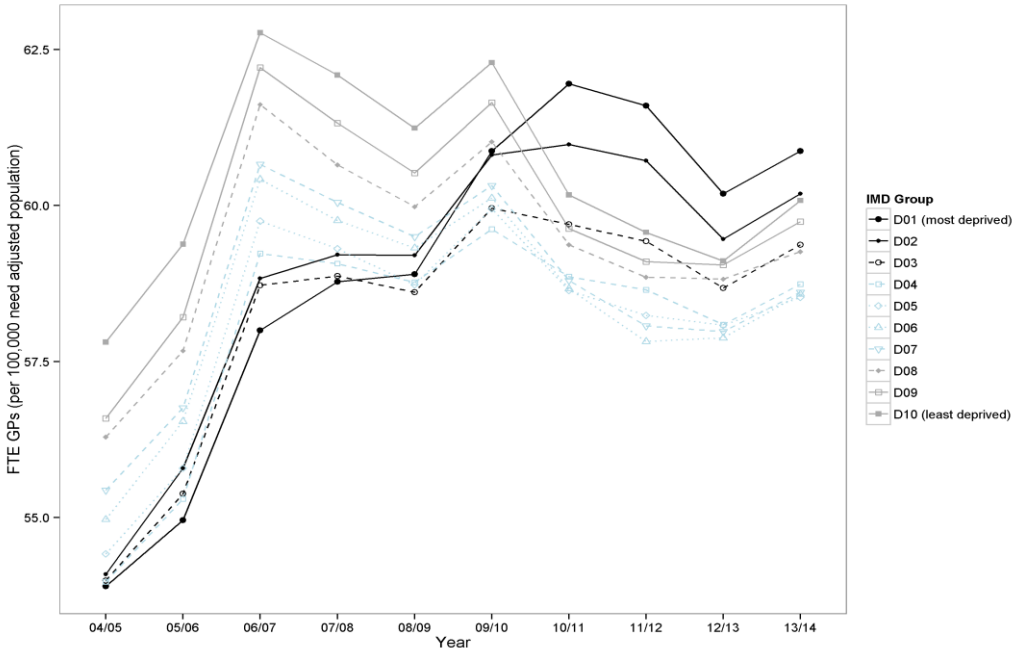


Figure A4.10: GP FTE by IMD Decile



Appendix Section 5

Results calculated by attributing GP supply to LSOAs and aggregating based on fifths of LSOAs ranked by IMD score - **all GPs including registrars and retainers** used in the calculations

Figure A5.1: Trend in FTE GP supply over time including registrars and retainers

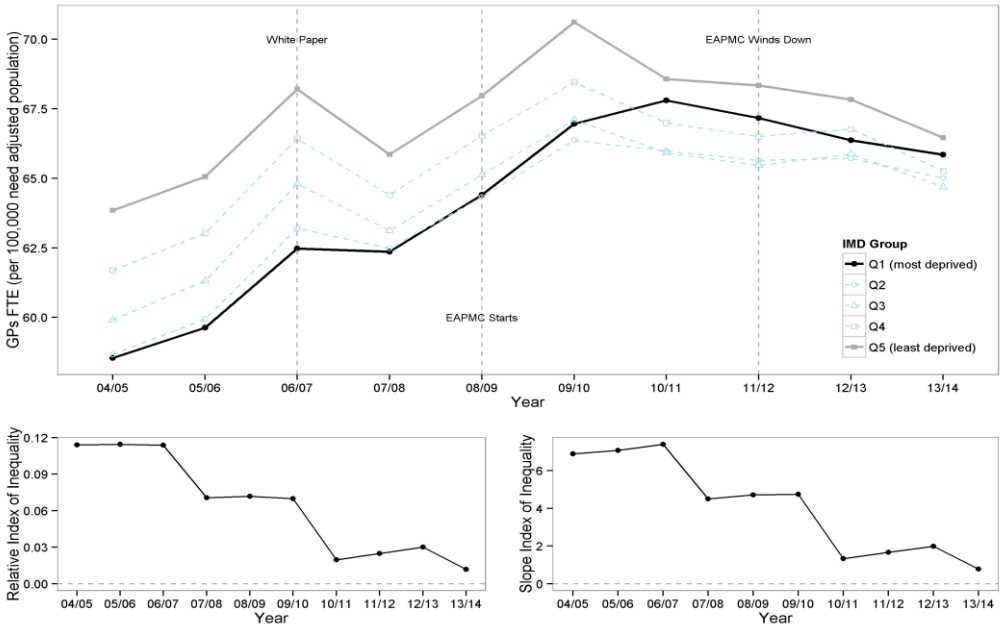


Figure A5.2: FTE GP supply in 2006/07 and 2011/12 including registrars and retainers

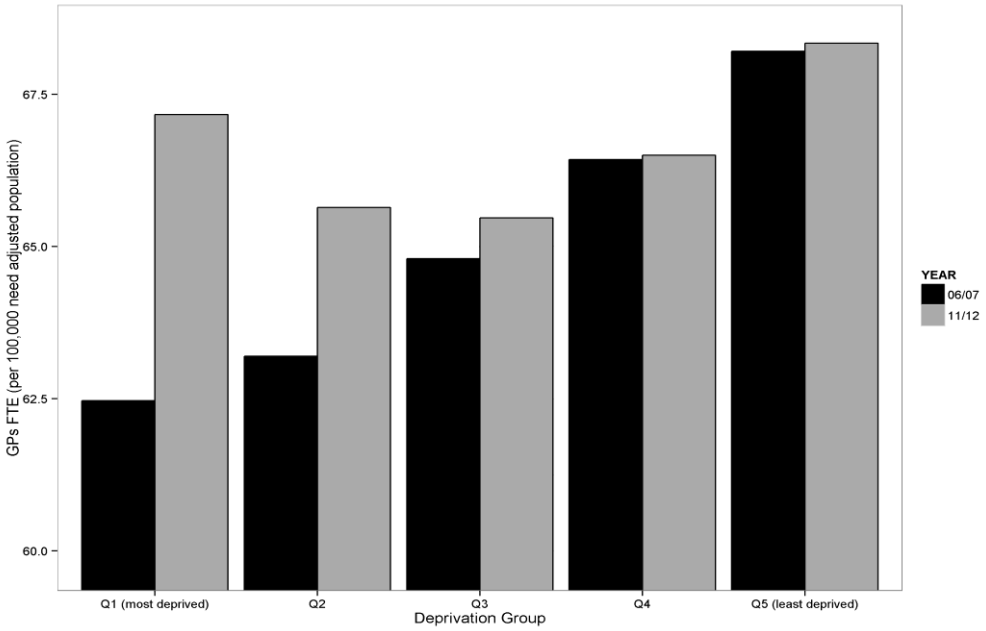


Figure A5.3: Trend in total headcount and FTE GP supply over time including registrars and retainers

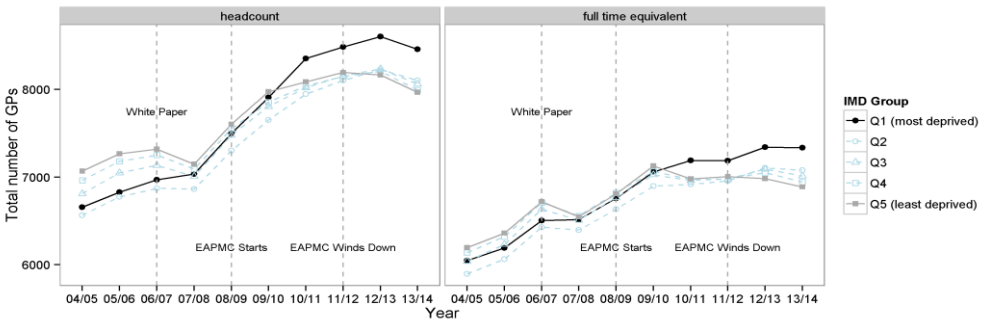
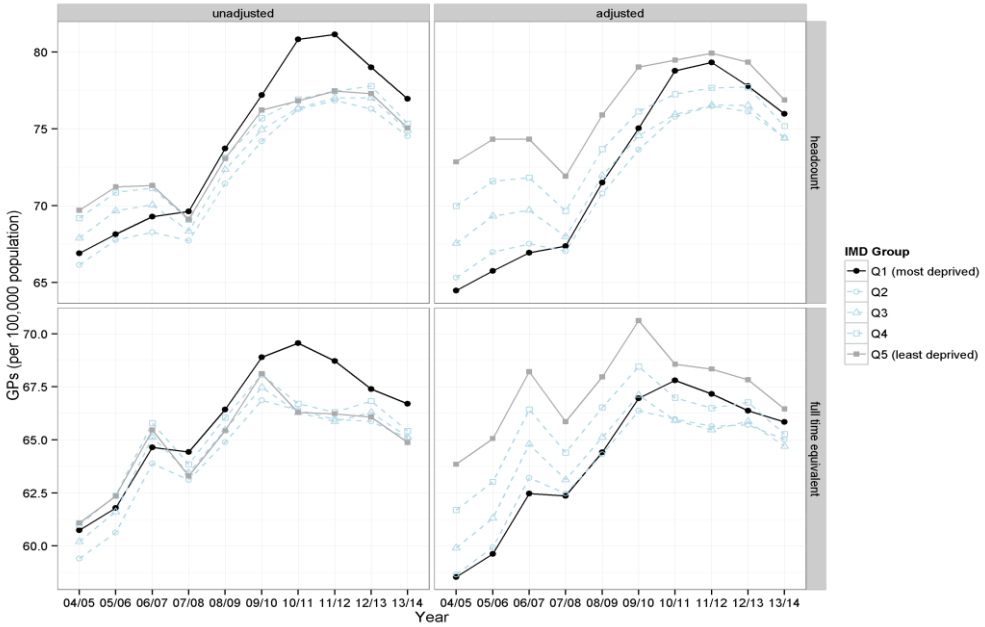


Figure A5.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time including registrars and retainers



Regression A5.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

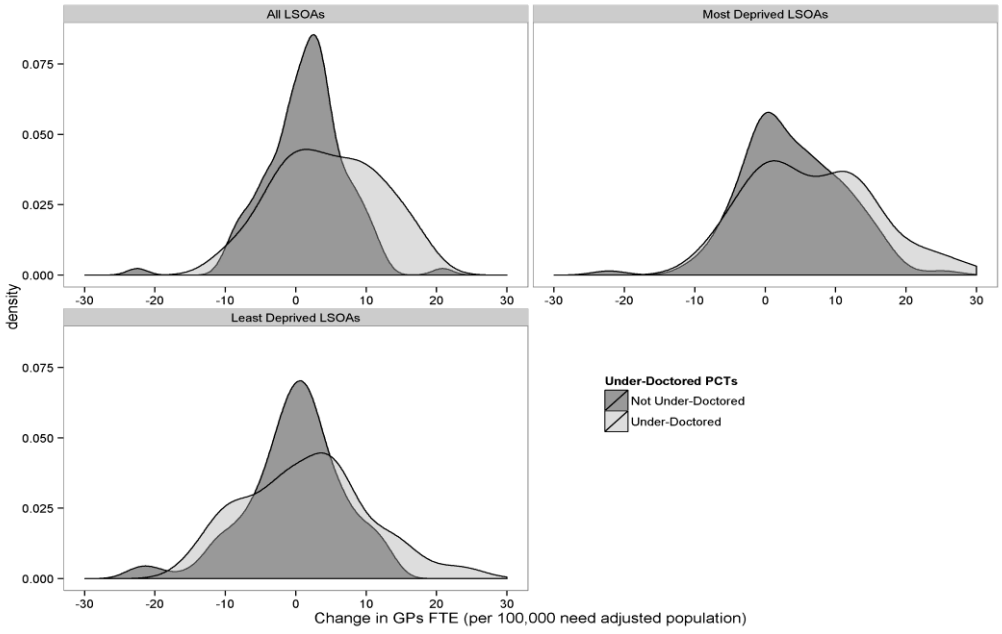
```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
     Min       1Q   Median       3Q      Max
-1.16200 -0.40845 -0.07703  0.42570  1.49800

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)         60.9533     0.5718 106.607  < 2e-16 ***
YEAR2011             4.7587     0.8086   5.885 2.30e-05 ***
IMD_DECILE           7.4012     0.9215   8.032 5.27e-07 ***
YEAR2011:IMD_DECILE -5.7412     1.3031  -4.406 0.000442 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.837 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.8138
F-statistic: 28.68 on 3 and 16 DF,  p-value: 1.131e-06
```

Figure A5.5: Distribution of change in FTE GP supply in PCTs between 2006/07 and 2011/12 by underdoctored status including registrars and retainers



Appendix Section 6

Results calculated by attributing GP supply to LSOAs and aggregating based on fifths of LSOAs ranked by IMD score - **only looking at GP registrars**

Figure A6.1: Trend in FTE GP supply over time registrars only

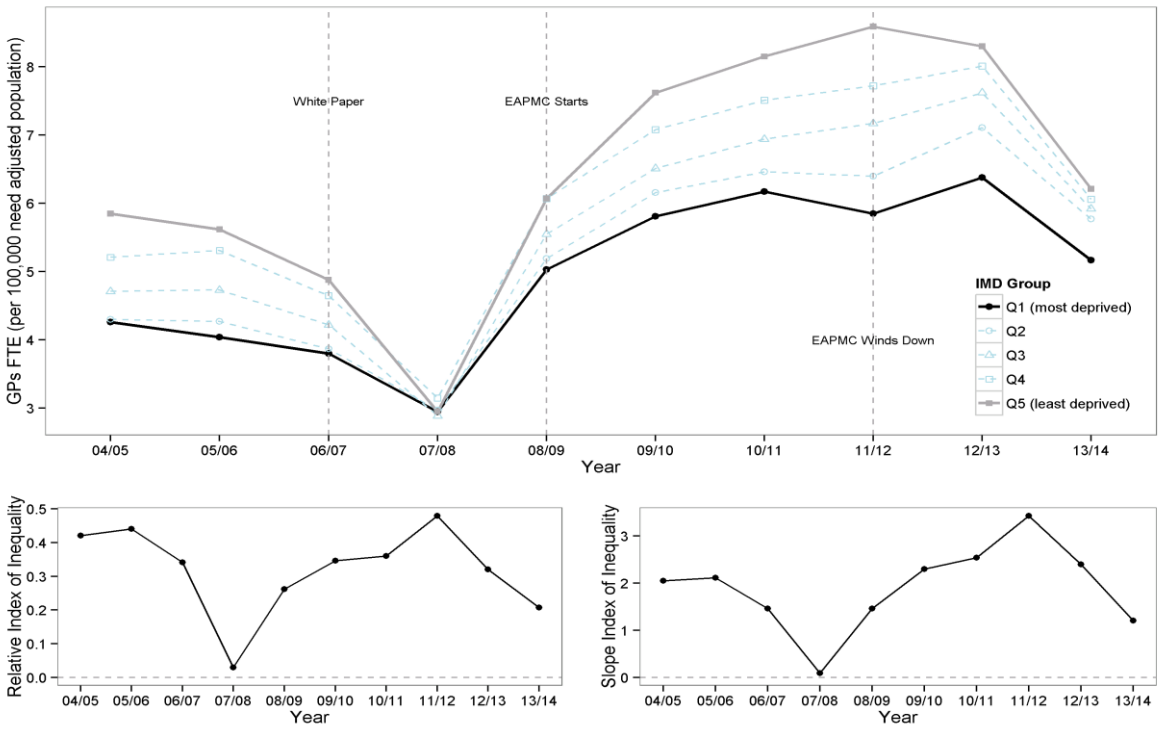


Figure A6.2: FTE GP supply in 2006/07 and 2011/12 registrars only

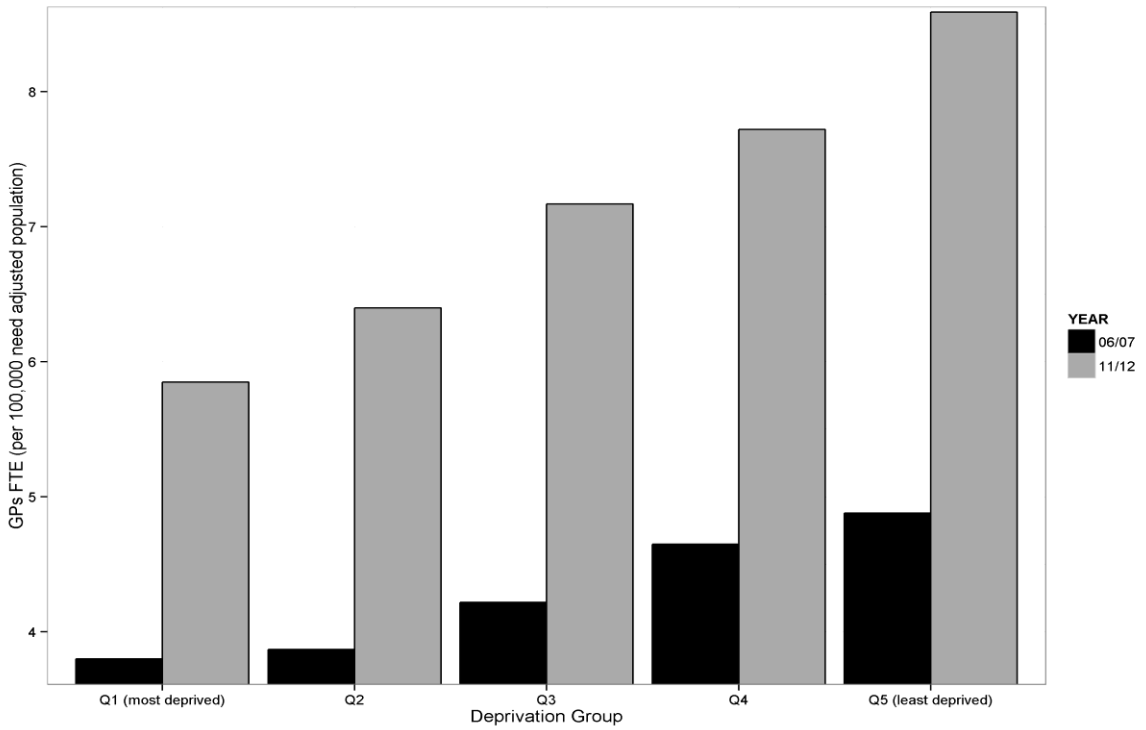


Figure A6.3: Trend in total headcount and FTE GP supply over time registrars only

