



# Intermediate Minor Oral Surgery Needs Assessment

## East Midlands

February 2022

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# Introduction

## Oral Health

Oral health is defined by the World Health Organization (WHO) as:

*“a state of being free from mouth and facial pain, oral diseases and disorders that limit an individual’s capacity in biting, chewing, smiling, speaking and psychosocial wellbeing” [1]*

Not everyone experiences good oral health. Although anyone can experience poor oral health, certain population groups are at increased risk (Figure 1).

- Those who are from a lower socioeconomic group
- Those who live in a disadvantaged area
- Those from some black, Asian and minority ethnic groups
- Those who are older and frail
- Those who are homeless or frequently move, such as traveller communities
- Those who are socially isolated or excluded
- Those who have physical or mental disabilities
- Those who smoke or misuse substances (including alcohol)
- Those who have a poor diet
- Those who are, or who have been, in care

Figure 1. Groups whose economic, social, environmental circumstances or lifestyle place them at high risk of poor oral health or make it difficult for them to access dental services [2]

Those with poor oral health are more likely to require oral surgery.

## Oral Surgery

Oral surgery is surgical treatment in the mouth. This includes the removal of teeth. Most oral surgery is undertaken in general dental practices, although some patients are referred elsewhere for treatment. The most complex oral surgery is undertaken in hospitals. Sometimes the treatment required is too complex to be undertaken in a

general dental practice, but not sufficiently complex to be undertaken in a hospital. In these instances, treatment may be undertaken by an Intermediate Minor Oral Surgery (IMOS) service.

IMOS services treat patients aged 16 years and over<sup>1</sup>, typically on referral from their regular dentist. When the treatment has been undertaken, patients are discharged to their regular dentist for ongoing care.

The remit of IMOS services encompasses procedures within Level 2 of the Draft Framework of Oral Surgery Complexity Levels and Procedures [3] (Figure 2). However, these procedures may be performed in a secondary care setting if modifying factors or local circumstances require this.

- Surgical removal of uncomplicated third molars involving bone removal
- Surgical removal of buried roots and fractured or residual root fragments
- Management and surgical removal of uncomplicated ectopic teeth (including supernumerary teeth)
- Management and surgical exposure of teeth to include bonding of orthodontic bracket or chain
- Surgical endodontics
- Minor soft tissue surgery to remove apparent non-suspicious lesions with appropriate histopathological assessment and diagnosis

Figure 2. Level 2 oral surgery procedures [3]

## Conscious Sedation

Sometimes patients benefit from the administration of conscious sedation when undergoing oral surgery. Conscious sedation is defined as:

*“A technique in which the use of a drug or drugs produces a state of depression of the central nervous system enabling treatment to be carried out, but during which verbal contact with the patient is maintained throughout the period of sedation. The drugs and techniques used to provide conscious sedation for dental treatment should carry a margin of safety wide enough to render loss of consciousness unlikely.” [4]*

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<sup>1</sup> Some of the current IMOS services in the East Midlands only treat patients aged 17 years and over, based on historic commissioning arrangements

The Indicator of Sedation Need (IOSN) is a means of identifying, assessing and delivering appropriate conscious sedation to patients [5]. The premise of IOSN is that patients requiring conscious sedation are not just dentally anxious, but that their health, behaviour and treatment complexity should also be considered [5].

## Workforce

Level 2 oral surgery procedures may be undertaken either by a specialist, or by a dentist with enhanced skills and experience in oral surgery [3]. A standardised and robust process exists for the accreditation of clinicians undertaking level 2 oral surgery procedures [6].

All staff involved in the provision of conscious sedation must have undertaken appropriate and validated education and training and have demonstrated an acceptable level of competence by means of a robust assessment process [5]. Educational programmes intended to provide training in the clinical delivery of conscious sedation and to prepare the team for independent practice must be assessed, externally quality assured and incorporate supervised clinical practice [5].

## Context

The contractual arrangements for the current IMOS services in the East Midlands will end on 31 March 2023. These services were established between 2008 and 2017, when the population and its oral health needs were different to those today. This needs assessment has been undertaken as part of the commissioning process for new IMOS services in the East Midlands, to ensure the services are aligned to current and future need.

The intention is to commission the new IMOS services on an Integrated Care System (ICS) footprint. There are five ICSs in the East Midlands:

1. Lincolnshire
2. Nottingham and Nottinghamshire
3. Joined up Care Derbyshire
4. Leicester, Leicestershire and Rutland

## 5. Northamptonshire Health and Care Partnership

The needs assessment incorporates the ICS boundary changes planned to take place on 1 April 2022.

It is anticipated that the new IMOS services will be operational and treating patients on 1 April 2023.

# Population

## Population Growth

In 2021 the East Midlands was estimated to have a population of 3,957,774 adults aged 16-89 [7]. By 2026 this is projected to grow by 4.0% to 4,115,933 and by 2031 it is projected to grow by 7.8% to 4,268,206 [7]. This growth is unlikely to be uniform across the region, with variation between ICSs and lower-tier local authorities (Table 1, Table 2, Table 3, Table 4, Table 5). It is worth noting that in some areas there are slight discrepancies between ICS and lower-tier local authority boundaries; the projections presented are based on the latter.

Table 1. Projected population growth for Lincolnshire ICS [7]

	2021	2026	2031	Absolute change 2021-2026	Absolute change 2026-2031	Absolute change 2021-2031	% change 2021- 2026	% change 2026- 2031	% change 2021- 2031
<b>Boston</b>	57315	60140	62984	2825	2844	5669	4.9	4.7	9.9
<b>East Lindsey</b>	120408	125716	130618	5308	4902	10210	4.4	3.9	8.5
<b>Lincoln</b>	82016	83524	86073	1508	2549	4057	1.8	3.1	4.9
<b>North Kesteven</b>	97053	101060	104534	4007	3474	7481	4.1	3.4	7.7
<b>South Holland</b>	78375	81906	85369	3531	3463	6994	4.5	4.2	8.9
<b>South Kesteven</b>	115913	119608	123102	3695	3494	7189	3.2	2.9	6.2
<b>West Lindsey</b>	78950	81182	83297	2232	2115	4347	2.8	2.6	5.5
<b>Total</b>	<b>630030</b>	<b>653136</b>	<b>675977</b>	<b>23106</b>	<b>22841</b>	<b>45947</b>	<b>3.7</b>	<b>3.5</b>	<b>7.3</b>



Table 2. Projected population growth for Nottingham and Nottinghamshire ICS [7]

	2021	2026	2031	Absolute change 2021-2026	Absolute change 2026-2031	Absolute change 2021-2031	% change 2021- 2026	% change 2026- 2031	% change 2021- 2031
<b>Ashfield</b>	105319	110459	115192	5140	4733	9873	4.9	4.3	9.4
<b>Bassetlaw</b>	96847	100151	103386	3304	3235	6539	3.4	3.2	6.8
<b>Broxtowe</b>	94735	98014	100711	3279	2697	5976	3.5	2.8	6.3
<b>Gedling</b>	97500	100706	103548	3206	2842	6048	3.3	2.8	6.2
<b>Mansfield</b>	89108	92252	95386	3144	3134	6278	3.5	3.4	7.0
<b>Newark and Sherwood</b>	100879	104901	108428	4022	3527	7549	4.0	3.4	7.5
<b>Nottingham</b>	269075	276007	286230	6932	10223	17155	2.6	3.7	6.4
<b>Rushcliffe</b>	97553	102831	107080	5278	4249	9527	5.4	4.1	9.8
<b>Total</b>	<b>951016</b>	<b>985321</b>	<b>1019961</b>	<b>34305</b>	<b>34640</b>	<b>68945</b>	<b>3.6</b>	<b>3.5</b>	<b>7.2</b>

Table 3. Projected population growth for Joined up Care Derbyshire ICS [7]

	2021	2026	2031	Absolute change 2021-2026	Absolute change 2026-2031	Absolute change 2021-2031	% change 2021- 2026	% change 2026- 2031	% change 2021- 2031
<b>Amber Valley</b>	106537	110661	114412	4124	3751	7875	3.9	3.4	7.4
<b>Bolsover</b>	66668	69593	72242	2925	2649	5574	4.4	3.8	8.4
<b>Chesterfield</b>	86437	87889	89257	1452	1368	2820	1.7	1.6	3.3
<b>Derby</b>	203001	208004	213133	5003	5129	10132	2.5	2.5	5.0
<b>Derbyshire Dales</b>	60899	62176	63255	1277	1079	2356	2.1	1.7	3.9
<b>Erewash</b>	94396	96293	98308	1897	2015	3912	2.0	2.1	4.1
<b>High Peak</b>	76741	78619	80291	1878	1672	3550	2.4	2.1	4.6
<b>North East Derbyshire</b>	84861	86838	88575	1977	1737	3714	2.3	2.0	4.4
<b>South Derbyshire</b>	88536	95485	101335	6949	5850	12799	7.8	6.1	14.5
<b>Total</b>	<b>868076</b>	<b>895558</b>	<b>920808</b>	<b>27482</b>	<b>25250</b>	<b>52732</b>	<b>3.2</b>	<b>2.8</b>	<b>6.1</b>

Table 4. Projected population growth for Leicester, Leicestershire and Rutland ICS

[7]

	2021	2026	2031	Absolute change 2021-2026	Absolute change 2026-2031	Absolute change 2021-2031	% change 2021- 2026	% change 2026- 2031	% change 2021- 2031
<b>Blaby</b>	84120	89867	94974	5747	5107	10854	6.8	5.7	12.9
<b>Charnwood</b>	155767	164781	173915	9014	9134	18148	5.8	5.5	11.7
<b>Harborough</b>	77241	81834	85791	4593	3957	8550	5.9	4.8	11.1
<b>Hinckley and Bosworth</b>	94599	99838	104789	5239	4951	10190	5.5	5.0	10.8
<b>Leicester</b>	283316	291855	301976	8539	10121	18660	3.0	3.5	6.6
<b>Melton</b>	41800	42598	43450	798	852	1650	1.9	2.0	3.9
<b>North West Leicestershire</b>	86998	93869	100140	6871	6271	13142	7.9	6.7	15.1
<b>Oadby and Wigston</b>	45495	46277	47590	782	1313	2095	1.7	2.8	4.6
<b>Rutland</b>	33245	34751	36137	1506	1386	2892	4.5	4.0	8.7
<b>Total</b>	<b>902581</b>	<b>945670</b>	<b>988762</b>	<b>43089</b>	<b>43092</b>	<b>86181</b>	<b>4.8</b>	<b>4.6</b>	<b>9.5</b>

Table 5. Projected population growth for Northamptonshire Health and Care Partnership ICS [7]. Note the lower-tier local authorities presented have since been superseded by North Northamptonshire and West Northamptonshire.

	2021	2026	2031	Absolute change 2021-2026	Absolute change 2026-2031	Absolute change 2021-2031	% change 2021-2026	% change 2026-2031	% change 2021-2031
<b>Corby</b>	57413	62148	66416	4735	4268	9003	8.2	6.9	15.7
<b>Daventry</b>	71590	76767	81154	5177	4387	9564	7.2	5.7	13.4
<b>East Northamptonshire</b>	77946	82544	86469	4598	3925	8523	5.9	4.8	10.9
<b>Kettering</b>	82378	87149	91384	4771	4235	9006	5.8	4.9	10.9
<b>Northampton</b>	176065	180044	183886	3979	3842	7821	2.3	2.1	4.3
<b>South Northamptonshire</b>	76822	81084	84588	4262	3504	7766	5.5	4.3	10.1
<b>Wellingborough</b>	63853	66512	68804	2659	2292	4951	4.2	3.4	7.8
<b>Total</b>	<b>606067</b>	<b>636248</b>	<b>662701</b>	<b>30181</b>	<b>26453</b>	<b>56634</b>	<b>5.0</b>	<b>4.2</b>	<b>9.3</b>

## Population Density

Those who live in densely populated areas have an increased risk of poor oral health [8]. Population density varies greatly both within and between the ICSs in the East Midlands (Figure 3, Figure 4, Figure 5, Figure 6, Figure 7). The maps are based on mid-2020 population projections by Lower Super Output Area (LSOA), with population density presented in quintiles.

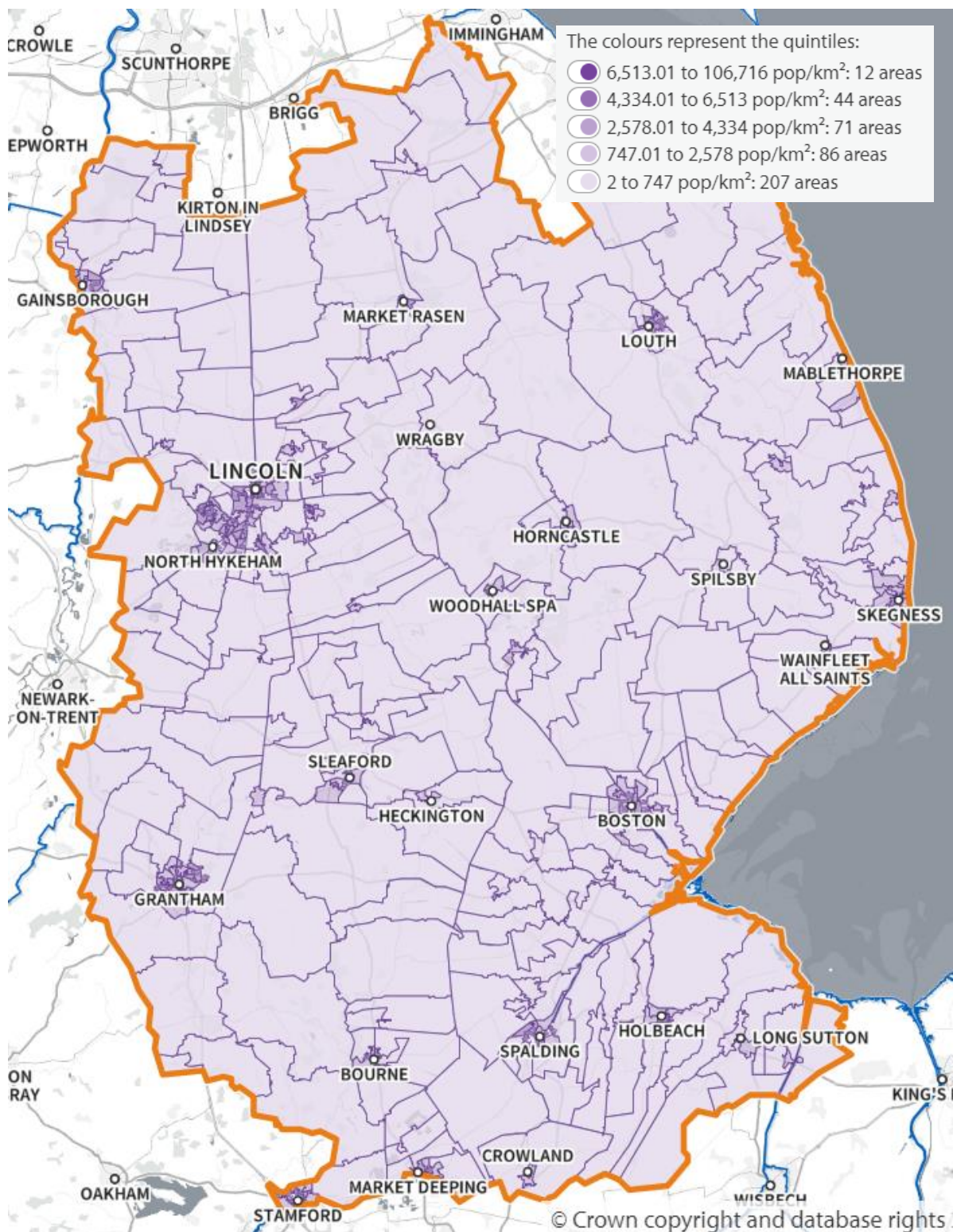


Figure 3. Population density in Lincolnshire ICS. The darker areas are those where population density is greatest.



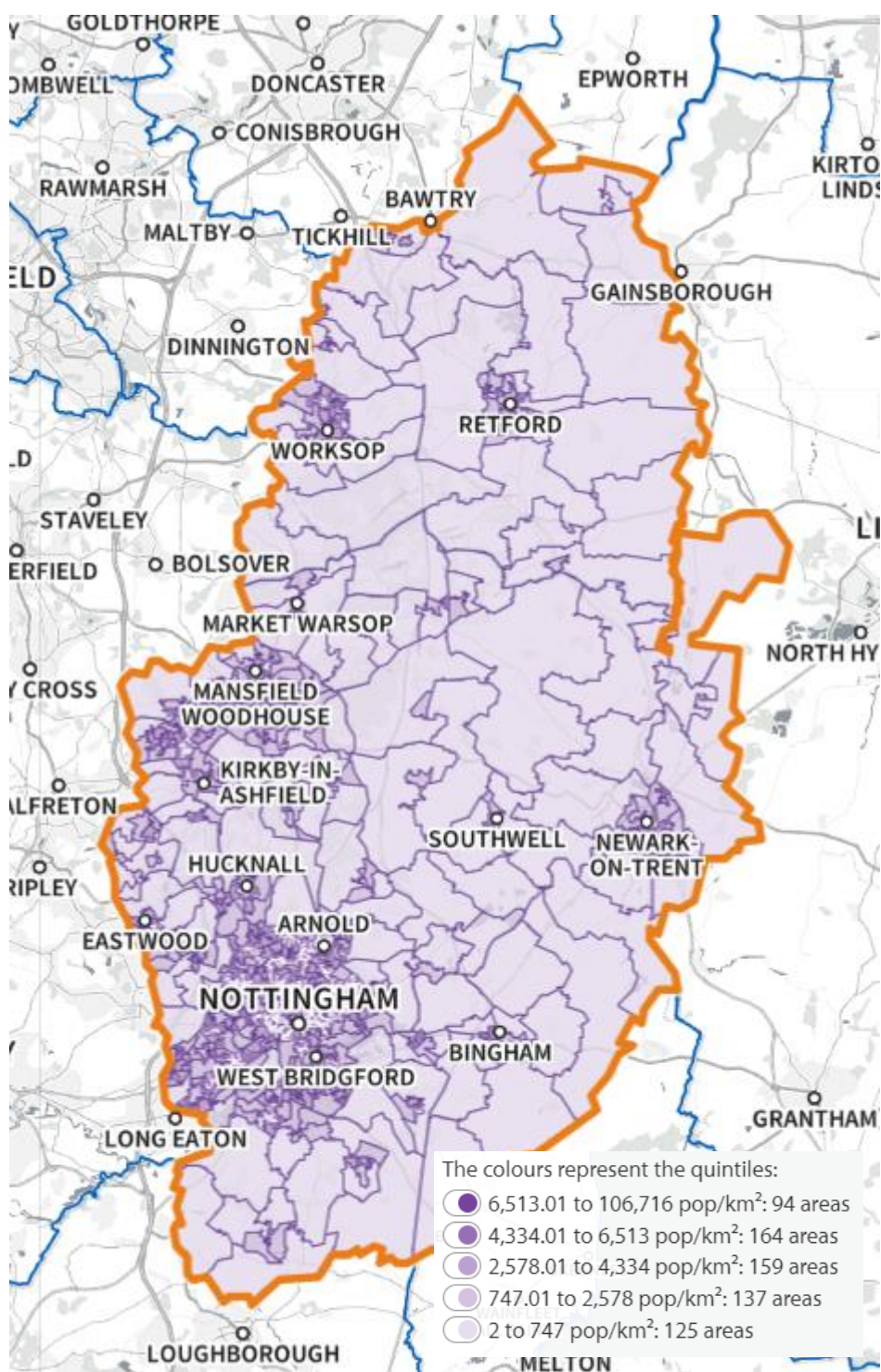


Figure 4. Population density in Nottingham and Nottinghamshire ICS. The darker areas are those where population density is greatest.



