Liverpool
Public Health
Observatory

# Dental Health Needs Assessment for Cheshire

**Louise Roper, Janet Ubido, Chris Williamson, Rebecca Harris, Paul Wright, Alex Scott Samuel**

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PROVIDING INTELLIGENCE FOR THE PUBLIC HEALTH

## Acknowledgements

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# Contents

## Terms and Definitions

**Dental Health:** Dental health refers to all aspects of the health and functioning of the mouth especially the teeth and gums. Apart from working properly to enable us to eat and speak, teeth and gums should be free from infection, which can cause dental caries, inflammation of gums, tooth loss and bad breath. Poor dental health is also linked to chronic illnesses such as heart disease.

**FP17:** Providers (usually dental practices) submit forms to the NHS detailing dental activity data. The data recorded on the FP17 form shows the patient charge collected, the number of units of activity performed and treatment banding information.

**Health Needs Assessment (HNA):** a systematic method for reviewing the health issues facing a population, leading to agreed priorities and resource allocation that will improve health and reduce inequalities.

**Liverpool City Region (LCR):** In January 2009 an agreement was made that the local authorities of Halton, Knowsley, Liverpool, Sefton, St Helens and Wirral would form LCR in a multi area agreement.

**Liverpool Public Health Observatory (LPHO):** LPHO was founded in 1990 and provides public health research and intelligence for the Liverpool City Region local authorities. LPHO is situated within the University of Liverpool's Department of Public Health and Policy.

**Public Health England (PHE):** was established on April 1st 2013 to bring together public health specialists from more than 70 organisations, including the former Health Protection Agency (HPA), into a single public health service. PHE works with national and local government, industry and the NHS, to protect and improve the nation's health and support healthier choices. PHE is addressing inequalities by focusing on removing barriers to good health.

**Oral Health:** Oral health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss and other diseases and disorders that affect the oral cavity. Risk factors for oral diseases include unhealthy diet, tobacco use, harmful alcohol use and poor oral hygiene (WHO definition)[1].

**Units of Dental Activity**: Dentists or dental practitioners providing their services to the NHS in England and Wales are paid according to how many "Units of Dental Activity" (UDA) they do in a year. The average value is around £20 per unit of dental activity and it varies around the country.

[1] http://www.who.int/topics/oral_health/en/

Usually the more need of dentists and NHS dental provision there is in an area, the more a UDA is worth. For band 1 treatment (the most routine) the dentist is paid 1 UDA, for band 2 treatment, 3 UDAs and for band 3 treatment 12 UDAs. UDA's are awarded for completed treatments; therefore if a dentist provides a treatment with crowns, they will report 12 UDAs as this is the accepted rate for this treatment. It does not matter if it is 1 crown or 10 crowns, 12 UDA's are still reported.

## Individual local authority summary reports

The individual local authority summary reports are presented on the following pages i to xvii,



The summaries are followed by the full main report which starts on p.1.

# Dental Health Need Assessment Cheshire East Summary

## Aims

The aims of this dental health need assessment were to determine the current health needs of the population, to investigate the current service provision for dental health in children and adults, highlighting gaps and inequalities. We also developed a set of evidence based recommendations for local commissioners on oral health promotion and prevention and for NHS England on the provision of dental health services for the local population; from Cheshire and Merseyside, through to local authority level.

**********

## Key recommendations for improving dental health in Cheshire and Merseyside

**Increased provision of data**

- Utilise public health and ward level data (where available) to help inform commissioning intentions and decisions.
- Explore the needs of people on low incomes but who are not exempt from dental charges.
- Undertake an additional health needs assessment into domiciliary dental care provision.

**Targeted interventions**

- Place oral health needs on a wider agenda for change in order for collaboration with relevant sectors and agencies to take place, for example linking with related public health programmes such as healthy eating.
- Work towards a multi-partnership oral health programme strategy for older people.
- Pursue fluoridation of public water supplies.

**Improved knowledge of oral health, sharing of good practice and reporting of information**

- Encourage local authorities to share good oral health practice and procedures.
- Explore tobacco cessation and alcohol awareness training for dental practices.
- Monitor NHS access to dental care at regular intervals.

**********

## Evidence of oral health promotion

Following the oral health promotion review in 2014, many existing programmes to prevent dental caries in children were expanded. As an example of local practice in Cheshire and Merseyside, details of health promotion activities in St Helens are given here. Priorities for St Helens include reducing

inequalities in dental health of vulnerable adults. Local promotion, prevention and delivery now includes:

- Weaning advice from Health Visitors and the Health Early Years Award for nurseries are helping to make sure that young children have a healthy diet. This promotes health eating in young children.
- Brushing for life- the health visitor led programme provides oral health information, advice and a free toothbrush and toothpaste to parents of babies aged 0-3 years old (2,000 packs already distributed in quarter 1).
- In 2014 a scheme was extended to significantly increase the numbers of nurseries and children benefitting from a supervised tooth brushing programme aimed at strengthening children's teeth using fluoride. 4,000 children currently benefit.
- All children aged 3-11 years old benefit from a free toothbrush and toothpaste 4 times per year (expanded in 2014 and now covering 9,000 children).
- Local dentists have been strengthening children's teeth with fluoride varnish particularly in children who have had some teeth affected by dental decay.
- 30 nursing and care homes have received training on oral health assessment, a denture marking kit and updated policies on oral health.
- Oral health care packs and training available for carers of other vulnerable groups- YMCA, homeless charities, drug and alcohol services, carers of people with learning disabilities.

## Dental Health in Cheshire East

Evidence suggests that the general health of people in Cheshire East (population 372,000) is varied compared with the average health of the population in England. Deprivation levels are lower than the national average. The Health Profile for Cheshire East can be found by following this link: http://www.apho.org.uk/default.aspx?QN=HP_FINDSEARCH2012 with some more recent data available here: http://fingertips.phe.org.uk/profile/health-profiles/data

The common risk factors to poor oral and dental health include unhealthy diet, smoking and harmful alcohol use. Available indicators would suggest that Cheshire East compares favourably or is similar to the national average for most of these risk factors.

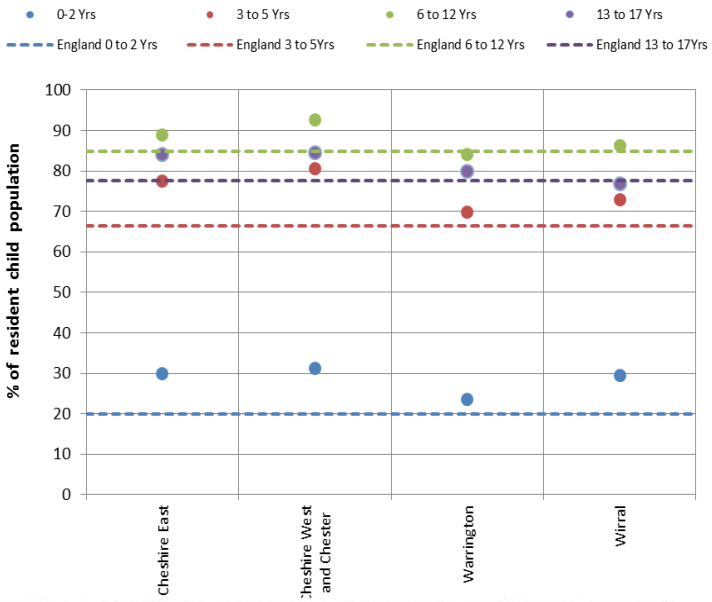
The dental health of local populations is difficult to determine as only limited data is collected, usually related to the health of children's teeth. In Cheshire East, just over 1 in 5 (22.2%) of children aged 5 have decayed, missing or filled teeth. This is the lowest across Cheshire and Merseyside and lower than the national average of 27.9%. See main report for further findings.

## Dental Access in Cheshire East

Child dental access rates in Cheshire East are better than the England average for each age group (Figure A). Adult access rates are 57.3%, which is higher than the England average of 52.0%, but slightly lower than each of the other local authorities in Cheshire..

**Figure A. Cheshire Local Authorities Child Access by Age Band March 2014**

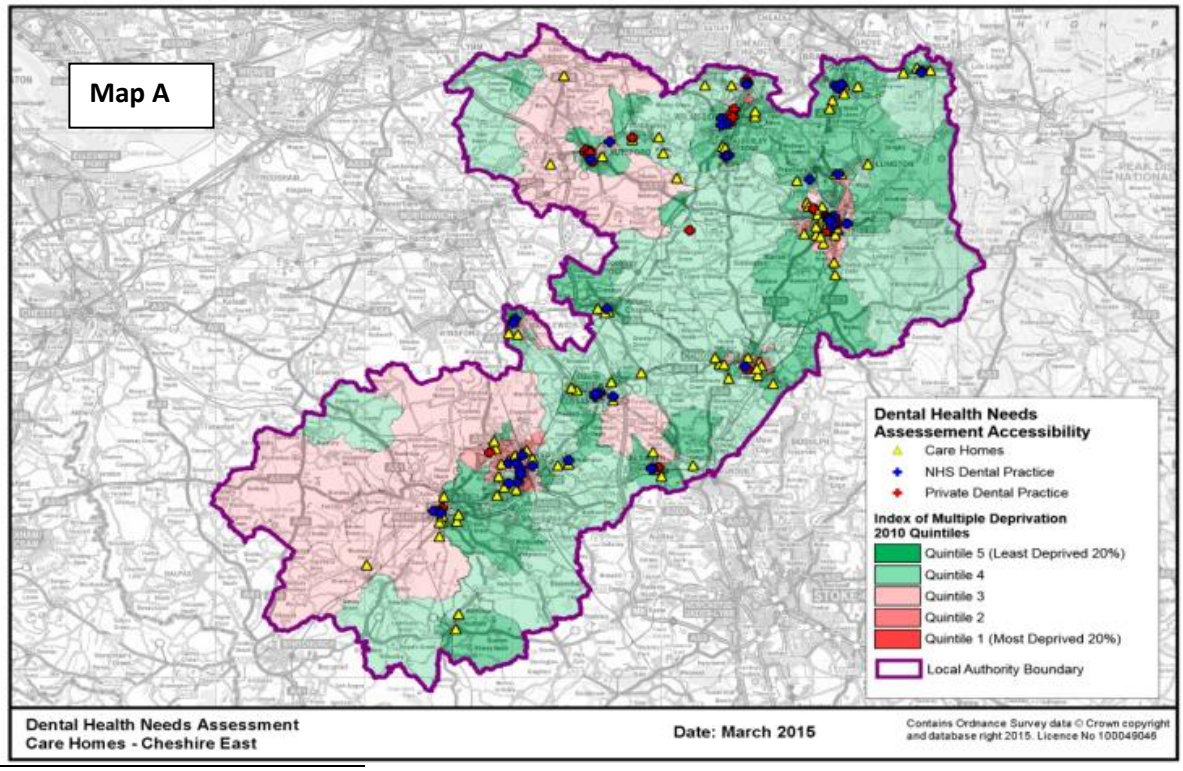
*% seeing dentist over last 24 months*




Research has shown[2] [3] that dental disease correlates closely with social and economic deprivation, meaning that usually, dental need is greater in areas of deprivation and in areas of prosperity, dental need is less. There has been a reported seven fold difference between the populations of (former) PCTs in England with the best dental health compared to those with the worst dental health[4].

## Practice locations

The distance travelled to a dentist can be seen as an indicator of need and



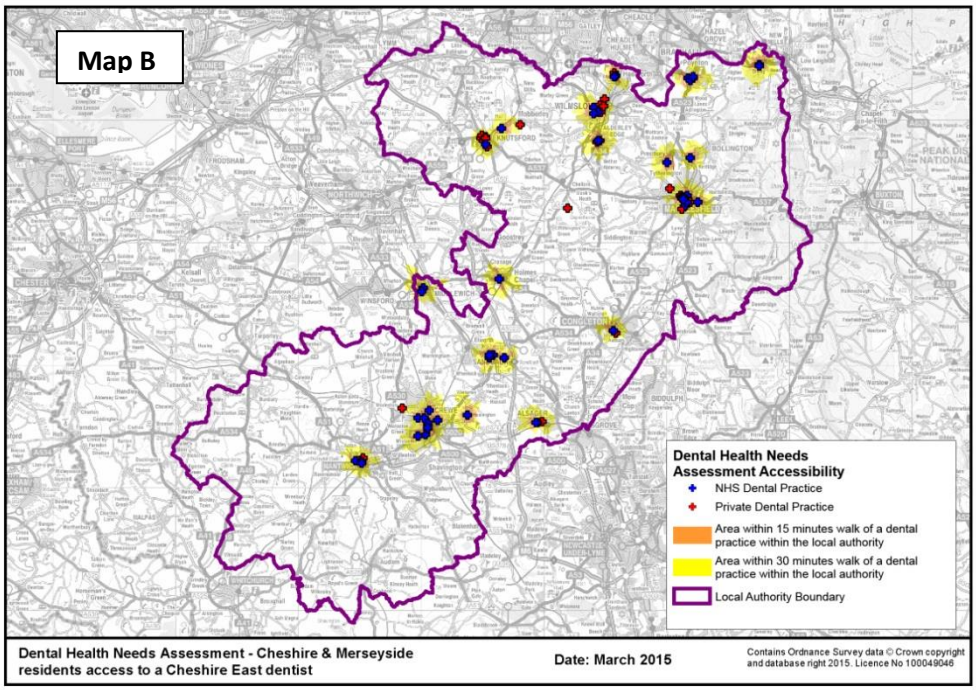

[2] The Office of National Statistics (1998), Adult Dental Health Survey, Oral health in the United Kingdom

[3] Independent Inquiry into Inequalities in Health (Acheson Report), 1998; Department of Health, Choosing Better Oral Health: An Oral Health Plan for England, 2005

[4] British Association for the Study of Community Dentistry, 2003/04 survey of five-year-olds

effectiveness of dental commissioning. In Map A, the red areas are the most deprived nationally, dark green the least deprived. The map shows the geographical location of dental practices (NHS and private) mapped over the Indices of Multiple Deprivation Quintiles and how in general, the more deprived an area, the more dental practices it has. There are still areas of relative deprivation that do not have as much provision of dental practices as might be needed. Map A also plots the location of care homes in Cheshire East. The dental health of vulnerable people, particularly of older people in care homes and the location of practices to care homes is an important consideration for commissioners of services.