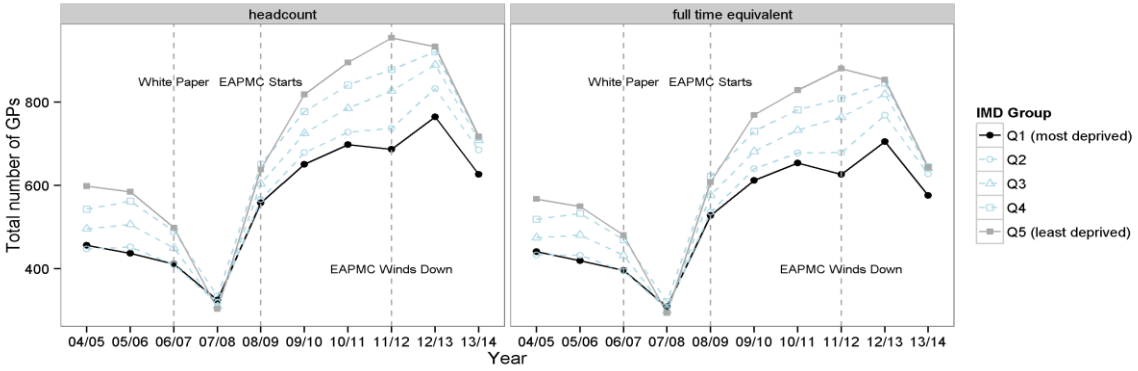
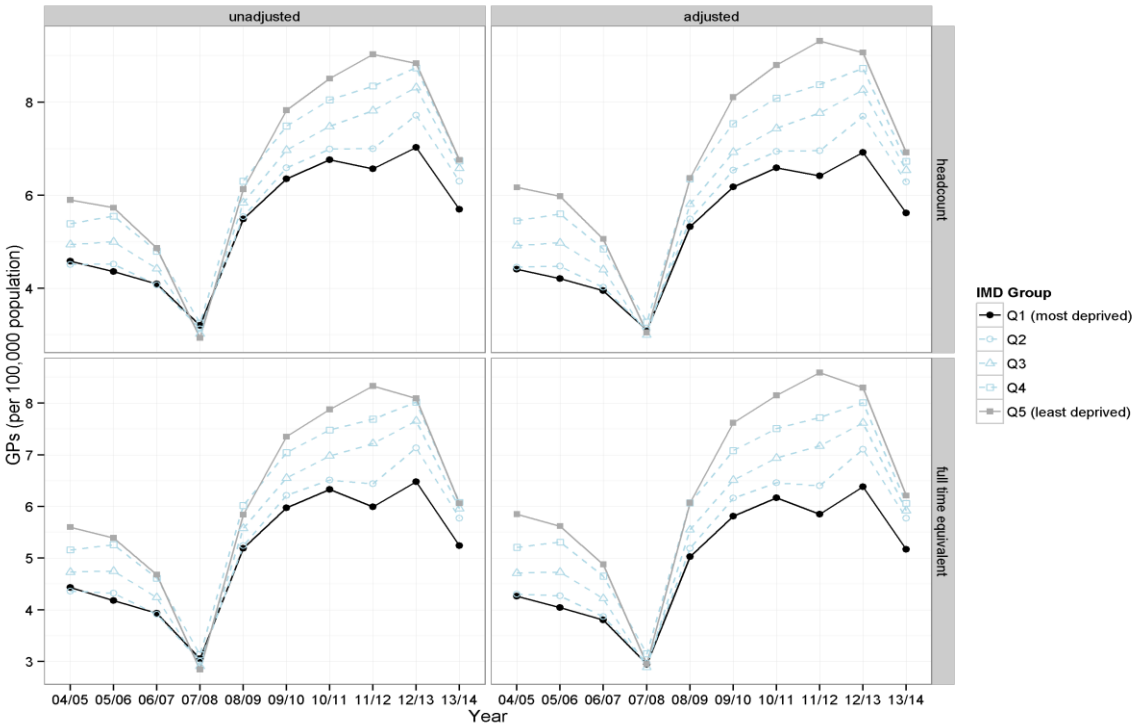


Figure A6.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time registrars only



Regression A6.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
     Min       1Q   Median       3Q      Max
-0.21273 -0.06820 -0.01009  0.07977  0.16139

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)         3.47800    0.07755   44.85  < 2e-16 ***
YEAR2011            1.78467    0.10967   16.27 2.24e-11 ***
IMD_DECILE          1.46182    0.12498   11.70 2.98e-09 ***
YEAR2011:IMD_DECILE 1.96788    0.17674   11.13 6.04e-09 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1135 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.9954
F-statistic:  1360 on 3 and 16 DF,  p-value: < 2.2e-16
```

Appendix Section 7

Results calculated by attributing GP supply to LSOAs and aggregating based on fifths of LSOAs ranked by IMD score - **only looking at GP retainers**

Figure A7.1: Trend in FTE GP supply over time retainers only

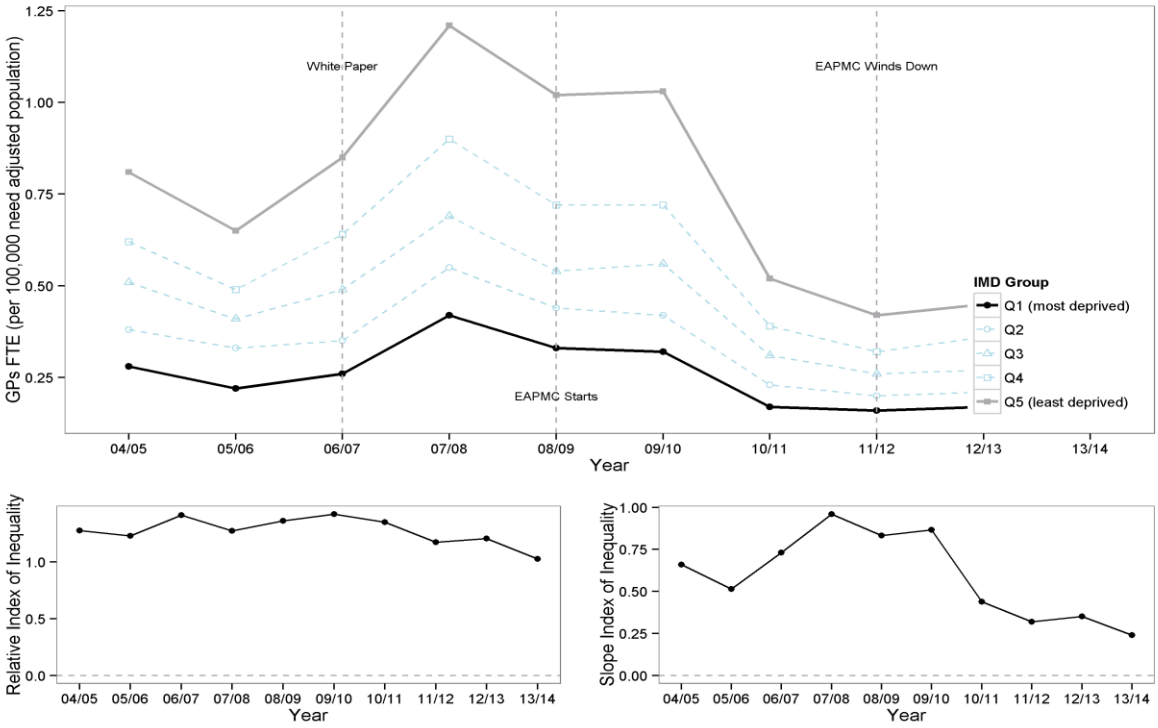


Figure A7.2: FTE GP supply in 2006/07 and 2011/12 retainers only

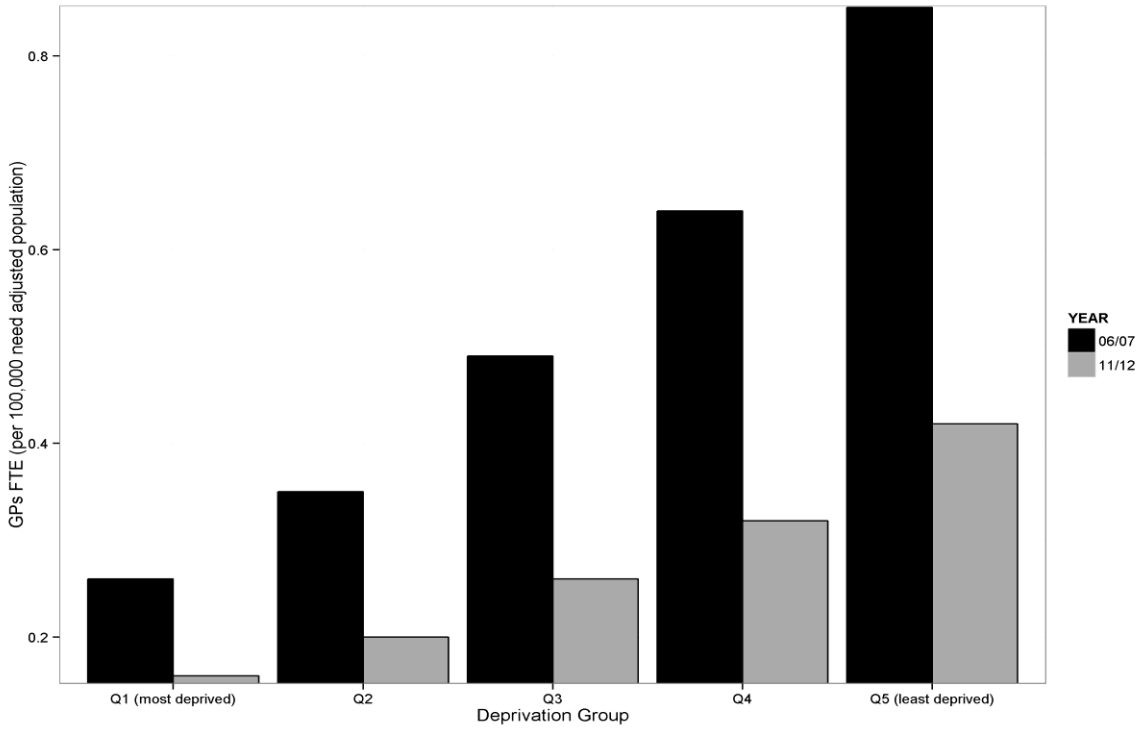


Figure A7.3: Trend in total headcount and FTE GP supply over time retainers only

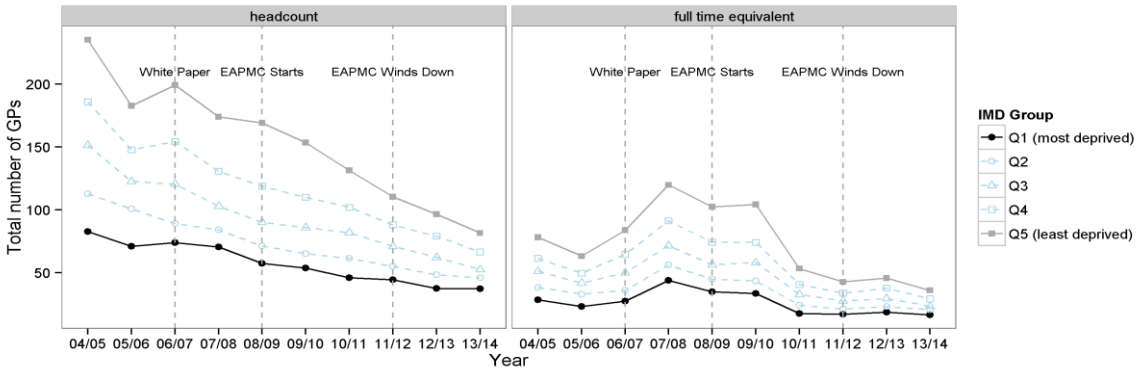
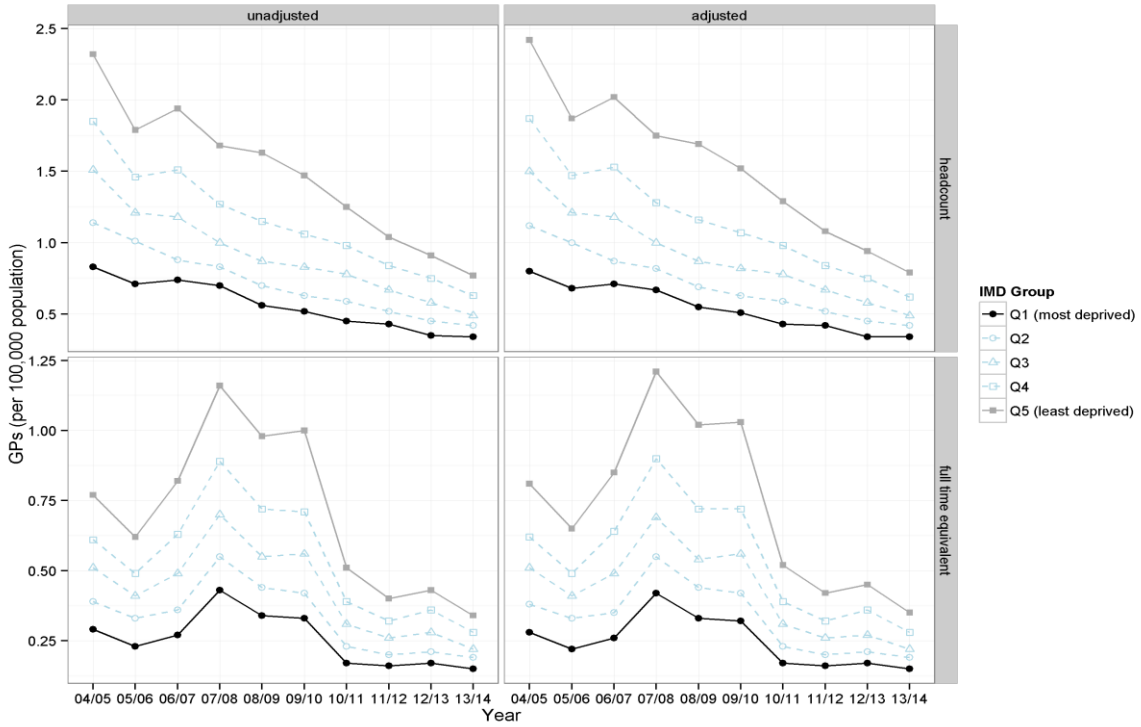


Figure A7.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time retainers only



Regression A7.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
      Min        1Q    Median        3Q       Max
-0.049273 -0.022864 -0.010758  0.008636  0.121818

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)          0.11667    0.03033   3.847  0.00143 **
YEAR2011            -0.02000    0.04289  -0.466  0.64730
IMD_DECILE           0.73152    0.04888  14.965 7.91e-11 ***
YEAR2011:IMD_DECILE -0.41273    0.06913  -5.970 1.96e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.0444 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.9565
F-statistic: 140.4 on 3 and 16 DF,  p-value: 1.056e-11
```

Appendix Section 8

Results calculated by **attributing IMD scores to practices excluding registrars and retainers** and aggregating based on fifths of population weighted practices ranked by IMD score

Figure A8.1: Trend in FTE GP supply over time excluding registrars and retainers practice level aggregation