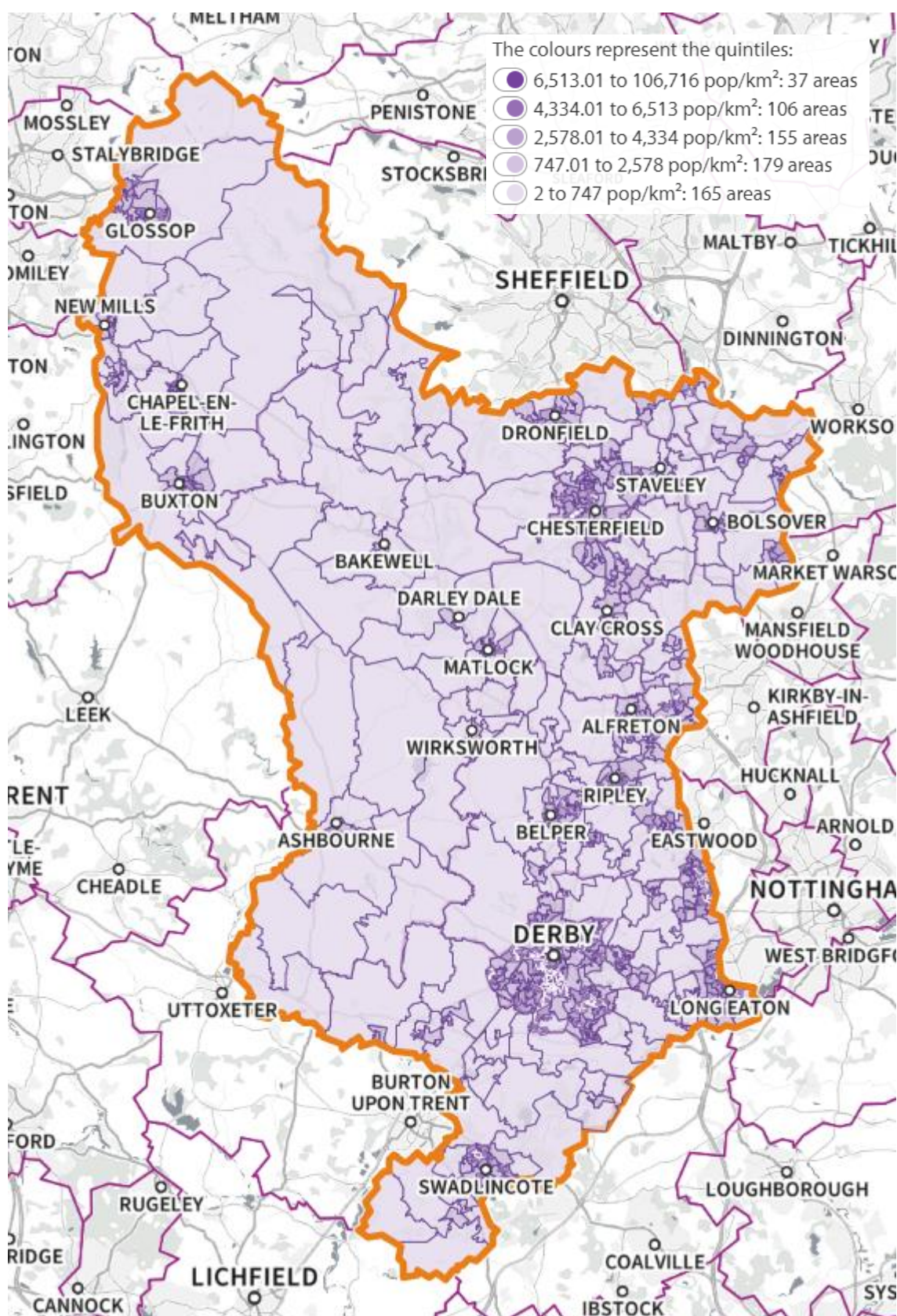


Figure 5. Population density in Joined up Care Derbyshire ICS. The darker areas are those where population density is greatest.

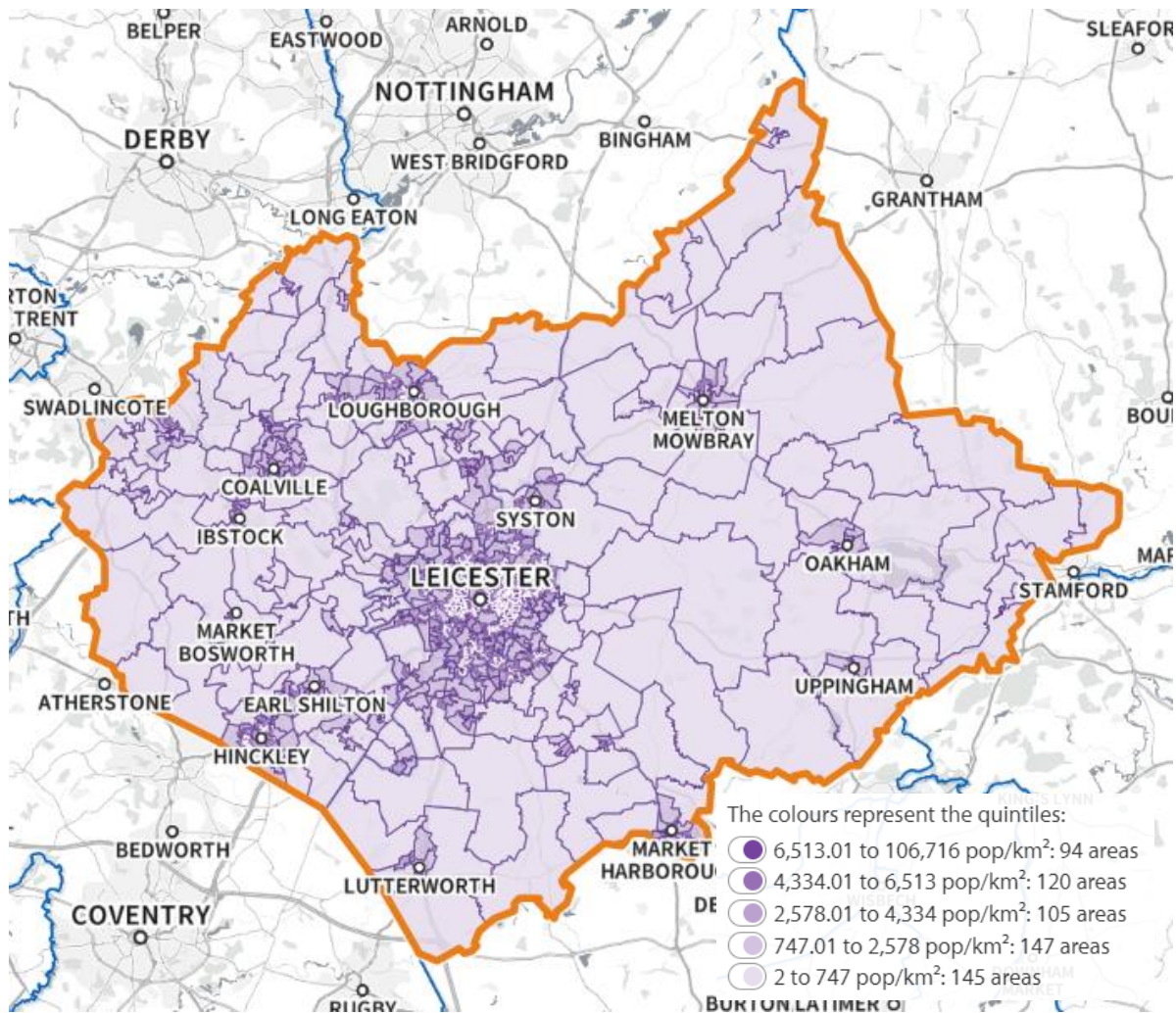


Figure 6. Population density in Leicester, Leicestershire and Rutland ICS. The darker areas are those where population density is greatest.



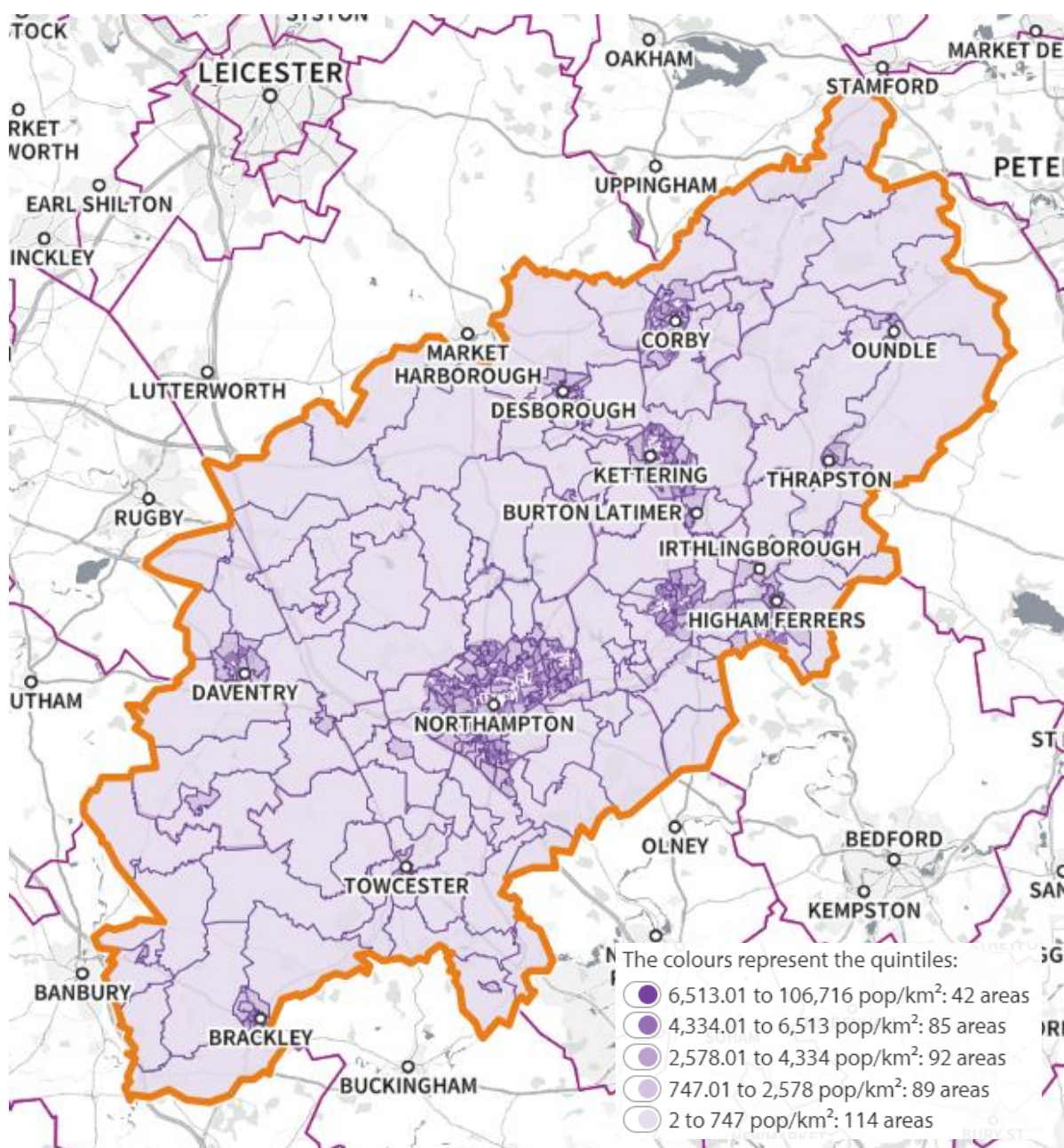


Figure 7. Population density in Northamptonshire Health and Care Partnership ICS. The darker areas are those where population density is greatest.

## Deprivation

Living in deprivation carries an increased risk of poor oral health [2]. Those from lower socioeconomic groups and those living in disadvantaged areas may also find it more difficult to access dental services. Across the ICSs deprivation is centred on urban areas, although there are also instances of marked deprivation in rural areas (Figure 9, Figure 10, Figure 11, Figure 12, Figure 13). The maps are based on the

Index of Multiple Deprivation (IMD) from the Indices of Deprivation 2019 by LSOA. The IMD consists of seven weighted domains (Figure 8).

- Health Deprivation (13.5%)
- Income Deprivation (22.5%)
- Employment Deprivation (22.5%)
- Education Deprivation (13.5%)
- Crime Deprivation (9.3%)
- Barriers to Housing and Services (9.3%)
- Living Environment Deprivation (9.3%)

Figure 8. Index of Multiple Deprivation domains and weightings, from the Indices of Deprivation 2019

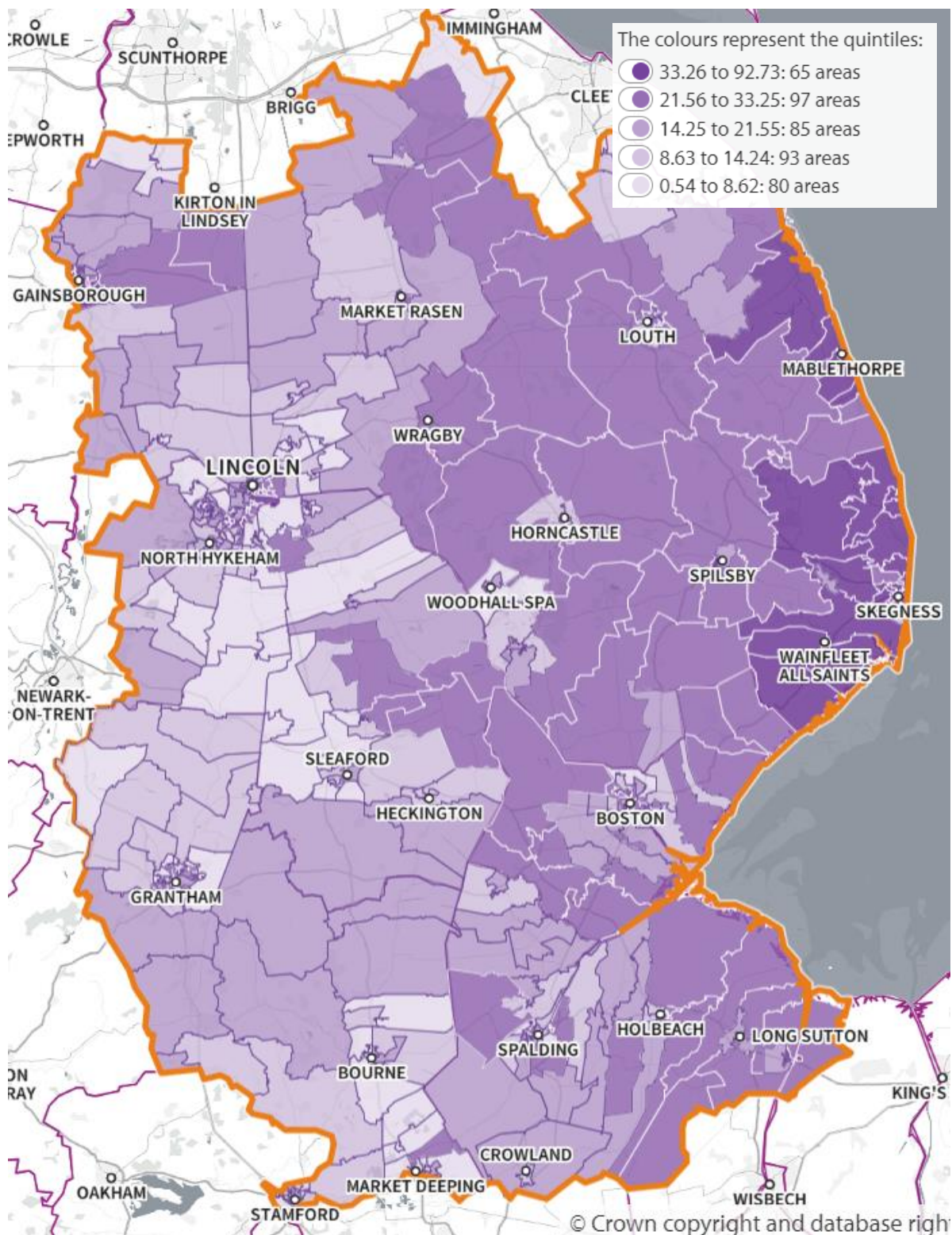


Figure 9. Deprivation in Lincolnshire ICS. The darker areas are those where deprivation is greatest.



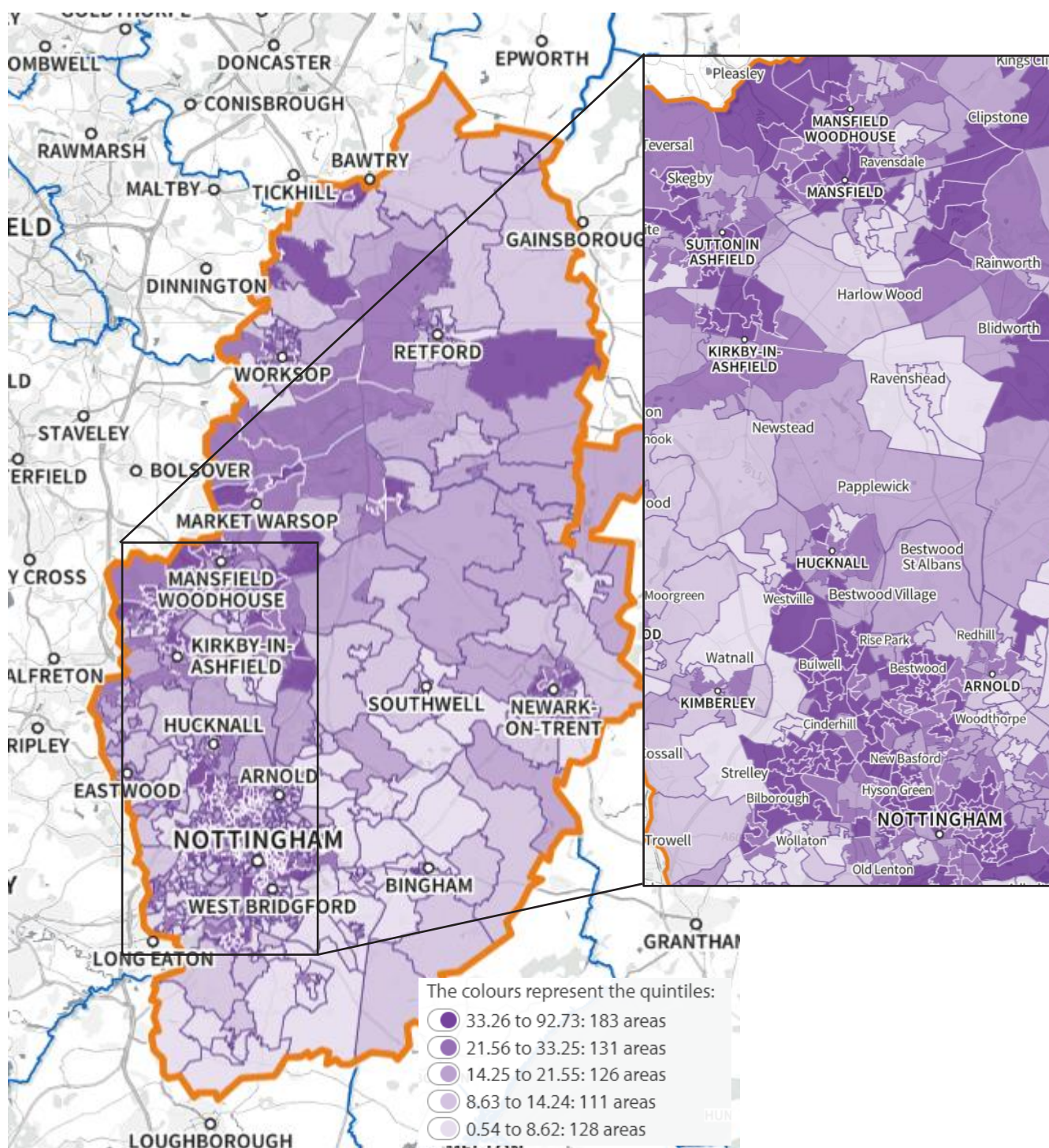


Figure 10. Deprivation in Nottingham and Nottinghamshire ICS. The darker areas are those where deprivation is greatest.