Most of the dental practices in Cheshire East are accessible within an 8.4 minute drive[5], with the exception of an area around the foot of the map. However Map B shows that there are large geographical areas where there are no NHS practices accessible by either walking a 15 (orange) or 30 minute (yellow) distance.




## Dental Practice Opening Times

The opening times of practices have an impact on how often the general population can use available dental services. Dental practices are not required to open between specific times although in most areas there are some dental practices which open outside the usual working hours of Monday- Friday 9am-5pm.

| Local Authority | Number of NHS Dental Practices | Open beyond 9-5pm at least one weekday | Open Saturday at least occasionally |
|---|---|---|---|
| Cheshire East | 53 | 41 (77.4%) | 7 (13.2%) |
| Cheshire Total | 150 | 126 (84.0%) | 18 (12.0%) |

*Source: LPHO telephone survey, Feb/March 2015*

## Patient Satisfaction Information

The GP Patient Survey Data (2014) reports that the proportion of people in Cheshire successfully able to get an NHS dental appointment is 96% compared to the 93% England average, and 56% report experiencing a very good overall experience compared to 48% across England.

[5] decided to be a reasonable driving distance to access services in the recent Pharmaceutical Needs Assessment

# Dental Health Need Assessment Cheshire West and Chester Summary

## Aims

The aims of this dental health need assessment were to determine the current health needs of the population, to investigate the current service provision for dental health in children and adults, highlighting gaps and inequalities. We also developed a set of evidence based recommendations for local commissioners on oral health promotion and prevention and for NHS England on the provision of dental health services for the local population; from Cheshire and Merseyside, through to local authority level.

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## Key recommendations for improving dental health in Cheshire and Merseyside

**Increased provision of data**

- Utilise public health and ward level data (where available) to help inform commissioning intentions and decisions.
- Explore the needs of people on low incomes but who are not exempt from dental charges.
- Undertake an additional health needs assessment into domiciliary dental care provision.

**Targeted interventions**

- Place oral health needs on a wider agenda for change in order for collaboration with relevant sectors and agencies to take place, for example linking with related public health programmes such as healthy eating.
- Work towards a multi-partnership oral health programme strategy for older people.
- Pursue fluoridation of public water supplies.

**Improved knowledge of oral health, sharing of good practice and reporting of information**

- Encourage local authorities to share good oral health practice and procedures.
- Explore tobacco cessation and alcohol awareness training for dental practices.
- Monitor NHS access to dental care at regular intervals.

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## Evidence of oral health promotion

Following the oral health promotion review in 2014, many existing programmes to prevent dental caries in children were expanded. As an example of local practice in Cheshire and Merseyside, details

of health promotion activities in St Helens are given here. Priorities for St Helens include reducing inequalities in dental health of vulnerable adults. Local promotion, prevention and delivery now includes:

- Weaning advice from Health Visitors and the Health Early Years Award for nurseries are helping to make sure that young children have a healthy diet. This promotes health eating in young children.
- Brushing for life- the health visitor led programme provides oral health information, advice and a free toothbrush and toothpaste to parents of babies aged 0-3 years old (2,000 packs already distributed in quarter 1).
- In 2014 a scheme was extended to significantly increase the numbers of nurseries and children benefitting from a supervised tooth brushing programme aimed at strengthening children's teeth using fluoride. 4,000 children currently benefit.
- All children aged 3-11 years old benefit from a free toothbrush and toothpaste 4 times per year (expanded in 2014 and now covering 9,000 children).
- Local dentists have been strengthening children's teeth with fluoride varnish particularly in children who have had some teeth affected by dental decay.
- 30 nursing and care homes have received training on oral health assessment, a denture marking kit and updated policies on oral health.
- Oral health care packs and training available for carers of other vulnerable groups- YMCA, homeless charities, drug and alcohol services, carers of people with learning disabilities.

## Dental Health in Cheshire West and Chester

Evidence suggests that the general health of people in Cheshire West and Chester (population 330,000) is varied compared with the average health of the population in England. Deprivation levels are lower than the national average. The Health Profile for Cheshire West and Chester can be found by following this link: http://www.apho.org.uk/default.aspx?QN=HP_FINDSEARCH2012 with some more recent data available here: http://fingertips.phe.org.uk/profile/health-profiles/data

The common risk factors to poor oral and dental health include unhealthy diet, smoking and harmful alcohol use. Available indicators suggest that Cheshire West and Chester compares favourably or is similar to the national average for most of these risk factors.

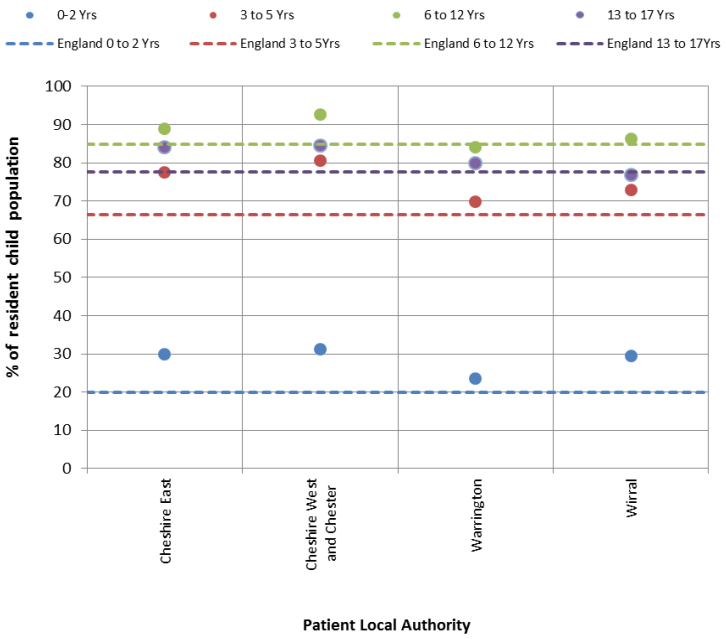
The dental health of local populations is difficult to determine as only limited data is collected, usually related to the health of children's teeth. In Cheshire West and Chester, around 1 in 4 (24.4%) children aged 5 have decayed, missing or filled teeth. This is lower than the national average of 27.9%, and much lower than the North West average of 34.8%. See main report for further findings.

## Dental Access in Cheshire West and Chester

Child dental access rates in Cheshire West and Chester are better than the England average and the highest across Cheshire for all ages (Figure A). Adult access rates are 59.3%, which is higher than the England average of 52.0%.

**Figure A. Cheshire Local Authorities Child Access by Age Band March 2014**

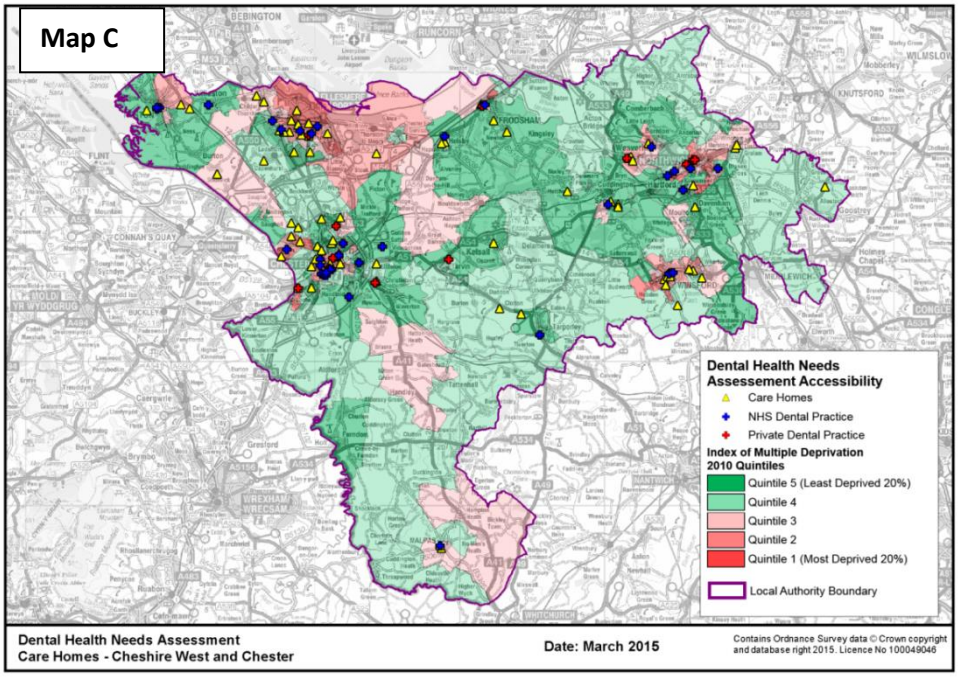
*% seeing dentist over last 24 months*




Research has shown[6] [7] that dental disease correlates closely with social and economic deprivation, meaning that usually, dental need is greater in areas of deprivation and in areas of prosperity dental need is less. There has been a reported seven fold difference between the populations of (former) PCTs in England with the best dental health compared to those with the worst dental health[8].

### Practice locations

The distance travelled to a dentist can be seen as an indicator of need and effectiveness of dental commissioning. In Map C, the red areas are the most deprived nationally, dark green the least deprived. The map shows the geographical location of NHS and private dental practices mapped over the Indices of Multiple Deprivation Quintiles and how in general, the more deprived an area, the more dental practices it has.



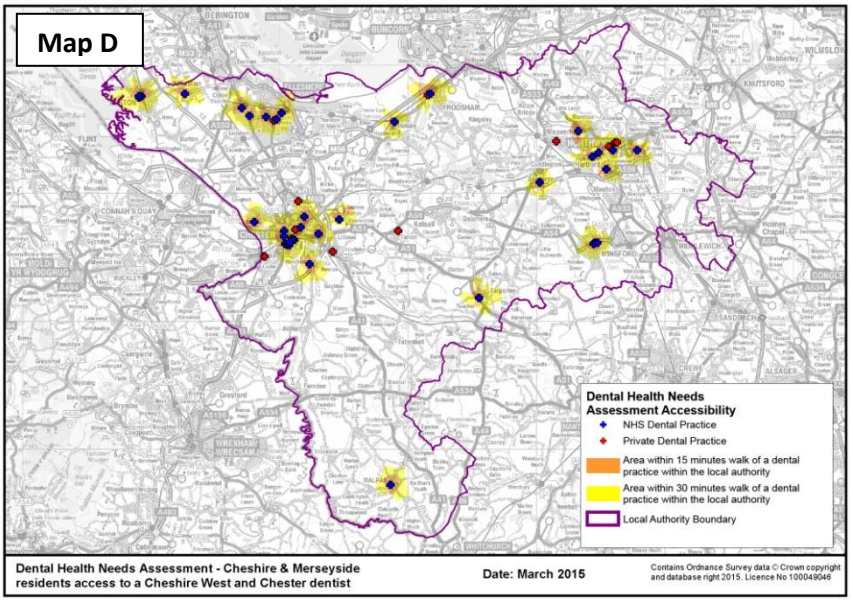

[6] The Office of National Statistics (1998), Adult Dental Health Survey, Oral health in the United Kingdom

[7] Independent Inquiry into Inequalities in Health (Acheson Report), 1998; Department of Health, Choosing Better Oral Health: An Oral Health Plan for England, 2005

[8] British Association for the Study of Community Dentistry, 2003/04 survey of five-year-olds

There are still areas of relative deprivation that do not have as much provision of dental practices as might be needed, such as some areas to the north of the map. Map C also plots the location of care homes in Cheshire West and Chester. The dental health of vulnerable people, particularly of older people in care homes and the location of practices to care homes is an important consideration for commissioners of services.

Most of the dental practices in Cheshire West and Chester are accessible to the local population within an 8.4 minute drive[9], apart from a band across the local authority to the south of Handley. Map D shows that there are large geographical areas without nearby NHS or private dental practices, with none accessible by either walking a 15 (orange) or 30 minute (yellow) distance.




## Dental Practice Opening Times

The opening times of practices have an impact on how often the general population can use available dental services. Dental practices are not required to open between specific times although in most areas there are some dental practices which open outside the usual working hours of Monday-Friday 9am-6pm.

| Local Authority | Number of NHS Dental Practices | Open beyond 9-5pm at least one weekday | Open Saturday at least occasionally |
|---|---|---|---|
| Cheshire WandC | 36 | 29 (80.6%) | 5 (13.9%) |
| Cheshire Total | 150 | 126 (84.0%) | 18 (12.0%) |

*Source: LPHO telephone survey, Feb/March 2015*

## Patient Satisfaction Information

The GP Patient Survey Data (2014) reports that the proportion of people in Cheshire successfully able to get an NHS dental appointment is 96% compared to the 93% England average, and 56% report experiencing a very good overall experience compared to 48% across England.