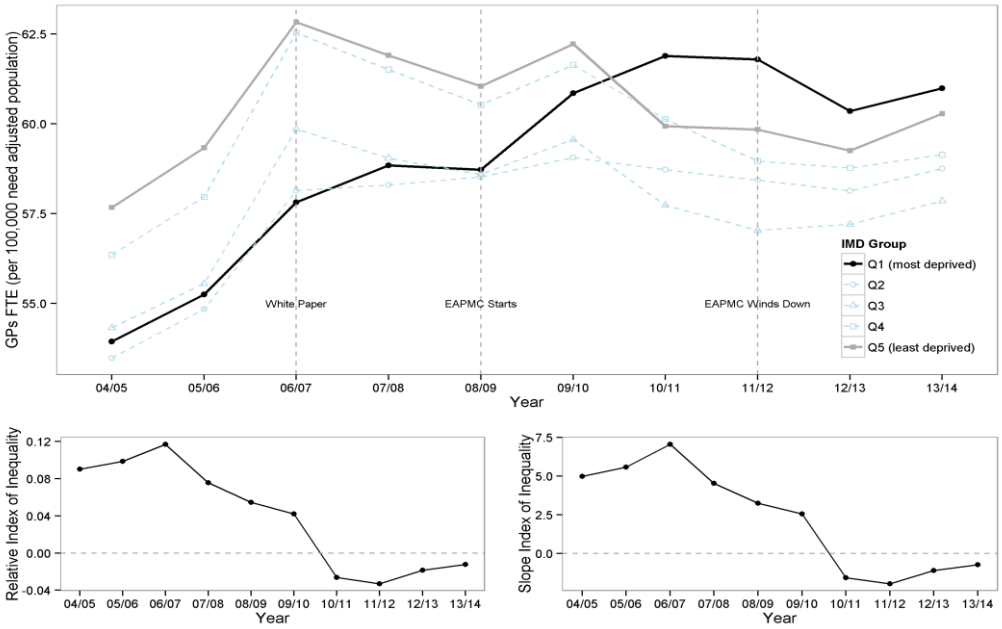


Figure A8.2: FTE GP supply in 2006/07 and 2011/12 excluding registrars and retainers practice level aggregation

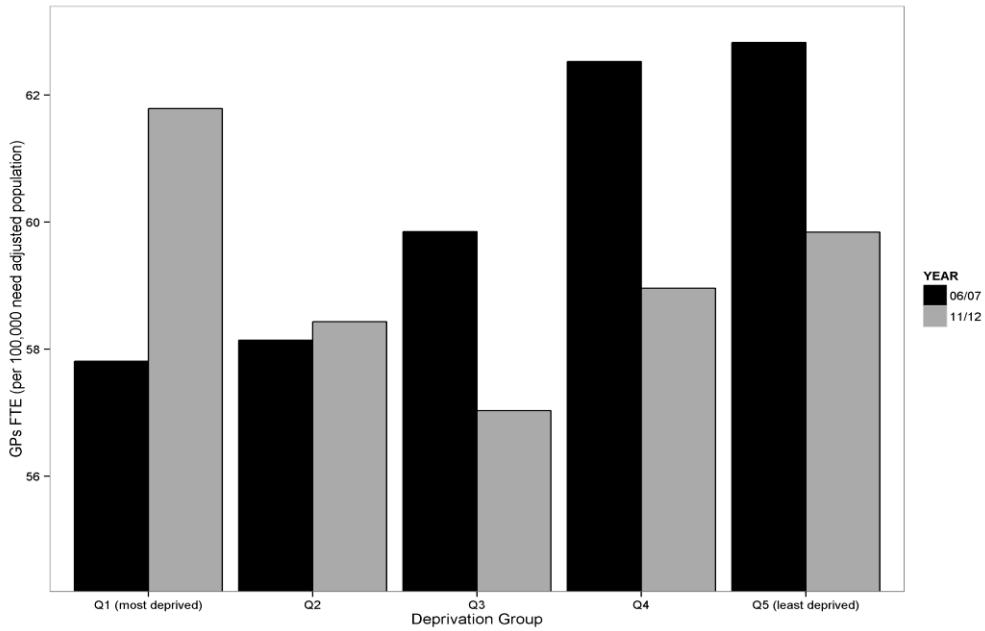


Figure A8.3: Trend in total headcount and FTE GP supply over time excluding registrars and retainers practice level aggregation

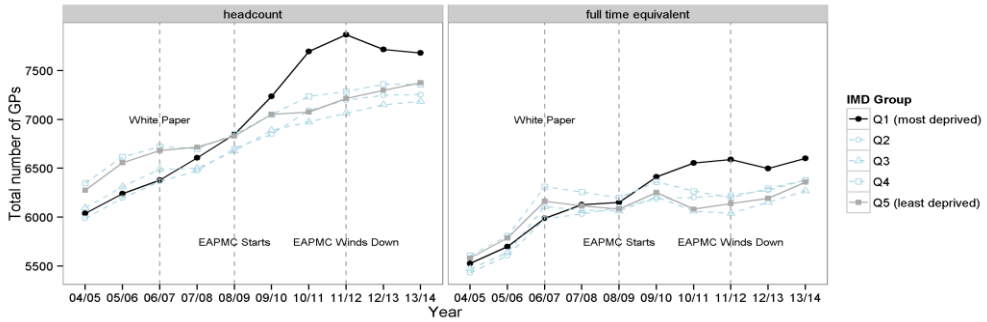
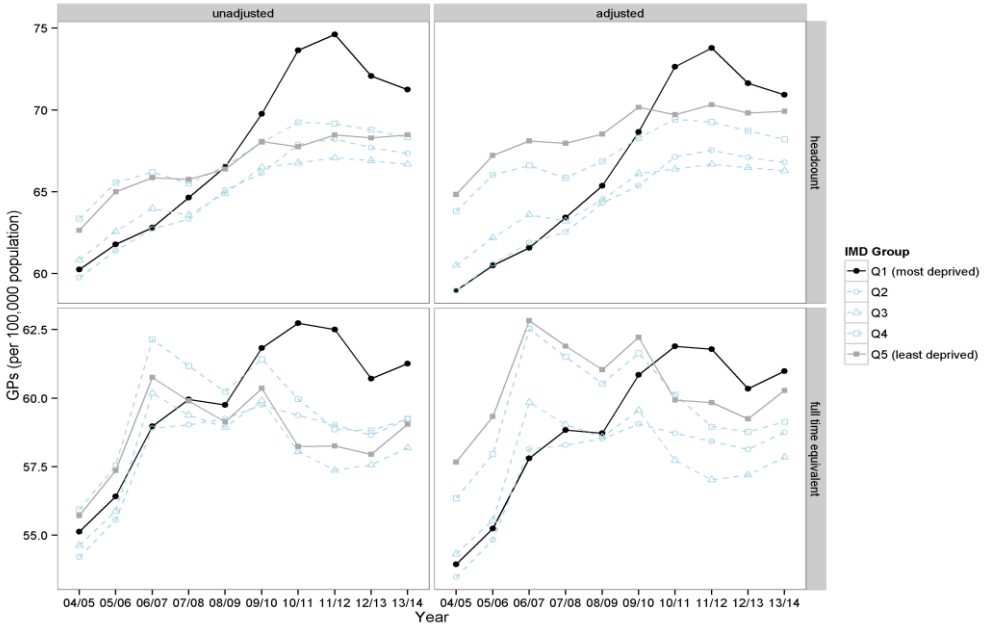


Figure A8.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time excluding registrars and retainers practice level aggregation



Regression A8.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
    Min      1Q  Median      3Q     Max
-2.6158 -0.6283 -0.2555  0.8089  3.3422

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)           56.349      0.992  56.803  < 2e-16 ***
YEAR2011               3.934      1.403   2.804 0.012732 *
IMD_DECILE             7.054      1.599   4.412 0.000436 ***
YEAR2011:IMD_DECILE   -9.009      2.261  -3.985 0.001066 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.452 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.5182
F-statistic: 7.811 on 3 and 16 DF,  p-value: 0.00196
```

Figure A8.5 Numbers of LSOA per GP Practice over Time

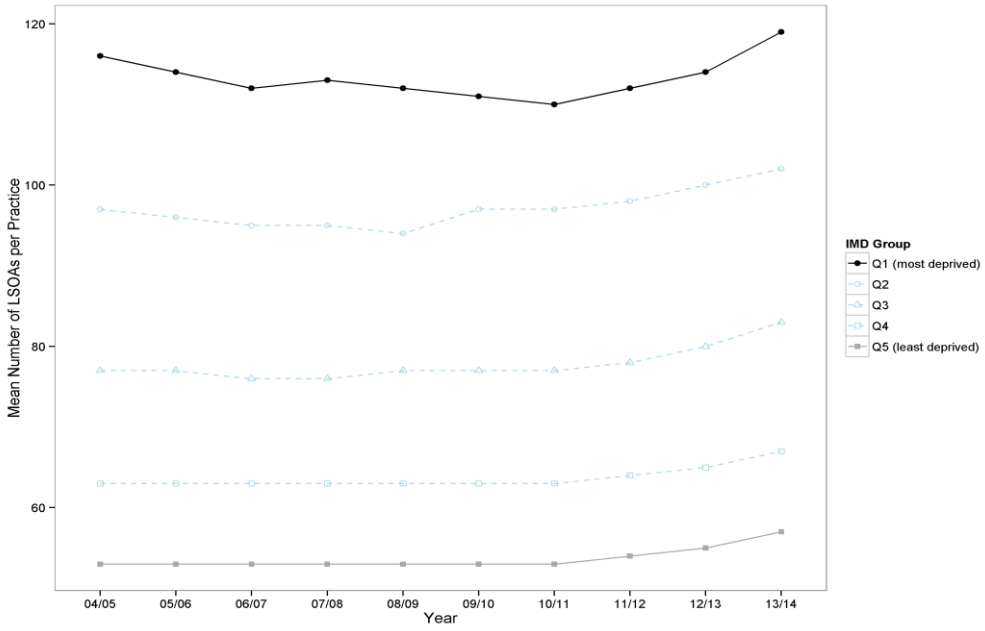
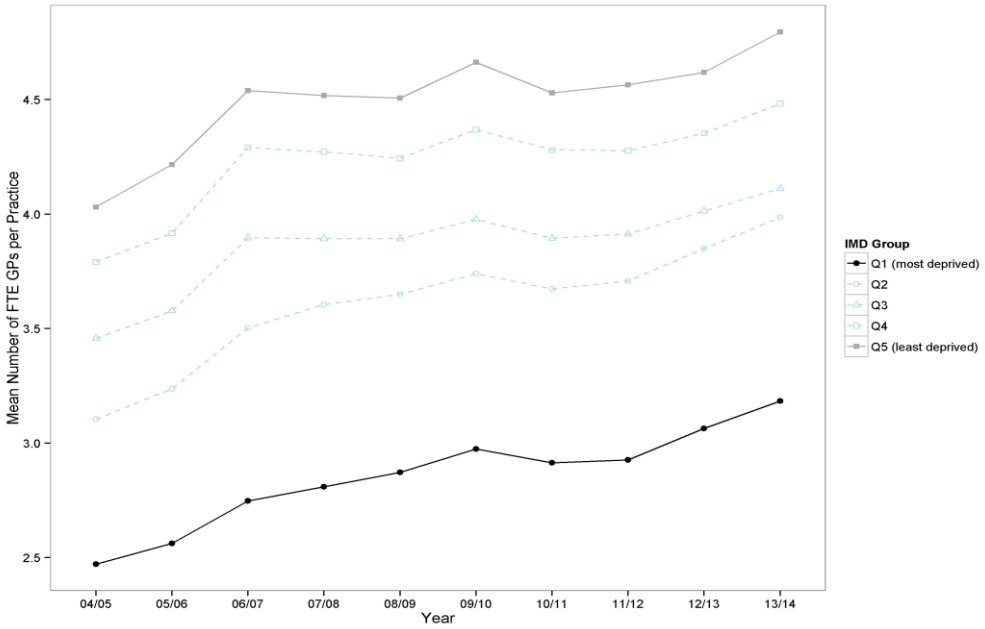


Figure A8.6 Numbers of FTE GPs per Practice over Time



Appendix Section 9

Results calculated by **attributing IMD scores to practices** and aggregating based on fifths of population weighted practices ranked by IMD score - all GPs including registrars and retainers included in the calculation

Figure A9.1: Trend in FTE GP supply over time including registrars and retainers practice level aggregation

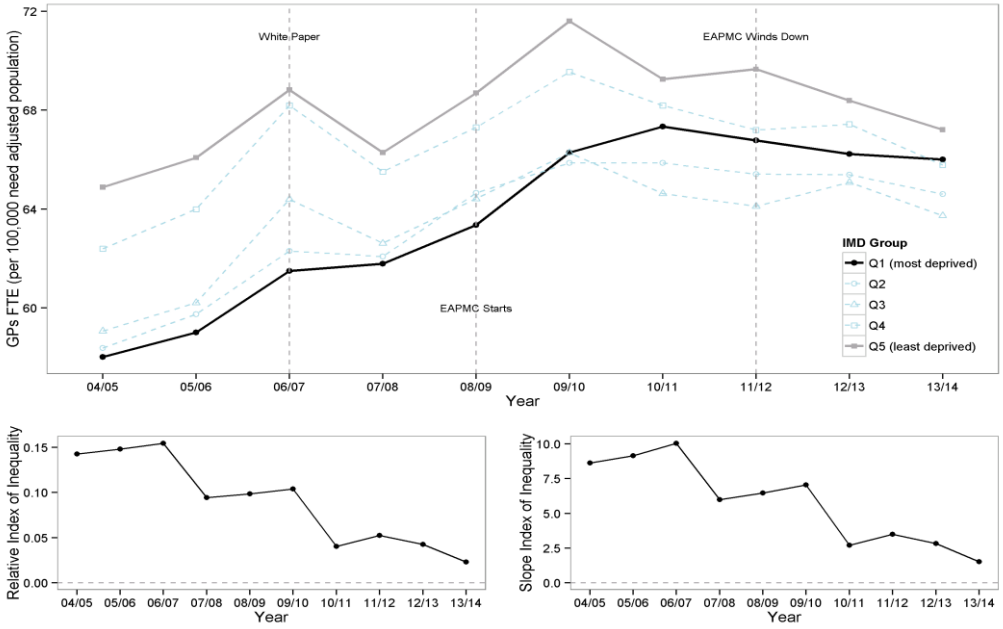


Figure A9.2: FTE GP supply in 2006/07 and 2011/12 including registrars and retainers practice level aggregation

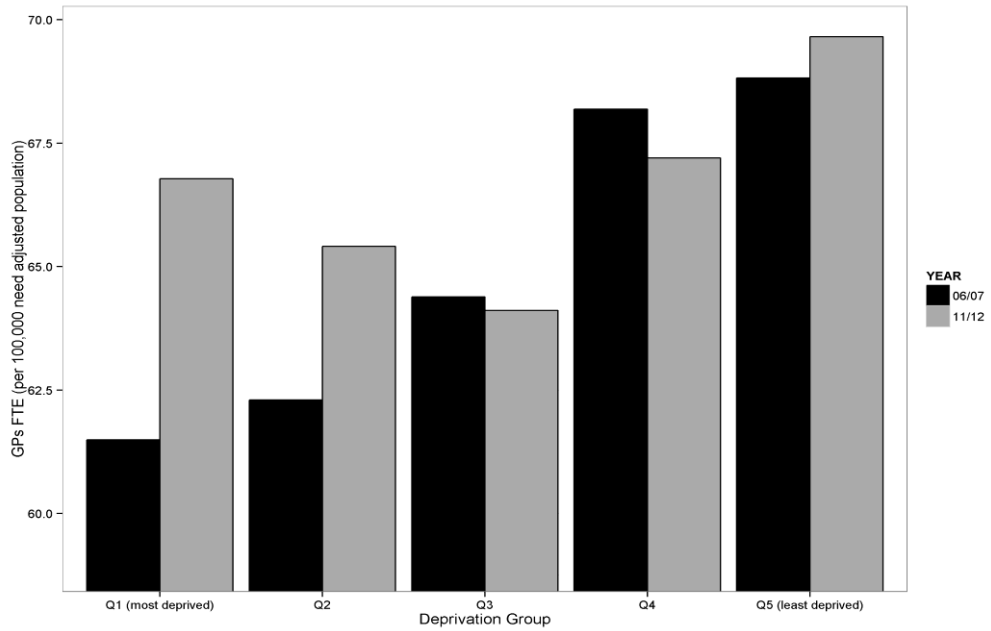


Figure A9.3: Trend in total headcount and FTE GP supply over time including registrars and retainers practice level aggregation

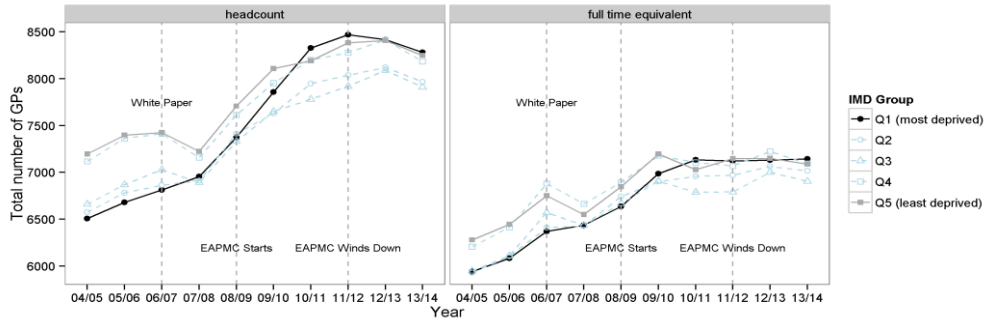
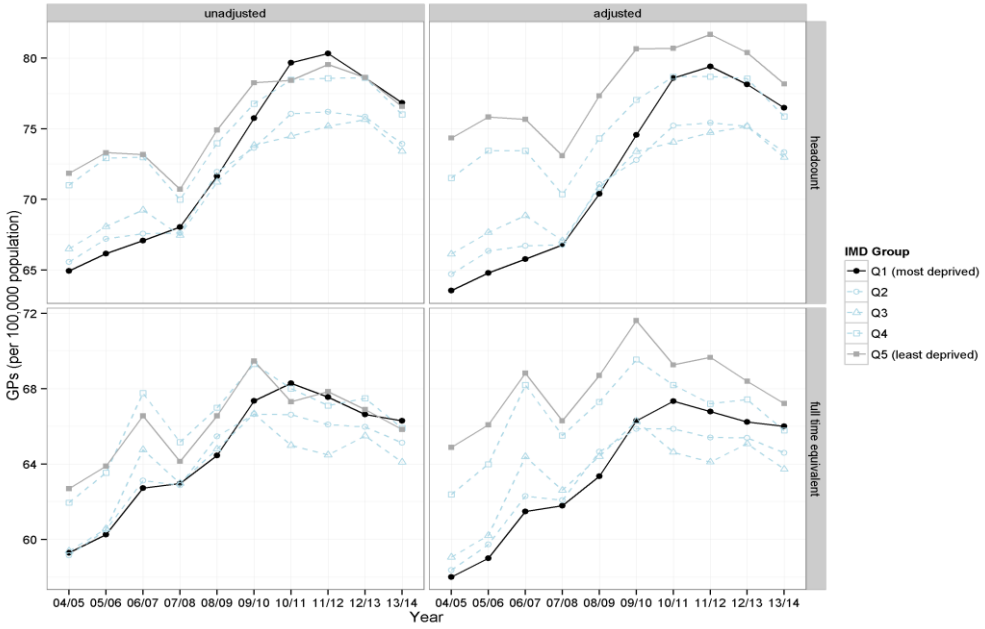


Figure A9.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time including registrars and retainers practice level aggregation



Regression A9.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
    Min      1Q  Median      3Q     Max
-2.9198 -0.8870 -0.2299  1.1036  3.7836

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)           59.508      1.127  52.782  < 2e-16 ***
YEAR2011               5.210      1.594   3.268  0.00484 **
IMD_DECILE            10.056      1.817   5.535 4.53e-05 ***
YEAR2011:IMD_DECILE   -6.573      2.570  -2.558  0.02107 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.65 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.6544
F-statistic: 12.99 on 3 and 16 DF,  p-value: 0.0001479
```