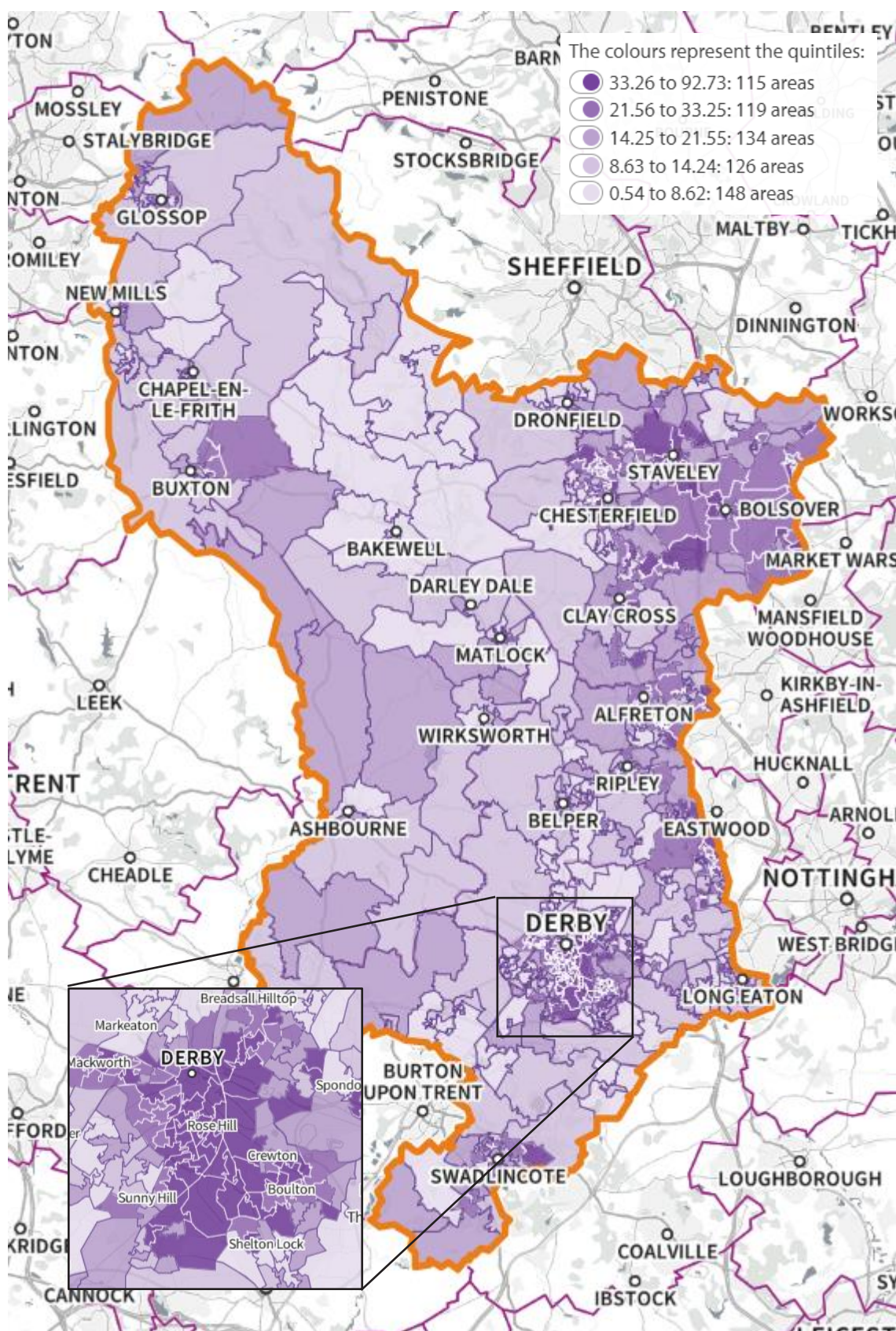


Figure 11. Deprivation in Joined up Care Derbyshire ICS. The darker areas are those where deprivation is greatest.



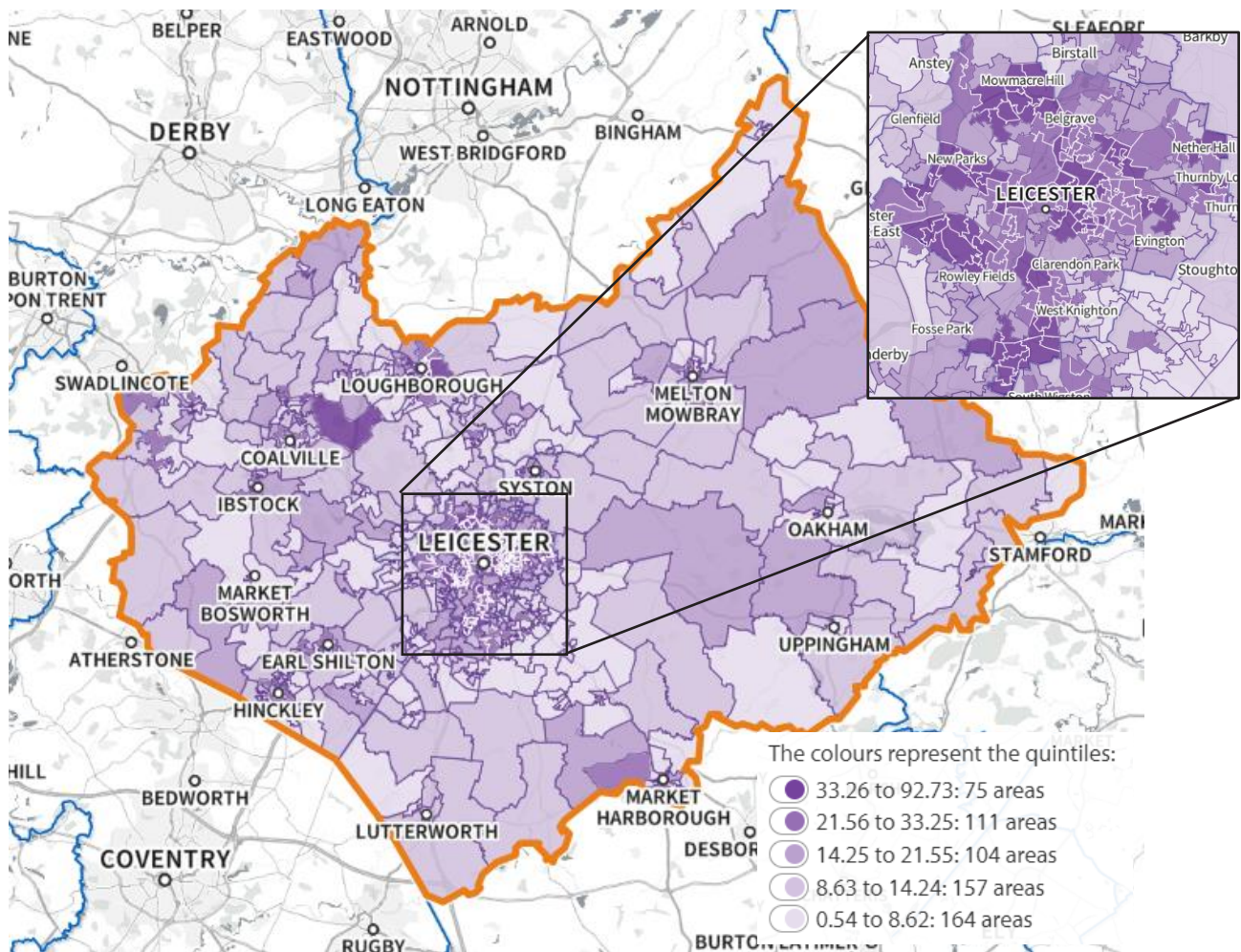


Figure 12. Deprivation in Leicester, Leicestershire and Rutland ICS. The darker areas are those where deprivation is greatest.

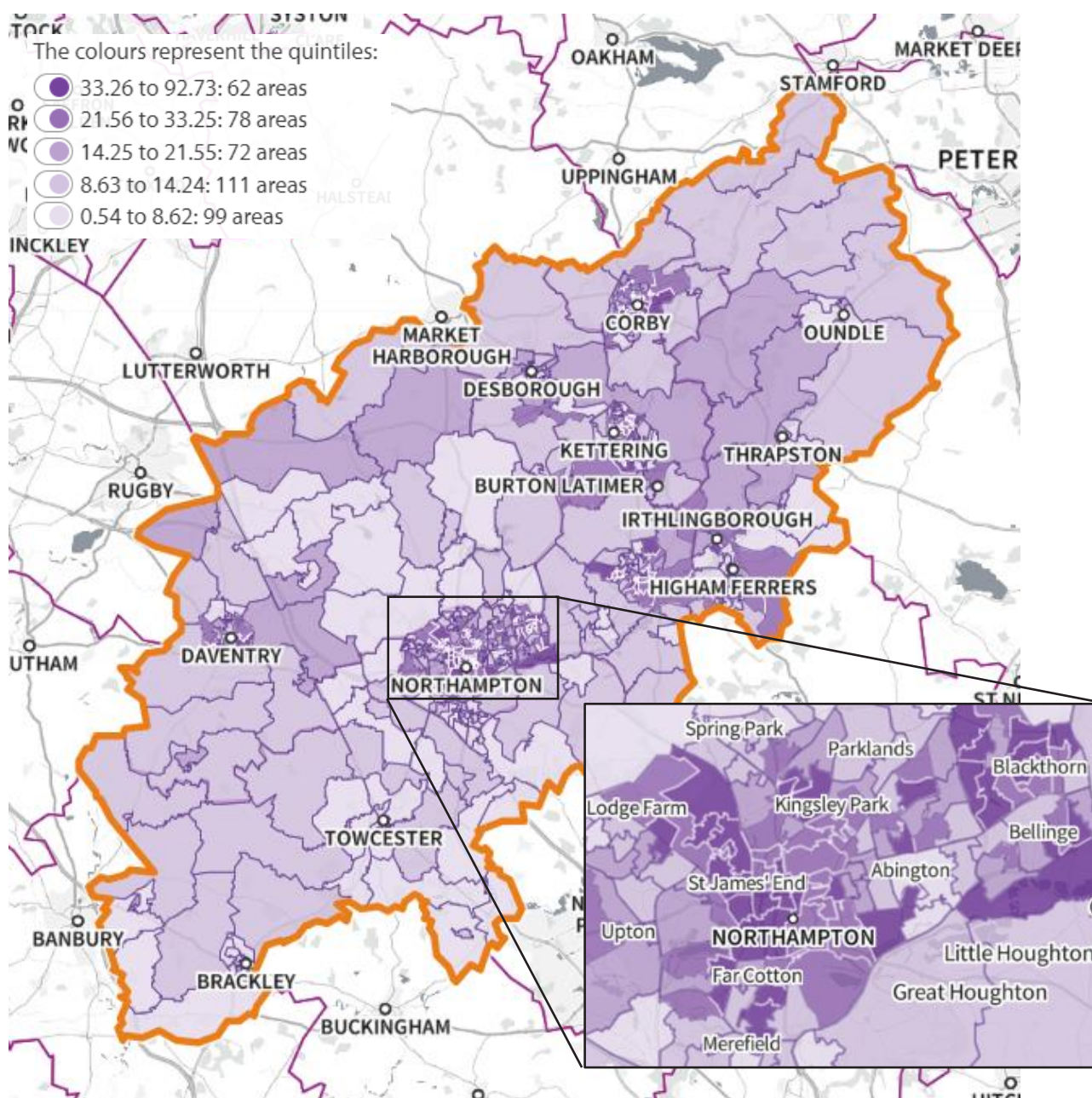


Figure 13. Deprivation in Northamptonshire Health and Care Partnership ICS. The darker areas are those where deprivation is greatest.

## Ethnicity

Oral health is poorer in those from some Black, Asian and minority ethnic groups [2]. The maps show the proportion of the population from the white ethnic group, by LSOA, based on the 2011 Census (Figure 14, Figure 15, Figure 16, Figure 17, Figure 18).



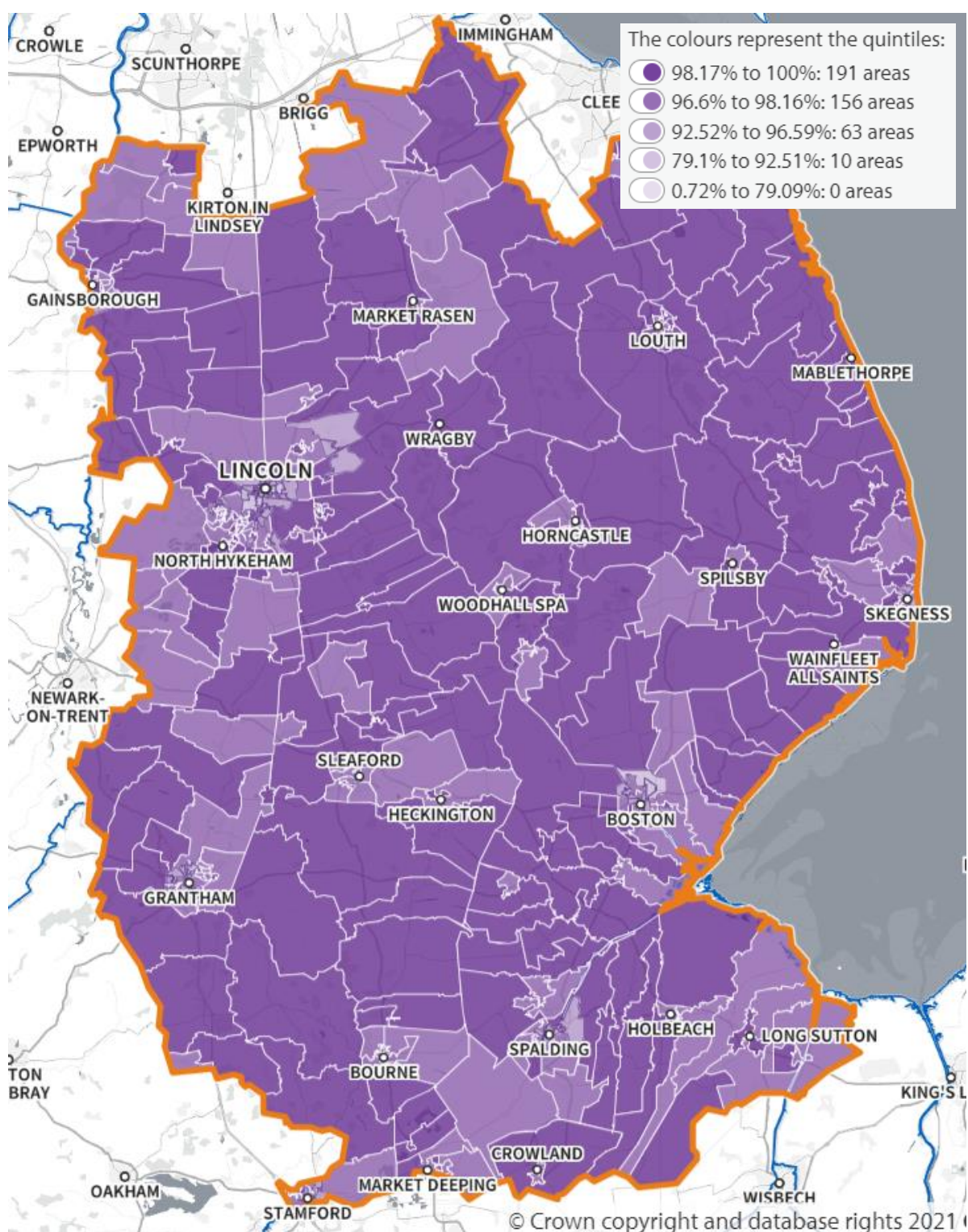


Figure 14. Ethnicity in Lincolnshire ICS. The lighter areas are those where the proportion of the population from non-white ethnic groups is greatest.



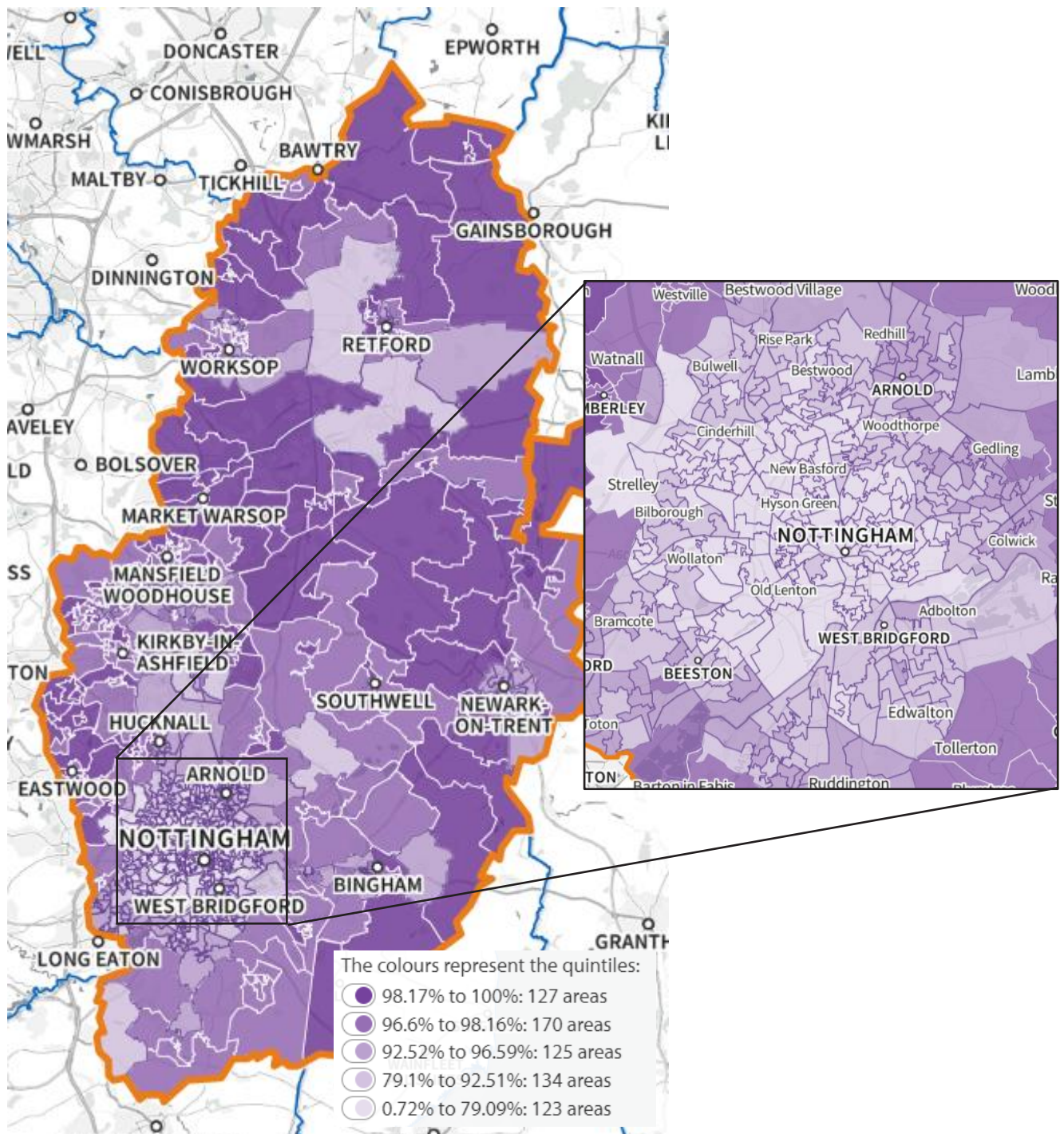


Figure 15. Ethnicity in Nottingham and Nottinghamshire ICS. The lighter areas are those where the proportion of the population from non-white ethnic groups is greatest.