[9] decided to be a reasonable driving distance to access services in the recent Pharmaceutical Needs Assessment

# Dental Health Need Assessment Warrington Summary

## Aims

The aims of this dental health need assessment were to determine the current health needs of the population, to investigate the current service provision for dental health in children and adults, highlighting gaps and inequalities. We also developed a set of evidence based recommendations for local commissioners on oral health promotion and prevention and for NHS England on the provision of dental health services for the local population; from Cheshire and Merseyside, through to local authority level.

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## Key recommendations for improving dental health in Cheshire and Merseyside

**Increased provision of data**

- Utilise public health and ward level data (where available) to help inform commissioning intentions and decisions.
- Explore the needs of people on low incomes but who are not exempt from dental charges.
- Undertake an additional health needs assessment into domiciliary dental care provision.

**Targeted interventions**

- Place oral health needs on a wider agenda for change in order for collaboration with relevant sectors and agencies to take place, for example linking with related public health programmes such as healthy eating.
- Work towards a multi-partnership oral health programme strategy for older people.
- Pursue fluoridation of public water supplies.

**Improved knowledge of oral health, sharing of good practice and reporting of information**

- Encourage local authorities to share good oral health practice and procedures.
- Explore tobacco cessation and alcohol awareness training for dental practices.
- Monitor NHS access to dental care at regular intervals.

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## Evidence of oral health promotion in Warrington

Following the oral health promotion review in 2014, many existing programmes to prevent dental caries in children were expanded. As an example of local practice in Cheshire and Merseyside, details of health promotion activities in St Helens are given here. Priorities for St Helens include reducing

inequalities in dental health of vulnerable adults. Local promotion, prevention and delivery now includes:

- Weaning advice from Health Visitors and the Health Early Years Award for nurseries are helping to make sure that young children have a healthy diet. This promotes health eating in young children.
- Brushing for life- the health visitor led programme provides oral health information, advice and a free toothbrush and toothpaste to parents of babies aged 0-3 years old (2,000 packs already distributed in quarter 1).
- In 2014 a scheme was extended to significantly increase the numbers of nurseries and children benefitting from a supervised tooth brushing programme aimed at strengthening children's teeth using fluoride. 4,000 children currently benefit.
- All children aged 3-11 years old benefit from a free toothbrush and toothpaste 4 times per year (expanded in 2014 and now covering 9,000 children).
- Local dentists have been strengthening children's teeth with fluoride varnish particularly in children who have had some teeth affected by dental decay.
- 30 nursing and care homes have received training on oral health assessment, a denture marking kit and updated policies on oral health.
- Oral health care packs and training available for carers of other vulnerable groups- YMCA, homeless charities, drug and alcohol services, carers of people with learning disabilities.

## Dental Health in Warrington

Evidence suggests that the general health of people in Warrington (population 204,000) is varied compared with the average health of the population in England. Deprivation levels are lower than the national average. The Health Profile for Warrington can be found by following this link: http://www.apho.org.uk/default.aspx?QN=HP_FINDSEARCH2012 with some more recent data available here: http://fingertips.phe.org.uk/profile/health-profiles/data

The common risk factors to poor oral and dental health include unhealthy diet, smoking and harmful alcohol use. Available indicators would suggest that Warrington compares worse or is similar to the national average for most of these risk factors.

The dental health of local populations is difficult to determine as only limited data is collected, usually related to the health of children's teeth. In Warrington, 31.6% of children aged 5 have decayed, missing or filled teeth. This is higher than the national average of 27.9%, although lower than the North West average of 34.8%. See main report for further findings.

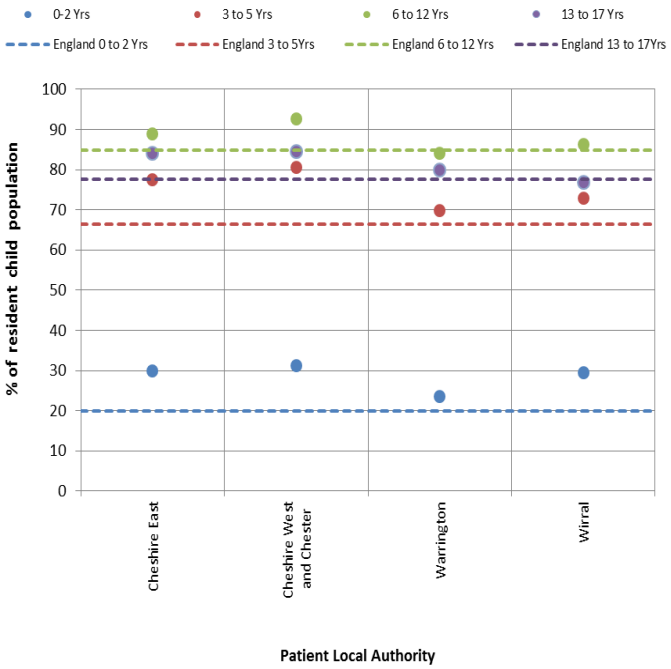
## Dental Access in Warrington

Child dental access rates in Warrington are better than the England average for each age group except those aged 6 to 12 (Figure A). Adult access rates are 58.6%, which is higher than the England average of 52.0%.

Research has shown[10] [11] that dental disease correlates closely with social and economic deprivation, meaning that usually, dental need is greater in areas of deprivation and in areas of prosperity, dental need is less. There has been a reported seven fold difference between the populations of (former) PCTs in England with the best dental health compared to those with the worst dental health[12].

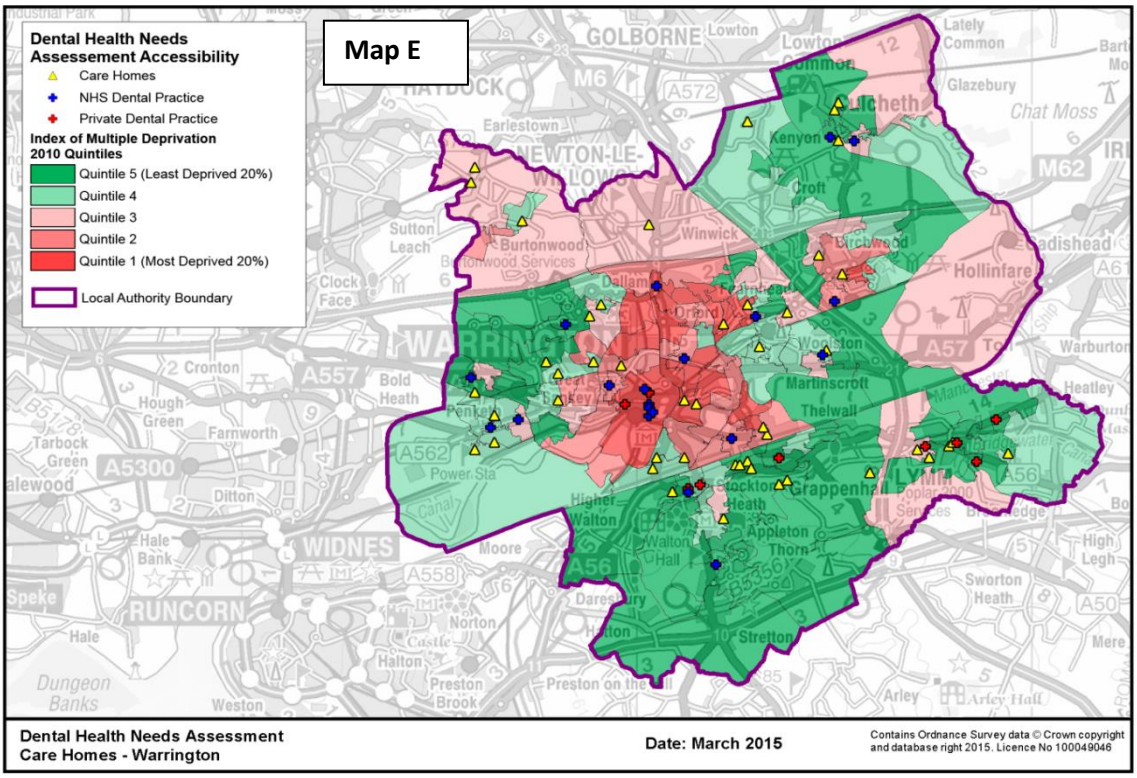
**Figure A. Cheshire Local Authorities Child Access by Age Band March 2014**

*% seeing dentist over last 24 months*




## Practice locations

The distance travelled to a dentist can be seen as an indicator of need and effectiveness of dental commissioning. In Map E, the red areas are the most



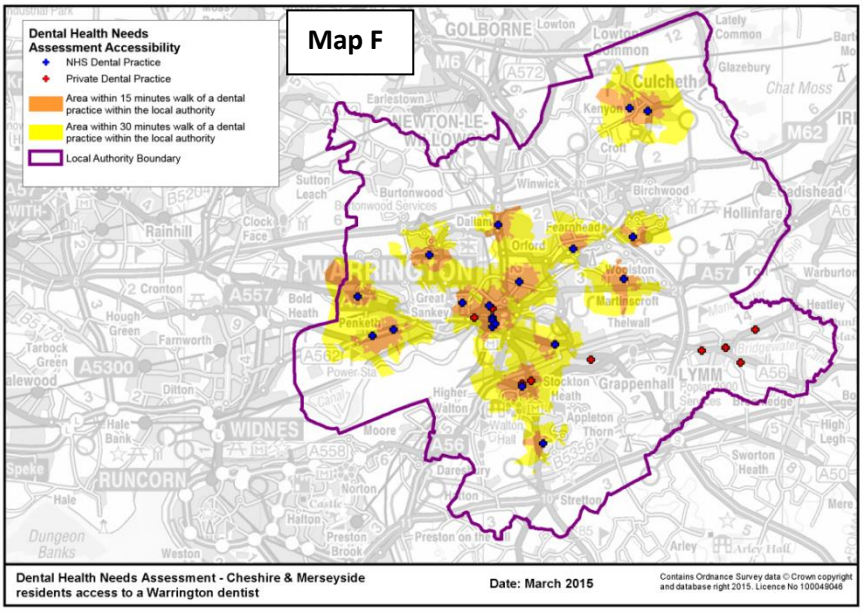

[10] The Office of National Statistics (1998), Adult Dental Health Survey, Oral health in the United Kingdom

[11] Independent Inquiry into Inequalities in Health (Acheson Report), 1998; Department of Health, Choosing Better Oral Health: An Oral Health Plan for England, 2005

[12] British Association for the Study of Community Dentistry, 2003/04 survey of five-year-olds

deprived nationally, dark green the least deprived. The map shows the geographical location of NHS and private dental practices mapped over the Indices of Multiple Deprivation Quintiles and how in general, the more deprived an area, the more dental practices it has. There are still areas of relative deprivation that do not have as much provision of dental practices as might be needed. Map E also plots the location of care homes in Warrington. The dental health of vulnerable people, particularly of older people in care homes and the location of practices to care homes is an important consideration for commissioners of services.

Most of the dental practices in Warrington are accessible to the local population, all being within an 8.4 minute drive[13]. However Map F shows that there are geographical areas where there are no NHS practices accessible by either walking a 15 (orange) or 30 minute (yellow) distance. There are no accessible NHS dentists to the east, around Lymm.




## Dental Practice Opening Times

The opening times of practices have an impact on how often the general population can use available dental services. Dental practices are not required to open between specific times although in most areas there are some dental practices which open outside the usual working hours of Monday- Friday 9am-6pm.

| Local Authority | Number of NHS Dental Practices | Open beyond 9-5pm at least one weekday | Open Saturday at least occasionally |
|---|---|---|---|
| Warrington | 22 | 18 (81.8%) | 4 (18.2%) |
| Cheshire Total | 150 | 126 (84.0%) | 18 (12.0%) |

*Source: LPHO telephone survey, Feb/March 2015*

## Patient Satisfaction Information

The GP Patient Survey Data (2014) reports that the proportion of people in Cheshire successfully able to get an NHS dental appointment is 96% compared to the 93% England average, and 56% report experiencing a very good overall experience compared to 48% across England.

[13] decided to be a reasonable driving distance to access services in the recent Pharmaceutical Needs Assessment

# Dental Health Need Assessment Wirral Summary

## Aims

The aims of this dental health need assessment were to determine the current health needs of the population, to investigate the current service provision for dental health in children and adults, highlighting gaps and inequalities. We also developed a set of evidence based recommendations for local commissioners on oral health promotion and prevention and for NHS England on the provision of dental health services for the local population; from Cheshire and Merseyside, through to local authority level.

**********

## Key recommendations for improving dental health in Cheshire and Merseyside

**Increased provision of data**

- Utilise public health and ward level data (where available) to help inform commissioning intentions and decisions.
- Explore the needs of people on low incomes but who are not exempt from dental charges.
- Undertake an additional health needs assessment into domiciliary dental care provision.

**Targeted interventions**

- Place oral health needs on a wider agenda for change in order for collaboration with relevant sectors and agencies to take place, for example linking with related public health programmes such as healthy eating.
- Work towards a multi-partnership oral health programme strategy for older people.
- Pursue fluoridation of public water supplies.

**Improved knowledge of oral health, sharing of good practice and reporting of information**

- Encourage local authorities to share good oral health practice and procedures.
- Explore tobacco cessation and alcohol awareness training for dental practices.
- Monitor NHS access to dental care at regular intervals.

