

## An assessment of the orthodontic treatment need of the resident population of Shropshire and Staffordshire compared with the level of current service provision

This document updates the 2015 orthodontic needs assessment for the geography of NHS England Shropshire and Staffordshire (Q60).

### 1. Prevalence of Malocclusion and Treatment Need

#### Normative Need

Normative need can be defined as the ability to biologically benefit from orthodontic treatment, in terms of improved occlusion, as defined by professionals. It does not take into account demand for treatment or potential detrimental effects of treatment.

National guidance (Guide for Commissioning Dental Services – orthodontics 2015) advises that 1/3 of the 12 year old population has a normative need for orthodontic treatment.

The normative need of 12 year olds by unitary and lower tier lower authority is shown in Table 1. The overall need for Q60 12 year olds is estimated at 5889 orthodontic case starts per year.

**Table 1:** Normative Need for Orthodontic Treatment of 12 year olds by local authority

Upper Tier Local Authorities	12 year old population Mid Year Estimate 2017	No. of 12 year olds with a Normative need (at 1/3)
<b>Shropshire</b>	3298	1099
<b>Staffordshire</b>	9505	3168
<b>Stoke-on-Trent</b>	2811	937
<b>Telford and Wrekin</b>	2053	684
<b>Total</b>	<b>17667</b>	<b>5889</b>
<b>Staffordshire Lower Tier local authorities</b>		
<b>Cannock Chase</b>	1134	378
<b>East Staffordshire</b>	1379	460
<b>Lichfield</b>	1130	377
<b>Newcastle-under-Lyme</b>	1318	439
<b>South Staffordshire</b>	1133	378
<b>Stafford</b>	1392	464
<b>Staffordshire Moorlands</b>	1055	352
<b>Tamworth</b>	964	321
<b>Total Staffordshire</b>	<b>9505</b>	<b>3168</b>

There is also a need to quantify the number of younger children who need interceptive orthodontic treatment prior to definitive treatment and the number of individuals over 18 years of age who need treatment. The only figures available which have estimated those relate to unpublished work (Stephens C.D. *Report of an Expert Group 1992: Standing Dental Advisory Committee –Department of Health – unpublished*). These figures are 9% and 4% of the population.

The estimated maximum number of individuals with a need for orthodontic treatment per year is shown in Table 2 below. This makes an assumption that those with a clinical need for treatment, want that treatment and are also suitable for treatment – i.e. have very good dental and gingival health. In reality it is unlikely that all those with a clinical need are suitable for treatment and actually want the treatment. Commissioners should take this into account when determining the quantity of orthodontic services to commission.

**Table 2:** Normative orthodontic treatment need for 12 year olds, younger children with an interceptive treatment need and those 18 years and over.

Upper and Lower tier Local Authorities	12 year old population  Mid Year Estimate 2017	No. 12 year olds with Normative need  (1/3)	No. with a need for interceptive care and those 18 yrs & over  (9%+4%)	Estimated Normative need  (No. of Case starts needed per year to address need) {(1/3) plus interceptive (9%) and 18 years & over (4%)}
<b>Shropshire</b>	3298	1099	143	<b>1242</b>
<b>Staffordshire</b>	9505	3168	412	<b>3580</b>
<b>Stoke-on-Trent</b>	2811	937	122	<b>1059</b>
<b>Telford and Wrekin</b>	2053	684	89	<b>773</b>
<b>TOTAL</b>	<b>17667</b>	<b>5889</b>	<b>766</b>	<b>6655</b>
<b>Staffordshire Lower Tier Local Authorities</b>				
<b>Cannock Chase</b>	1134	378	49	<b>427</b>
<b>East Staffordshire</b>	1379	460	59	<b>519</b>
<b>Lichfield</b>	1130	377	49	<b>426</b>
<b>Newcastle-under-Lyme</b>	1318	439	57	<b>496</b>
<b>South Staffordshire</b>	1133	378	49	<b>427</b>
<b>Stafford</b>	1392	464	60	<b>524</b>
<b>Staffordshire Moorlands</b>	1055	352	45	<b>397</b>
<b>Tamworth</b>	964	321	42	<b>363</b>
<b>TOTAL</b>	<b>9505</b>	<b>3168</b>	<b>412</b>	<b>3580</b>