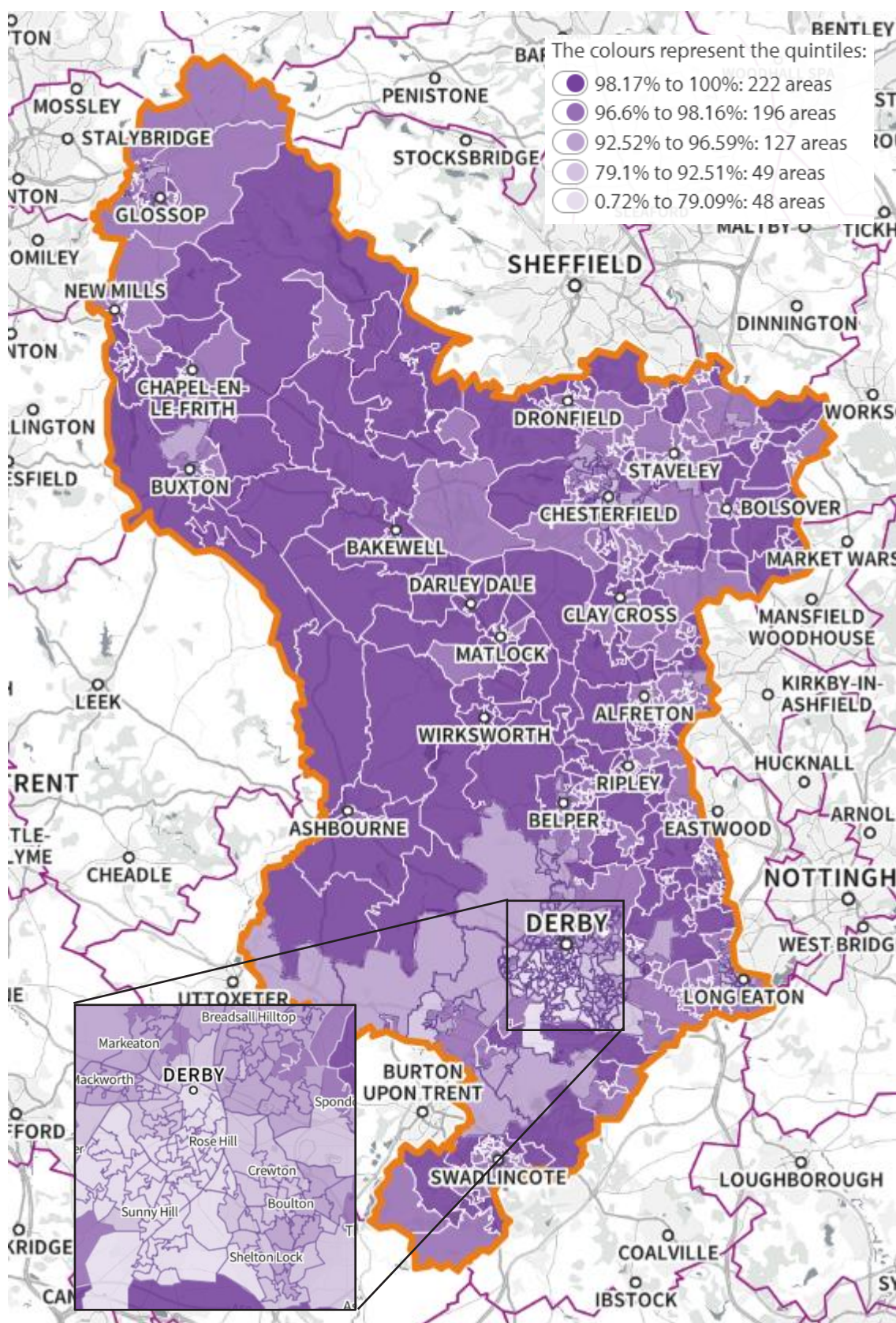


Figure 16. Ethnicity in Joined up Care Derbyshire ICS. The lighter areas are those where the proportion of the population from non-white ethnic groups is greatest.



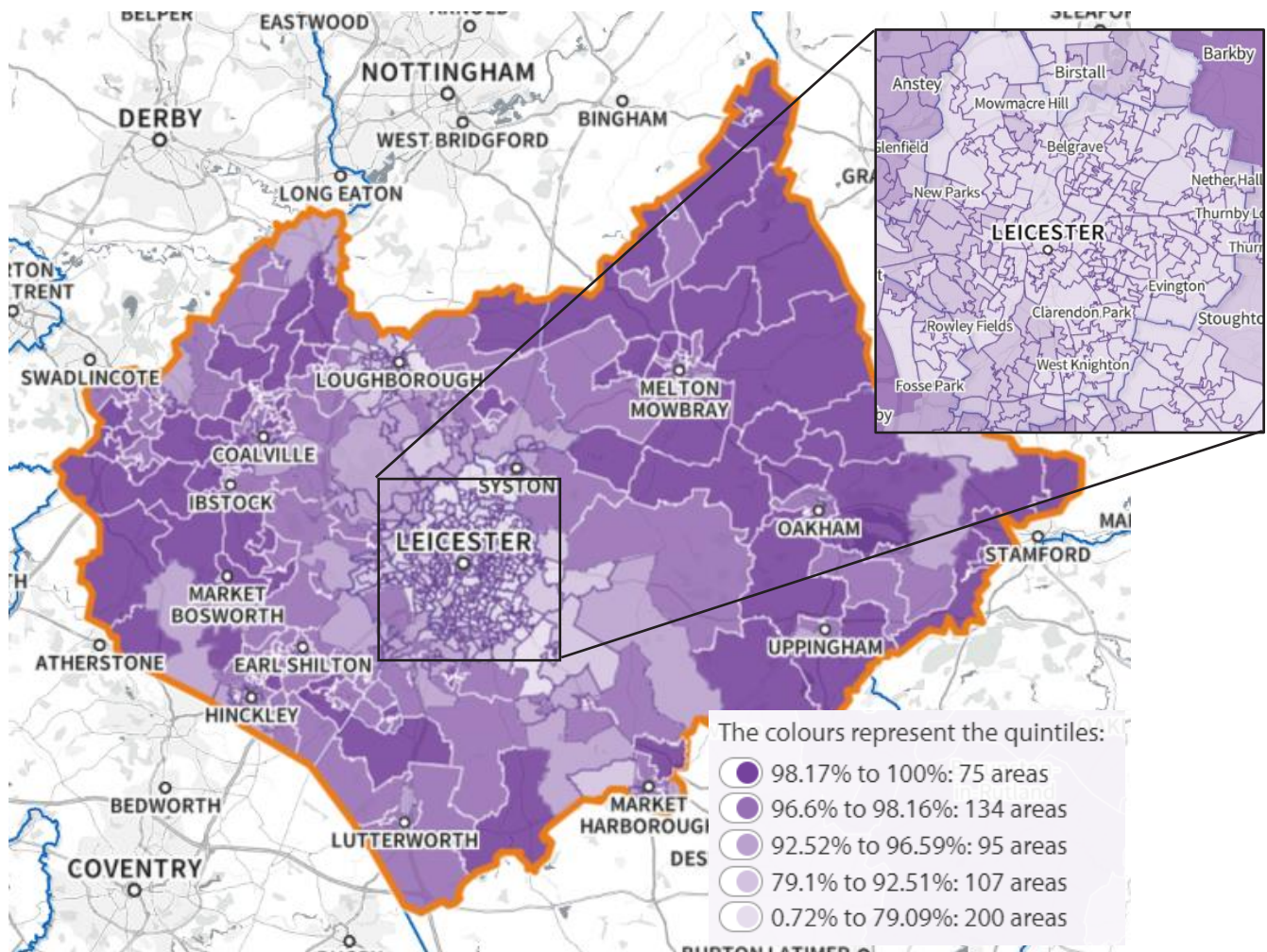


Figure 17. Ethnicity in Leicester, Leicestershire and Rutland ICS. The lighter areas are those where the proportion of the population from non-white ethnic groups is greatest.

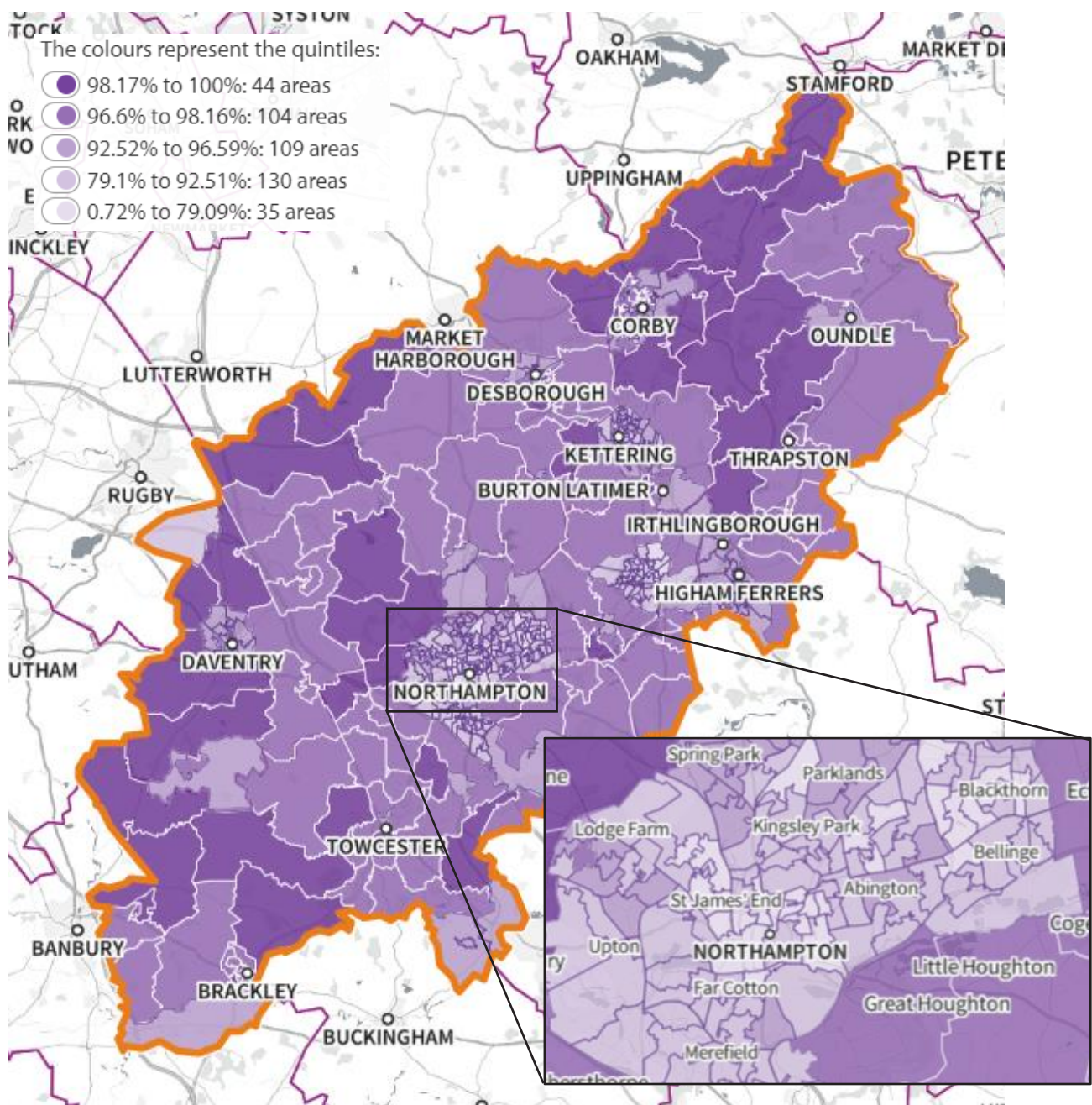


Figure 18. Ethnicity in Northamptonshire Health and Care Partnership ICS. The lighter areas are those where the proportion of the population from non-white ethnic groups is greatest.

## Age Profile

Those who are older and frail are at high risk of poor oral health and may find it more difficult to access dental services [2]. The population age profile differs between the ICSs (Figure 19, Figure 20, Figure 21, Figure 22, Figure 23). The population pyramids are based on mid-2020 projections with age grouped by quinary band. Lincolnshire ICS has the greatest proportion of older adults. In

Nottingham and Nottinghamshire ICS and Leicester, Leicestershire and Rutland ICS, 20-24 years is the modal quinary band, representing a greater proportion of younger adults.

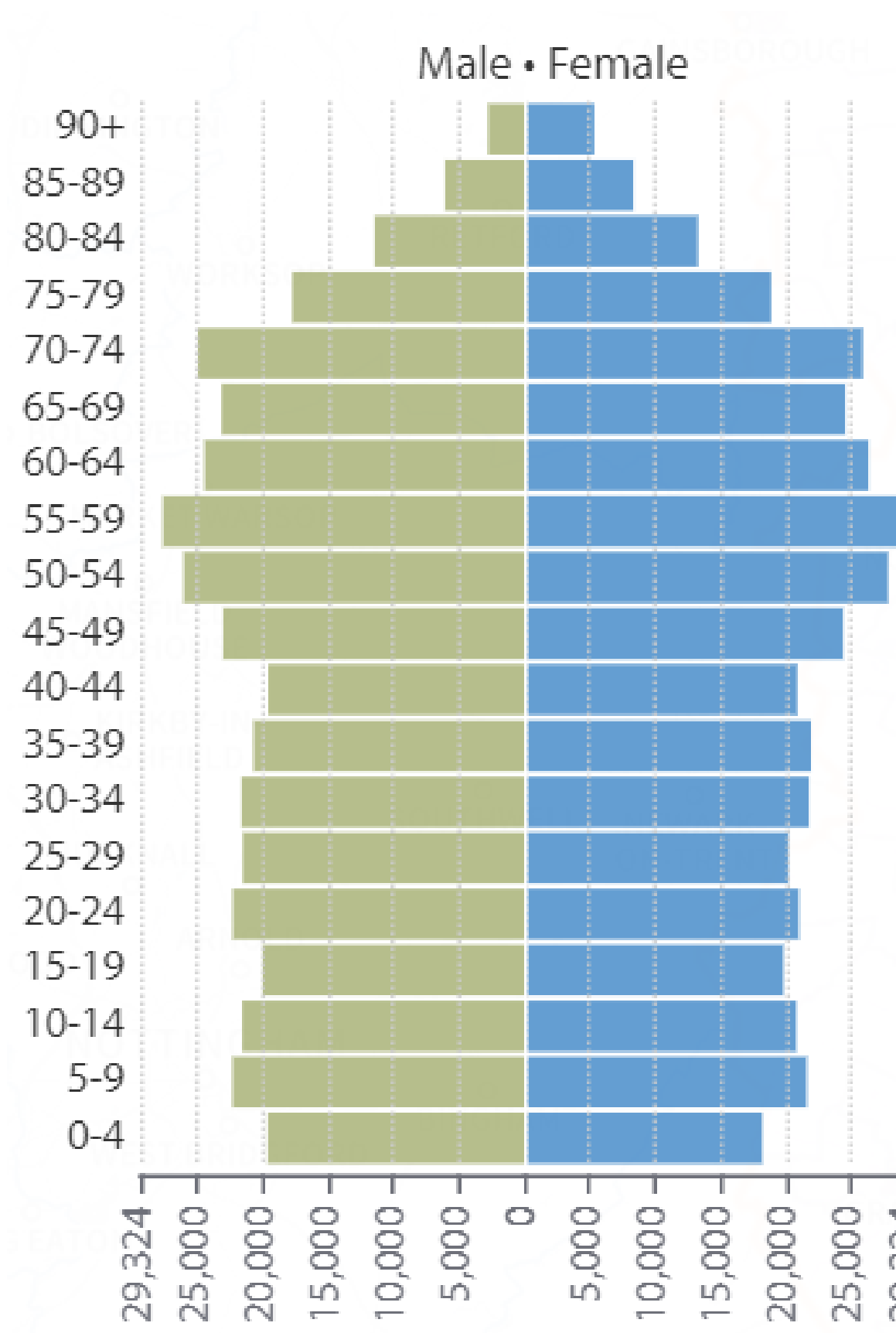


Figure 19. Population pyramid for Lincolnshire ICS with age in years by quinary band

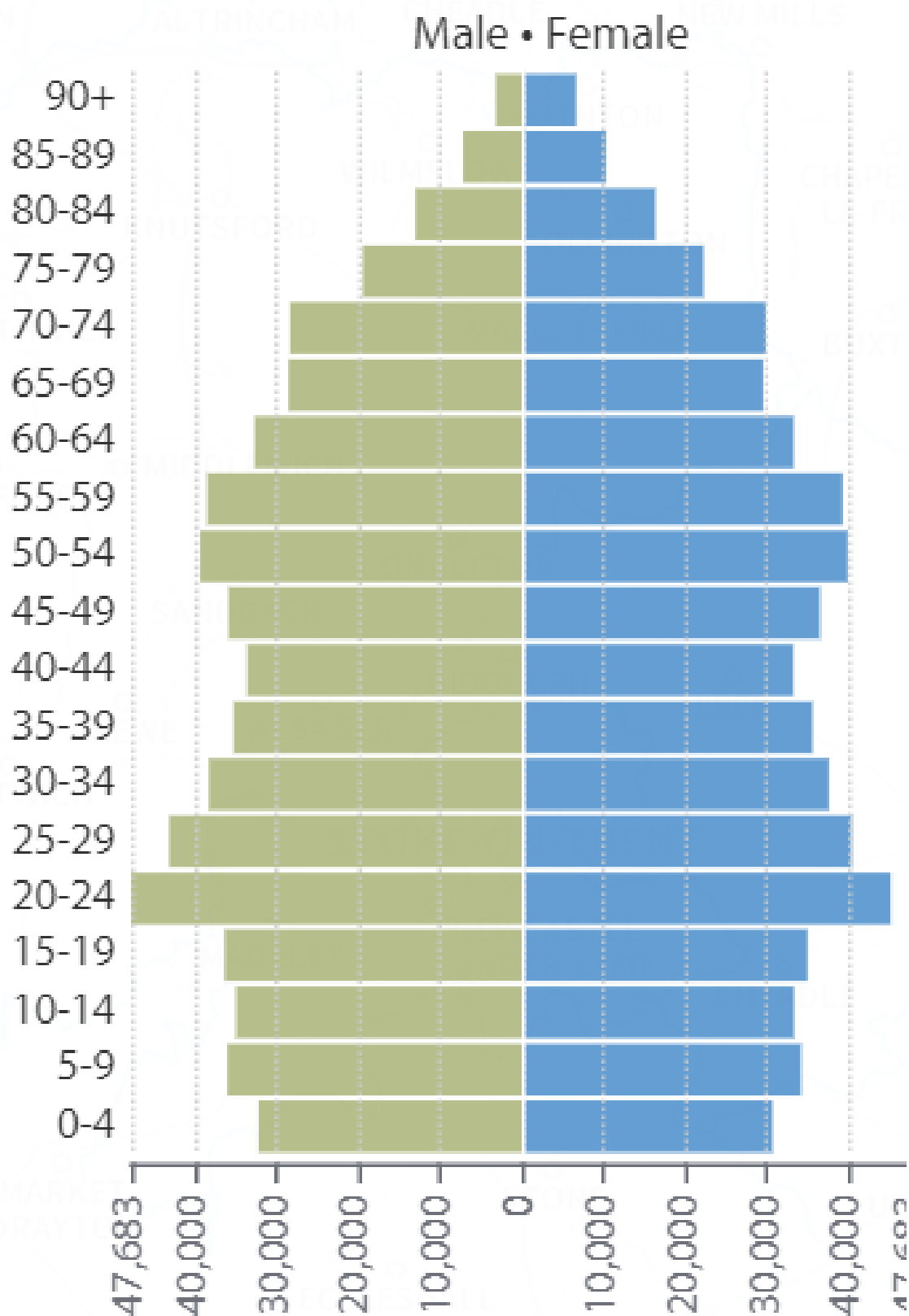


Figure 20. Population pyramid for Nottingham and Nottinghamshire ICS with age in years by quinary band



