

Liothyronine and Levothyroxine Prescribing in England: A Comprehensive Survey and Evaluation

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Abstract

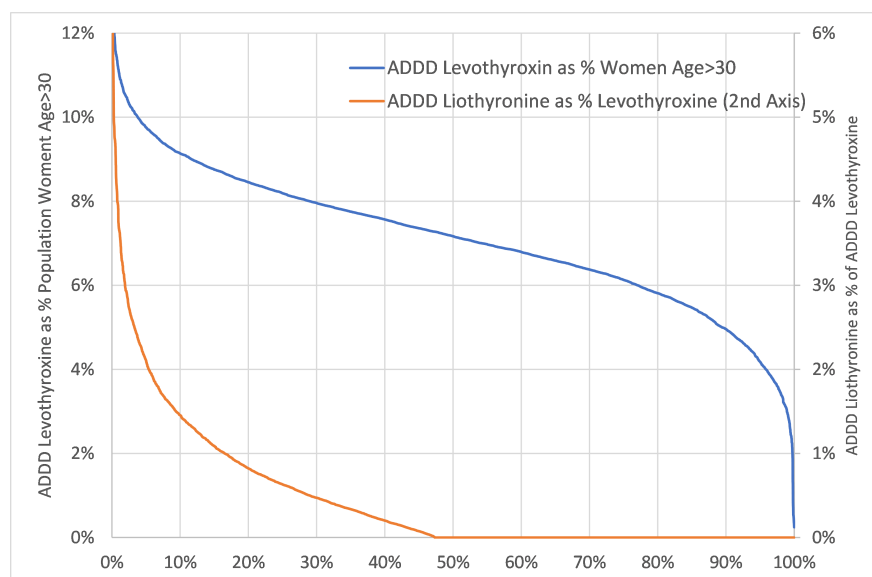
Introduction: The approach to thyroid hormone replacement varies across centres but the extent and determinants of variation is unclear. We evaluated geographical variation in levothyroxine (LT4) and liothyronine (LT3) prescribing across General Practices in England and analysed the relationship of prescribing patterns to clinical and socioeconomic factors. **Methods:** Data was downloaded from the NHS monthly General Practice Prescribing Data in England for the period 2011-2020. **Results** Overall, 0.5% of levothyroxine treated patients continue to receive liothyronine. All Clinical Commission Groups (CCGs) in England continue to have at least one liothyronine prescribing practice and 48.5% of English general practices prescribed liothyronine in 2019-20. Factors strongly influencing more levothyroxine prescribing (model accounted for 62% of variance) were the CCG to which the practice belonged and the proportion of people with diabetes registered on the practice list plus antidepressant prescribing, with socioeconomic disadvantage associated with less levothyroxine prescribing. For liothyronine prescribing (model accounted for 17% of variance), factors that were associated with increased levels of liothyronine prescribing were antidepressant prescribing and % of type 2 diabetes mellitus individuals achieving HbA1c control of 58mmol/mol or less. Factors that were associated with reduced levels of liothyronine prescribing included smoking and higher obesity rates. **Conclusion:** In spite of strenuous attempts to limit prescribing of liothyronine in general practice a significant number of patients continue to receive this therapy, although there is significant geographical variation in the prescribing of this as for levothyroxine, with specific general practice and CCG related factors influencing prescribing of both levothyroxine and liothyronine.

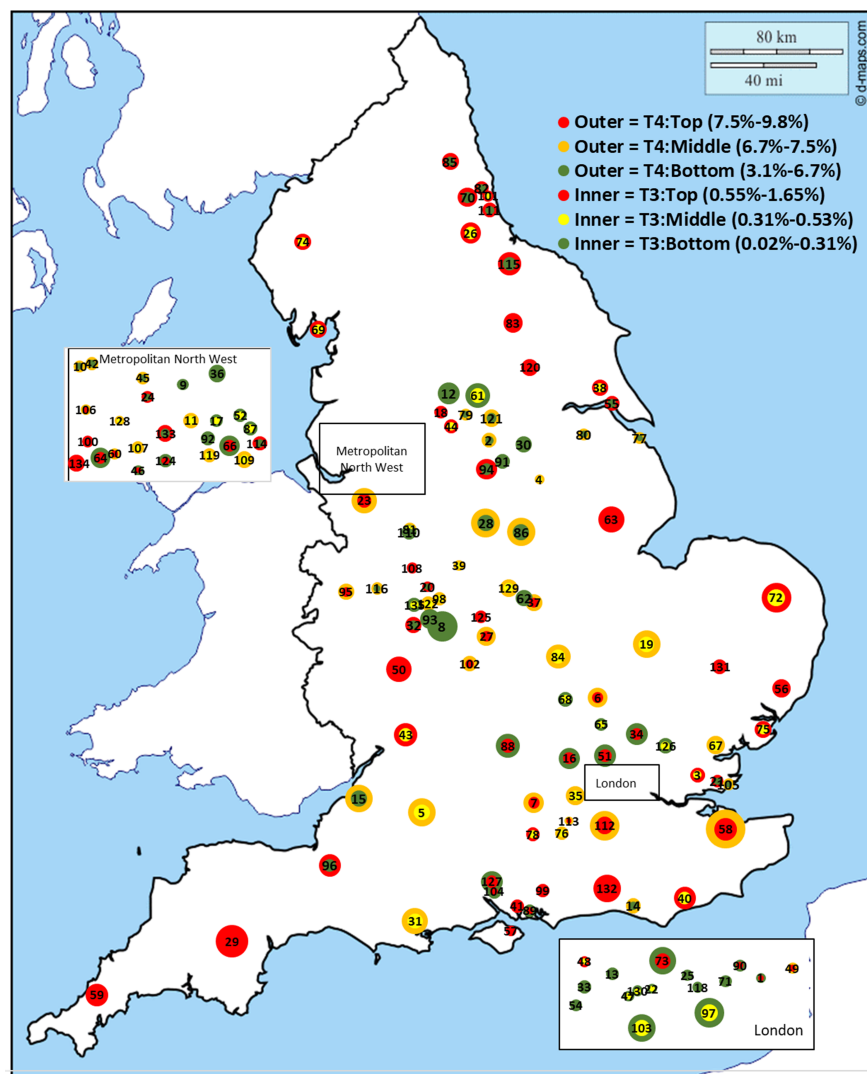
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Thyroid Cross-sectional paper AH MS Buchi 28 Dec 2020 (1).pdf available at <https://authorea.com/users/312292/articles/503217-liothyronine-and-levothyroxine-prescribing-in-england-a-comprehensive-survey-and-evaluation>