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## Evidence of oral health promotion in Wirral

Following the oral health promotion review in 2014, many existing programmes to prevent dental caries in children were expanded. As an example of local practice in Cheshire and Merseyside, details

of health promotion activities in St Helens are given here. Priorities for St Helens include reducing inequalities in dental health of vulnerable adults. Local promotion, prevention and delivery now includes:

- Weaning advice from Health Visitors and the Health Early Years Award for nurseries are helping to make sure that young children have a healthy diet. This promotes health eating in young children.
- Brushing for life- the health visitor led programme provides oral health information, advice and a free toothbrush and toothpaste to parents of babies aged 0-3 years old (2,000 packs already distributed in quarter 1).
- In 2014 a scheme was extended to significantly increase the numbers of nurseries and children benefitting from a supervised tooth brushing programme aimed at strengthening children's teeth using fluoride. 4,000 children currently benefit.
- All children aged 3-11 years old benefit from a free toothbrush and toothpaste 4 times per year (expanded in 2014 and now covering 9,000 children).
- Local dentists have been strengthening children's teeth with fluoride varnish particularly in children who have had some teeth affected by dental decay.
- 30 nursing and care homes have received training on oral health assessment, a denture marking kit and updated policies on oral health.
- Oral health care packs and training available for carers of other vulnerable groups- YMCA, homeless charities, drug and alcohol services, carers of people with learning disabilities.

## Dental Health in Wirral

Evidence suggests that the general health of people in Wirral (population 320,000) is varied compared with the average health of the population in England. Deprivation levels are higher than the national average. The Health Profile for Wirral can be found by following this link: http://www.apho.org.uk/default.aspx?QN=HP_FINDSEARCH2012 with some more recent data available here: http://fingertips.phe.org.uk/profile/health-profiles/data

The common risk factors to poor oral and dental health include unhealthy diet, smoking and harmful alcohol use. Available indicators would suggest that Wirral compares worse or is similar to the national average for most of these risk factors.

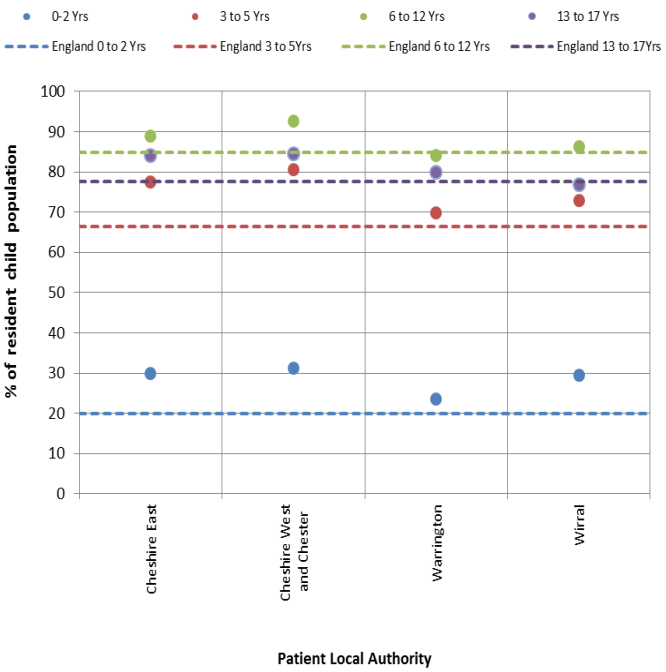
The dental health of local populations is difficult to determine as only limited data is collected, usually related to the health of children's teeth. In Wirral, nearly 1 in 3 (32.1%) children aged 5 have decayed, missing or filled teeth. This is the highest level in Cheshire and higher than the national average of 27.9%, although lower than the North West average of 34.8%. See main report for further findings.

## Dental Access in Wirral

Child dental access rates in Wirral are better than the England average for each age group except those aged 13 to17 (Figure A). Adult access rates are 59.6%, which is higher than the England average of 52.0%. Research has shown[14] [15] that dental disease correlates closely with social and economic deprivation, meaning that usually, dental need is greater in areas of deprivation and in areas of prosperity, dental need is less. There has been a reported seven fold difference between the populations of (former) PCTs in England with the best dental health compared to those with the worst dental health[16].

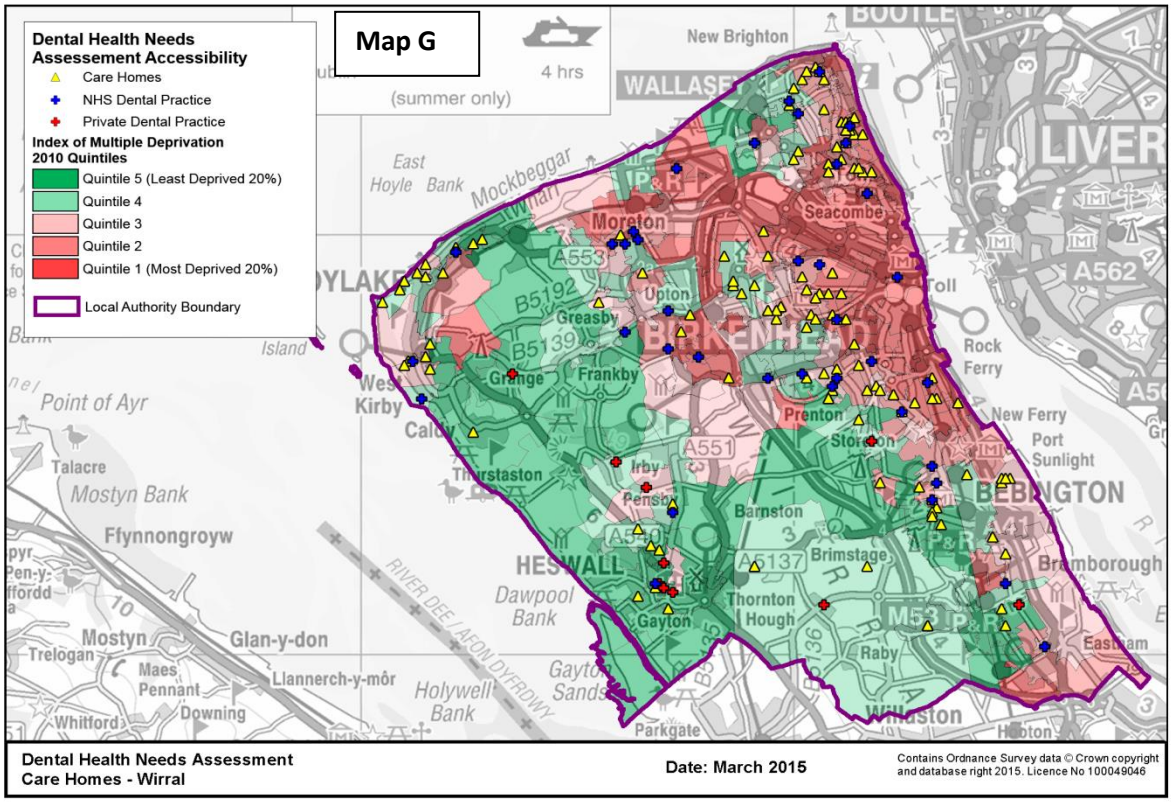
**Figure A. Cheshire Local Authorities Child Access by Age Band March 2014**

*% seeing dentist over last 24 months*




## Practice locations

The distance travelled to a dentist can be seen as an indicator of need and effectiveness of dental commissioning. In Map G, the red areas are the most deprived nationally, dark green the least



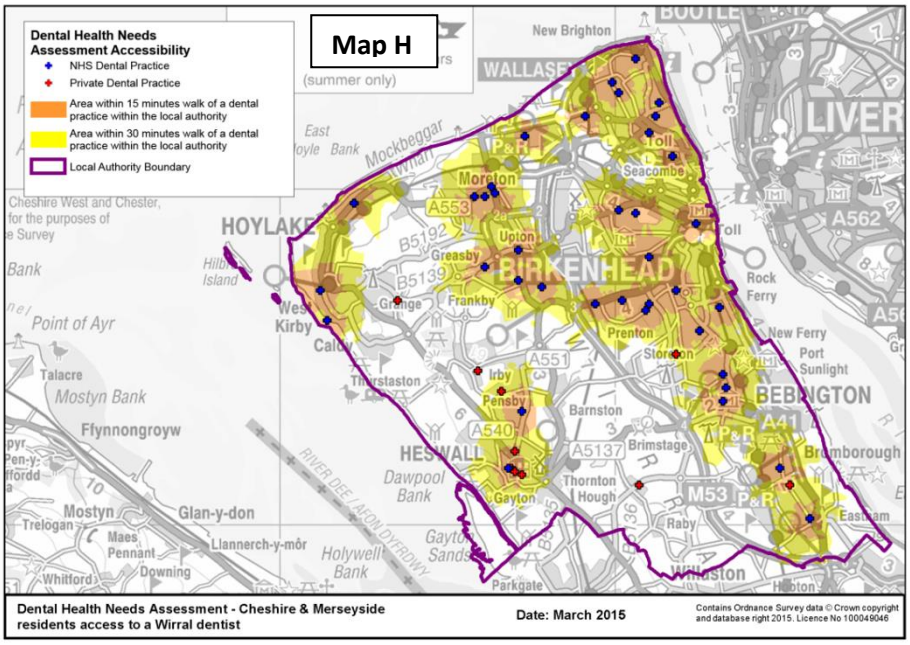

[14] The Office of National Statistics (1998), Adult Dental Health Survey, Oral health in the United Kingdom

[15] Independent Inquiry into Inequalities in Health (Acheson Report), 1998; Department of Health, Choosing Better Oral Health: An Oral Health Plan for England, 2005

[16] British Association for the Study of Community Dentistry, 2003/04 survey of five-year-olds

deprived. The map shows the geographical location of NHS and private dental practices mapped over the Indices of Multiple Deprivation Quintiles and how in general, the more deprived an area, the more dental practices it has. There are still areas of relative deprivation that do not have as much provision of dental practices as might be needed. Map G also plots the location of care homes in Wirral. The dental health of vulnerable people, particularly of older people in care homes and the location of practices to care homes is an important consideration for commissioners of services.

Most of the dental practices in Wirral are accessible to the local population within an 8.4 minute drive[17]. However Map H shows that there are geographical areas where there are no NHS practices accessible by either walking a 15 (orange) or 30 minute (yellow) distance.




## Dental Practice Opening Times

The opening times of practices have an impact on how often the general population can use available dental services. Dental practices are not required to open between specific times although in most areas there are some dental practices which open outside the usual working hours of Monday- Friday 9am-6pm.

| Local Authority | Number of NHS Dental Practices | Open beyond 9-5pm at least one weekday | Open Saturday at least occasionally |
|---|---|---|---|
| Wirral | 39 | 38 (97.4%) | 2 (5.1%) |
| Cheshire Total | 150 | 126 (84.0%) | 18 (12.0%) |

*Source: LPHO telephone survey, Feb/March 2015*

## Patient Satisfaction Information

The GP Patient Survey Data (2014) reports that the proportion of people in Cheshire successfully able to get an NHS dental appointment is 96% compared to the 93% England average, and 56% report experiencing a very good overall experience compared to 48% across England.

[17] decided to be a reasonable driving distance to access services in the recent Pharmaceutical Needs Assessment

# Full Report: A Dental Health Needs Assessment for Cheshire

## 1. Introduction to the Health Needs Assessment

Health needs assessment (HNA) is a systematic method for reviewing the health issues facing a population and the provision and adequacy of services to meet those needs. Health needs assessments can lead to agreeing priorities and resource allocation that will improve health and reduce inequalities.

Public Health is defined as: "The science and art of promoting and protecting health and wellbeing, preventing ill health and prolonging life through the organised efforts of society" (Faculty of Public Health, 2005). There are three domains of public health: health improvement (including people's lifestyles as well as inequalities in health and the wider social influences of health), health protection (including infectious diseases, environmental hazards and emergency preparedness) and health services (including service planning, efficiency, audit and evaluation)[18].

### Why undertake a Health Needs Assessment?

A health needs assessment (HNA) is a recommended public health tool to provide evidence about a population on which to plan services and address health inequalities. It provides an opportunity to engage with specific populations and enable them to contribute to targeted service planning and resource allocation and is also an opportunity for cross-sectoral partnership working and developing creative and effective interventions.

A HNA also supports national and local priorities. Benefits include strengthened community involvement in decision making, improved team and partnership working, professional development of skills and experience, improved communication with other agencies and the public and better use of resources. Please see Figure 1a for a graphical explanation.