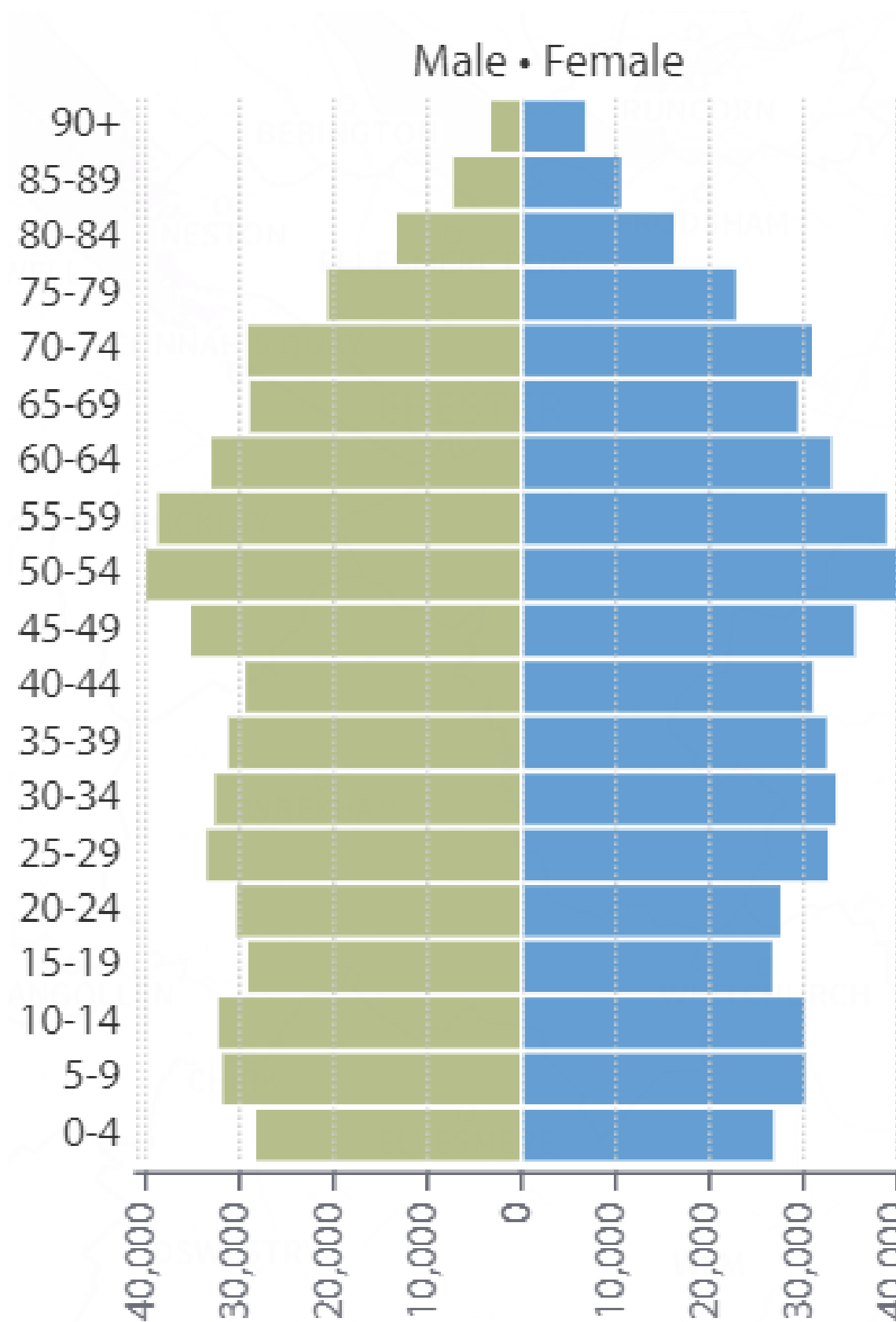


Figure 21. Population pyramid for Joined up Care Derbyshire ICS with age in years by quinary band



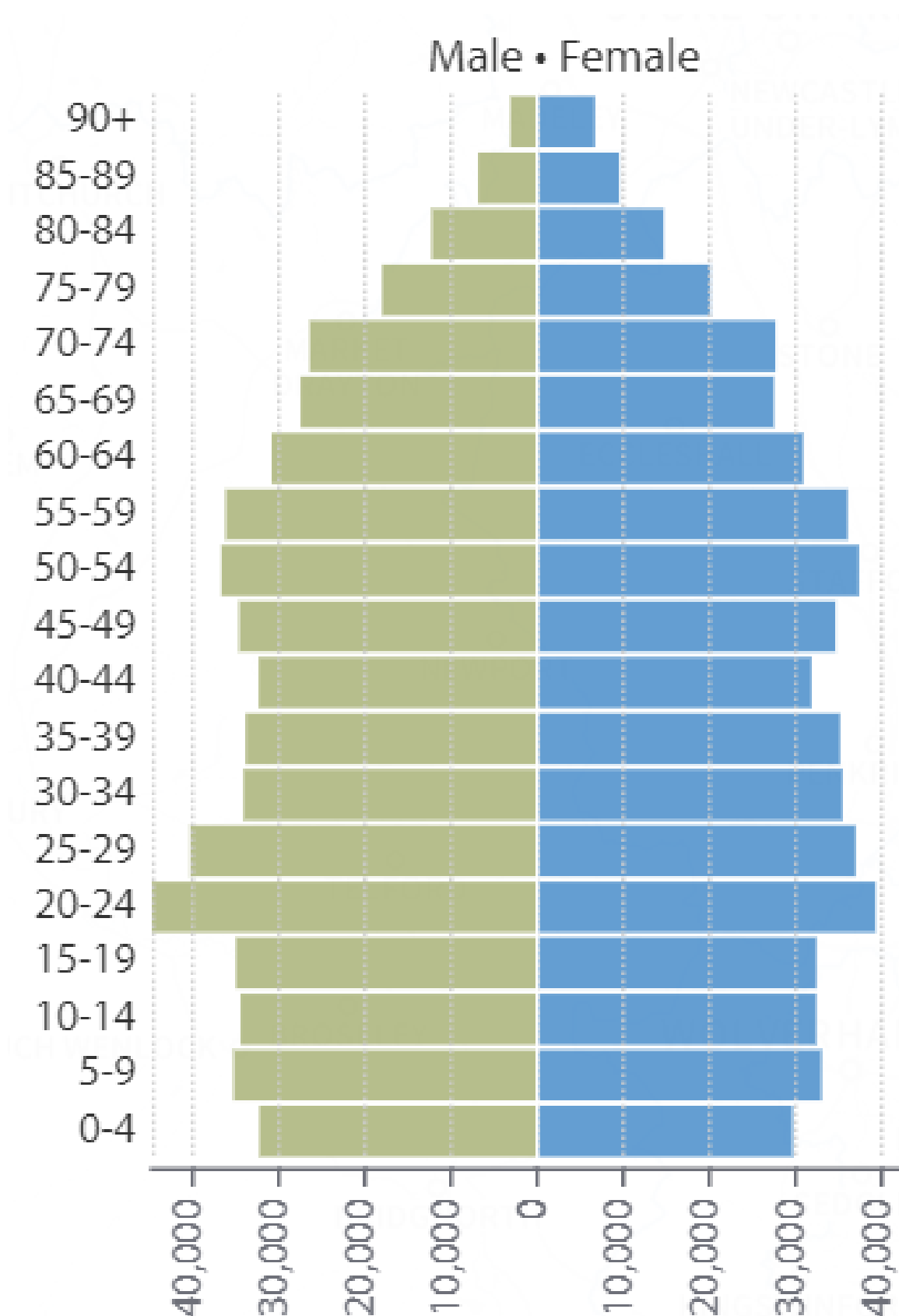


Figure 22. Population pyramid for Leicester, Leicestershire and Rutland ICS with age in years by quinary band

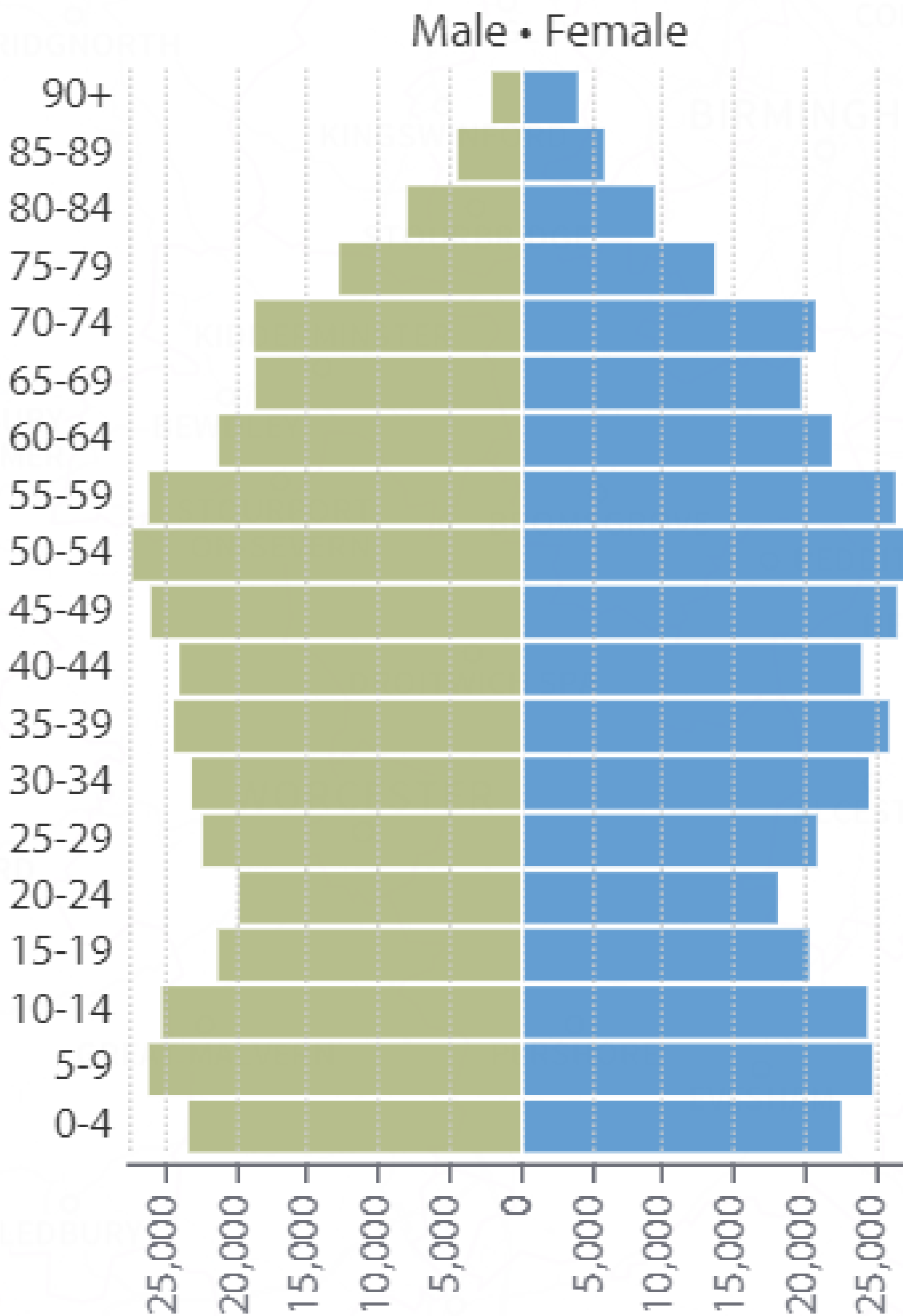


Figure 23. Population pyramid for Northamptonshire Health and Care Partnership ICS with age in years by quinary band

## General Health

General health has strong links to oral health [9]. Those with poor general health are more likely to have poor oral health, as many of the risk factors are the same [1, 9]. The prevalence of common chronic conditions varies between the upper-tier local authorities across the region (Figure 24, Figure 25).

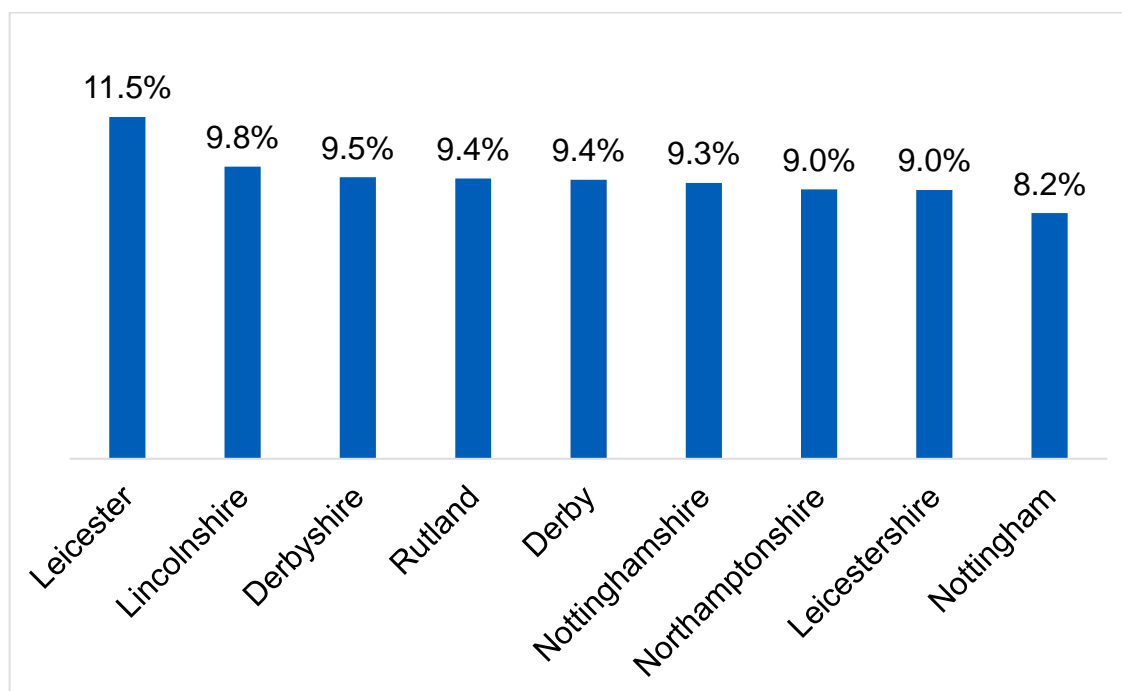


Figure 24. Projected diabetes prevalence in those aged 16 and over in 2025 by upper-tier local authority. Projections are based on data from the Health Survey for England 2012, 2013 and 2014, Hospital Episodes Statistics (HES) and a range of demographic indicators [10].

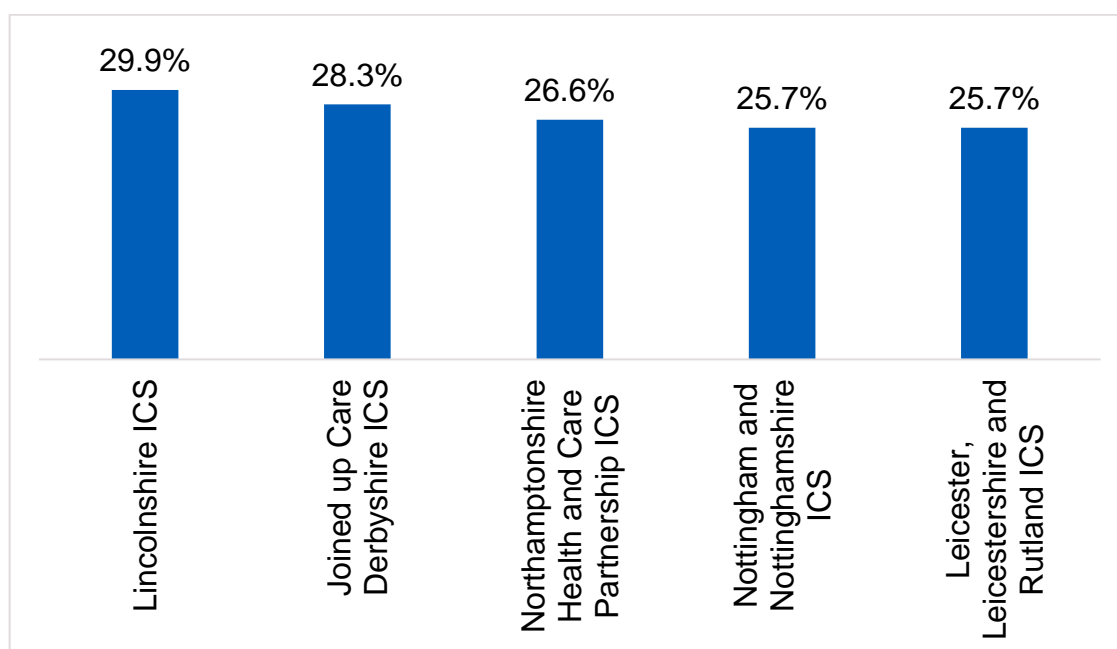


Figure 25. Estimated hypertension prevalence in those aged 16 and over in 2017 by ICS. Estimates are based on data from the Health Survey for England 2016 and 2017 and a range of demographic indicators [11].

## Disability

A person is considered to have a disability if they have a physical or mental impairment that has ‘substantial’ and ‘long term’ negative effects on their ability to do normal daily activities [12]. Those with disabilities are at increased risk of poor oral health and may find it more difficult to access dental services [2]. There is considerable variation in the proportion of the total population whose day-to-day activities are limited by a long term health problem or disability at lower-tier local authority level [13] (Figure 26).