Appendix Section 10

Results calculated by attributing GP supply to LSOAs and aggregating based on fifths of LSOAs ranked by IMD score - **GP registrars and retainers excluded from the calculation - results for London**

Figure A10.1: Trend in FTE GP supply over time excluding registrars and retainers

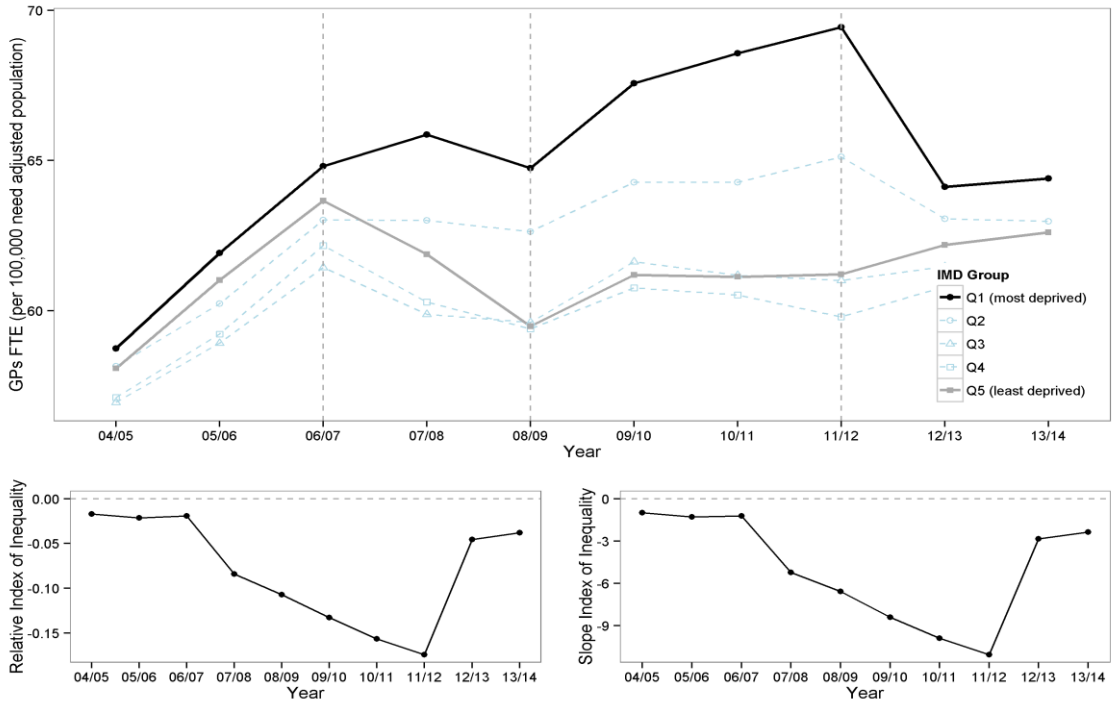


Figure A10.2: FTE GP supply in 2006/07 and 2011/12 excluding registrars and retainers

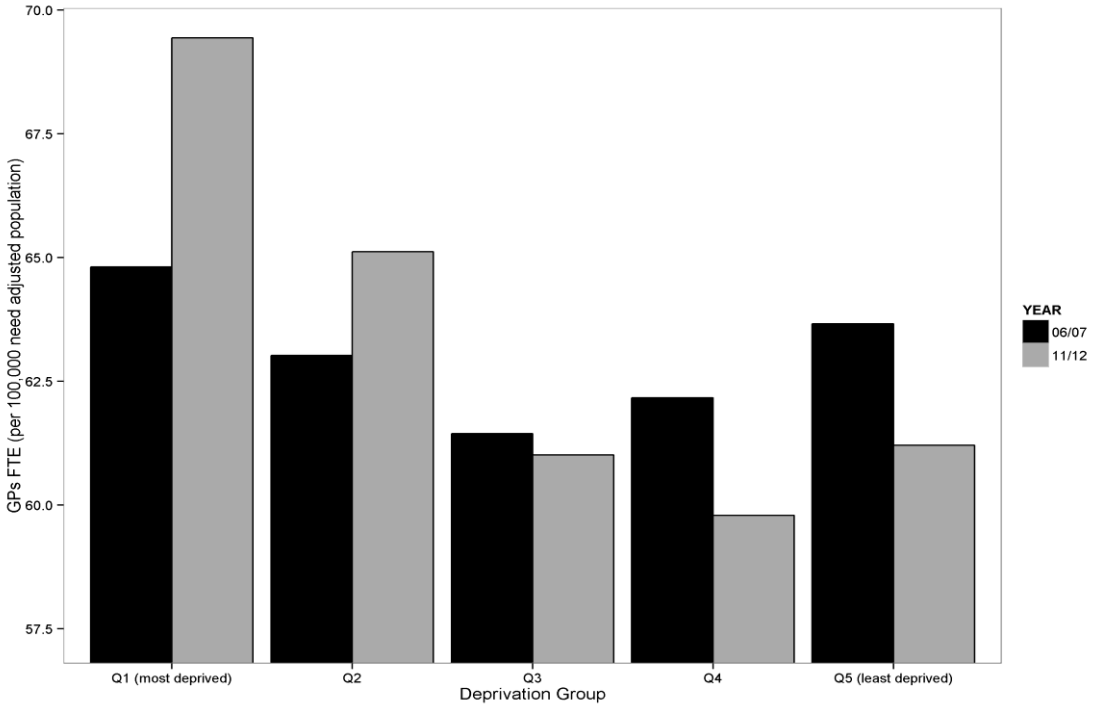


Figure A10.3: Trend in total headcount and FTE GP supply over time excluding registrars and retainers

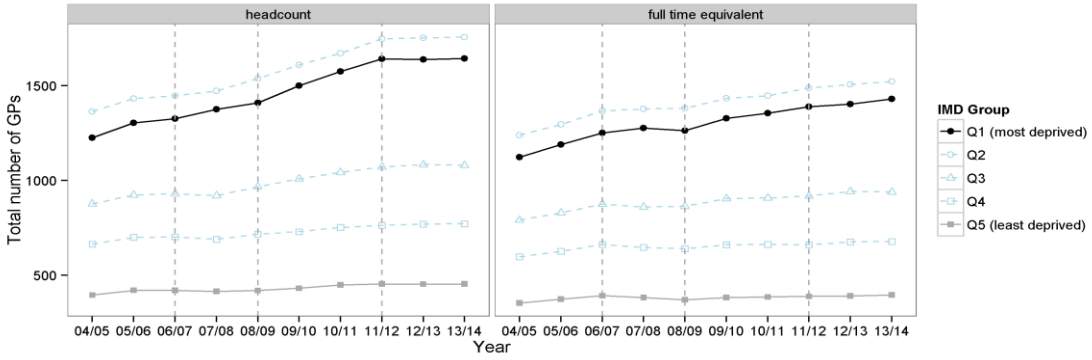
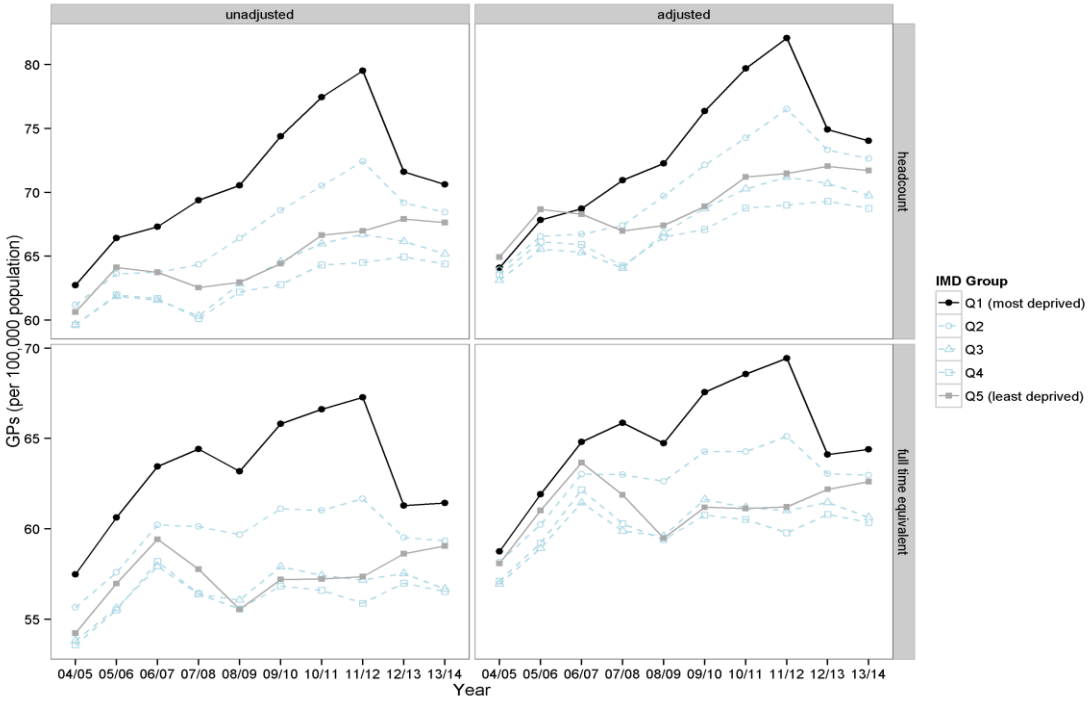


Figure A10.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time excluding registrars and retainers



Regression A10.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
    Min      1Q  Median      3Q     Max
-2.4398 -1.1211 -0.2092  1.3358  3.4882

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)          63.687      1.257  50.664  < 2e-16 ***
YEAR2011              5.789      1.778   3.257  0.00495 **
IMD_DECILE           -1.215      2.026  -0.600  0.55704
YEAR2011:IMD_DECILE  -9.830      2.865  -3.431  0.00343 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.84 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.5896
F-statistic:  10.1 on 3 and 16 DF,  p-value: 0.0005652
```

Appendix Section 11

Results calculated by attributing GP supply to LSOAs and aggregating based on fifths of LSOAs ranked by IMD score - **GP registrars and retainers excluded from the calculation - results for North of England**

Figure A11.1: Trend in FTE GP supply over time excluding registrars and retainers

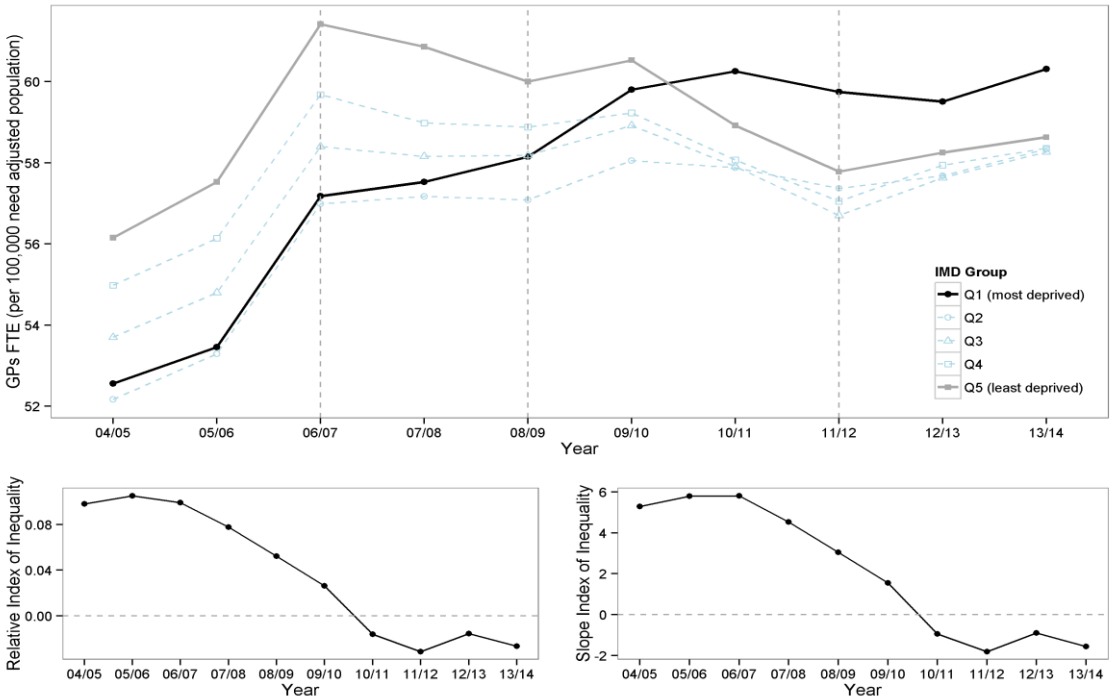


Figure A11.2: FTE GP supply in 2006/07 and 2011/12 excluding registrars and retainers

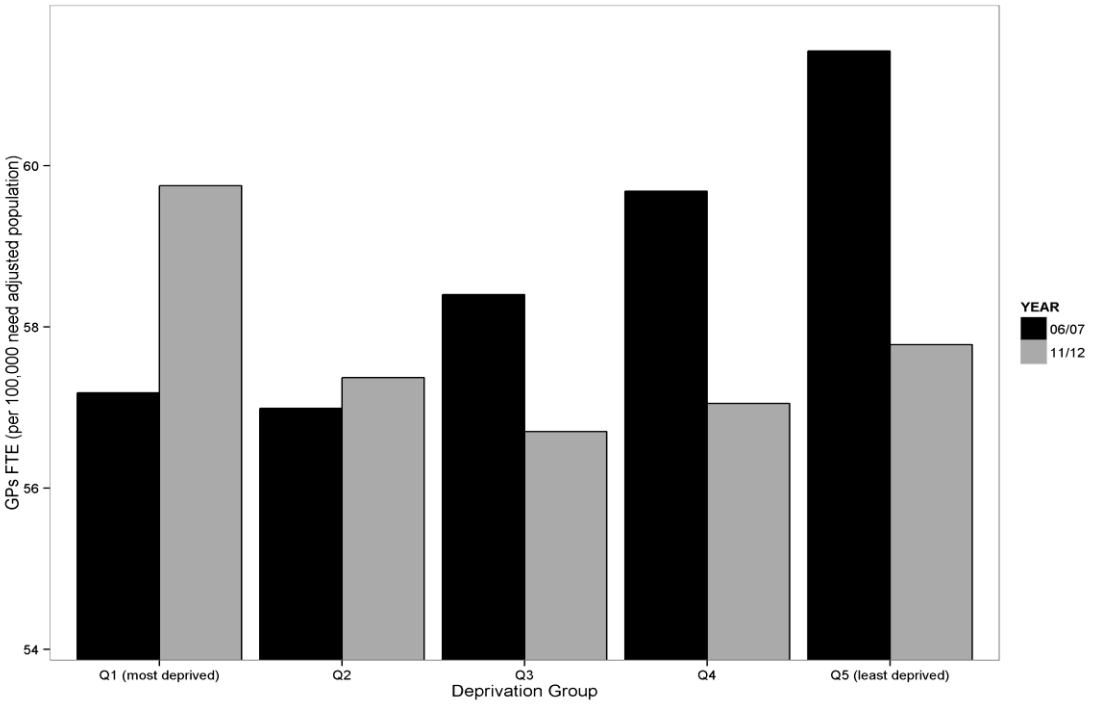


Figure A11.3: Trend in total headcount and FTE GP supply over time excluding registrars and retainers

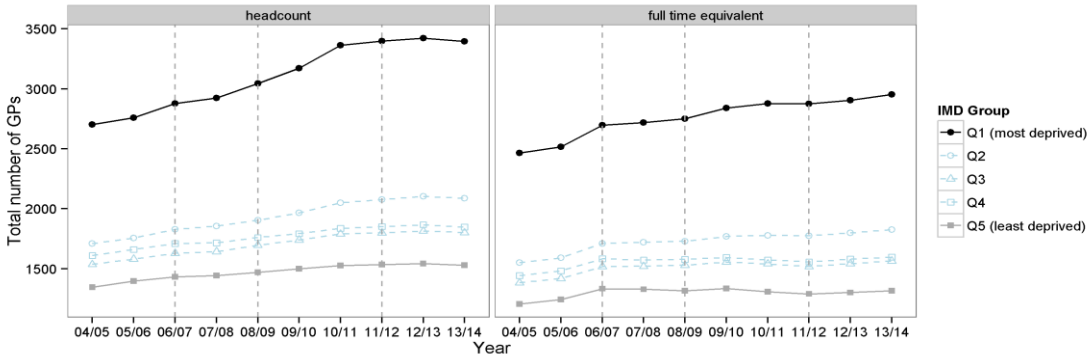
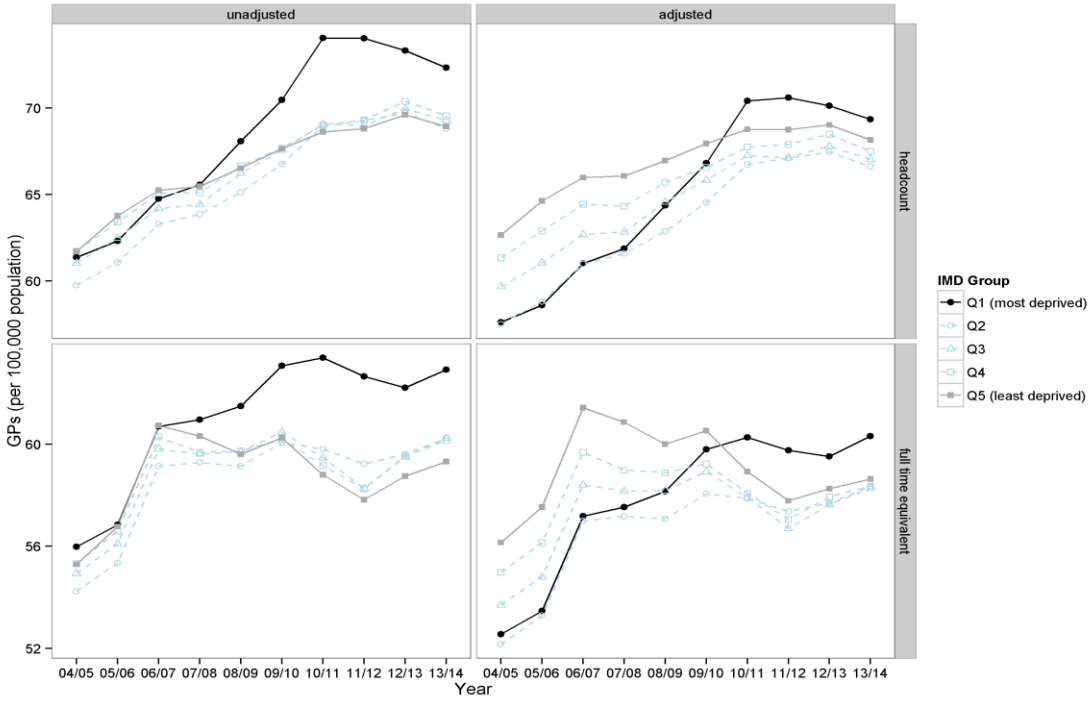


Figure A11.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time excluding registrars and retainers



Regression A11.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
     Min       1Q   Median       3Q      Max
-1.38648 -0.67520 -0.01955  0.44667  2.18964

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)          55.5367     0.6595  84.211  < 2e-16 ***
YEAR2011              3.1447     0.9327   3.372 0.003885 **
IMD_DECILE            5.8152     1.0629   5.471 5.13e-05 ***
YEAR2011:IMD_DECILE  -7.6248     1.5031  -5.073 0.000113 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9654 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.6529
F-statistic: 12.91 on 3 and 16 DF,  p-value: 0.0001531
```