More detailed information on conducting a HNA can be found by following this web link below: http://www.nice.org.uk/media/150/35/Health_Needs_Assessment_A_Practical_Guide.pdf

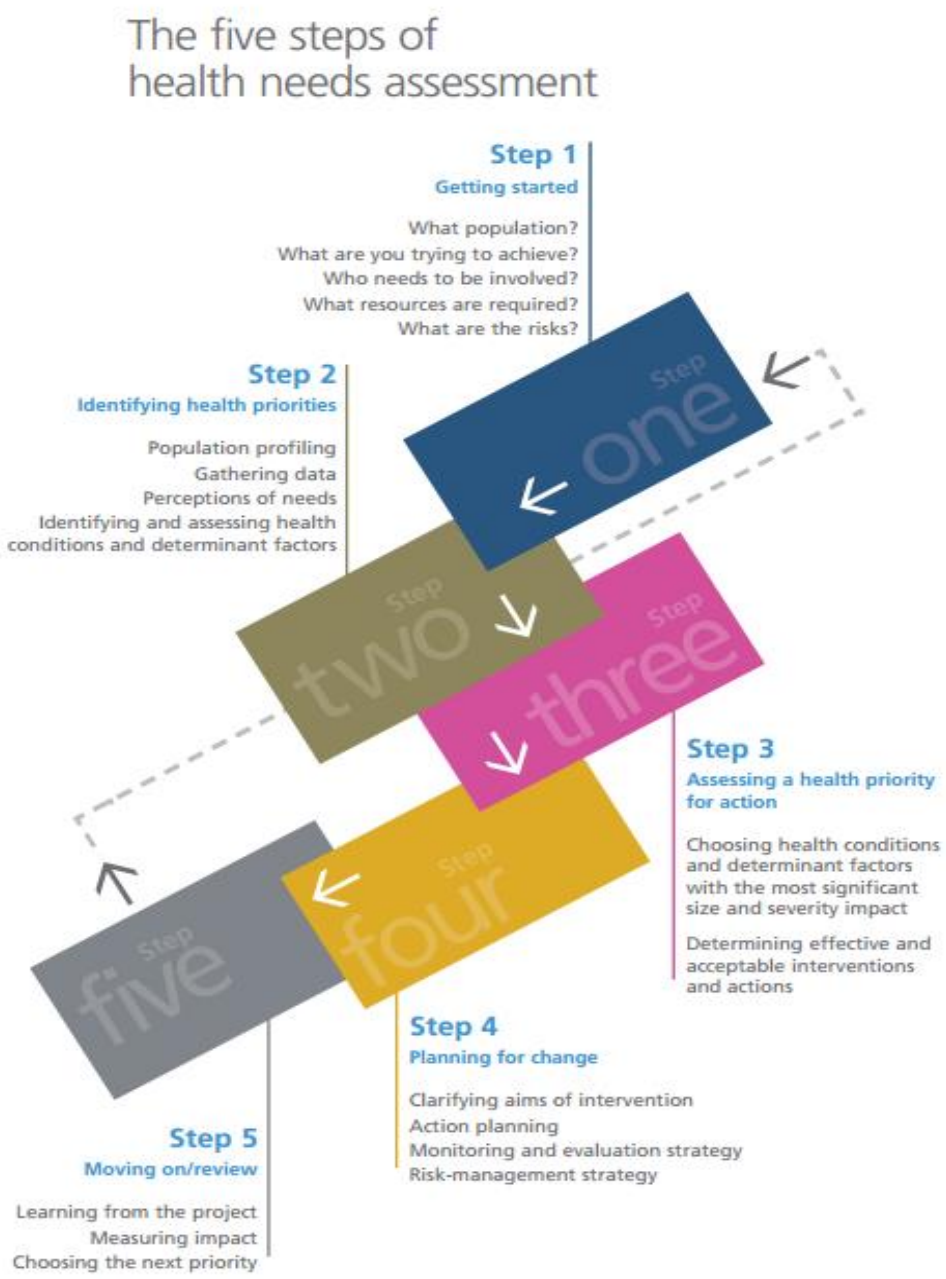
This dental need assessment has a different scope from other recent oral health need assessments, in that it focuses on exclusively on dental health, namely teeth and the absence or presence of decay and the reasons why some groups of people or geographical areas of Cheshire and Merseyside may have differing levels of decay or disease. There is background information this need assessment

[18] Griffiths, S., Jewell, T. and Donnelly, P. (2005) Public health in practice: The three domains of public health. *Public Health*; 119(10): 907–13.

about the link between oral health and dental health however; the focus of this health need assessment and the data gathered stays within the remit for a dental health need assessment.

However, where possible, we have endeavoured to include discussion of risk factors alongside the known evidence on the common risk factors of poor dental health such as sugary drinks, smoking, alcohol consumption, poor diet and income deprivation.

**Figure 1a**




Developed by the Health Development Agency (2005), now, NICE, hosted by this website;
http://www.urbanreproductivehealth.org/sites/mle/files/Health_Needs_Assessment_A_Practical_Guide.pdf

## A Dental Health Need Assessment in Cheshire and Merseyside

Cheshire and Merseyside Public Health Intelligence Group identified dental health as an issue that would benefit from further analysis via a health needs assessment. This is a report of the Cheshire Dental Health Needs Assessment. The Merseyside report is available in a complimentary document via the following link:
http://www.liv.ac.uk/psychology-health-and-society/research/public-health-observatory/publications/report-series/

Throughout this report the term Cheshire is used to describe the local authority areas of Cheshire East, Cheshire West and Chester, Warrington and Wirral (see Figure 1b).
This HNA aims to inform local commissioning arrangements for the provision of services for dental health and local authorities' Joint Strategic Needs Assessments (JSNAs) around the needs of the local population.

Dental services are commonly provided by both NHS dentists and private practices and a large minority of the population pay for some private dental care. Therefore, when exploring the dental health and availability of dental services to the population it is important to consider both NHS practice and private practice availability and ideally to have a complete set of data on the dental health of the population as a whole.

However, data on the dental health of people who attend practices that operate privately is not publicly available and could not be accessed for this dental health need assessment. Furthermore, the availability to the local population of these practices is also unknown.

However, as part of the collection of evidence for this health need assessment Liverpool Public Health Observatory conducted a telephone survey of every registered dental practice in Cheshire and Merseyside as listed on the Care Quality Commission website. We asked practices to provide information about opening times, whether the practice had a NHS contract or was fully private for adult patients, whether they were currently accepting new NHS adult patients and for how long a patient would usually have to wait to be seen for a routine appointment. The results of this survey are in reported in chapter 8.

Engagement at local and senior level is crucial to the success of any health need assessment including dental and oral health need assessments. Professional stakeholders are important people to involve from the outset of the process to ensure sponsorship by those people with the power to make the necessary decisions for change if required. During this dental health need assessment we

engaged and worked with a variety of professional stakeholders including local authority public health leads, managers and information specialists, assistant director of public health, an academic professor from a local university, local authority commissioners, public health consultants and Public Health England (PHE) consultants in dental public health. Professionals from across the Cheshire and Merseyside area in these roles were consulted on a regular basis and provided ongoing support to the researchers.

### Strengths of this Dental Health Need Assessment in Cheshire and Merseyside

- A good breadth and depth of literature was sourced to inform the background and literature gathering for this Dental Health Need Assessment.
- Our steering group for the project included professionals from a variety of backgrounds and working across areas all related to dental health and public health information.
- Primary data was collected from every practice in Cheshire and Merseyside in an attempt to map the current availability of NHS dental services in Cheshire and Merseyside and at Local Authority levels.

### Limitations of this Dental Health Need Assessment in Cheshire and Merseyside

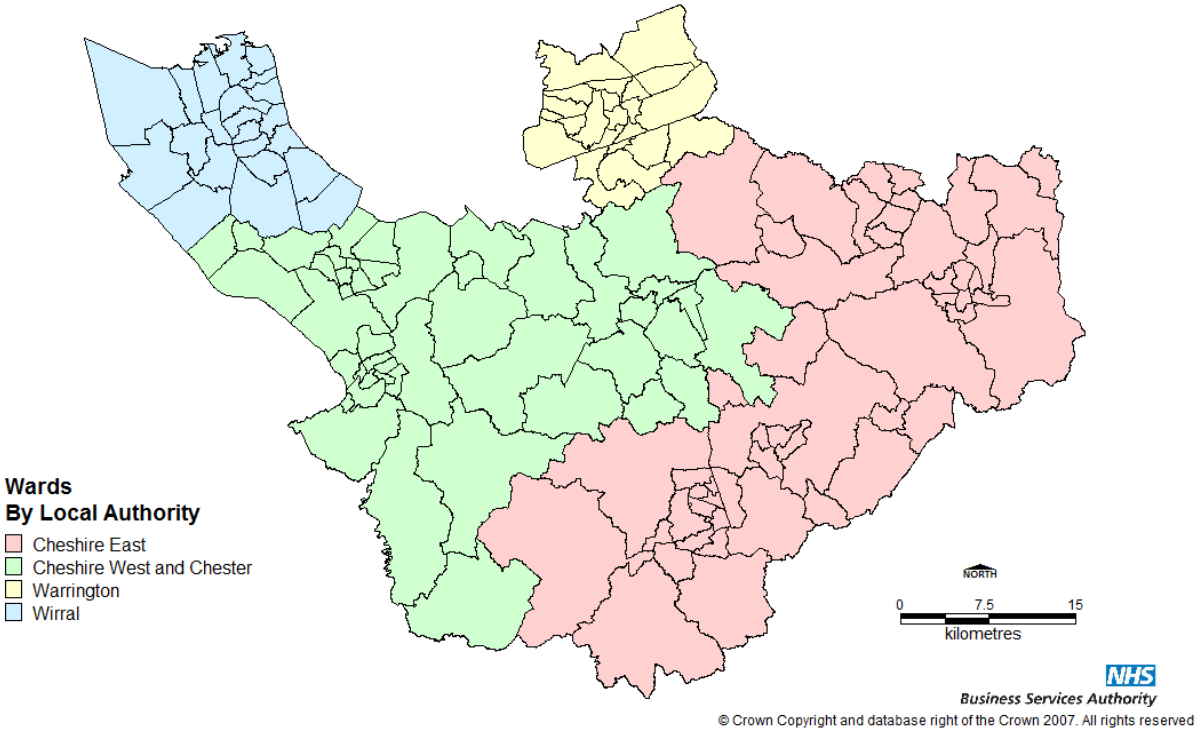
- Data from private dental practices is not included and therefore the true use and availability of dental services is likely to be under reported and the rate of decay amongst adults over reported.
- The timescale and resources did not allow us to work with patient or public groups as would be expected in a comprehensive health need assessment.
- The findings and recommendations of this report can only be applied to the provision of NHS dental health services and to NHS patients.

## Aims of this dental health needs assessment

1. To determine the current health needs of the population in relation to dental health in Cheshire for NHS patients.
2. To investigate the current service provision for dental health in children and adults highlighting any gaps and inequalities based on the new dental contract.
3. To make a set of evidence based recommendations for local commissioners on the provision of oral health promotion for the local population.

**Figure 1b**

**The area of Cheshire has been defined as the following local authorities:**



# 2. Headline findings and recommendations

- Dental health across Cheshire and Merseyside is varied. Children in Cheshire East, Cheshire West and Chester and Warrington have more routine treatments than the England average. Children in Wirral have more complex treatments than in other areas of Cheshire.

- The level of deprivation is linked to the complexity of the treatment, with more children from more deprived areas needing more complex and urgent treatment than those in more affluent groups.

- Units of Dental Activity claimed for each patient is a fundamental measure of the intensity of resource use. The UDA per child patient in Cheshire and Merseyside is similar to the England average.

- On average, 3 year olds in England have 11.7% of their teeth decayed, missing or filled. The North West average is 14.3%, Cheshire East 11.2%, Cheshire West and Chester 7.9%, Warrington 10.5% and Wirral 13.4%. At age 5, all Cheshire areas were below the level of the North West (34.8%) for children with decayed, missing or filled teeth, but Warrington (31.6%) and Wirral (32.1%) were above the England average (27.9%).

- LPHO conducted a telephone survey and found that, in Cheshire, 84% of NHS dental practices had some out of hours' weekday access, but only 12% on a Saturday, and that 26.7% of NHS dental practices had expected routine appointment waiting times of more than 2 weeks. Of all dental practices, 68.7% hold NHS contracts for adults and of these practices, approximately 77.2% were currently accepting new NHS adult patients.

This dental health need assessment has highlighted a number of areas that merit development across Cheshire and Merseyside;

- Local authorities should look for ways to share good practice and successful health promotion and illness prevention ideas.
- Gaps in the NHS dental services have been highlighted and need addressing.
- To achieve this, regular, comprehensive dental health need assessments would enable us to look at the needs of the population at local authority and local area level and should be

undertaken every three years on a rolling, staggered basis, if costs of a general population HNA are prohibitive e.g. Year 1: Children, Year 2: Working Age People, Year 3: Older People.

- Dental health should be included in the Joint Strategic Needs Assessment process.

In collaboration between LPHO as the project document authors, the local authority and Public Health England steering group members and University of Liverpool academic colleagues, it was decided that the list below represented the **key recommendations from this report:**

## Increased provision of data

- Recommendation 1: Public Health and ward level data (where available) should be utilised to help inform commissioning intentions and decisions. The continued commissioning of the dental epidemiology programme is essential and a full census survey on the oral health of children, adults and older people could be considered in order to provide ward level data which would enable further detailed understanding of the needs of vulnerable groups in the population. This would improve the data available to local authorities and the region.

  Action: Currently, Public Health England develop the national programme for dental epidemiology surveys, commissioned by local authorities. It is expected that in the future, local authorities will be more involved in setting the national dental epidemiology programme. They may also wish to commission their own local survey work to support needs assessment, or may wish to augment sample survey work (set out in the national programme) to census based surveys. A staggered approach to a census survey, with a yearly rolling remit of children, adults and older people, could be explored by local authorities.

- Recommendation 2: Explore the needs of people on low incomes but who are not exempt from dental charges. Currently, 700,000 people are on zero hour contracts- costs may hinder access to preventive care.

  Action: Commission research to explore the experience of people who do not qualify for exemption, but who are on low incomes. This could be led by the local authority in collaboration with the Knowledge and Intelligence Teams within PHE.

- Recommendation 3: The level of domiciliary care provision was outside the scope of this DHNA.

Action: Further research is required to investigate domiciliary care provision and whether it is appropriate for the populations' need.

## Targeted interventions

- Recommendation 4: Oral health needs to be placed on a wider agenda for change in order for collaboration with relevant sectors and agencies to take place. One suggestion could be an 'oral health promoter' post for someone to have dedicated time to provide oral health promotion services to priority population groups and to provide a full range of oral health promotion and preventative advice across the whole life course. The post could link with related public health programmes such as healthy eating.