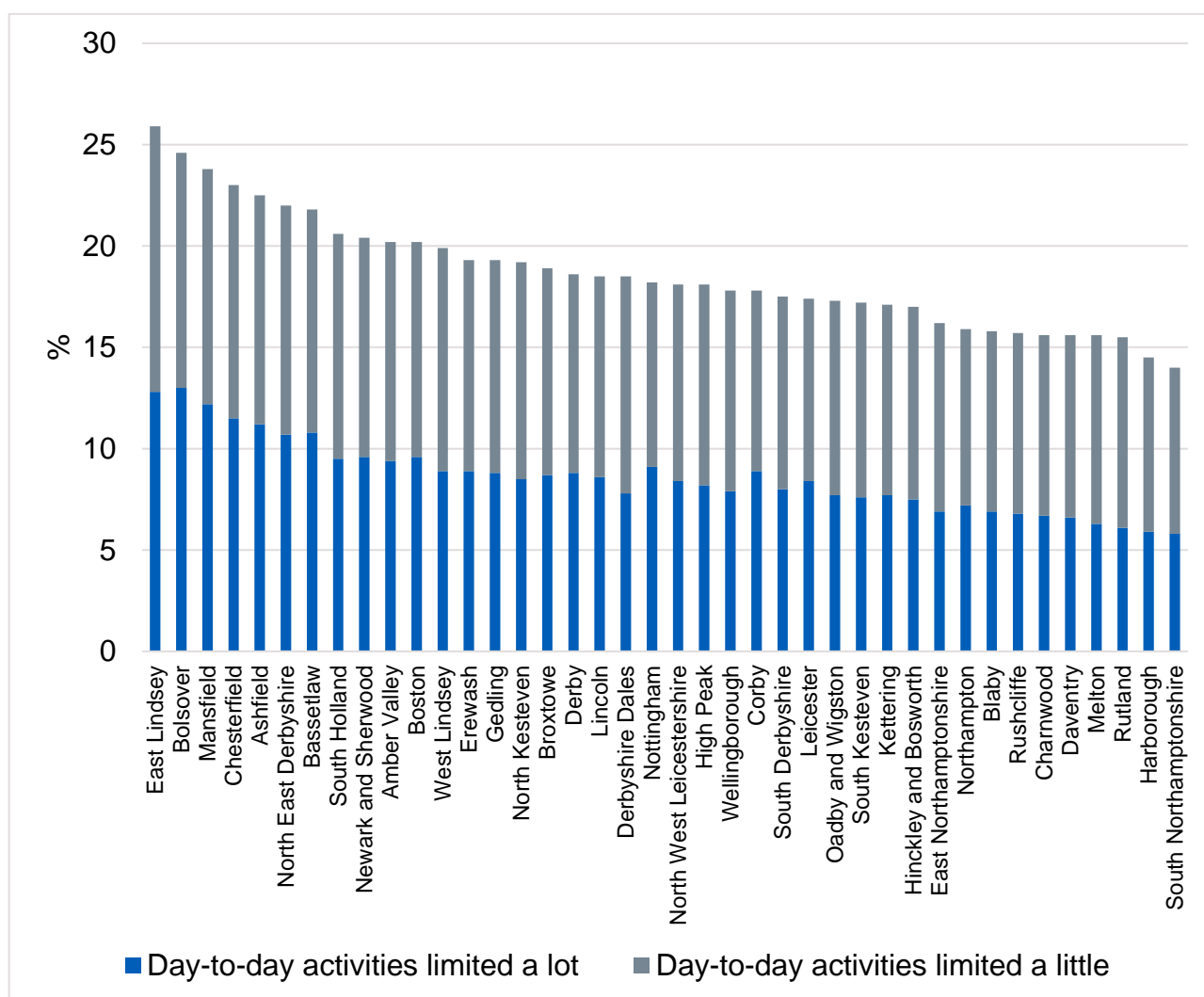


Figure 26. Percentage of total population whose day-to-day activities are limited, by lower-tier local authority [13].

## Adult Oral Health

Those with poor oral health are more likely to require oral surgery. An oral health survey of adults (aged 16 and over) attending dental practices was undertaken in 2018 and is a source of data at upper-tier local authority level [14]. It consisted of a questionnaire and a dental examination for participants, undertaken within a dental epidemiology fieldwork programme. The PUFA (pulp, ulceration, fistula and abscess) index is useful in the estimation of population oral surgery need. The proportion of adults with at least one PUFA sign ranged from 0.0% in Rutland to 11.8% in Nottinghamshire (Table 6).

Table 6. Adult oral health data by upper-tier local authority [14]. The number of survey participants in Derby and Nottingham was insufficient to publish data for these upper-tier local authorities.

	% suffering any oral health impacts fairly or very often % with an urgent treatment need % with PUFA % with filled teeth Average number of decayed teeth (for those with active decay) % with active decay					
<b>Derby</b>	no data					
<b>Derbyshire</b>	28.2	2.1	92.2	5.3	5.2	13.8
<b>Leicester</b>	36.4	2.4	87.4	5.5	2.1	23.4
<b>Leicestershire</b>	25.4	1.9	92.0	3.9	2.6	13.5
<b>Lincolnshire</b>	20.7	1.8	88.6	2.5	1.6	13.7
<b>Northamptonshire</b>	23.9	2.0	90.5	3.6	5.3	18.1
<b>Nottingham</b>	no data					
<b>Nottinghamshire (excluding Ashfield, Bassetlaw and Rushcliffe)</b>	20.0	1.4	90.0	11.8	4.3	11.5
<b>Rutland</b>	12.5	1.7	89.3	0.0	1.8	10.2

## Child Oral Health

Population-level child oral health data is useful as a proxy measure in the assessment of adult oral surgery treatment need. This is because positive correlation exists between child and adult oral health at population level. Child oral health data is more granular than adult oral health data as it is available at lower-tier local authority level. An oral health survey of 5-year-olds was undertaken in 2019 [15] and is the most recent child oral health data available. It consisted of a dental examination for participants, undertaken in schools within a dental epidemiology fieldwork programme. The need for oral surgery treatment is likely to be greater in lower-tier local authorities where a higher proportion of the child population have experience of decay, extracted teeth and oral sepsis. The graphs show the variation in these measures across the region (Figure 27, Figure 28, Figure 29).

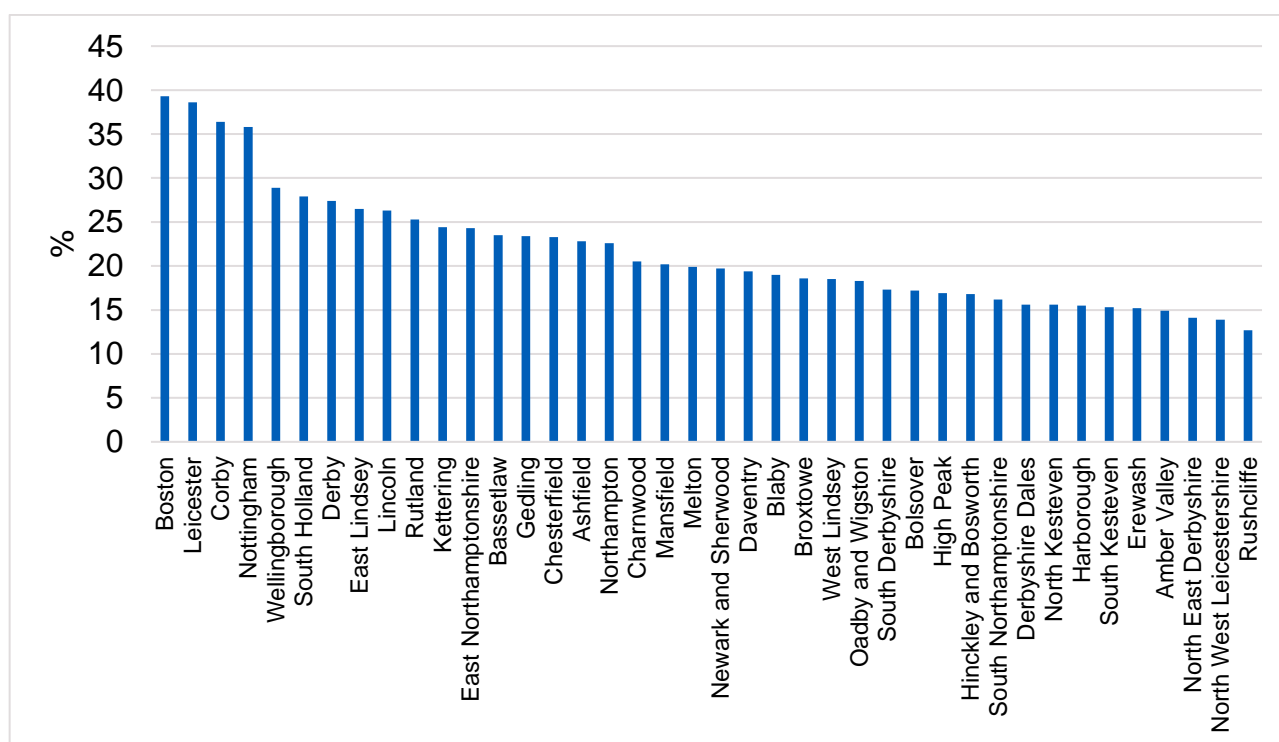


Figure 27. Percentage of 5-year-olds with evidence of decay by lower-tier local authority [15]. Evidence of decay is defined as having one or more teeth that are decayed into dentine, missing or filled.

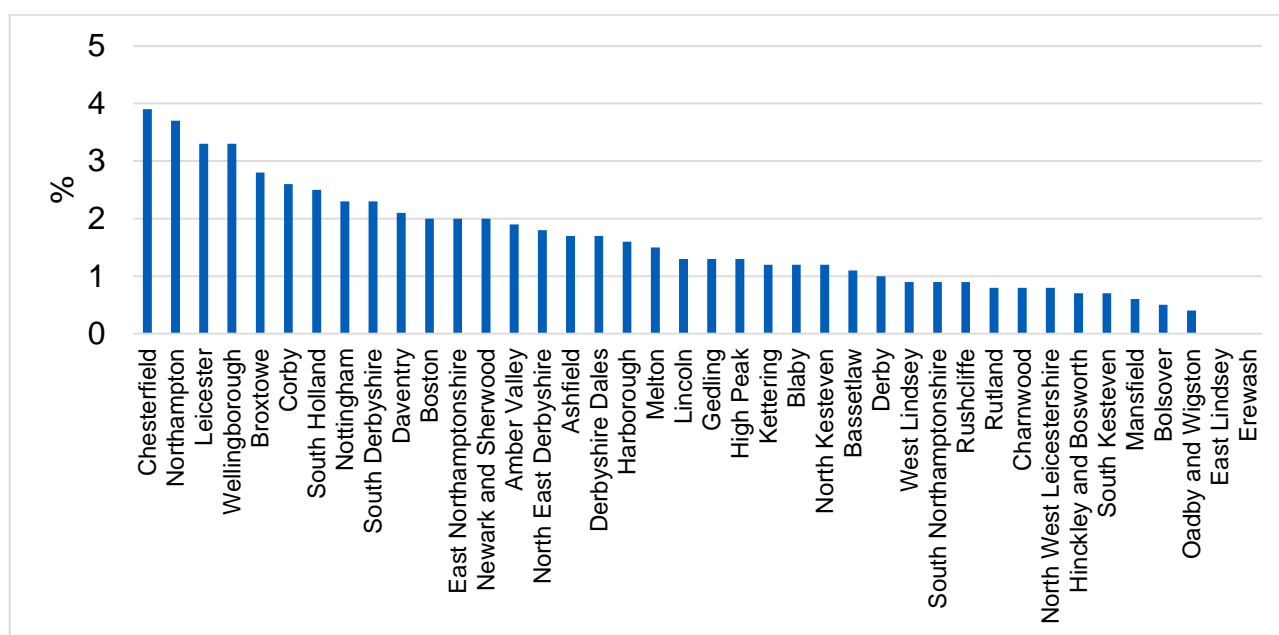


Figure 28. Percentage of 5-year-olds with one or more teeth extracted due to decay by lower-tier local authority [15]

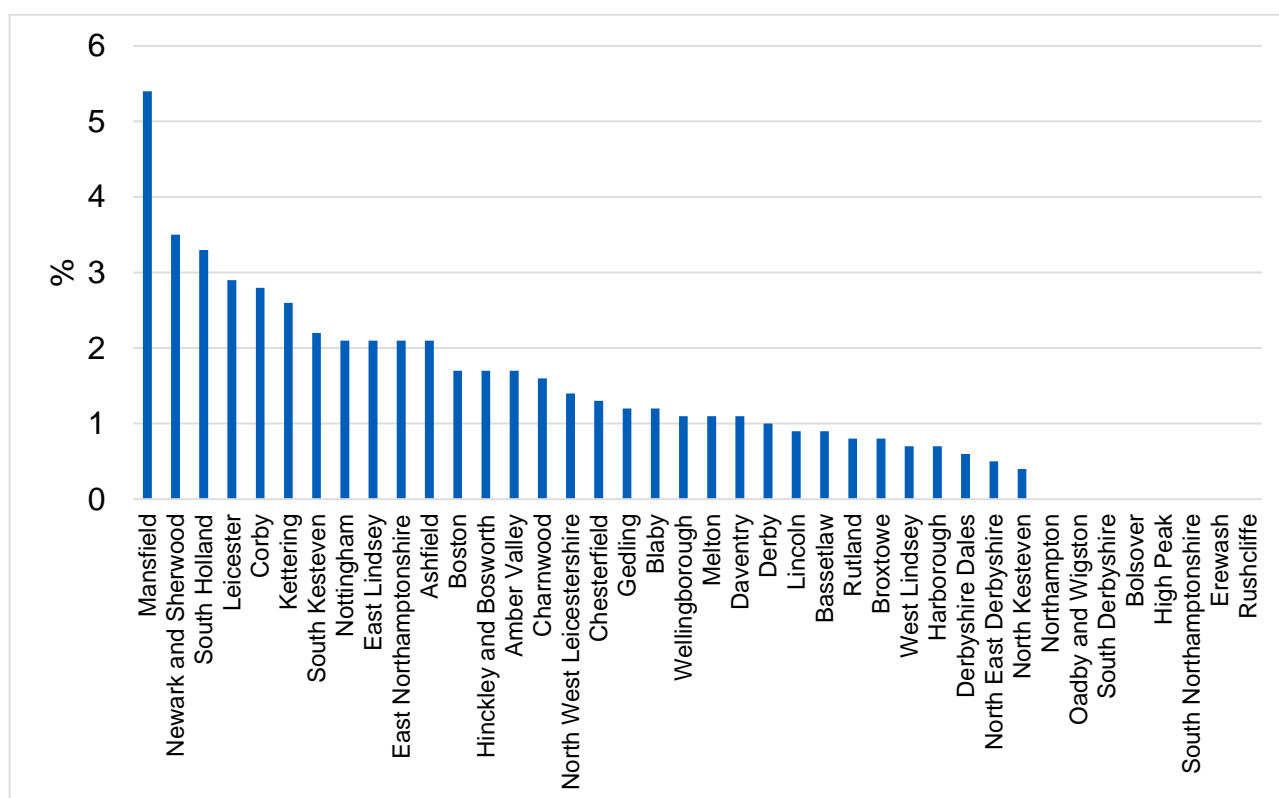


Figure 29. Percentage of 5-year-olds with evidence of oral sepsis, defined as the presence of a dental abscess or sinus recorded by visual examination of the soft tissues [15]



## Community Water Fluoridation

Water fluoridation is a safe and effective measure for reducing the proportion of a population developing decay [16]. It also reduces differences in dental health between those of differing levels of deprivation [16]. Water fluoridation schemes exist in parts of Lincolnshire, Nottinghamshire and Derbyshire [17] (Figure 30, Figure 31, Figure 32).