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Cross Sectional Thyroid paper Table.pdf available at <https://authorea.com/users/312292/articles/503217-liothyronine-and-levothyroxine-prescribing-in-england-a-comprehensive-survey-and-evaluation>





CCG	Women Age>30	ADD T4	ADD T3	CCG	Women Age>30	ADD T4	ADD T3
1 BARKING AND DAGENHAM	62,646	3,222	23	69 MORECAMBE BAY	117,695	9,150	37
2 BARNSELY	87,640	6,058	13	70 NEWCASTLE GATESHEAD	157,221	12,734	10
3 BASILDON AND BRENTWOOD	94,087	7,744	32	71 NEWHAM	109,492	5,127	3
4 BASSETLAW	40,766	2,725	10	72 NORFOLK AND WAVENEY	370,040	31,745	120
5 BATH, NE SOMERSET, SWINDON AND WILTS	323,835	22,304	110	73 NORTH CENTRAL LONDON	516,979	27,044	153
6 BEDFORDSHIRE	162,642	11,815	71	74 NORTH CUMBRIA	114,571	10,056	35
7 BERKSHIRE WEST	175,041	12,979	111	75 NORTH EAST ESSEX	121,302	11,839	60
8 BIRMINGHAM AND SOLIHULL	392,267	24,533	55	76 NORTH EAST HAMPSHIRE AND FARNHAM	77,411	5,376	25
9 BLACKBURN WITH DARWEN	52,930	3,355	2	77 NORTH EAST LINCOLNSHIRE	56,477	4,214	13
10 BLACKPOOL	57,827	3,876	11	78 NORTH HAMPSHIRE	77,809	5,977	27
11 BOLTON	97,936	7,163	30	79 NORTH KIRKLEES	60,064	4,309	4
12 BRADFORD DISTRICT AND CRAVEN	193,997	12,185	36	80 NORTH LINCOLNSHIRE	61,390	4,496	9
13 BRENT	117,559	6,144	8	81 NORTH STAFFORDSHIRE	74,241	5,255	20
14 BRIGHTON AND HOVE	97,157	6,894	1	82 NORTH TYNESIDE	77,955	6,290	18
15 BRISTOL, N. SOMERSET AND S. GLOUCS	325,082	23,114	38	83 NORTH YORKSHIRE	156,101	12,997	138
16 BUCKINGHAMSHIRE	189,826	11,427	189	84 NORTHAMPTONSHIRE	253,671	16,973	83
17 BURY	67,253	4,121	17	85 NORTHUMBERLAND	119,542	10,087	22
18 CALDERDALE	73,492	6,673	40	86 NOTTINGHAM AND NOTTINGHAMSHIRE	333,199	22,929	36
19 CAMBRIDGESHIRE AND PETERBOROUGH	311,141	22,222	109	87 OLDHAM	78,947	4,572	23
20 CANNOCK CHASE	45,746	3,615	11	88 OXFORDSHIRE	242,527	14,820	141
21 CASTLE POINT AND ROCHFORD	65,467	5,329	10	89 PORTSMOUTH	64,196	4,187	34
22 CENTRAL LONDON (WESTMINSTER)	68,039	3,127	12	90 REDBRIDGE	100,633	6,028	45
23 CHESHIRE	263,436	17,683	117	91 ROTHERHAM	87,354	5,417	6
24 CHORLEY AND SOUTH RIBBLE	61,031	4,641	9	92 SALFORD	79,838	5,332	13
25 CITY AND HACKNEY	96,871	3,023	9	93 SANDWELL AND WEST BIRMINGHAM	161,453	9,975	15
26 COUNTY DURHAM	185,528	14,316	64	94 SHEFFIELD	179,520	14,319	26
27 COVENTRY AND RUGBY	151,775	10,290	98	95 SHROPSHIRE	113,318	8,228	69
28 DERBY AND DERBYSHIRE	355,469	24,433	35	96 SOMERSET	206,069	16,076	17
29 DEVON	435,522	34,389	273	97 SOUTH EAST LONDON	627,453	31,438	108
30 DONCASTER	106,763	6,899	19	98 SOUTH EAST STAFFORDSHIRE AND SEISDON	73,530	5,161	27