### Anticipating future trends in population growth

The estimates of orthodontic treatment need are based on the size of the current 12 year old population. Mid year population estimates by the Office of National Statistics (ONS) enable us to estimate the 12 year old population over the next 10 years. Estimates suggest a 6% increase across the Q60 geography with larger increases in Stoke on Trent and Telford and Wrekin of 10% and 12% respectively.

### Orthodontic Service Provision for the responsible population of Shropshire and Staffordshire (Q60) Area Team

#### *Who provides services and what quantity of treatment is commissioned and provided?*

##### Primary care orthodontic services

For the financial year 2017/18, there were a total of 38 dental contracts commissioned to provide orthodontics within the Q60 area. Providers were contracted to provide either mandatory services and orthodontic care (27 GDS contracts) or purely orthodontic care (11 PDS agreements).

Orthodontic care in primary care is commissioned in terms of the volume of orthodontic activity which includes assessments, interceptive orthodontic treatment and full courses of treatment. It is measured by Units of Orthodontic Activity (UOAs). UOAs are allocated for courses of treatment as follows: 21 UOAs (patient under 18 years) 23 UOAs (patient 18 years or over), 4 UOAs (patient under 10 years).

The following table details where contracts are held within the Area Team geography by LA and CCG of provider, and the number of UOAs commissioned.

**Table 3:** Q60 Commissioned orthodontic contracts in Primary Care (Source NHS BSA Dental Services)

LA in which provider located	Number of contracts	No. of UOAs commissioned from contracts within Q60	Ortho only contract PDS	Mixed contract GDS	CCG in which provider located	No. of UOAs by CCG
Cannock Chase	2	3344	0	2	Cannock Chase	3344
East Staffs	3	10834	1	2	East Staffs	10834
Stafford	5	4711	0	5	Stafford & Surrounds	4711
Tamworth	1	4341	1	0	SES & Seisdon	8702
Lichfield	2	3367	0	2		
South Staffs	3	994	0	3		
Newcastle-under-Lyme	0	0	0	0	North Staffs	0
Staffs Moorlands	0	0	0	0		
Stoke-on-Trent	6	26234	4	2	Stoke-on-Trent	26234
Shropshire	12	18750	3	9	Shropshire	18750
Telford	4	21803	2	2	Telford	21803
<b>TOTAL</b>	<b>38</b>	<b>94378</b>	<b>11</b>	<b>27</b>		<b>94378</b>

Dental patients are able to attend a dental practice of their choosing and are not limited by the practice's location. Whilst there are currently no practices commissioned to provide orthodontics located in Staffordshire Moorlands and Newcastle under Lyme – residents of those areas access orthodontics from practices which are located within neighbouring areas – predominantly Stoke-on-Trent, and East Cheshire.

Table 4 indicates the number of people residing in the area who receive orthodontic treatment in primary care both within the Q60 area and further afield. 695 Q60 residents received orthodontic treatment from providers outside the Q60 area (Table 4 Column D). The majority received care from providers in East Cheshire, Nuneaton and Bedworth, Wolverhampton, Walsall, Wyre Forest, Dudley, Birmingham, and Herefordshire.