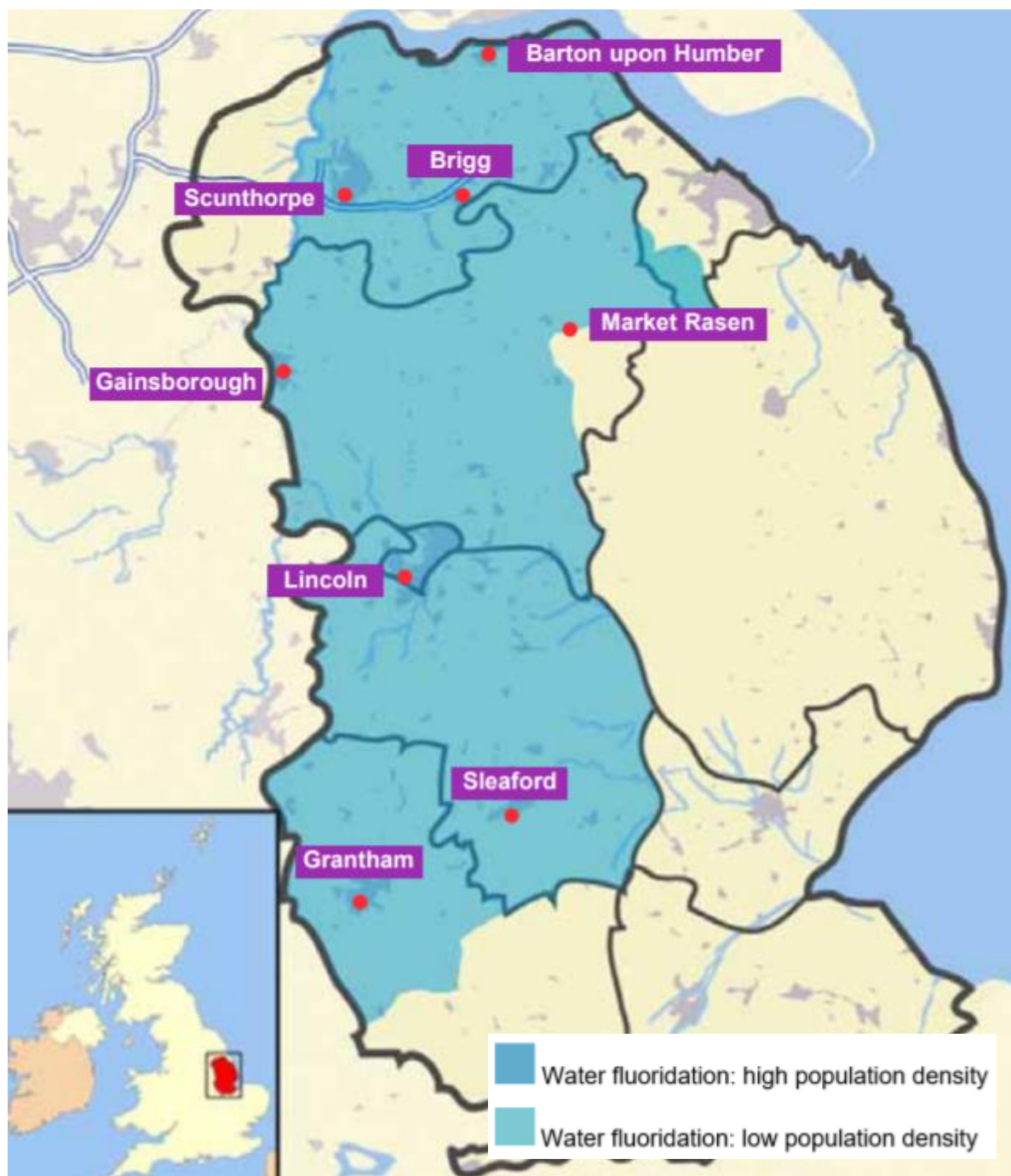


Figure 30. Water fluoridation in Lincolnshire

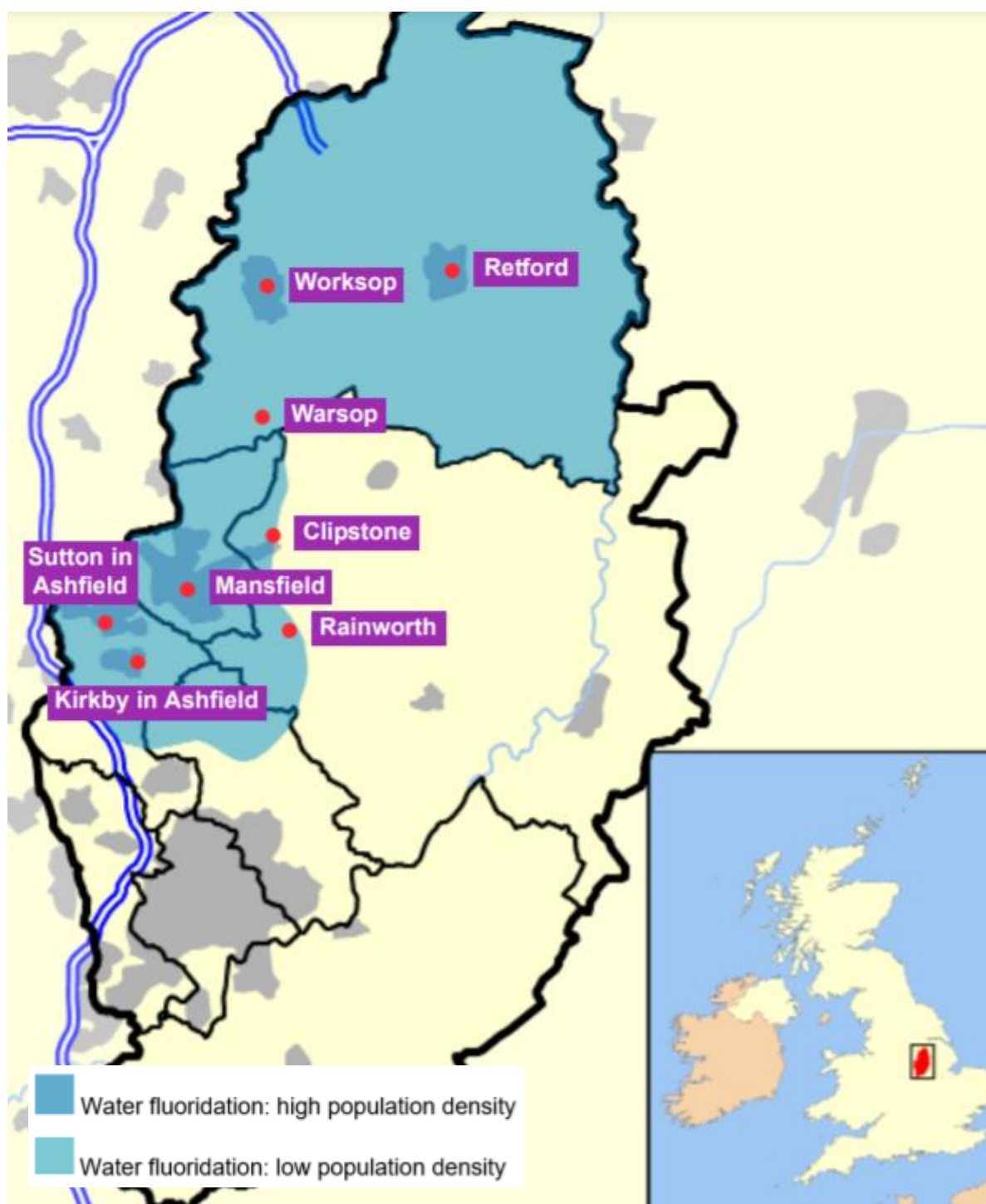


Figure 31. Water fluoridation in Nottinghamshire

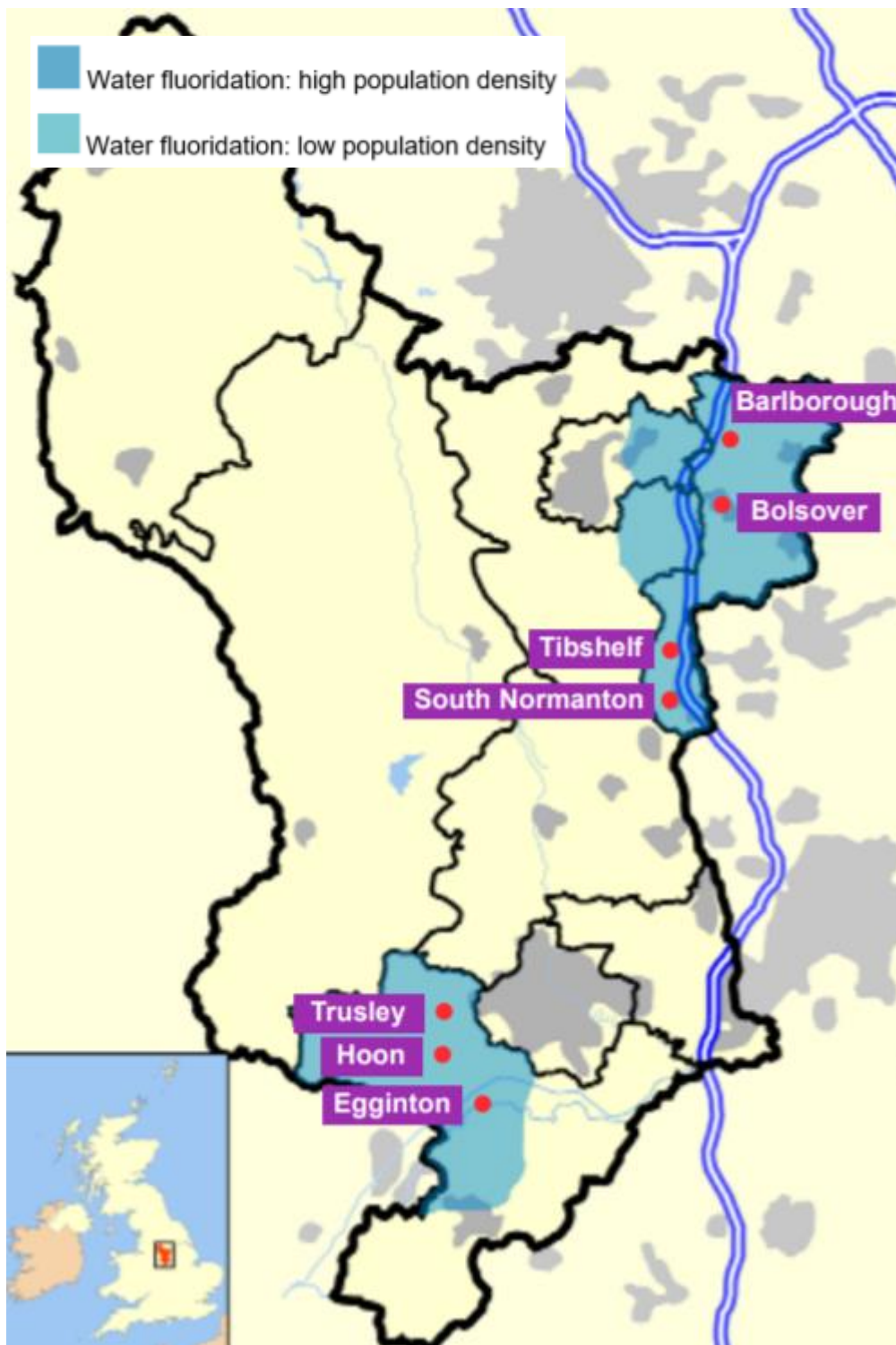


Figure 32. Water fluoridation in Derbyshire

# Current services

## Service Locations

There are currently 38 IMOS service locations in the East Midlands (Table 7, Figure 33, Figure 34, Figure 35, Figure 36, Figure 37), operated by 36 providers. These services were established between 2008 and 2017 on an “any qualified provider” basis, without alignment to population need or clinical activity thresholds.

Table 7. Current IMOS service locations by ICS

Number of services		Service locations
<b>Lincolnshire</b>	5	Gainsborough Lincoln Skegness Grantham Boston
<b>Nottingham and Nottinghamshire</b>	9	5 locations in Nottingham Carlton West Bridgford Keyworth Mansfield
<b>Joined up Care Derbyshire</b>	10	3 locations in Derby 2 locations in Chesterfield Alfreton Ilkeston Belper Wirksworth Etwall
<b>Leicester, Leicestershire and Rutland</b>	10	6 locations in Leicester Coalville Hinckley Market Harborough Loughborough
<b>Northamptonshire Health and Care Partnership</b>	4	Corby Wellingborough Daventry Northampton



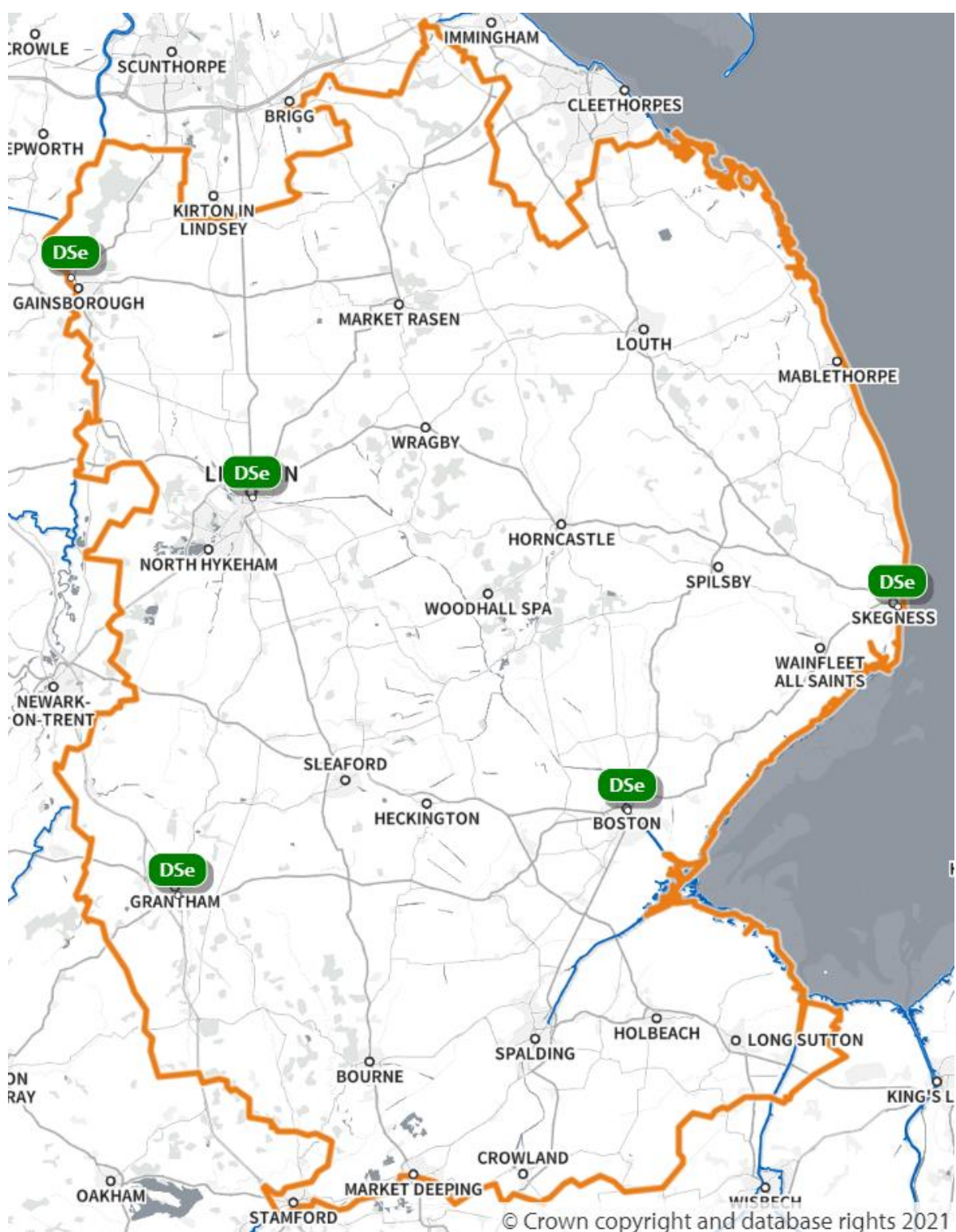


Figure 33. Current IMOS service locations in Lincolnshire ICS, with the green DSe icon indicating the location of a service

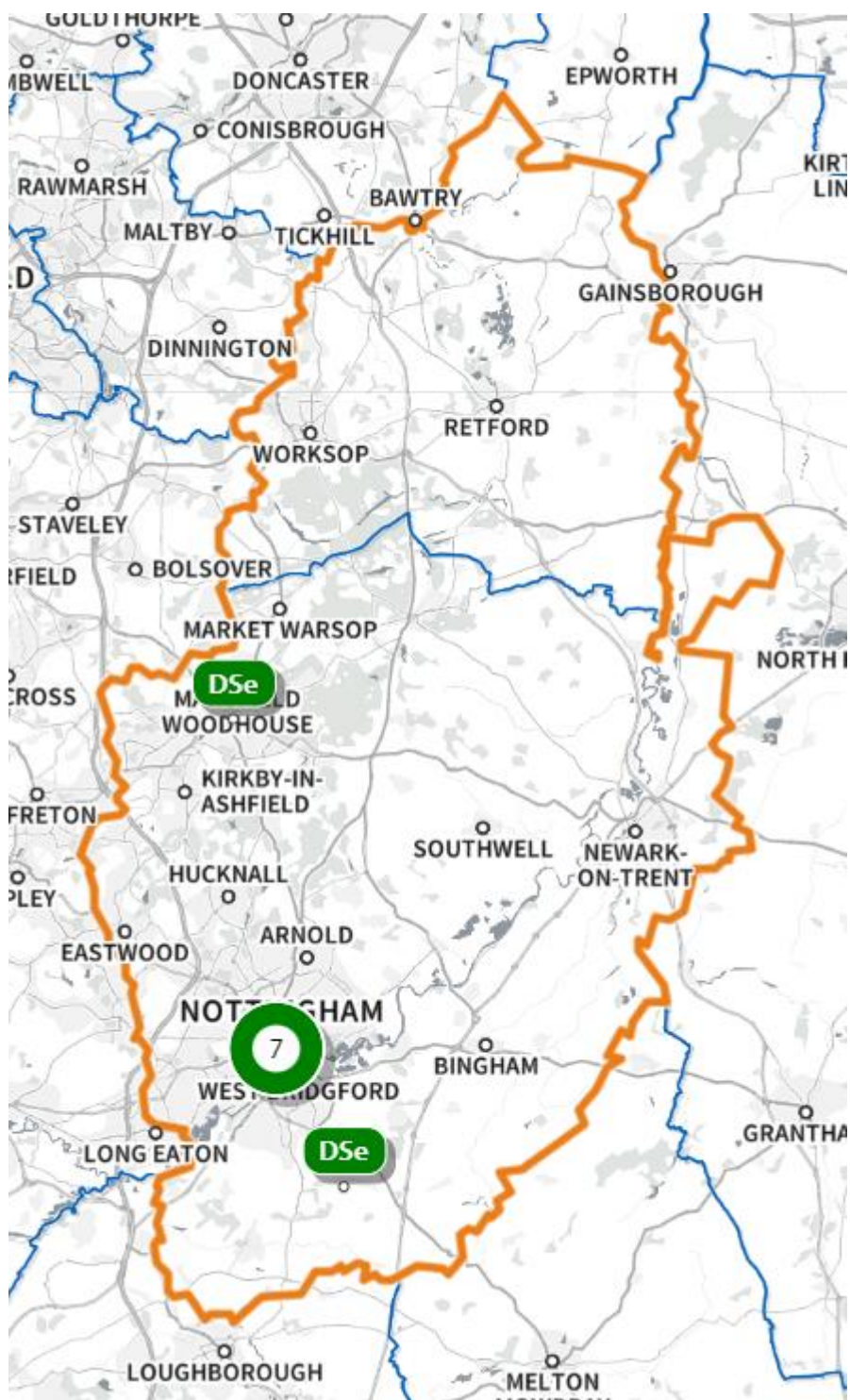


Figure 34. Current IMOS service locations in Nottingham and Nottinghamshire ICS, with the green DSe icon indicating the location of a service and the circled number indicating the location of that number of services



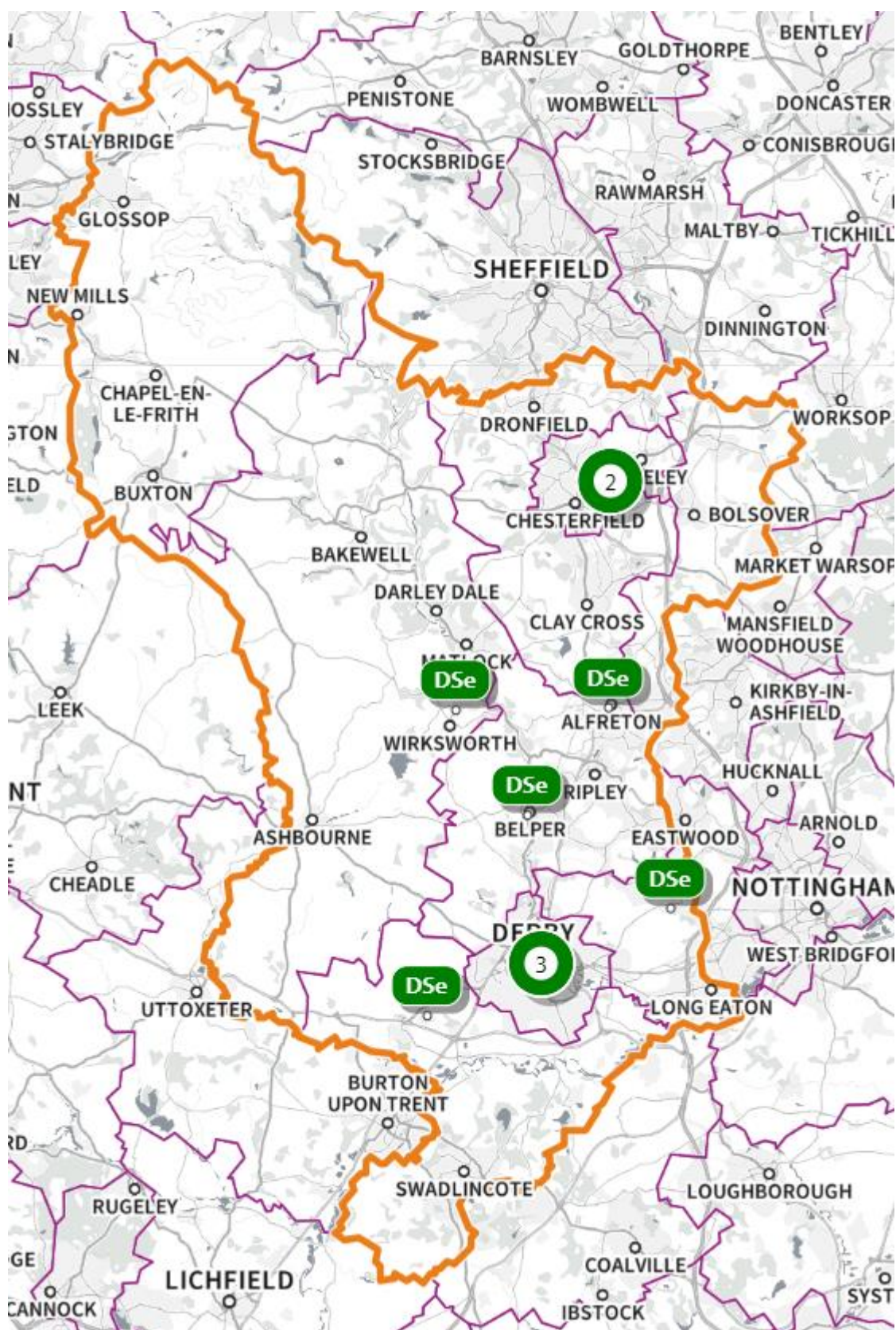


Figure 35. Current IMOS service locations in Joined up Care Derbyshire ICS, with the green DSe icon indicating the location of a service and the circled number indicating the location of that number of services