Appendix Section 12

Results calculated by attributing GP supply to LSOAs and aggregating based on fifths of LSOAs ranked by IMD score - **GP registrars and retainers excluded from the calculation - results for Midlands and East of England**

Figure A12.1: Trend in FTE GP supply over time excluding registrars and retainers

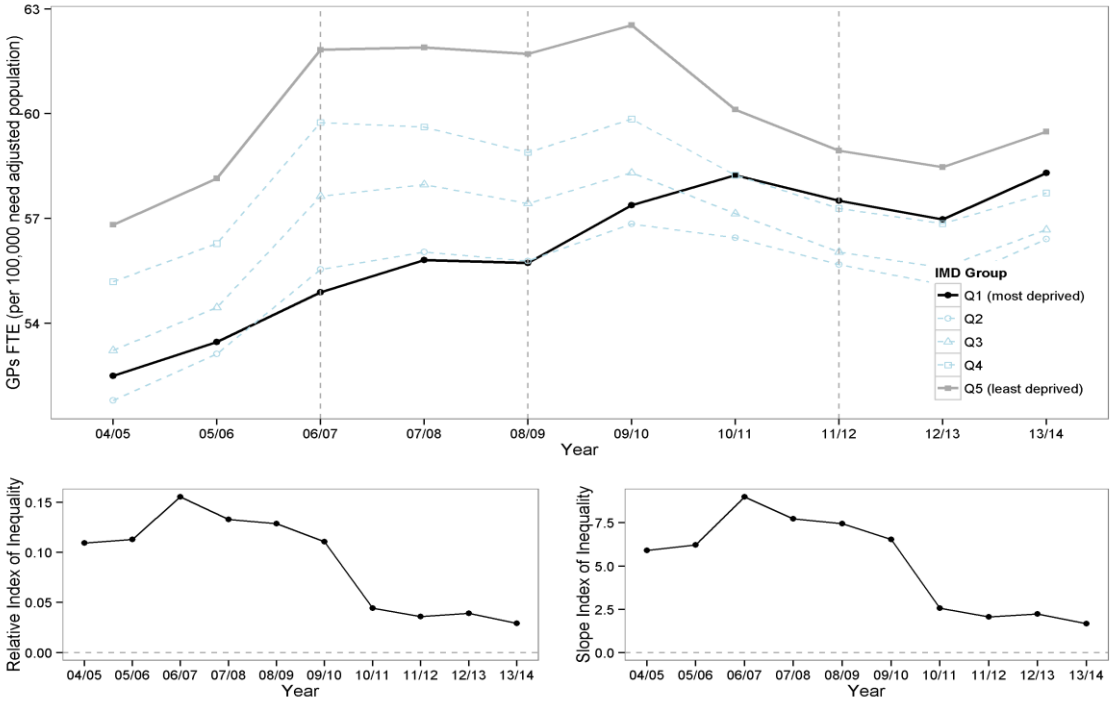


Figure A12.2: FTE GP supply in 2006/07 and 2011/12 excluding registrars and retainers

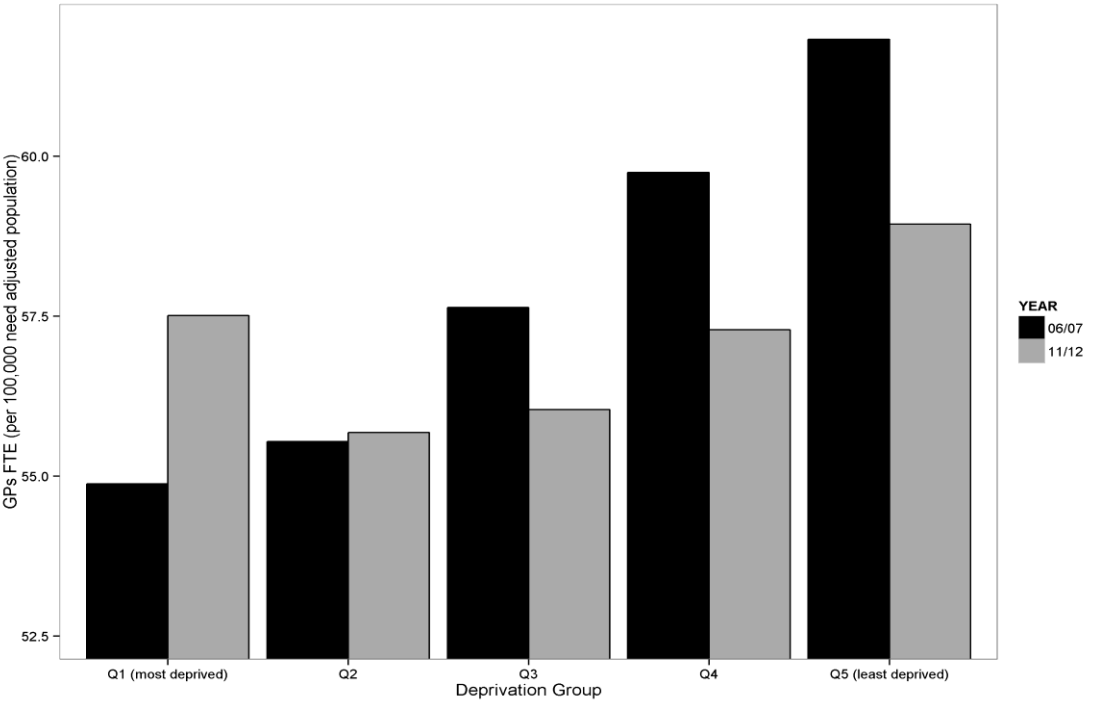


Figure A12.3: Trend in total headcount and FTE GP supply over time excluding registrars and retainers

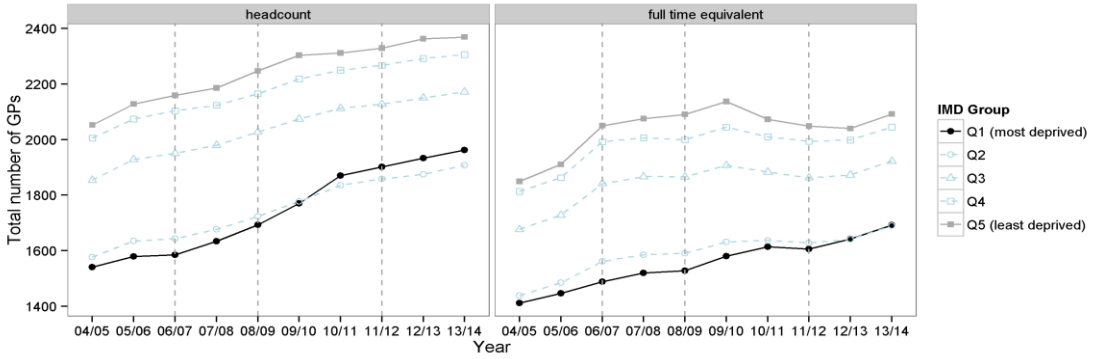
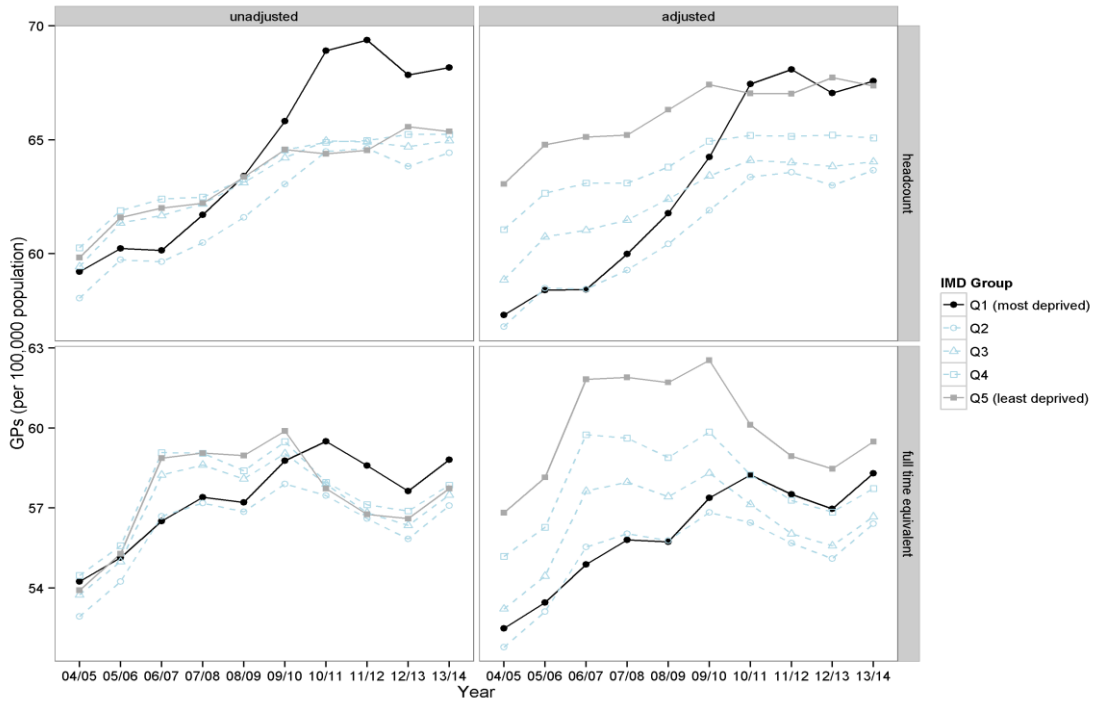


Figure A12.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time excluding registrars and retainers



Regression A12.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
    Min      1Q  Median      3Q     Max
-1.2693 -0.5681 -0.2970  0.3750  2.8982