**Table 4:** Primary Care Orthodontic Provision for Residents of Q60 (Source NHS BSA Dental Services)

LA residence of patient	CCG of residence of patient	Primary Care estimated case starts provided within Q60 for Q60 residents (adjusted for unknowns)	Primary Care outflow (Q60 residents treated outside the Q60 area (2017/18))	Total primary care case starts for residents of Q60	Total primary care cases starts by CCG of patient residence
Column A	Column B	Column C	Column D	Column E	Column F
<b>Cannock Chase</b>	Cannock Chase	155	44	199	199
<b>East Staffs</b>	East Staffs	339	10	349	349
<b>Stafford</b>	Stafford & Surrounds	274	4	278	278
<b>Tamworth</b>		133	81	214	
<b>Lichfield</b>	SES & Seisdon	234	53	287	799
<b>South Staffs</b>		141	157	298	
<b>Newcastle-u-Lyme</b>		217	58	275	
<b>Staffs Moorlands</b>	North Staffs	88	160	248	523
<b>Stoke-on-Trent</b>	Stoke-on-Trent	828	24	852	852
<b>Shropshire</b>	Shropshire	1003	101	1104	1104
<b>Telford</b>	Telford	670	3	673	673
<b>TOTAL</b>	<b>Shropshire &amp; Staffordshire</b>	<b>4082</b>	<b>695</b>	<b>4777</b>	<b>4777</b>

There were a significant number of missing/corrupted postcodes in the data. In order to improve data accuracy postcodes were manually reviewed and allocated to local authority areas based on best fit. This approach improved data accuracy beyond direct proportioning of the missing data but it is acknowledged that missing patient information reduces accuracy of the analysis. NHS BSA Dental Services is aware of this issue and is working to address it.

Approximately 250 patients who live outside the Q60 area are treated each year by orthodontic providers within Q60. The majority of these patients live in Wolverhampton, Birmingham, South Derbyshire and East Cheshire. This level of provision should continue to be factored into the services commissioned by the Area Team.

Waiting times for assessment and treatment are not recorded or reported in a consistent manner. However it is known that a significant proportion of providers have very long waiting lists. The recording of waiting times needs to be addressed in order to monitor adequacy of service provision.

Secondary Care provision of orthodontics for residents of Shropshire and Staffordshire (Q60)

Consultant-led orthodontic services are provided to residents of Shropshire and Staffordshire by 11 hospital trusts both within and outside Q60. 90% of the activity commissioned for local residents is provided locally by University Hospitals of North Midlands NHS Trust, Burton Hospitals NHS Foundation Trust, and Shrewsbury and Telford Hospital NHS Trust.

Secondary Care activity is commissioned in a different currency from that in primary care. Activity is reported as New Patient Appointments and Follow-up appointments rather than actual Case Starts. A previous local needs assessment derived a means of estimating the number of case starts provided by dividing the number of New Patient Appointments by 2.55. This was based on a known number of case starts in a large local unit and the number of New Patient Appointments. This approach has been taken for this needs assessment.

Secondary care activity is commissioned by CCG geography and Table 5 illustrates provision of care based on the CCG where a patient lives. It is not possible to report secondary care provision on a smaller geography than CCG.

**Table 5:** Estimated annual number of orthodontic case starts in secondary care based on the CCG in which the patient lives. (Source Arden and GEM CSU data 2016/17)

CCG in which patient lives	Total number of New Patient Appointments by CCG	Secondary care estimated case starts for Q60 residents (No. new appts/2.55)
<b>Cannock Chase</b>	204	80
<b>East Staffs</b>	319	125
<b>Stafford &amp; Surrounds</b>	497	195
<b>SES &amp; Seisdon</b>	270	106
<b>North Staffs</b>	329	129
<b>Stoke-on-Trent</b>	470	184
<b>Shropshire</b>	325	127
<b>Telford</b>	135	53
<b>Total</b>	<b>2549</b>	<b>1000</b>

## **Quality of orthodontic services provided**

In any needs assessment it is important to assess the quality of the services provided as well as quantifying any gap between the needs of the population and current provision. This should address the following areas: **effectiveness, efficiency, acceptability and accessibility.**

NHS England Shropshire and Staffordshire has had an ongoing programme of quality assurance to ensure efficient delivery of services as well as the quality of treatment outcomes. Future commissioning will provide NHS England with an opportunity to improve the acceptability and accessibility of the orthodontic services it commissions.