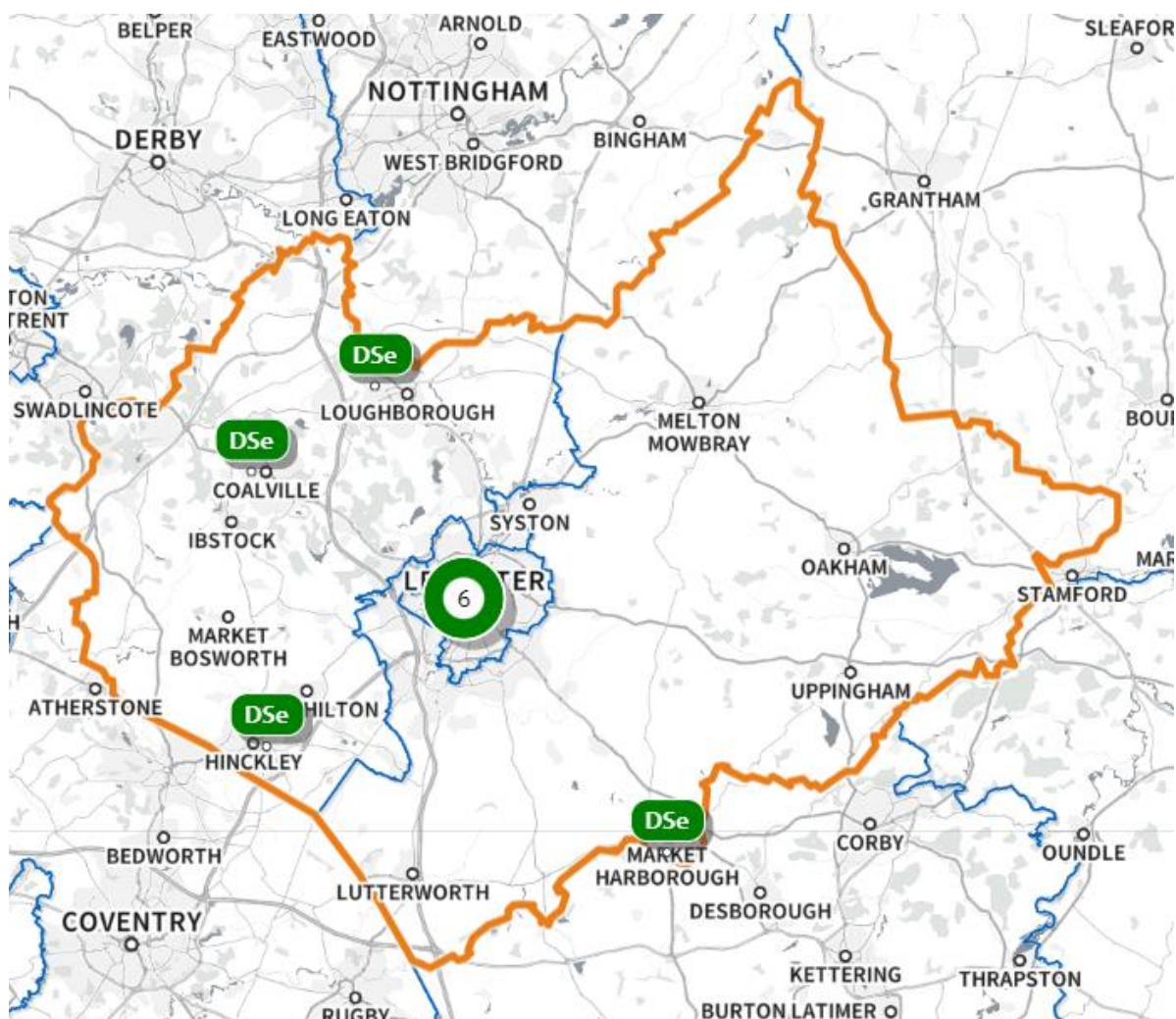


Figure 36. Current IMOS service locations in Leicester, Leicestershire and Rutland ICS, with the green DSe icon indicating the location of a service and the circled number indicating the location of that number of services



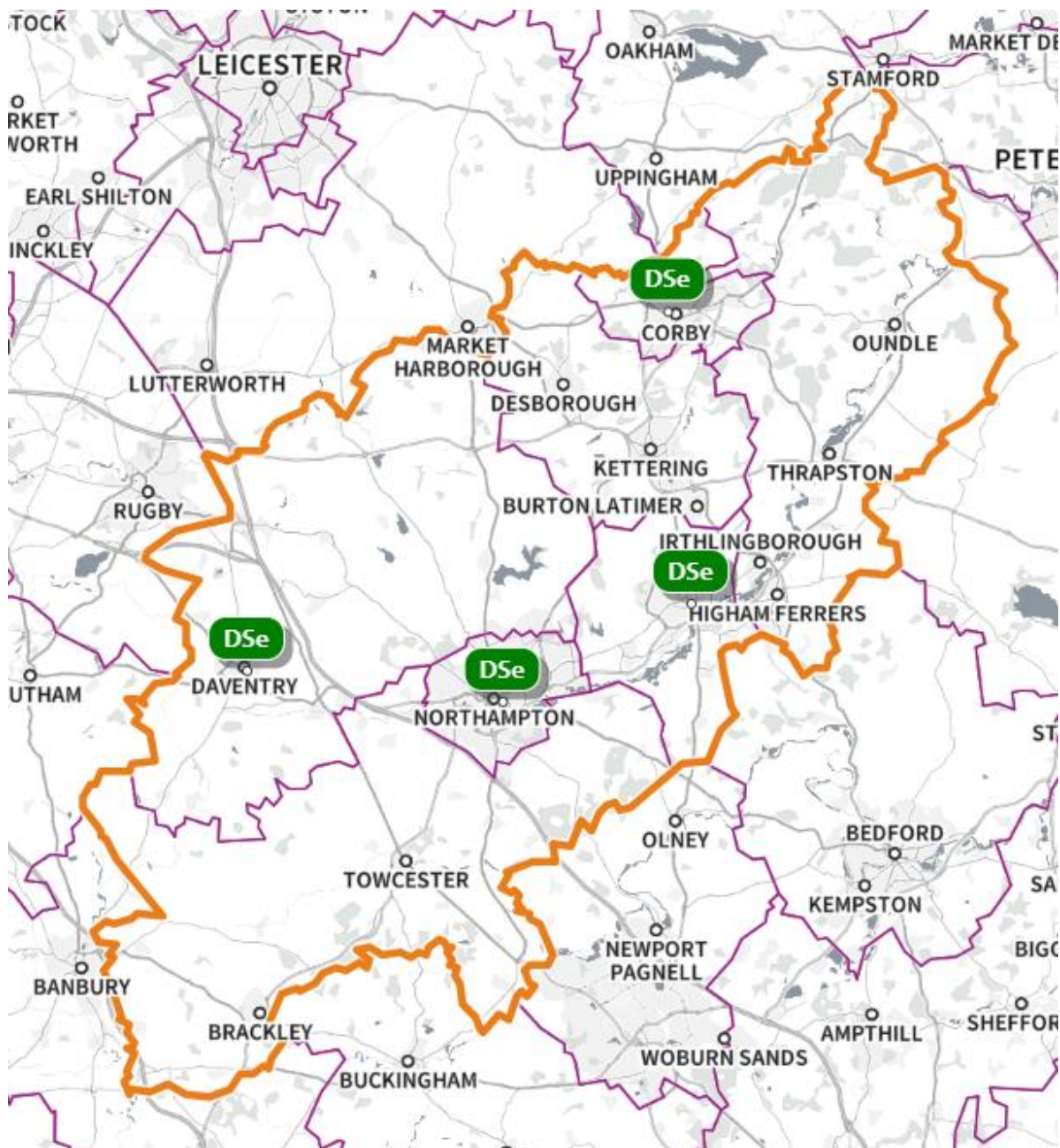


Figure 37. Current IMOS service locations in Northamptonshire Health and Care Partnership ICS, with the green DSe icon indicating the location of a service

## Patient Travel

The distance travelled by patients from their home address to reach an IMOS service is dependent on a number of factors, including include geographical location, IMOS service remit and patient preference. It is acknowledged that while the majority of patients are likely to access their nearest IMOS service, others may choose to attend a different IMOS service for a variety of reasons. The mean



distance travelled by patients to IMOS services ranged from 3.7km to 23.2km, for the IMOS services for which data was available (Table 8).

Table 8. Range of mean distances travelled by patients to IMOS services by ICS for the 2018-2019 financial year. The range for Nottingham and Nottinghamshire excludes one service for which data was not available. Data was only available for one service in Northamptonshire Health and Care Partnership, so it was not possible to determine a range. In both cases the lack of data is due to historic activity reporting arrangements.

	Range of mean distances travelled by patients to IMOS services
<b>Lincolnshire</b>	10.1km-23.2km
<b>Nottingham and Nottinghamshire</b>	4.3km-12.3km
<b>Joined up Care Derbyshire</b>	4.4km-14.1km
<b>Leicester, Leicestershire and Rutland</b>	3.7km-9.0km
<b>Northamptonshire Health and Care Partnership</b>	not available

## Clinical Activity

Previous clinical activity from IMOS services is of use in the assessment of future population need. There is marked variation in this between ICSs, particularly with respect to the administration of conscious sedation (Table 9, Figure 38, Table 10). Possible explanations for this may include commissioning arrangements, financial factors, clinical competence, service infrastructure and variation in need. There is also variation between ICSs in the proportion of patients assessed without progressing to treatment. Reasons for this are likely to include the treatment indicated being too complex to be undertaken within the IMOS service, a requirement for sedation where this is unavailable and the refusal of treatment. It is worth noting that considerable variation also exists between services within the same ICS, although due to the commercially sensitive nature of this data it has not been included.

Table 9. IMOS clinical activity volumes by ICS for the 2019-2020 financial year, as quantified by payment claim submissions. The clinical activity for each ICS is likely to include a small number of patients domiciled in another ICS.

	Assessment only	Assessment and treatment	Assessment, treatment and conscious sedation
<b>Lincolnshire</b>	464	4,042	4
<b>Nottingham and Nottinghamshire</b>	1,384	7,385	302
<b>Joined up Care Derbyshire</b>	1,154	7,702	550
<b>Leicester, Leicestershire and Rutland</b>	604	8,333	not commissioned
<b>Northamptonshire Health and Care Partnership</b>	525	4,704	63
<b>Total</b>	<b>4,131</b>	<b>32,166</b>	<b>919</b>

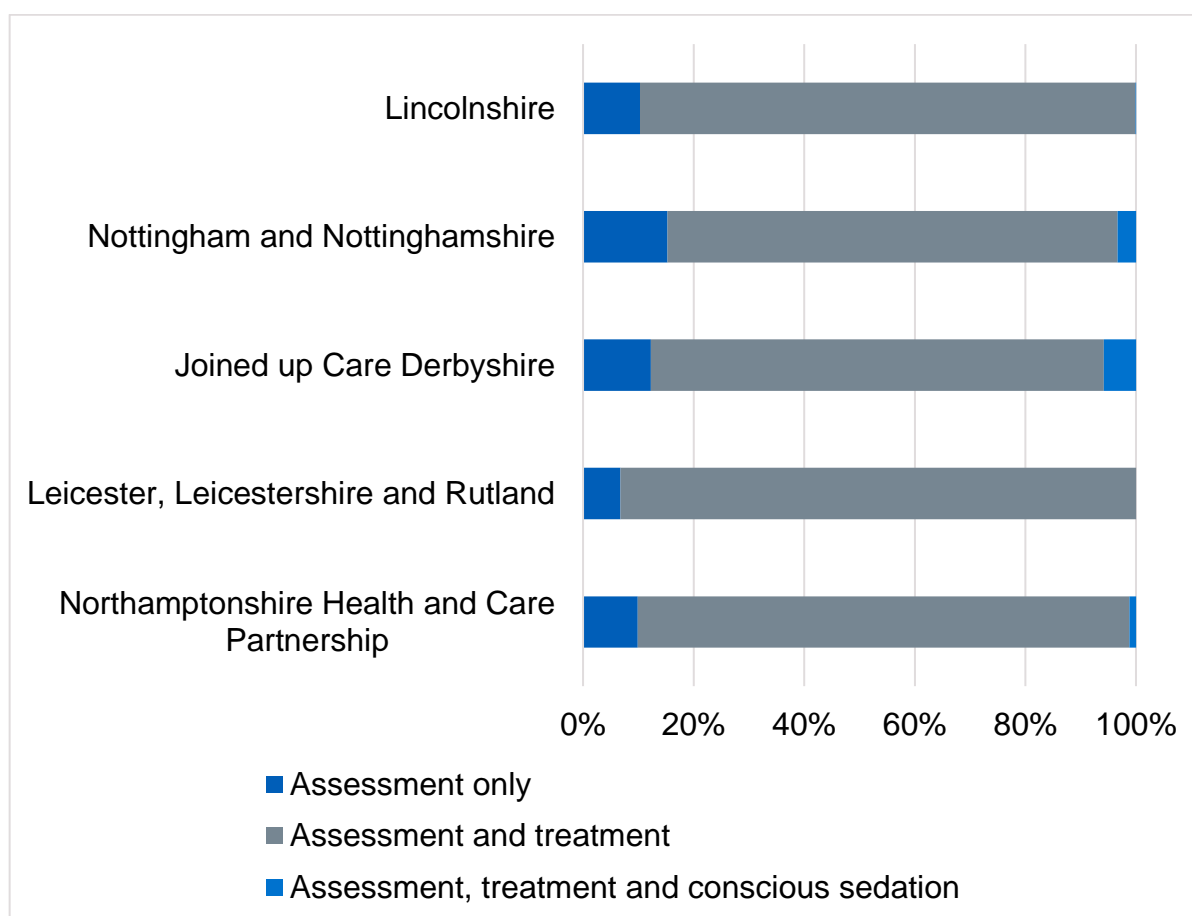


Figure 38. IMOS clinical activity proportions by ICS for the 2019-2020 financial year as quantified by payment claim submissions. Note conscious sedation was not commissioned within the IMOS services in Leicester, Leicestershire and Rutland ICS. The clinical activity for each ICS is likely to include a small number of patients domiciled in another ICS.

Table 10. IMOS clinical activity per 100,000 population aged 16 and over [18] by ICS for the 2019-2020 financial year, as quantified by payment claim submissions. The clinical activity for each ICS is likely to include a small number of patients domiciled in another ICS.

	Assessment only	Assessment and treatment	Assessment, treatment and conscious sedation
<b>Lincolnshire</b>	73.7	641.7	0.6
<b>Nottingham and Nottinghamshire</b>	219.7	1172.4	47.9
<b>Joined up Care Derbyshire</b>	183.2	1222.7	87.3
<b>Leicester, Leicestershire and Rutland</b>	95.9	1322.9	0.0
<b>Northamptonshire Health and Care Partnership</b>	83.3	746.8	10.0
<b>Total</b>	<b>655.8</b>	<b>5106.3</b>	<b>145.9</b>

The vast majority of the IMOS services in Nottingham and Nottinghamshire ICS and Joined up Care Derbyshire ICS administered conscious sedation in the 2019-2020 financial year. In the same period, 5.3% of treatment undertaken within the IMOS services in these ICSs was under conscious sedation. Published studies based on the IOSN that have shown 5.1% of patients attending general dental practices have a high need for conscious sedation [5]. The relative complexity of IMOS treatment is likely to be a factor in the slightly higher proportion of treatment undertaken under conscious sedation within IMOS services in the two ICSs. These figures are of use in generating cautious projections for future conscious sedation need. They also



suggest there is likely to be an unmet need for conscious sedation within IMOS services in ICSs where its availability is currently limited or not commissioned.

## Remuneration

The schedule of remuneration varies considerably between IMOS services across the region (Table 11). Due to the commercially sensitive nature of this data the values for individual IMOS services have not been included.

Table 11. Remuneration of IMOS services in the East Midlands

	Assessment only	Assessment and treatment	Assessment, treatment and conscious sedation
Remuneration range	£55.00-£80.00	£174.60-£330.00	£275.00-£350.00

# Stakeholders

## IMOS Patient, Public and Dental Professional Engagement Exercise

An online engagement exercise was launched on 24 May 2021 and ran for a period of four weeks. Its purpose was to gain feedback from IMOS patients, members of the public and the dental profession, to inform the commissioning of new IMOS services in the East Midlands. It was promulgated to approximately 5000 IMOS patients via e-mail, as well as to stakeholder groups and clinical networks across the East Midlands. A total of 224 responses were received (Table 12). The responses were subsequently analysed by NHS Arden and Greater East Midlands Commissioning Support Unit (Figure 39, Figure 40, Figure 41).

Table 12. IMOS patient, public and dental professional engagement exercise response profile

Number of responses	
IMOS patient	167
Member of the public	12
Dental professional	45
Total	224

- 42.5% were offered a choice of where their IMOS treatment was provided
- 78.4% were involved in making a decision regarding their treatment
- 49.7% travelled 5 miles or less and 9.0% travelled 21 miles or more for IMOS treatment
- 91.6% felt the distance travelled for IMOS treatment was acceptable
- 85.6% travelled to their IMOS appointment by car, 8.4% walked and 4.2% used public transport
- 73.7% received IMOS treatment within 3 months of referral and 15.6% waited longer than 6 months
- 73.7% were satisfied with the waiting time for IMOS treatment; those who were dissatisfied cited a lack of communication and the impact of COVID-19 as factors
- 12.2% felt they had suffered due to the waiting time for IMOS treatment
- 4.9% required further treatment as a consequence of their first IMOS appointment
- 7.3% experienced issues with the IMOS referral process
- 92.2% were happy with the day and time of their IMOS appointment
- 83.8% felt the IMOS service accommodated their needs
- 90.4% received aftercare advice following their IMOS treatment
- 16.2% experienced complications following their IMOS treatment; these included issues caused by incorrect treatment, the requirement for further treatment and post-operative pain
- 55.7% were extremely satisfied with the treatment received
- Quality of care was the most important factor, followed by appointment availability

Figure 39. IMOS patient responses to engagement exercise

- Quality of care and waiting time were the most important factors
- All respondents would be comfortable to see a specialist assisted by a specialty trainee
- 50.0% would feel either very anxious or extremely anxious if they were to be treated tomorrow by a specialist for a complex extraction
- 83.3% would be comfortable having IMOS treatment in a dental practice rather than in a hospital
- 58.3% would be happy to travel 16 miles or more for IMOS treatment
- 58.3% felt it was very important to have easy access by public transport
- 91.7% would be happy to attend an IMOS appointment between noon and 5pm

Figure 40. Public responses to engagement exercise

- 62.2% were general dental practitioners
- 75.6% felt a referral management system was beneficial; those who did not feel it was beneficial cited inconsistencies, delays and the referral of patients requiring conscious sedation to services unable to provide this as factors
- Waiting times, fees and funding, and clinic access were considered the most important areas for improving IMOS services
- All respondents would be comfortable approaching a colleague for advice and guidance

Figure 41. Dental professional responses to engagement exercise

## Market Engagement Exercise

A market engagement exercise was launched on 22 June 2021 and ran for a period of four weeks. Its purpose was to gain feedback from current and potential IMOS service providers on contractual matters pertaining to the commissioning of new IMOS services. A total of 21 responses were received (Figure 42).



- An initial contract length of 5-10 years was favoured, with the costs of premises, equipment and training cited as factors
- Potential challenges associated with attracting appropriately trained staff were raised, in particular with respect to the delivery of conscious sedation
- Some respondents felt greater clarity was required regarding the arrangements for pathology services
- It was noted that the proposed remuneration would represent a reduction from current rates
- It was felt that Units of Dental of Activity (UDAs) were not the most appropriate measure of activity
- Having multiple IMOS services and multiple IMOS providers within an ICS was viewed positively, facilitating patient choice and clinical networking
- Some concern was expressed about the potential for a lack of patients and the financial impact of this on IMOS providers
- A mobilisation period of 3-6 months was preferred, with some respondents acknowledging they could mobilise immediately from premises with existing services
- Cited cost drivers included workforce, equipment and consumables
- The majority of respondents felt that the provision of conscious sedation within IMOS services would benefit patients, supporting those with anxiety and reducing the need for referrals to secondary care
- Most respondents felt that IMOS services should be available during normal working hours; some suggested evening and weekend appointments would benefit patients who would find it difficult to attend appointments at other times

Figure 42. Market engagement responses

# Recommendations

The following recommendations have been developed based on this needs assessment, to inform the commissioning of new IMOS services in the East Midlands:

1. The locations of IMOS services should be aligned to population oral health need, with resources targeted at the areas where need is greatest, as a means of reducing oral health inequalities
2. All IMOS services should offer a full range of level 2 oral surgery procedures and conscious sedation
3. All IMOS services should have sufficient levels of clinical activity to ensure they are clinically, logistically and financially viable
4. All IMOS services should have scope to support workforce development, including the attainment and maintenance of competency in oral surgery and conscious sedation
5. All IMOS services should have robust quality assurance and quality improvement measures in place

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