  Action: Adopt a common risk factor approach in developing dental health promotion including promoting self-care management across all health and social care settings for example, "making every contact count".

- Recommendation 5: Work towards a multi-partnership oral health programme strategy for older people.

  Action: Public health teams within local authorities, in partnership with NHS England and supported by Public Health England, should lead the development of an oral health strategy by 2016, with a focus on prevention, promotion and appropriate treatment for older people. This work should be underpinned by oral health needs assessment.

- Recommendation 6: Pursue fluoridation of public water supplies.

  Action: Public Health England

## Improved knowledge of oral health, sharing of good practice and reporting of information

- Recommendation 7: Encourage local authorities to share good oral health practice and procedures, targeted interventions and local preventative and promotion strategies to improve health of the wider geographical footprint.

  Action: Local Authority Public Health Teams should utilise existing Public Health networks to facilitate the sharing of best practice among partners.

- Recommendation 8: Explore tobacco cessation and alcohol awareness training for dental practices.

  Action: Local Authority Public Health Teams should explore training opportunities relating to tobacco cessation and alcohol awareness for all staff within dental practices, on an on-going basis.

- Recommendation 9: Monitor NHS access to dental care at regular intervals, to assess trends of e.g. access to NHS dentists. Access should always be at a reasonable level (to be defined).

  Action: NHS England or PHE could report to Health and Wellbeing Boards on an annual basis.

# 3. Background literature

Oral health is a state of being "free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss and other disorders and diseases that limit a person's capacity in biting, chewing, smiling, speaking and psychosocial wellbeing"[19].

Oral health is an integral part of general health with a range of conditions such as obesity, stroke, cancers, diabetes, sharing with oral health a set of common risk factors such as: diet, smoking, and alcohol. Oral diseases include dental caries, periodontal disease, oral mucosal lesions, oropharyngeal cancer, HIV/AIDs related oral diseases and orodental trauma.

Oral diseases are often linked to chronic disease (CVD, cancers, chronic respiratory disease and diabetes). Poor oral hygiene is also a risk factor for oral disease. Oral diseases include dental caries, periodontal disease, tooth loss, oral mucosal lesion, oropharyngeal cancer, HIV/AIDs related oral diseases and orodental trauma and are major public health problems.

## Dental health history in the UK[20]

In the early 1900s, dental health in England was very poor. Many people had no teeth and dental decay was universal. Urbanisation had led to lower consumption of fresh foods and there had been a huge rise in the amount of sugar eaten- a five times increase. The first known dental survey was undertaken in 1893 and began the interest in paediatric dentistry. This also reflected British society by examining children across different social classes. See Table 1.

Until the NHS was founded in 1948, fillings were not common; they were too expensive for most people. As people started to use the dentist more frequently in 1948, there was a surge in demand for dental care and after 3 years, in 1951 the government introduced charges for dental treatment for adults. The escalation of demand was not met by an increase in number of dentists, despite the increase in demand having the potential to significantly increase dentist's earnings. Since then, NHS dental charges for adults have remained, increasing at various rates over time.

This new NHS system of providing dental treatment did not bring improved techniques or equipment and inadequate local anaesthetic often made visiting the dentist unpleasant. In 1959 there was a revolution in the area of caring for teeth at home as fluoride toothpaste was first marketed in the UK. By 1980 96% of toothpaste contained fluoride and dentate adults going for regular dental check-ups rose from 43% to 59% in 1998. Table 1 shows the relative liability to dental caries in poor and

[19] http://www.who.int/mediacentre/factsheets/fs318/en/
[20] http://www.rpharms.com/museum-pdfs/dentistry-information-and-enquiry-sheets.pdf

high class schools, taken from the British Dental Association and Royal Pharmaceutical Society "Health Histories" series (2011).

**Table 1**

C.—Table Showing the Relative Liability to Dental Caries in Poor and High Class Schools.

| Age Group ... ... ... | X.-XII. | | XIII.-XV. | | |
|---|---|---|---|---|---|
| Class ... ... ... | Poor. | Rich. | Poor. | Rich. | |
| No. Examined ... ... | 521 | 37 | 680 | 114 | Condition of denture. |
| Sound (no decay) ... ... | 11.7 | 8.1 | 14.3 | 0.9 | Good. |
| Defective Temporary Teeth only ... | 22.1 | 0 | 7.4 | 0 | |
| Permanent Teeth— | | | | | |
| 1 to 4 defective ... | 61.2 | 59.5 | 60.6 | 33.3 | Fair. |
| 5 to 8 ,, ... | 4.8 | 27. | 16.3 | 42.1 | Bad. |
| 9 to 12 ,, ... | 0.2 | 5.4 | 1.3 | 16.7 | Very bad. |
| 13 to 20 ,, ... | — | — | 0.1 | 7 | ,, ,, |
| | 100 | 100 | 100 | 100 | |

**Source: British Dental Association and Royal Pharmaceutical Society "Health Histories" series (2011).**

When the first national adult survey of dental health (ADHS) was published in 1968, over a third of the adult population had lost their teeth[21]. Of these people 7% were aged 25-34 and 22% aged 35-44. These young edentulous adults of 1968 are now part of an older generation whose overall levels of tooth retention are an important consideration when evaluating the oral health of the population in the 2009 national Adult Dental Health Survey. By 1978 there was a change in the nature of how disease and decay was treated meaning that people were beginning to have their teeth filled rather than extracted.

The demand for healthy and beautiful teeth has developed in recent years as the public become more image-conscious and people become more willing to pay for their treatment. The proportion of people having private dental treatment nationally has risen in recent years.

## Groups in society who are more at risk of poor dental health

By 1998 published research studies had shown that it was clear that there are certain groups of people who are at a higher risk of poor dental health and at increased risk of gum disease and tooth decay than others. These are identified as;

1. Older age groups (past the age of retirement), dominated by those with no teeth at all in need of complete dentures.
2. A young generation (under the age of 30), with a low need for fillings and likely to stay healthy so long as preventive care is available.

[21] http://www.hscic.gov.uk/catalogue/PUB01086/adul-dent-heal-surv-summ-them-the1-2009-rep3.pdf

3. A group between 30 and 65 years old who had previously experienced a high level of disease that had been treated by fillings who will have high maintenance needs as they age[22].
4. Other at risk groups include people with disability, those in long term institutional care (prisons, care homes and psychiatric hospitals), homeless people, refugees and asylum seekers, some black and minority ethnic (BME) groups.
5. In children, although dental health in England is amongst the best in Europe, there is a higher risk of poor dental health amongst those in low socioeconomic groups (50% higher in low socioeconomic status (SES) groups when compared to high SES groups). [23]

Poor dental health is associated with a number of other problems which can limit a person's quality of life:

| Good dental health can lead to | Poor dental health can lead to |
|---|---|
| Eating and enjoying food | Limitation of eating function and poor nutrition |
| A higher quality of life | Decreased quality of life |
| More self esteem and confidence | Loss of confidence or self esteem |
| The ability to communicate effectively | Sleepless nights and pain and discomfort |
| A contribution to an attractive appearance | Infection |

## Socioeconomic variation in dental health

Research evidence suggests that socioeconomic variations in health exist. Two pivotal independent UK health inquiries, the Acheson[24] and Black[25] reports helped generate extensive debate on inequalities in health, informing policy and action. Dahlgren and Whitehead (1991) developed a framework that identifies how a range of different factors can impact on personal and community health (Figure 1c). Whilst an individual has no control over his or her age, sex and genetics, wider determinants of health can affect the likelihood of a person developing a disease, or in dying prematurely. Such determinants of health include:

1. Individual lifestyle factors: e.g. diet, physical activity, smoking, alcohol, drugs, behaviour.
2. Social and community factors: e.g. crime, unemployment, social exclusion, local cultures.
3. Living and working conditions: e.g. housing and air or water quality.

[22] Steele, J (2009) NHS dental services in England http://www.sigwales.org/wp-content/uploads/dh_101180.pdf

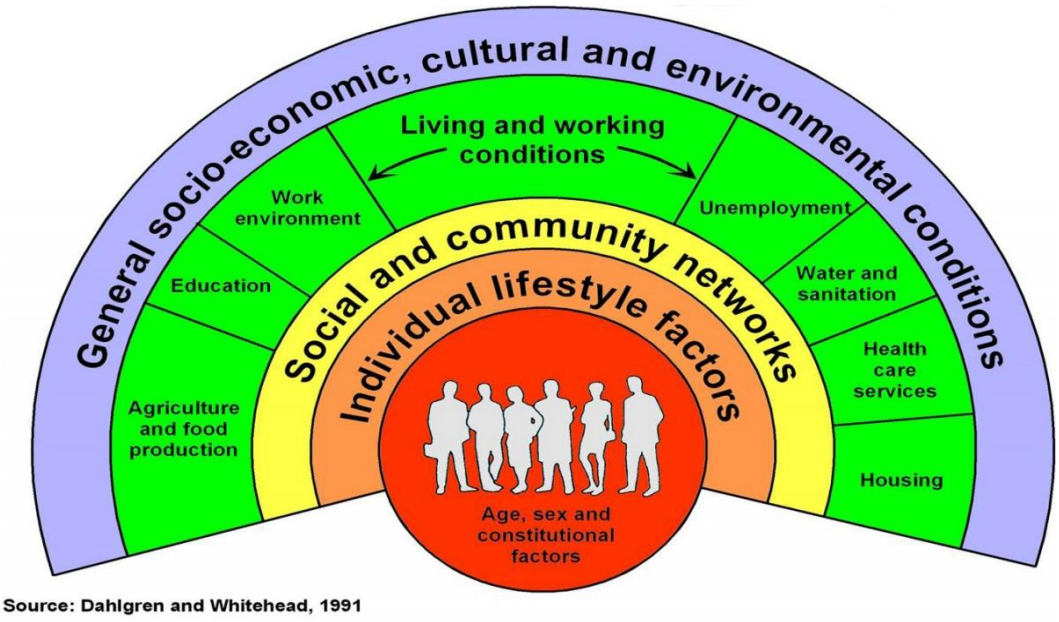
[23] Children's Dental Health in the UK (2003) Social factors and oral health http://www.ons.gov.uk/ons/guide-method/method-quality/specific/health-methodology/dental-health/dental-health-of-children/index.html

[24] Acheson report: http://webarchive.nationalarchives.gov.uk/20130814142233/http://www.archive.official-documents.co.uk/document/doh/ih/ih.htm

[25] Black report: http://www.sochealth.co.uk/resources/public-health-and-wellbeing/poverty-and-inequality/the-black-report-1980/

4. General socio-economic factors impacting on health: e.g. poverty and income, economy.

**Figure 1c**




Source: Dahlgren and Whitehead, 1991

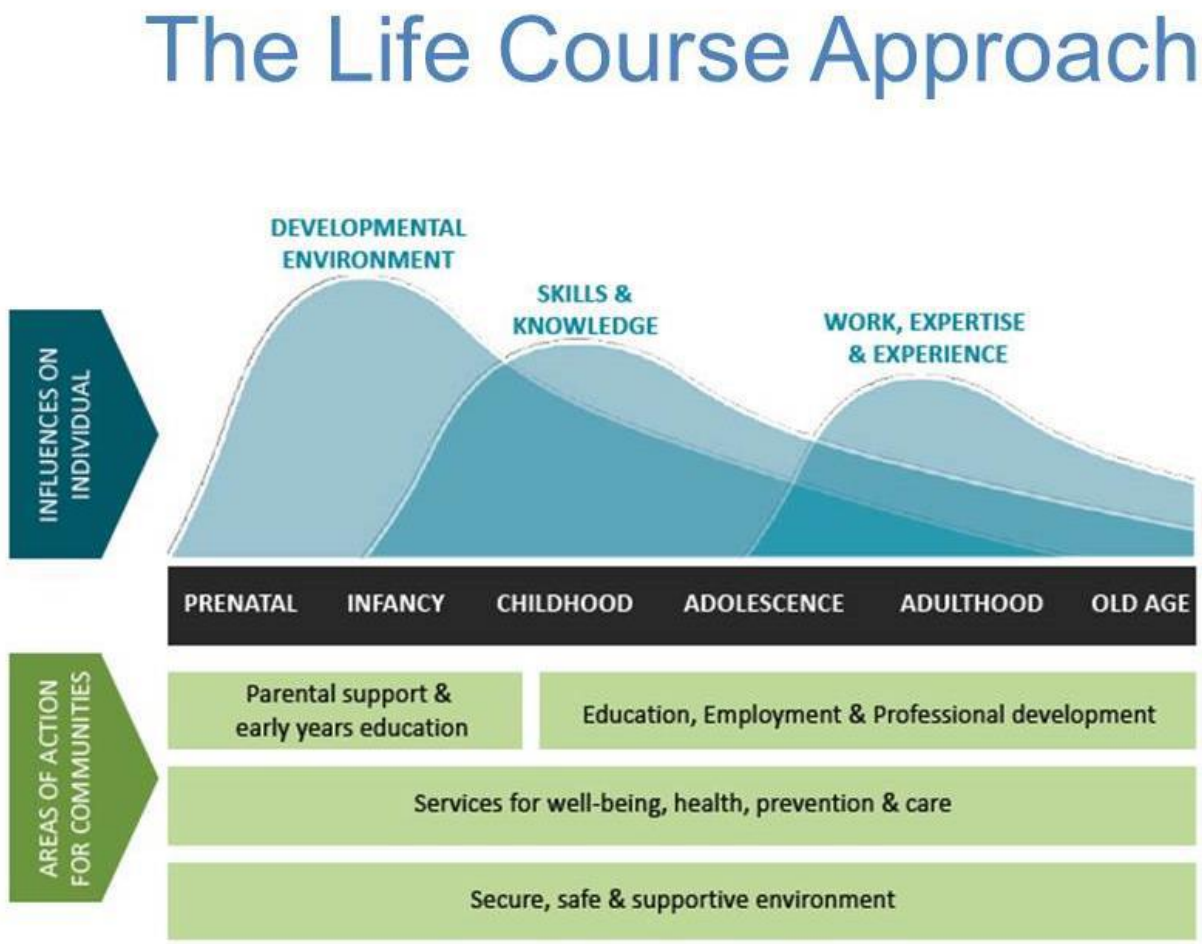
The understanding of these determinants of health has since been developed, particularly with a focus towards the health inequalities across and within regions of England. In the Due North[26] report published in September 2014, the Inquiry's overarching assessment of the main causes of the observed problem of health inequalities within and between North and South are:

- Differences in poverty, power and resources needed for health;
- Differences in exposure to health damaging environments, such as poorer living and working conditions and unemployment;
- Differences in the chronic disease and disability left by the historical legacy of heavy industry and its decline;
- Differences in opportunities to enjoy positive health factors and protective conditions that help maintain health, such as good quality early years education; economic and food security, control over decisions that affect your life; social support and feeling part of the society in which you live.