## Gap Analysis

Table 6 below, brings together information from Tables 2, 4 and 5 to calculate the current orthodontic provision for Q60 residents (Column D) compared with the estimated normative need (Column E) in order to calculate the estimated number of additional cases needed to address the Q60 population's normative orthodontic treatment need (Column F).

**Table 6:** Q60 Orthodontic Commissioning Gap for its responsible population

LA where patients live	CCG where patients live	Primary care case starts estimated case starts within Q60 (adjusted for unknowns) Source Table 4	Primary care case starts estimated case starts for Q60 residents provided outside Q60 Source Table 4	Secondary care case starts Source Table 5	Total estimated no. of case starts currently provided for patients by CCG of patient residence Column D = Columns A+B+C	Estimated Normative Need (No. of Case starts needed per year to address need) Source Table 2	Estimated no. of additional cases to be commissioned to address normative need Column F = Column E-Column D
		Column A	Column B	Column C	Column D = Columns A+B+C	Column E	Column F = Column E-Column D
<b>Cannock Chase</b>	Cannock Chase	155	44	80	279	427	148
<b>East Staffs</b>	East Staffs	339	10	125	474	519	45
<b>Stafford</b>	Stafford & Surrounds	274	4	195	473	524	51
<b>Tamworth</b>	SES & Seisdon	133	81	106	905	1216	311
<b>Lichfield</b>		234	53				
<b>South Staffs</b>		141	157				
<b>Newcastle-under-Lyme</b>	North Staffs	217	58	129	652	893	241
<b>Staffs Moorlands</b>		88	160				
<b>Stoke-on-Trent</b>	Stoke-on-Trent	828	24	184	1036	1059	23
<b>Shropshire</b>	Shropshire	1003	101	127	1231	1242	11
<b>Telford &amp; Wrekin</b>	Telford & Wrekin	670	3	53	726	773	47
<b>TOTAL</b>		<b>4082</b>	<b>695</b>	<b>1000</b>	<b>5776</b>	<b>6653</b>	<b>878</b>

Table 6 shows that the current level of orthodontic provision for Shropshire, Telford and Wrekin and Stoke on Trent residents appears to be nearer to the estimated normative need than that for residents of North Staffordshire, Cannock Chase and South East Staffordshire and Seisdon Peninsula CCGs.

Commissioners should consider how to ensure equitable provision of orthodontic care across all CCG areas when reprocurring the PDS agreements. The priority areas for this should in the first instance be:

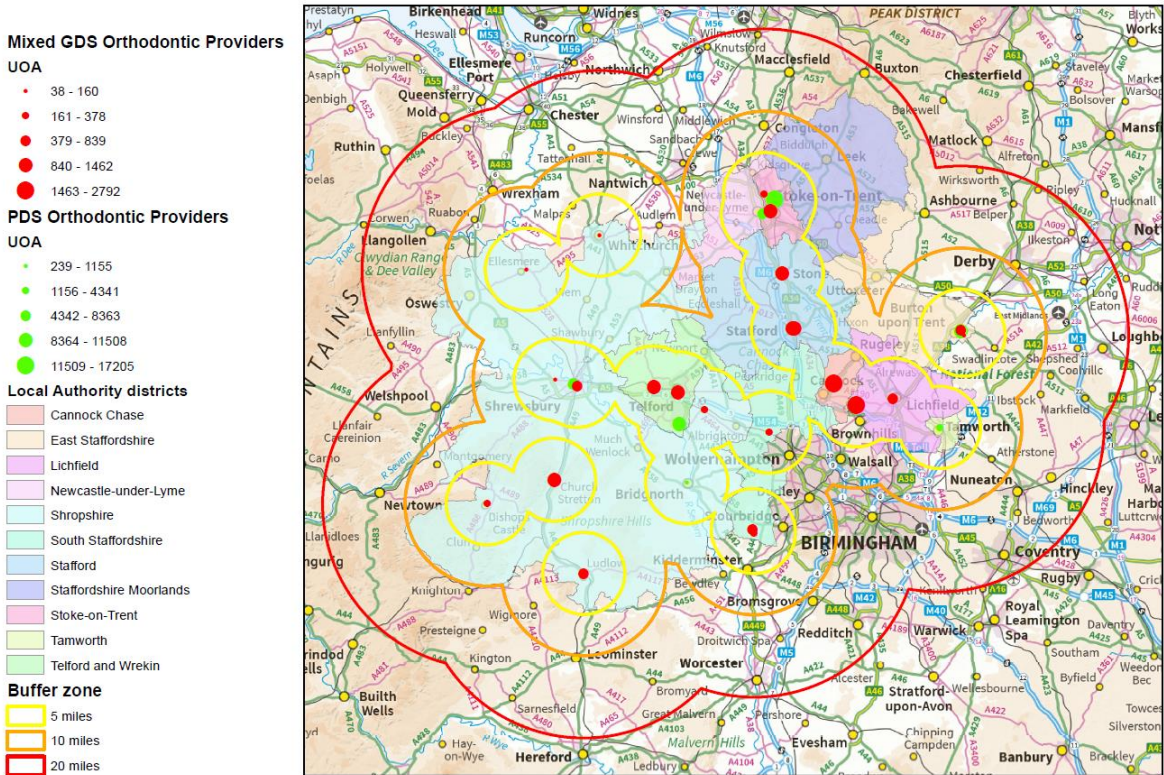
1. South East Staffordshire and Seisdon Peninsula CCG
2. North Staffordshire CCG
3. Cannock Chase CCG.