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)          52.9693     0.7386  71.718  < 2e-16 ***
YEAR2011              2.9867     1.0445   2.859 0.011358 *
IMD_DECILE            9.0067     1.1903   7.567 1.13e-06 ***
YEAR2011:IMD_DECILE  -6.9485     1.6834  -4.128 0.000789 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.081 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.7602
F-statistic: 21.07 on 3 and 16 DF,  p-value: 8.368e-06
```

Appendix Section 13

Results calculated by attributing GP supply to LSOAs and aggregating based on fifths of LSOAs ranked by IMD score - **GP registrars and retainers excluded from the calculation - results for South of England**

Figure A13.1: Trend in FTE GP supply over time excluding registrars and retainers

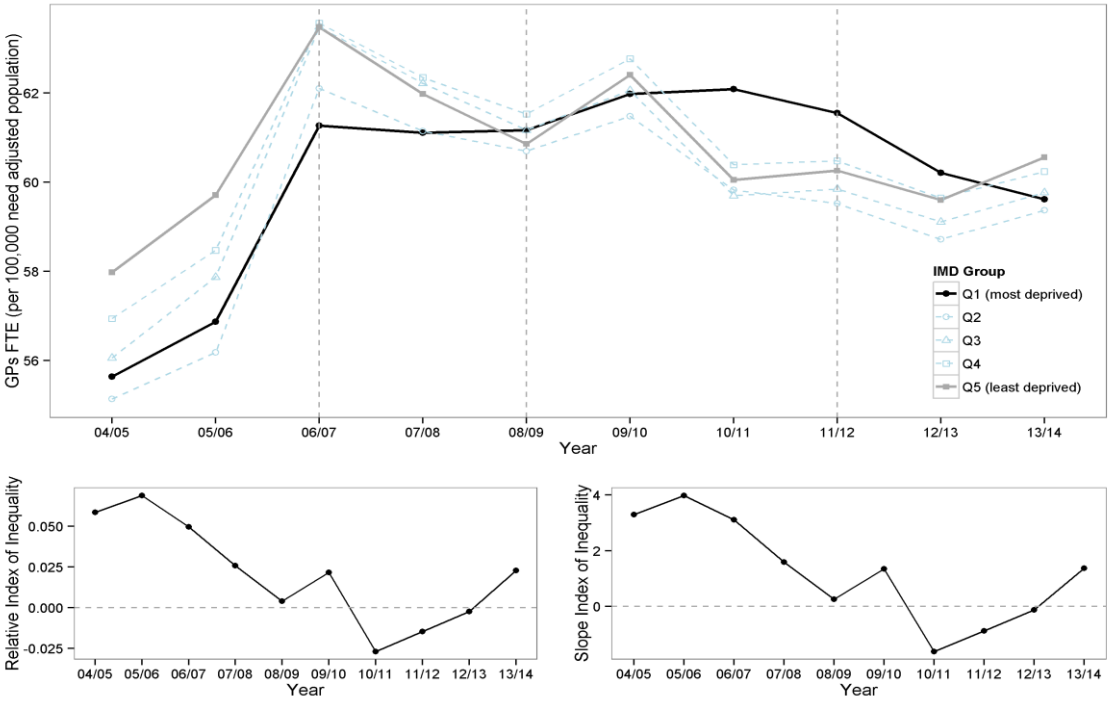


Figure A13.2: FTE GP supply in 2006/07 and 2011/12 excluding registrars and retainers

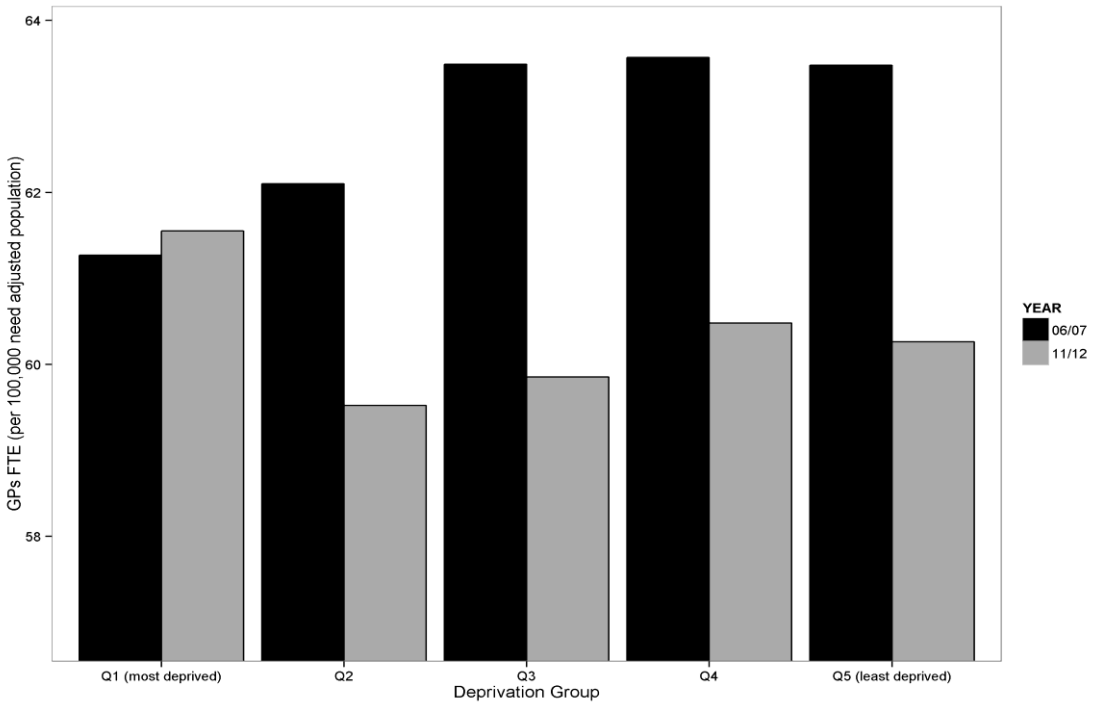


Figure A13.3: Trend in total headcount and FTE GP supply over time excluding registrars and retainers

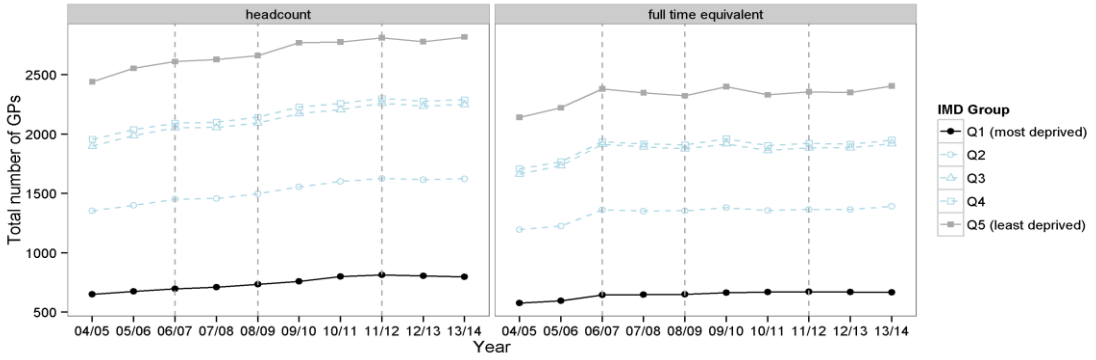
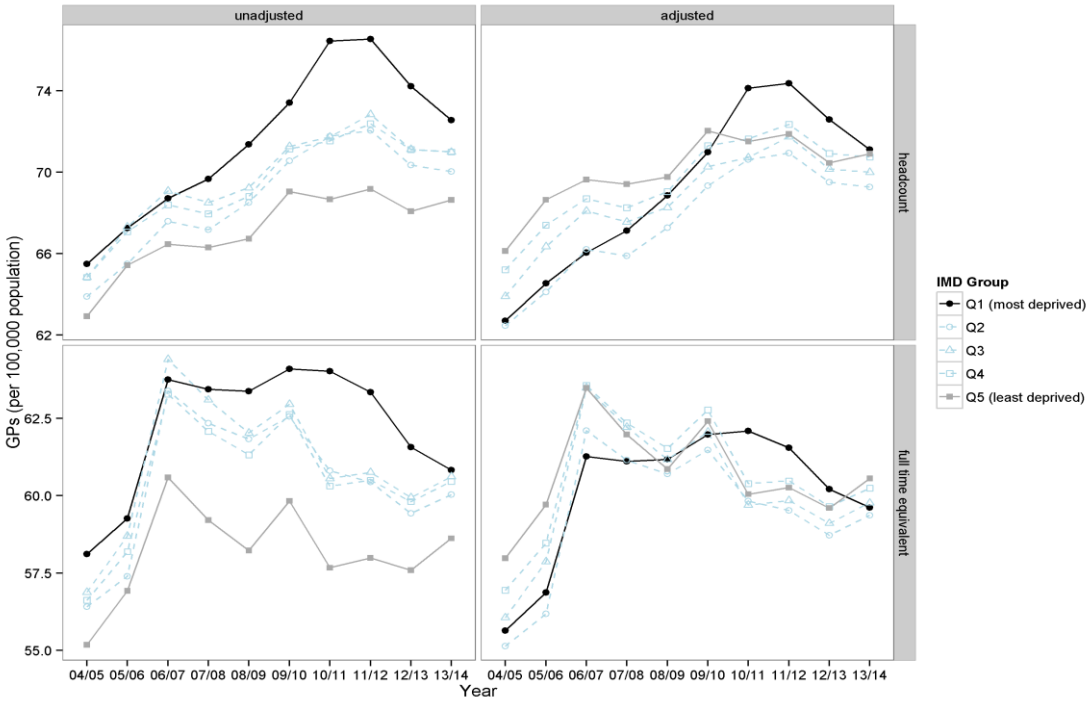


Figure A13.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time excluding registrars and retainers



Regression A13.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
     Min       1Q   Median       3Q      Max
-1.38576 -0.55121  0.08591  0.48395  1.16764

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)          61.0387     0.5336 114.399  < 2e-16 ***
YEAR2011             -0.2180     0.7546  -0.289  0.77636
IMD_DECILE            3.1170     0.8599   3.625  0.00228 **
YEAR2011:IMD_DECILE  -4.0000     1.2161  -3.289  0.00462 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.7811 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.7568
F-statistic:  20.7 on 3 and 16 DF,  p-value: 9.354e-06
```

Appendix Section 14

Results calculated by attributing GP supply to **PCTs** and aggregating based on population weighted fifths of PCTs ranked by IMD score - **GP registrars and retainers excluded from the calculation**

Figure A14.1: Trend in FTE GP supply over time excluding registrars and retainers

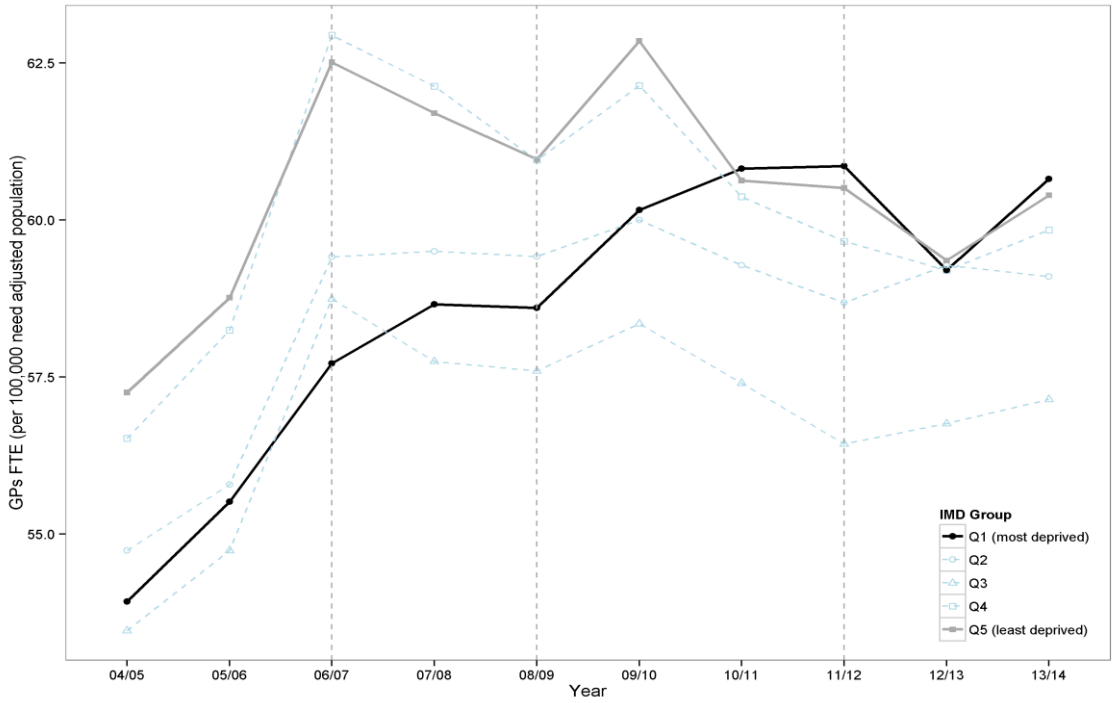


Figure A14.2: Trend in FTE nurse supply over time

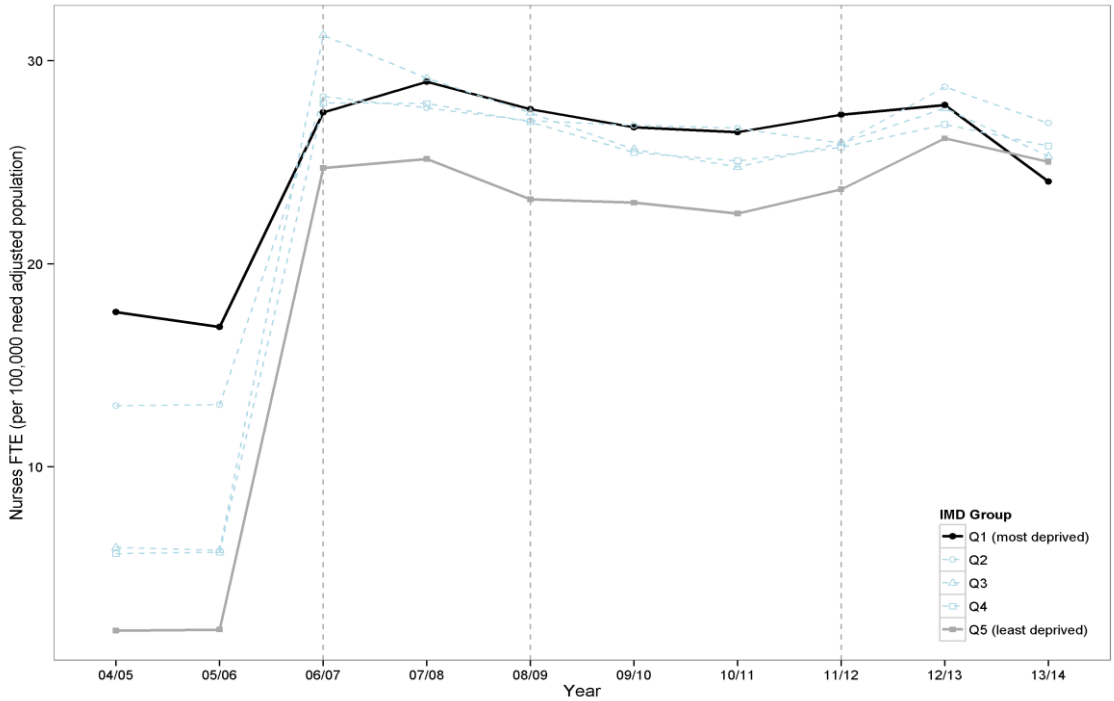
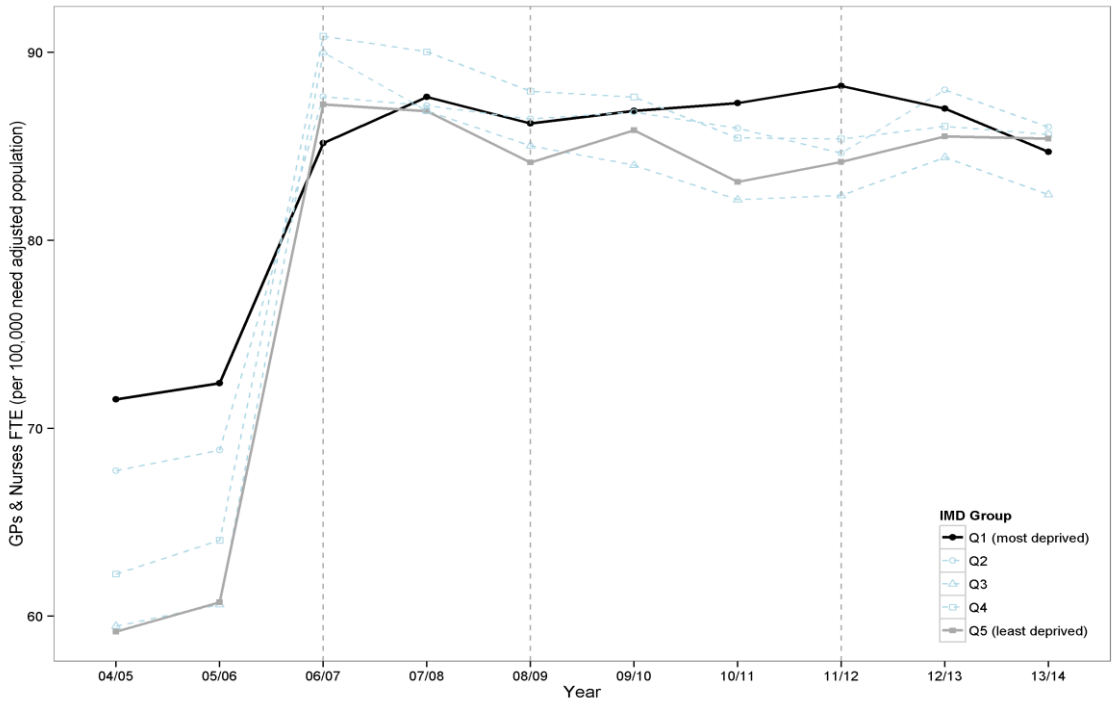


Figure A14.3: Combined trend in FTE GP and nurse supply over time



Appendix Section 15

Results calculated by attributing GP supply to **CCG**s and aggregating based on population weighted fifths of CCGs ranked by IMD score - **GP registrars and retainers excluded from the calculation**

Figure A15.1: Trend in FTE GP supply over time excluding registrars and retainers

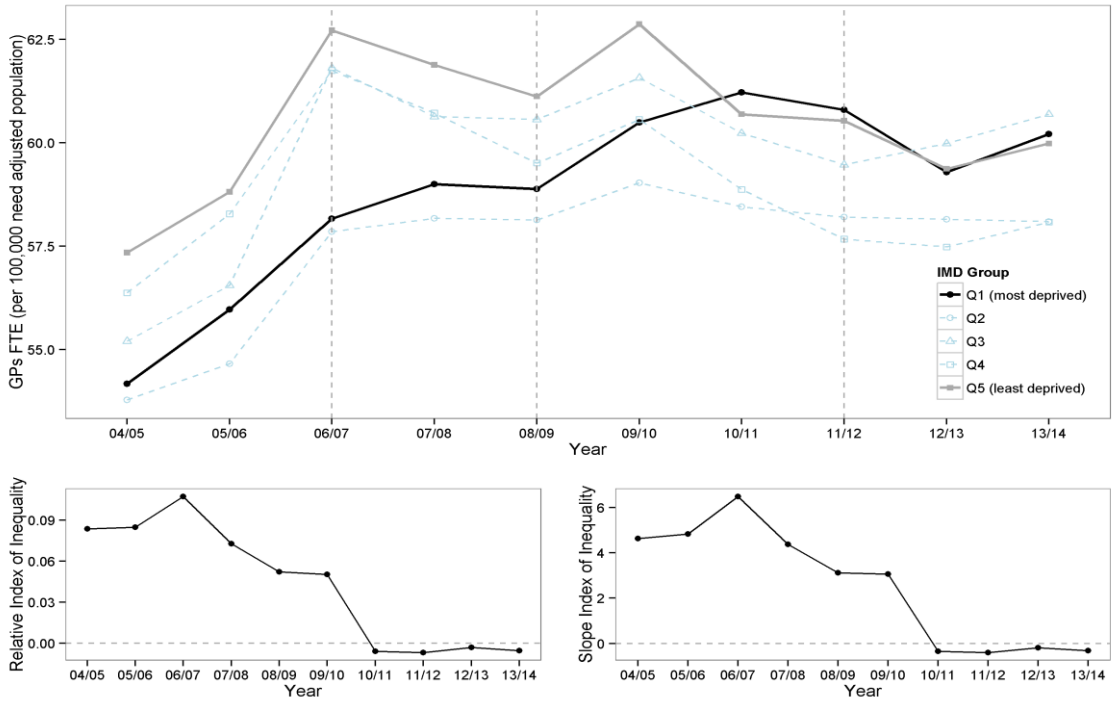


Figure A15.2: FTE GP supply in 2006/07 and 2011/12 excluding registrars and retainers