The life course perspective is of fundamental importance in terms of explaining how health inequalities are created. Other components include; socio-political contexts, structural determinants and socioeconomic position and intermediary determinants. Figure 1d below illustrates how different areas of action for communities have varying influences on an individual at different points in their life.

[26] Due North Report http://www.cles.org.uk/wp-content/uploads/2014/09/Due-North-Executive-summary-report-of-the-Inquiry-on-Health-Equity-in-the-North.pdf

**Figure 1d Life course stages and entry points for impacting health**




**Source: Chief Medical Officer (2011), Annual report: On the state of the public's health. Available at URL https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/255237/2901304_CMO_complete_low_res_accessible.pdf**

## Austerity measures and their impact on dental health

Not only are there strong step-wise gradients in these root causes, but austerity measures in recent years have been making the situation worse – the burden of local authority cuts and welfare reforms has fallen more heavily on the North than the South; on disadvantaged than more affluent areas; and on the more vulnerable population groups in society, such as children. These measures are leading to reductions in the services that support health and well-being in the very places and groups where need is the greatest.

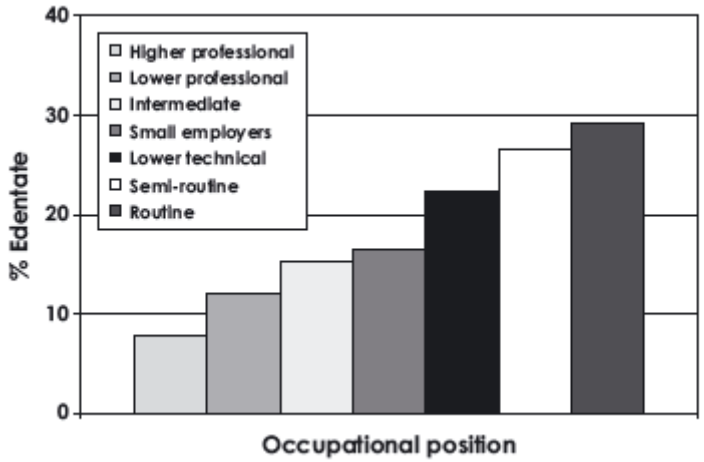
In general, people living in areas of material and social deprivation are more likely to have poor dental health and higher levels of tooth decay than those living in more affluent areas. There are well known factors which link people living in poverty to a range of health problems, the most

common health problems being coronary heart disease and stroke. Some of these material and social outcomes of deprivation include; poor general living conditions, difficult access to health care services, low education level and poor work environment, poor quality housing and unhealthy food choices.

A major research evidence finding[27] is that oral diseases are not merely different at the extremes of society, that is between the most affluent and most deprived, but that oral diseases, as is the case with other health outcomes are socially patterned across the entire social hierarchy; a relationship known as the social gradient.

Health status, including oral health, is directly related to the socioeconomic position across the socioeconomic gradient in populations; those in higher social ranks are healthier than those immediately below them in a stepwise and consistent nature. Figure 1e shows the relationship between the occupational position of someone as an indicator for their social position, and the number of teeth they have. The more affluent a person, measured in the graph below by the occupational group the person occupies, the less likely they are to have no natural teeth. The more 'routine' the occupation, the more likely they are to be edentate.

**Figure 1e: Social Gradient in Oral Health (source, Watt and Sheiham 2012)**




[27] Chen MS (1995). Oral health of disadvantaged populations. In: Cohen LK, Gift HC, editors 153–212.
Locker D. (2000) Deprivation and oral health: a review. Community Dent Oral Epidemiol;28:161–9.
Starfield B, (2002). Social class gradients in health in adolescence. J Epidemiol Community Health;56:354–61.
Marmot MG. (1996)The social pattern of health and disease. In Blane D, Brunner E, Wilkinson R, editors. Health and social organization. London: Routledge; 42–67

Evidence from Sheiham and Watt[28] shows that a main cause of inequalities in oral health are differences in the patterns of consumption of non milk extrinsic sugars and fluoridated toothpaste and that improvements over time have largely occurred due to social, economic and environmental factors alongside fluoridation toothpaste. There is evidence to suggest that people in lower socioeconomic groups, are more likely to have diets high in sugary foods and drinks and brush their teeth less often. The frequent and high consumption of sugars is the main cause of dental decay and a range of factors influence what people eat and drink including costs, availability, access, clear information and knowledge or education level[29]. Other factors which are associated with poor dental health (and poor general health) include smoking and alcohol consumption- both more prevalent in lower SES groups. Smoking and excessive alcohol consumption are also risks to developing gum disease and oral cancer and evidence shows that heavy drinkers and smokers are 30 times more likely to develop oral cancer than non smokers and non drinkers[30].

The 2003 National Survey of Child Dental Health highlights inequalities by socioeconomic group and how there is a 50% increase in obvious decay amongst the lowest SES group and the highest. At an individual level and when comparing children who have decay, there is evidence that more teeth are likely to be decayed in low SES groups than in higher SES group and further, clearer evidence that treatment choices may be affected, with extraction of permanent teeth much more likely in deprived groups.

The British Dental Journal published a paper called, 'Oral diseases and socio-economic status'[31] and findings suggested that the association between SES status and oral and dental health should be taken into consideration when developing health promoting policies.

## Primary Care and Financial Challenges

Dentistry is predominately a primary care service with NHS dental services provided in community-based dental practices. The primary care dental team is diverse and includes; dentists, dental therapists, dental hygienists, dental technicians, clinical dental technicians and dental nurses. Starfield[32] identified four cardinal features of primary care:

[28] Watt, R. & Sheiham, A (1999) Inequalities in oral health: a review of the evidence and recommendations for action. British Dental Journal 187 (1): 6-12
[29] Department of Health (2005) Choosing better oral health http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4123253.pdf
[30] Blot, WJ (1988) Smoking and drinking in relation to oral and pharyngeal cancer http://cancerres.aacrjournals.org/content/48/11/3282.long
[31] Hobdell, M.H et.al. (2003) http://www.nature.com/bdj/journal/v194/n2/pdf/4809882a.pdf
[32] Starfield B. Is primary care essential? *Lancet* 1994; 344: 1129-1133

1. First contact between the healthcare system and members of the public.
2. Ongoing, person centred care over time.
3. Comprehensiveness-addressing all of the commonly encountered needs of the population.
4. Co-ordination or integration-referral to specialist for patients who have an unusual or uncommon conditions.

Whilst on the one hand being asked to make financial savings, at the same time, primary care is being expected to provide more personalised, accessible community based services for patients, particularly for older people and those with multiple long term conditions[33].

There are over 1 million patient contacts with NHS dental services each week[34]. Dentists working in general dental practices are not NHS employees. They are independent providers from whom the NHS commissions services. It is common for dental practices to offer both NHS funded and private services.

- £3.4 billion per year is spent by NHS England on dental services.
- £2.3 billion per year is spent by the private market on dental services.
- £653 million in 2013 came from the dental charges system (all adult patients make a financial contribution for receiving dental care from the NHS unless they meet certain exemptions) into the NHS budget.
- Primary care services, like other parts of the NHS, face a challenge to close the projected 2021/22 funding gap of £30 billion.
- Financial inefficiencies could be reduced and better value for money secured[2.]

Preventive oral health programmes have the potential for savings, such as the national Childsmile programme in Scotland. The Faculty of Dental Surgery (FDS) noted that the Scottish programme resulted in savings of more than £6 million in children's dental treatment over a nine year period from 2001-02, mainly owing to fewer tooth extractions, fillings and general anaesthetics. NHS costs associated with the dental disease of five-year olds decreased dramatically, with savings from the programme far outweighing the costs[35]

[33] NHS England. *Improving dental care and oral health-a call to action.* February 2014. http://www.england.nhs.uk/ourwork/qual-clin-lead/calltoaction/dental-call-to-action/
[34] NHS England. *Improving dental care and oral health-a call to action.* February 2014. http://www.england.nhs.uk/ourwork/qual-clin-lead/calltoaction/dental-call-to-action/
[35] FDS. Faculty of Dental Surgery. *The state of children's oral health in England*. January 2015. https://www.rcseng.ac.uk/fds/policy/documents/fds-report-on-the-state-of-childrens-oral-health

## National Policy

Following the Darzi report [36] there was a call for quality to be a key *'organising principle of the NHS'* and the current government's 2010 NHS White Paper[37] sought to promote a *"patient focused, clinically led, outcomes driven NHS"*. The NHS constitution[38], supported and updated by the current government, lists as one of its seven guiding principles: *'The NHS aspires to the highest standards of excellence and professionalism - in the provision of high quality care that is safe, effective and focused on patient experience'.*

In England, the first steps have been taken to incentivise quality in the development of a Dental Quality and Outcomes Framework (DQOF, 2011)[39], involving pilots for a new dental contract. Improving oral health is one of the DQOF main objectives, using a care pathway approach to provide a dental service that helps people maintain good oral health, not one that is focused on treatment only[40]. The DQOF is a voluntary incentive scheme, rewarding dentists for how well they care for patients. It will measure the quality of their work, and the clinical outcomes they achieve, *'providing a better way of holding them to account than simply measuring the number of UDAs they carry out'* (p.4, DQOF). The DQOF is being tried out in 94 pilot dental practices, with early findings showing that dental teams are putting a firm focus on more preventative dental care [41].

With the publication in 2014 of *'Improving dental care and oral Health - a call for action'*[42], the government made a commitment to oral health and dentistry with a drive to:

- Increase the oral health of the population, particularly for children
- Introduce the new NHS primary dental care contract
- Increase access to NHS primary care dental services

## The new responsibilities of the Local Authority

The dental public health functions of local authorities are described in the 2012 regulations for NHS bodies and Local Authorities [43] and are outlined in the 2014 Public Health England (PHE) document

[36] Professor the Lord Darzi of Denham KBE *High quality care for all. NHS next stage review final report*. London. HSMO, 2009
[37] Department of Health. *Equity and excellence: liberating the NHS*. London 2010
[38] Department of Health. *The NHS Constitution for England*. London. HMSO 2013
[39] DQOF. Department of Health *Dental quality and outcomes framework*. London, DH 2011
[40] 2020Dentistry.com. *Dental Pilots*. http://2020dentistry.com/de/DQOF,%20evolving%20dental%20care%20patterns
[41] P.30, Department of Health. *NHS dental contract pilots – Learning after first two years of piloting. The second report from the dental contract pilots evidence and learning reference group*. February 2014. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/282760/Dental_contract_pilots_evidence_and_learning_report.pdf
[42] NHS England. *Improving dental care and oral Health - a call for action*. 2014.

'Tackling Poor Oral Health in Children'[44]: Under the terms of the Health and Social Care Act (2012), upper tier and unitary local authorities became responsible for improving the health, including the oral health, of their populations from April 2013. There is a statutory requirement for local authorities to provide or commission oral health improvement programmes and oral health surveys. The surveys have the following functions:

- assessment and monitoring of oral health needs
- planning and evaluation of oral health promotion programmes
- planning and evaluation of the arrangements for the provision of dental services
- reporting and monitoring of the effects of any local water fluoridation schemes covering their area.

Additionally, local authorities also have the power to make proposals regarding water fluoridation schemes and a duty to conduct public consultations in relation to such proposals. They have powers to make decisions about such proposals[45]. A recent Public Health England (PHE) report found that 45% fewer children aged 1 to 4 in fluoridated areas are admitted to hospital for tooth decay[46]. Water fluoridation schemes were found to exist in 15 out of 152 local authorities. The Faculty of Dental Surgery (FDS) would like to see the government encourage all local authorities to introduce such schemes, which would help to reduce the significant inequalities in children's oral health across the country[47].

The role of local government will soon also be extended to include commissioning responsibility for the Healthy Child Programme for 0-5 year olds, which will transfer from NHS England to local government from 1 October 2015. This will include the commissioning of health visitors who lead and support delivery of preventive programmes for infants and children, including providing advice on oral health and on breastfeeding, reducing the risk of tooth decay.