If a decision is made to recurrently commission more orthodontic treatment, commissioners should also consider commissioning additional non recurrent activity to address the large waiting lists, otherwise unacceptably long waiting times will prevail.

Commissioners will need to consider the geographical location from which to commission services in order to ensure that the target population can access the services.

Figure 1 below shows where services are currently provided from. The buffer zones indicate that the majority of Q60 residents live within 10 miles of a practice providing orthodontic treatment. The information contained in this map should be used to determine the optimal locations from which to procure services.

**Figure 1:** Map to show location of current primary care orthodontic services commissioned for Q60 residents



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## Summary and Recommendations

1. This needs assessment has been prepared using data from a range of sources. Some sources are less accurate than others, being dependent in part on informed approximations.
2. The first orthodontic needs assessment for Stoke on Trent was undertaken in 2006. This needs assessment is the fourth iteration of the original methodology (with refinements) and is the second needs assessment for the NHS England Shropshire and Staffordshire geography. Triangulation of information from data sources and significant local knowledge leads the author to conclude that the findings of this needs assessment are reasonably accurate. However commissioners are cautioned against viewing the levels of normative need as absolute – they may be higher or lower than the estimates provided. Commissioners are advised to be aware of this if a decision is made to procure additional activity.
3. The needs assessment indicates that there is an estimated gap of 856 case starts between the number currently provided versus the approximated need.
4. There is inequity in orthodontic service provision. Residents living in the CCG areas of North Staffordshire, Cannock Chase and South East Staffordshire and Seisdon Peninsula are less well served than those in other parts of the Q60 geography.
5. Commissioners should consider how to address the inequity in service provision either by commissioning additional activity prioritising the areas in 4 above, or redistribution of current service provision.
6. Commissioners should consider commissioning additional non recurrent activity in conjunction with any recurrent commissioning in order to address the large waiting lists, otherwise unacceptably long waiting times will prevail.
7. 12 year old population growth across the Q60 area is anticipated with higher levels of growth in the Stoke on Trent and Telford and Wrekin areas. This should be taken into account when commissioning.
8. Approximately 250 patients who live outside the Q60 geography receive orthodontic treatment from practices within the Q60 area each year. This level of activity should continue to be factored into services commissioned within Q60.
9. Commissioners should continue to ensure that the efficiency of service delivery is monitored and addressed where necessary. Data from NHS BSA Dental Services and local data from the dental electronic referral database will support this.

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