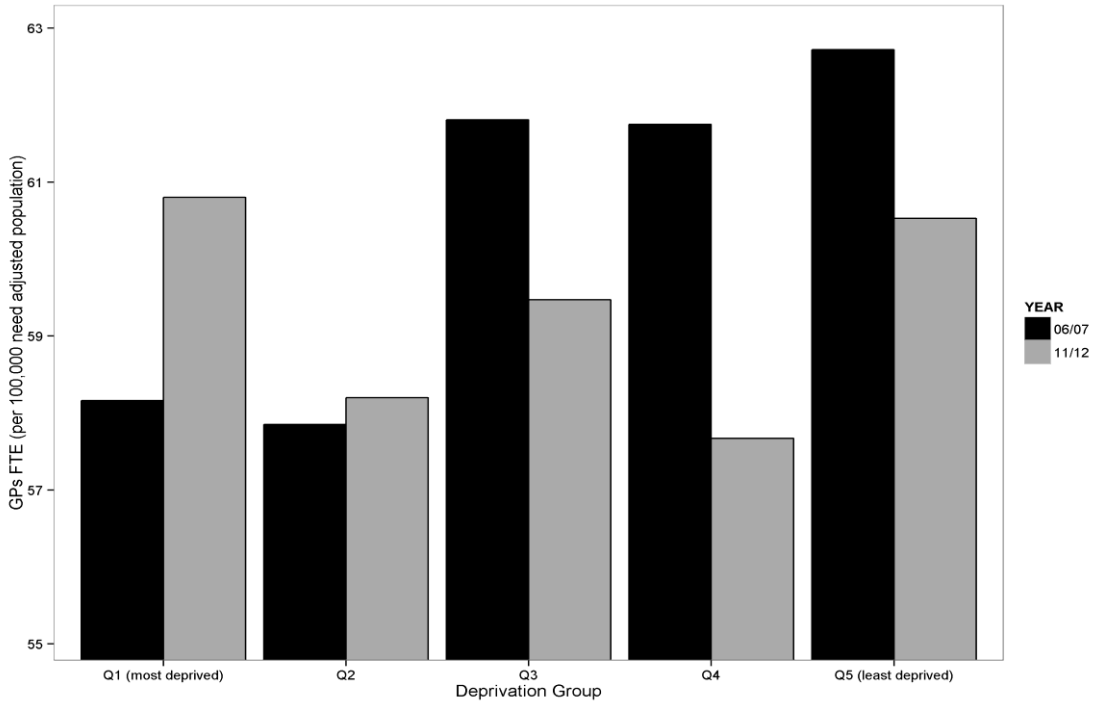


Figure A15.3: Trend in total headcount and FTE GP supply over time excluding registrars and retainers

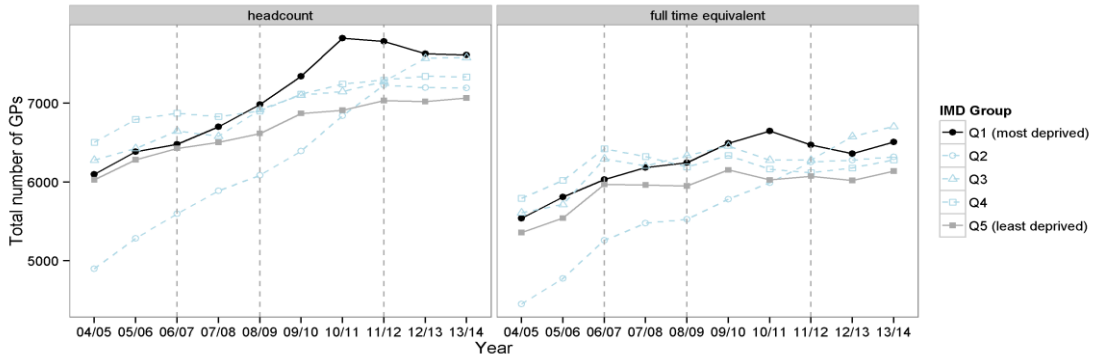
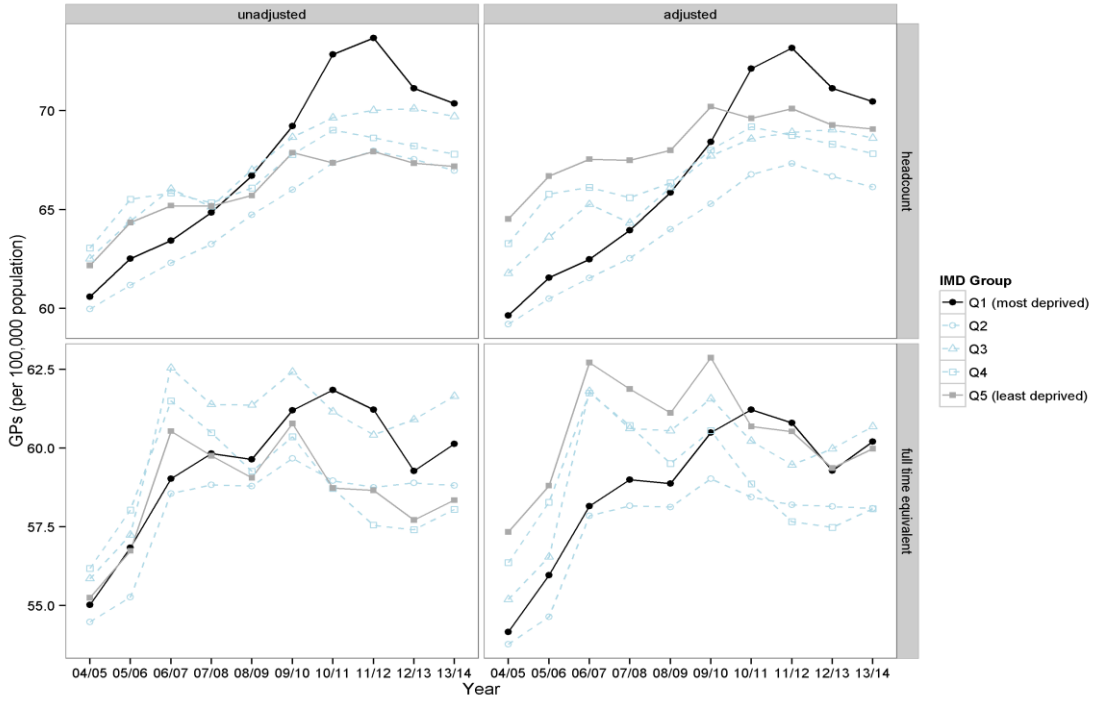


Figure A15.4: Trend in unadjusted and adjusted headcount and FTE GP supply over time excluding registrars and retainers



Regression A15.1: Test for difference in slope index of inequality between 2006/07 and 2011/12

```
Call:
lm(formula = FTE_PER100K_ADJ ~ YEAR * IMD_DECILE, data = subset(deciles,
    YEAR %in% c("2006", "2011")))

Residuals:
    Min      1Q  Median      3Q     Max
-3.9218 -0.9508  0.3906  1.1253  2.2385

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)          56.880      1.158  49.140  < 2e-16 ***
YEAR2011              2.683      1.637   1.639  0.12076
IMD_DECILE            6.487      1.865   3.478  0.00311 **
YEAR2011:IMD_DECILE  -6.888      2.638  -2.611  0.01891 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.694 on 16 degrees of freedom
Multiple Adjusted R-squared:  0.3723
F-statistic: 4.757 on 3 and 16 DF,  p-value: 0.0148
```

Appendix Section 16

Results calculated looking at opening and closing GP practices and their impact on GP FTE numbersby IMD score - **GP registrars and retainers excluded from the calculation**