31 DORSET	285,607	19,380	74	99 SOUTH EASTERN HAMPSHIRE	77,366	5,970	82
32 DUDLEY	109,520	8,460	8	100 SOUTH SEFTON	53,469	4,172	32
33 EALING	133,964	7,708	15	101 SOUTH TYNESIDE	53,569	4,940	16
34 EAST AND NORTH HERTFORDSHIRE	196,313	11,973	66	102 SOUTH WARWICKSHIRE	102,499	7,462	53
35 EAST BERKSHIRE	146,561	10,861	34	103 SOUTH WEST LONDON	537,319	30,659	138
36 EAST LANCASHIRE	123,343	7,652	5	104 SOUTHAMPTON	80,669	4,848	27
37 EAST LEICESTERSHIRE AND RUTLAND	118,256	7,976	58	105 SOUTHWEND	63,395	4,707	13
38 EAST RIDING OF YORKSHIRE	111,831	9,785	50	106 SOUTHPORT AND FORMBY	46,346	3,427	28
39 EAST STAFFORDSHIRE	48,008	3,569	17	107 ST HELENS	67,407	4,952	24
40 EAST SUSSEX	202,868	18,347	71	108 STAFFORD AND SURROUNDS	52,344	4,079	36
41 FAREHAM AND GOSPORT	73,089	5,720	59	109 STOCKPORT	107,502	7,682	31
42 FYLDE AND WYRE	66,319	4,678	12	110 STOKE ON TRENT	91,962	6,120	11
43 GLOUCESTERSHIRE	225,279	17,049	90	111 SUNDERLAND	93,974	8,266	21
44 GREATER HUDDERSFIELD	79,608	7,395	27	112 SURREY HEARTLANDS	370,079	26,535	211
45 GREATER PRESTON	65,455	4,504	4	113 SURREY HEATH	33,519	2,353	13
46 HALTON	43,533	2,868	19	114 TAMESIDE AND GLOSSOP	81,801	6,159	19
47 HAMMERSMITH AND FULHAM	83,265	3,009	10	115 TEES VALLEY	231,951	19,337	56
48 HARROW	86,958	6,804	29	116 TELFORD AND WREKIN	61,392	4,174	3
49 HAVERING	94,126	6,333	43	117 THURROCK	56,500	4,319	17
50 HEREFORDSHIRE AND WORCESTERSHIRE	279,545	22,303	211	118 TOWER HAMLETS	86,408	4,231	7
51 HERTS VALLEYS	209,701	13,701	75	119 TRAFFORD	81,055	5,587	26
52 HEYWOOD, MIDDLETON AND ROCHDALE	73,943	4,253	19	120 VALE OF YORK	120,199	9,886	101
53 HILLINGDON	97,911	5,943	6	121 WAKEFIELD	126,505	9,336	9
54 HOUNSLOW	100,189	5,576	10	122 WALSALL	90,842	6,787	29
55 HULL	91,793	7,584	8	123 WALTHAM FOREST	96,368	4,453	30
56 IPSWICH AND EAST SUFFOLK	140,785	11,440	68	124 WARRINGTON	73,801	4,118	43
57 ISLE OF WIGHT	47,592	3,894	31	125 WARWICKSHIRE NORTH	65,002	5,626	47
58 KENT AND MEDWAY	636,552	46,427	337	126 WEST ESSEX	105,699	6,685	21
59 KERNOW	209,492	16,733	205	127 WEST HAMPSHIRE	193,632	12,746	162
60 KNOWSLEY	54,520	3,803	27	128 WEST LANCASHIRE	38,659	2,868	13
61 LEEDS	262,713	17,518	93	129 WEST LEICESTERSHIRE	130,976	8,911	47
62 LEICESTER CITY	114,465	7,451	8	130 WEST LONDON	86,427	3,434	14
63 LINCOLNSHIRE	274,465	20,713	131	131 WEST SUFFOLK	90,236	7,506	48
64 LIVERPOOL	162,753	9,857	118	132 WEST SUSSEX	318,810	24,156	136
65 LUTON	67,039	3,810	12	133 WIGAN BOROUGH	110,327	8,417	19
66 MANCHESTER	171,435	9,067	51	134 WIRRAL	113,975	8,651	63
67 MID ESSEX	135,989	9,591	45	135 WOLVERHAMPTON	89,222	5,609	22
68 MILTON KEYNES	93,309	4,945	24				