Figure A16.1: Trend in GP practices opening

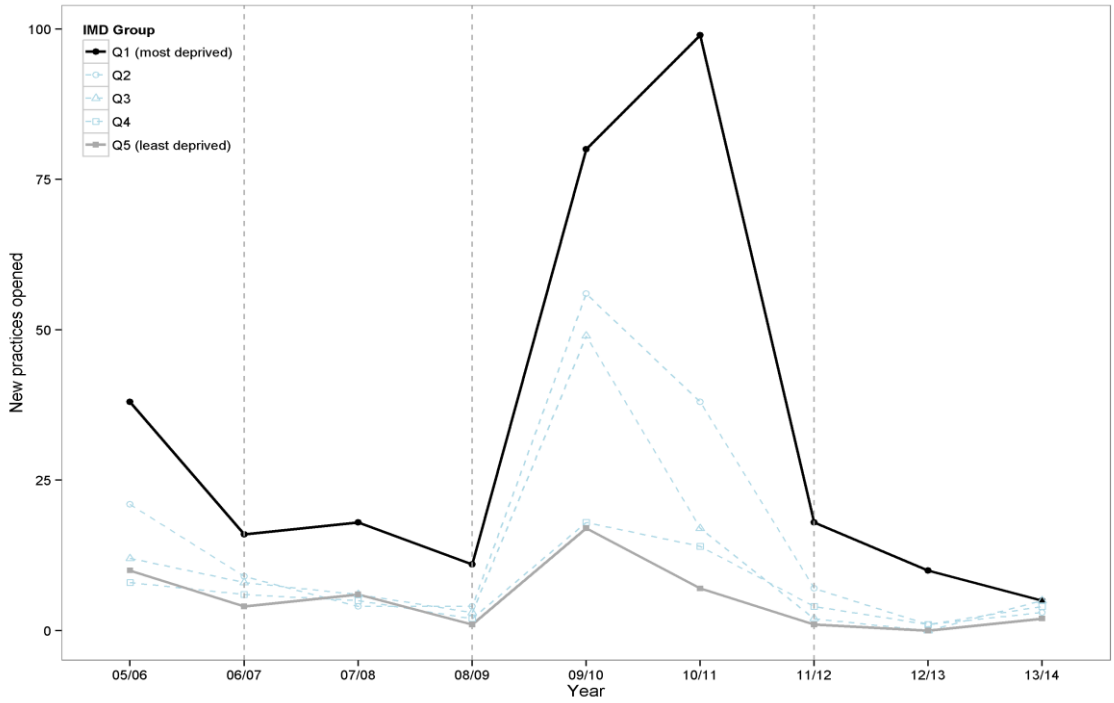


Figure A16.2: Trend in GP FTE due to GP practices opening

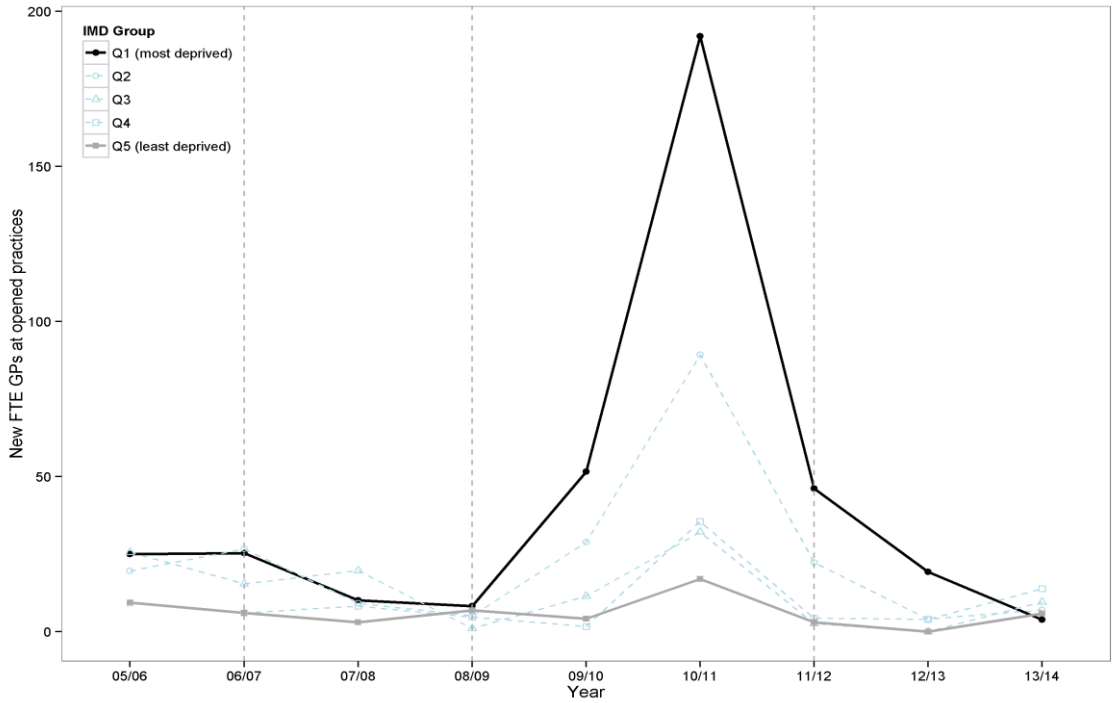


Figure A16.3: Trend in GP practices closing

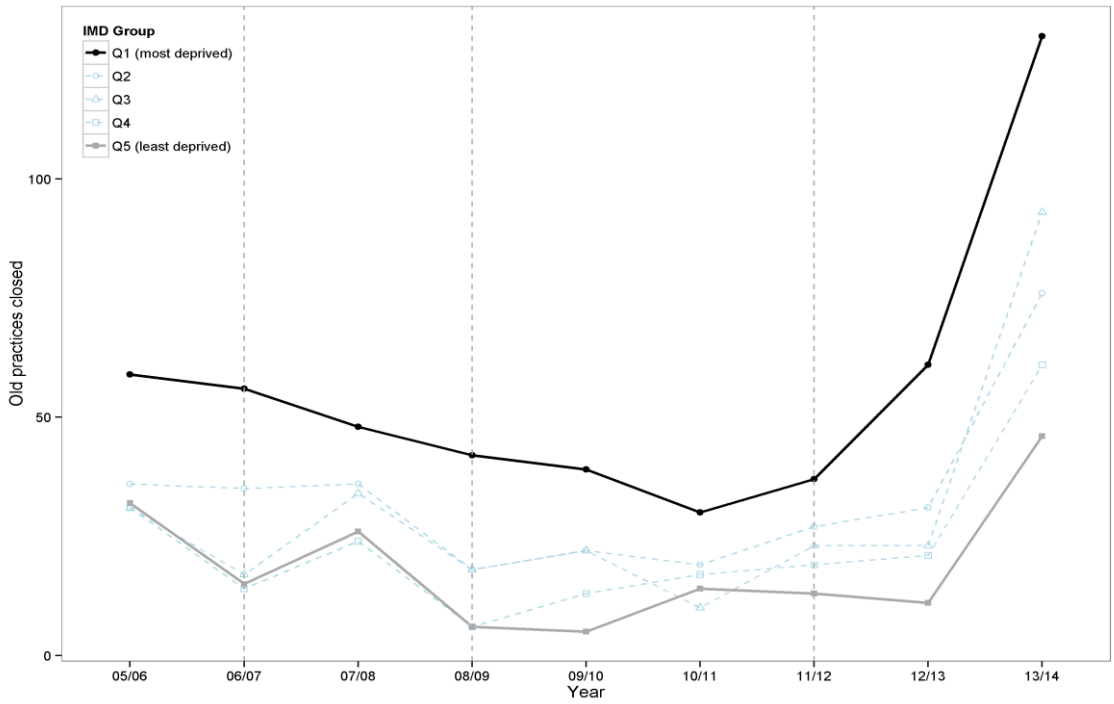


Figure A16.4: Trend in GP FTE due to GP practices closing

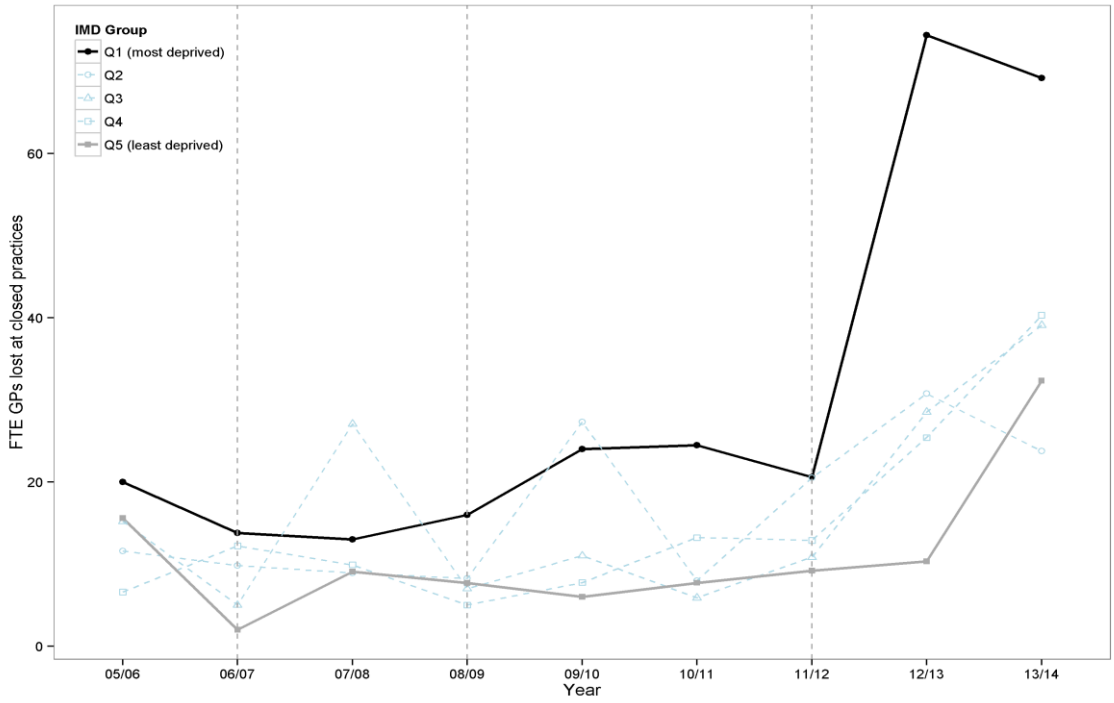


Figure A16.5: Trend in net change in GP practices

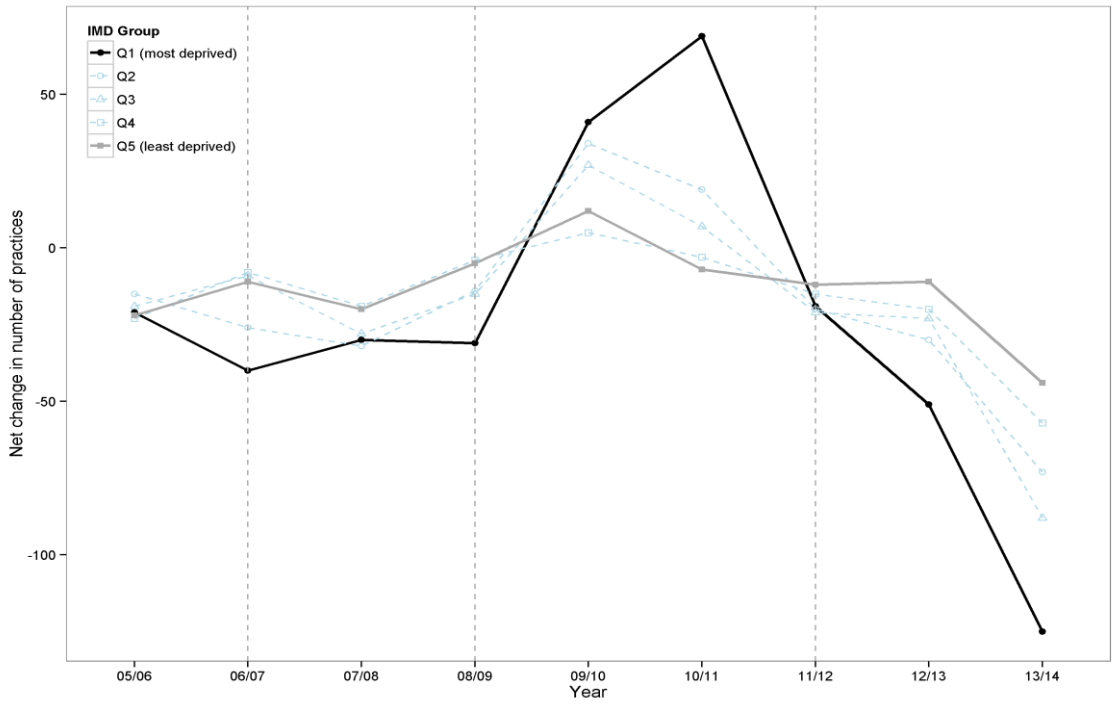
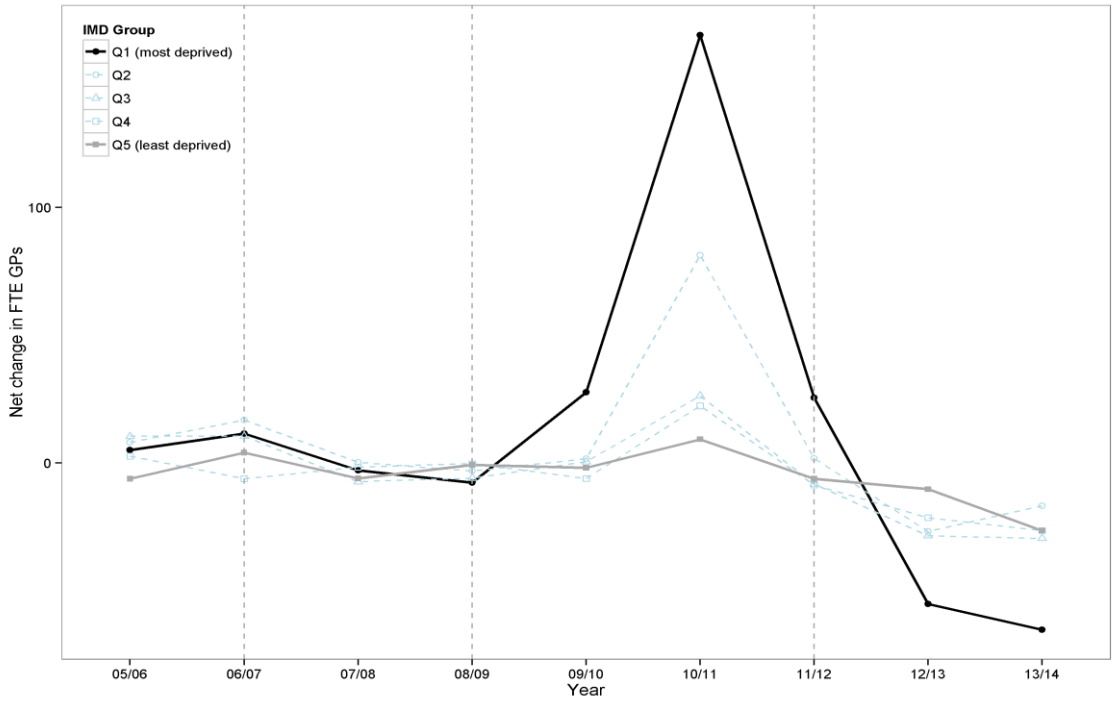


Figure A16.6: Trend in net change in GP FTE due to net change in practices



Appendix Section 17

Exploring the impact of need adjustment over time for the deprivation quintiles

Table A17.1: Carr-Hill Need Adjustment Workload Weights

Age-Sex weight		Registration status weight		IMD Health Domain score weight
Band	**Weight**	**Band**	**Weight**	**Weight**
Male 0-4 years	2.354	Registered with practice for 12 months+	1.000	The weight is calculated as: 1.054 to the power of the IMD Health Domain score associated with the patient's postcode)
Male 5-14 years	1.000			
Male 15-44 years	0.913			
Male 45-64 years	1.373			
Male 65-74 years	2.531	Registered with practice in last 12 months	1.689	
Male 75-84 years	3.254			
Male 85+ years	3.193			
Female 0-4 years	2.241			
Female 5-14 years	1.030			
Female 15-44 years	1.885			
Female 45-64 years	2.115			
Female 65-74 years	2.820			
Female 75-84 years	3.301			
Female 85+ years	3.090			

Source: Review of the Generla Medical Services global sum formula (2007) - Table 1 - http://www.nhsemployers.org/~/media/Employers/Documents/Primary%20care%20contracts/GMS/GMS%20Finance/Global%20Sum/frg_report_final_cd_090207.pdf

We were unable to get data on duration of registration with practice so this part of the calculation is ommited from our results

The formula was applied at LSOA level populations and adjusted populations were re-normalised to sum to the pre-adjusted total

The IMD Health Domain score ranges from -3.10 to 3.79 corresponding to pre-normalisation deprivation adustment weights of 0.85 and 1.22.

The biggest increase in LSOA population due to adjustment over the period of analysis was 165% and the smallest increase was 8%
After normalisation these changes reduced to an increase of 50% and a decrease of 38% respectively

Figure A17.1: Trend in Carr-Hill Relative Need Index Over Time - LSOA level IMD Quintile Aggregation

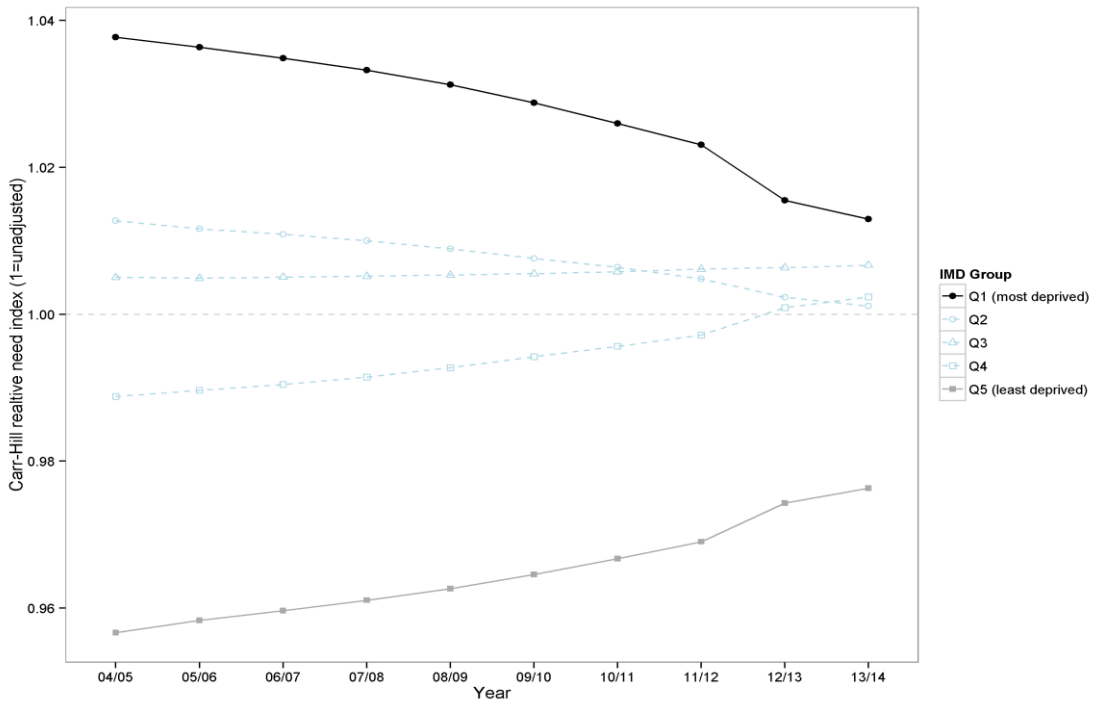
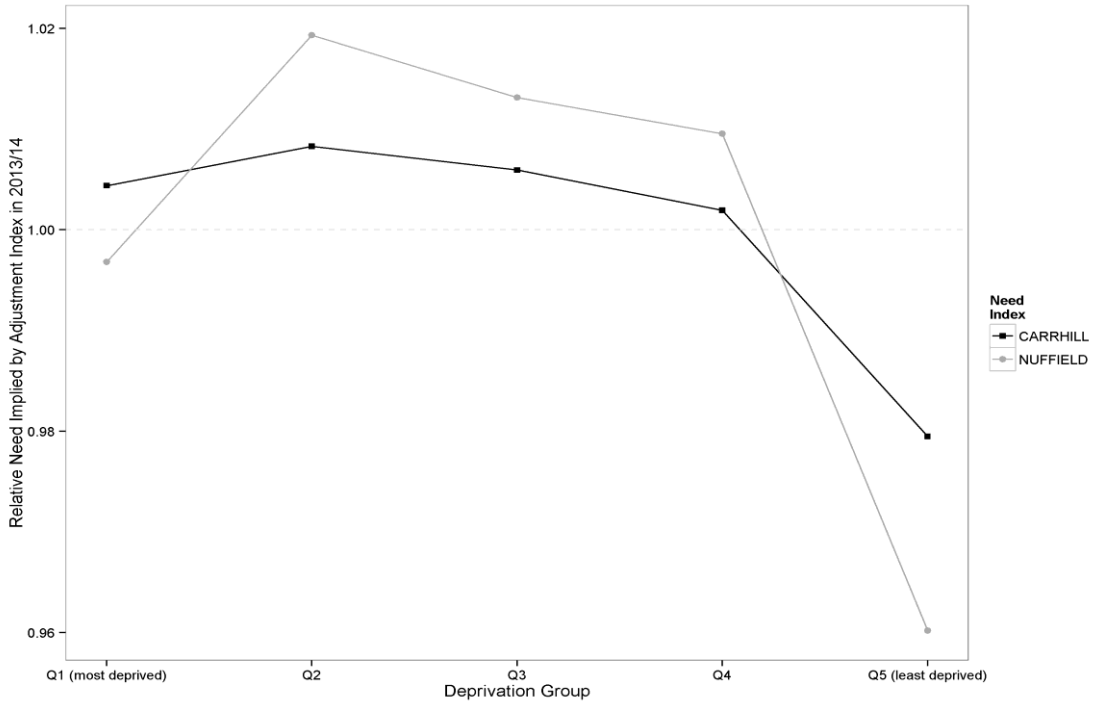


Figure A17.2: Comparing Carr-Hill and Nuffield PBRA Relative Need Index 2013/14 - Practice Level IMD Quintile Aggregation



Source: Nuffield Person Based Resource Allocation - Technical Guide to Clinical Commissioning Group and Area Team allocations 2014-15 and 2015-16: http://www.england.nhs.uk/2014/03/27/allocations-tech-guide/ speadsheet: http://www.england.nhs.uk/wp-content/uploads/2014/03/c-nph-gen-acute.xlsx

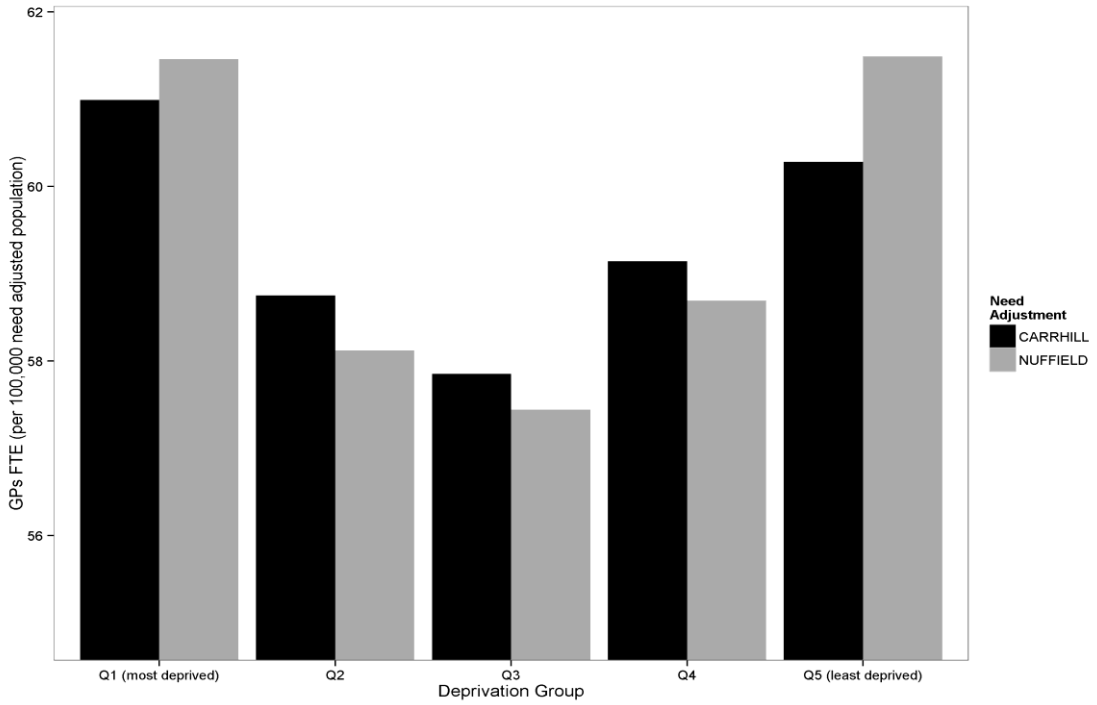



Figure A17.3: Impact of Carr-Hill and Nuffield PBRA Need Adjustment on GP FTE Excluding Registrars and Retianers 2013/14