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[43] *The NHS Bodies and Local Authorities (Partnership Arrangements, Care Trusts, Public Health and Local Healthwatch) Regulations 2012*, Statutory Instrument No.3094, Part 4; page 8 http://www.legislation.gov.uk/uksi/2012/3094/made

[44] Local Government Association and Public Health England. *Tackling poor oral health in children. Local government's public health role*. October 2012. http://www.local.gov.uk/public-health/-/journal_content/56/10180/6778162/PUBLICATION

[45] Local Government Association and Public Health England. *Tackling poor oral health in children. Local government's public health role*. October 2012. http://www.local.gov.uk/public-health/-/journal_content/56/10180/6778162/PUBLICATION

[46] PHE. Public Health England. *Water fluoridation: health monitoring report for England 2014*. March 2014. https://www.gov.uk/government/publications/water-fluoridation-health-monitoring-report-for-england-2014

[47] FDS. Faculty of Dental Surgery. The state of children's oral health in England. January 2015. https://www.rcseng.ac.uk/fds/policy/documents/fds-report-on-the-state-of-childrens-oral-health

## Recent guidance promoting dental health

**Public Health Outcome Framework (2013-16) domain 4 includes an indicator related to 'tooth decay in children under 5 years old'**

The 2012 Public Health Outcome Framework (2013-16)[48] domain 4 includes an indicator related to 'tooth decay in 5 year old children'. The objective is to reduce the numbers with tooth decay whilst also reducing the gap between communities. The British Dental Association (BDA)[49] suggested that it will promote collaborative working between health and social care professionals locally, and between family members around the establishment of good diet and effective oral hygiene routines, and welcomed the focus the indicator gives to evidence-based interventions to reduce avoidable ill-health and inequalities. Local authorities can use this indicator to monitor and evaluate children's oral health improvement programmes in the long term. One suggestion for further implementation is that the BDA would like to see a further oral health indicator relating to older age groups, which would also encourage local partnerships across health and social care.

**NHS Outcomes Framework 2014-15[50] includes indicators related to patient experience of NHS dental services and access to NHS dental services, both Domain 4 indicators: 'Ensuring that people have a positive experience of care'.**

Domain 3 indicators relate to 'Helping people to recover from episodes of ill health or following injury'. These have been extended to include additional dental indicators relating to:

- the proportion of people with decaying teeth and
- the number of tooth extractions in secondary care for children under ten years old[51].

**Public Health England Toolkit (2014) Improving oral health commissioning[52]/ Local Authorities Improving Oral Health: Commissioning Better Oral Health for Children and Young People (PHE June 2014)**

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[48] Department of Health. *Improving outcomes and supporting transparency: part 1: a public health outcomes framework for England, 2013-2016*. (2012). https://www.gov.uk/government/publications/healthy-lives-healthy-people-improving-outcomes-and-supporting-transparency

[49] British Dental Association *Response to Healthy Lives, Healthy People: Transparency in Outcomes Proposals for a Public Health Outcomes Framework*. March 2011. https://www.bda.org/dentists/policy-campaigns/research/government/leg-regs/pub-health-reform/Documents/bda_response-outcomes_framework.pdf

[50] HSCIC. *The NHS Outcomes Framework 2014/15. Domain 4. Ensuring that people have a positive experience of care. Indicator specifications.* Health and Social Care Information Centre. May 2014. https://indicators.ic.nhs.uk/download/Outcomes%20Framework/Specification/NHSOF_Domain_4_S_V2.pdf

[51] FDS. Faculty of Dental Surgery. *The state of children's oral health in England*. January 2015. https://www.rcseng.ac.uk/fds/policy/documents/fds-report-on-the-state-of-childrens-oral-health

And Department of Health. *The Mandate: A mandate from the Government to NHS England: April 2015 to March 2016*. December 2014. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/386221/NHS_England_Mandate.pdf

The toolkit provides guidance to dental teams on oral health assessments, age-appropriate preventive advice, and the use of toothpaste with high concentrations of fluoride. This has been welcomed by the Faculty of Dental Surgery (FDS)[53] who note that, along with the new dental contract, these initiatives will support children and their parents to follow advice and encourage dentists to identify children at high caries risk, with the focus shifting towards preventive action.

The second edition of the Public Health England publication '*Smokefree and Smiling'* provides updated guidance for dental teams, commissioners and educators on how they can contribute to reducing rates of tobacco use, and highlights resources available to support them. It will help dental teams to play a supportive role in encouraging patients who use tobacco to quit improving their general and oral health[54].

The Children and Young People's Health Outcome Forum report was published in 2012[55] and their annual report in 2014[56], both recommending that important integration and greater action should be taken to reduce the regional variation in child health outcomes.

The NHS Outcomes Framework 2014-15 includes indicators related to;

- Patient experiences of NHS dental services
- Access to NHS dental services

**NICE guidelines**

The NICE guideline on '*Oral health: approaches for local authorities and their partners to improve the oral health of their communities'* was published in October 2014. It makes recommendations on undertaking oral health needs assessments, developing a local strategy on oral health and delivering community-based interventions and activities[57]. It suggests that local authorities in England should ensure all early years' services provide oral health information and advice. The FDS[58] note that this

[52] PHE June 2014. *Local authorities: improving oral health: commissioning better oral health for children and young people. An evidence-informed toolkit for local authorities* . Public Health England. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/321503/CBOHMaindocumentJUNE2014.pdf

[53] FDS. Faculty of Dental Surgery. *The state of children's oral health in England*. January 2015. https://www.rcseng.ac.uk/fds/policy/documents/fds-report-on-the-state-of-childrens-oral-health

[54] Public Health England (2014) *Smokefree and smiling- helping dental patients quit tobacco* https://www.gov.uk/government/publications/smokefree-and-smiling

[55] Department of Health. Report of the children and young people's health outcome forum (2012).

[56] Department of Health. Report of the children and young people's health outcomes forum 2013/14 (2014).

[57] NICE guideline [PH55] October 2014. *Oral health: approaches for local authorities and their partners to improve the oral health of their communities.* http://www.nice.org.uk/guidance/ph55

[58] FDS. Faculty of Dental Surgery. *The state of children's oral health in England*. January 2015. https://www.rcseng.ac.uk/fds/policy/documents/fds-report-on-the-state-of-childrens-oral-health

builds on the important PHE toolkit for local authorities and includes recommendations for supervised tooth brushing and fluoride varnishing programmes in nurseries and primary schools in areas where children are at high risk of poor oral health. However, the FDS are concerned that many local authorities with reduced funding will ignore this advice. They recommend that the government needs to invest in a national oral health programme, such as in Scotland and Wales, which has resulted in reduced oral inequalities and improved access to dental services for children, saving the NHS millions in children's dental treatment (see p.17).

**The NHS England 'Improving Dental Care and Oral Health- A Call to Action' 2014 report mentions the following key points and recommendations**;

1. There is a wide variation of disease across England.
2. Levels of oral diseases are highest in the most deprived areas.
3. Concerns about NHS dental charges can be a very real barrier for those on a low income. Clear information to patients that explains the dental charges system and what help is available is important to ensure patients are not discouraged from seeking the dental care they need.
4. Although some ethnic groups are known to have a higher prevalence of certain oral diseases they are less likely to access NHS dental services.
5. Domiciliary services need to be available to all.
6. Some patients are reluctant to access dental services- they may not see it as a priority, be afraid or for cultural reasons not see regular dental care as a priority.
7. Overcoming the barriers that this 'seldom heard' group face in accessing care needs to be a key part of the approach to commissioning future dental services if we want to improve access and outcomes for all.

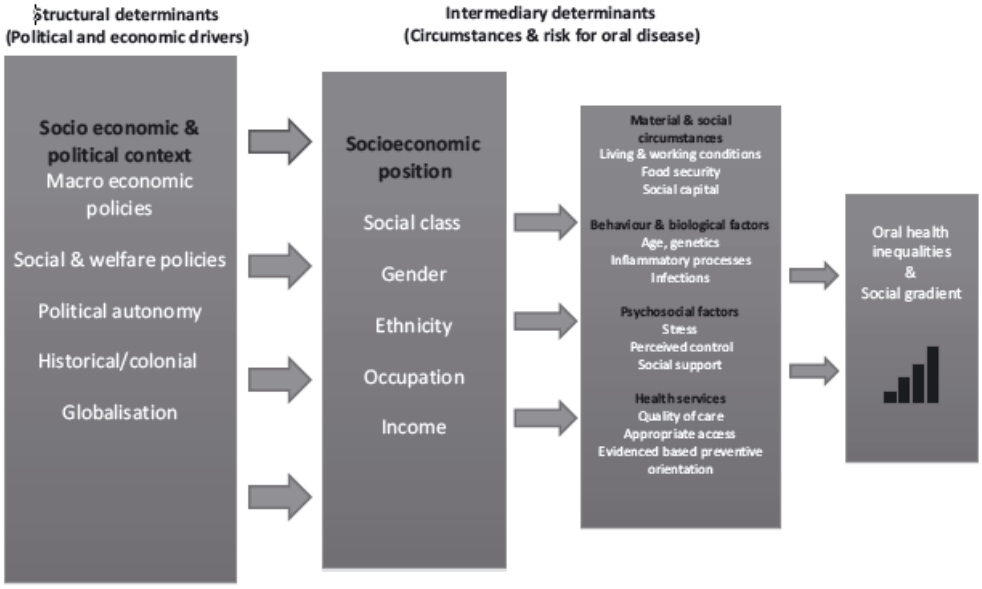
## Evidence for targeted inventions to reduce health inequalities

Watt and Sheiham (2012) discuss implications for oral health improvement strategies in detail in their paper: http://onlinelibrary.wiley.com/doi/10.1111/j.1600-0528.2012.00680.x/pdf

To summarise, they conclude that strategies to tackle social inequality in oral health should focus on reducing the angle of the social gradient (as seen in Figure 2 on the right hand side). Based on the principle of proportionate universality, the oral health commissioners should apply population strategies tackling the upstream causes of oral health inequalities e.g. actions directed at the unregulated activities of the manufacturers and distributors of processed sugary products. Intermediate oral health policies could focus on developing supportive oral health environments in a

variety of settings such as schools, colleges, hospitals, workplaces and care organisations. From a life course perspective it is important how preschool settings that ensure a supportive early life environment are created and nurtured.

**Figure 2: New conceptual model for oral health inequalities (Watt and Sheiham, 2012) "Integrating the common risk factor approach into a social determinants framework"**




The concept of the common risk factor approach (CRFA) was based on health policy recommendations from the WHO in the 1980s that encouraged an integrated approach to chronic disease prevention. In 2000 the general concept was extended to include oral conditions. Researchers have critically updated the common risk factor approach (CRFA) based on research and policy developments on reducing health inequalities, showing that policies to tackle structural determinants should be included in interventions.

# 4. Overview of the data used in the Dental Health Need Assessment for Cheshire

The majority of the 'activity data' presented in this report was obtained from the Business Services Authority. The data covers the time periods of:

- For activity data: 2013/14 performance year (as at March 2014)
- For access and distances: 24 month period[59] up to March 2014.

Activity data is based on the patient's local authority, based on home postcode as entered on FP17[60]. Data is attributed to the local authority where a patient is resident, irrespective of where the treatment took place.

The majority of the 'need' data, or the data that tells us the story about people and their dental health, at a national and sometimes North West, Cheshire or ward level, is derived from the national Child Dental Survey (2003) or the Adult Dental Health Survey (2009).

The 2003 Children's Dental Health Survey, commissioned by the four United Kingdom Health Departments and undertaken by the Office for National Statistics, is the fourth in a series of national dental surveys carried out every 10 years since 1973[61]. The survey covers a representative sample of children at the ages of five, eight, twelve and fifteen years attending state and independent schools in the U.K. In 2003 12,658 children were sampled and a total of 10,386 children were examined which achieved an 82% response rate. The most recent survey results for 2013 had not yet been released at the time of writing this report. Some information for specific age groups has been released; for example the results for 5 year olds for 2011/12 have been released. Wherever possible, throughout the report, the most recently available data is reported.

The main purpose of the Adult Dental Health Survey is to get a picture of dental health of the adult population and how this has changed over time; it has been carried out every 10 years since 1968[62].

[59] This is based on guidelines from NICE which recommend the longest period between oral reviews for adults is 24 months.
[60] Providers (usually dental practices) submit forms to the NHS detailing dental activity data. The data recorded on the FP17 shows the patient charge collected, the number of units of activity performed and treatment banding information.
[61] http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/Publicationsandstatistics/Bulletins/Chiefdentalofficersbulletin/Browsable/DH_4860753
[62] http://www.hscic.gov.uk/pubs/dentalsurveyfullreport09

The aims of the survey are to investigate dental experiences, knowledge about and attitude towards dental care and oral hygiene; to examine changes over time in dental health, attitudes and behaviour; and to monitor the extent to which dental health targets set by the Government are being met. It is the largest epidemiological survey of adult dental health in the UK; in the most recent survey a total of 11,380 individuals were examined and 6,469 dentate adults were examined. The summary of the report of the ADHS (2009) can be accessed here: http://www.hscic.gov.uk/catalogue/PUB01086/adul-dent-heal-surv-summ-them-exec-2009-rep2.pdf.

Other sources of information used to inform this Dental Health Need Assessment:

- Data from organisations such as the Care Quality Commission (CQC) to explore of locations of dental practices, out of hour's services and domiciliary services.
- Data from NHS England local area teams to explore what treatment is referred to specialist services, the nature of local complaints about dental care and access and whether dental practices are disability compliant.
- Local authority evidence of good practice in their locality and services, including audits and schemes that have been running locally.
- Finally, a telephone survey was conducted with all CQC listed dental practices in Cheshire and Merseyside; approximately 200 in Cheshire and 230 in Merseyside. Each practice was asked to provide information about waiting times, the availability for new NHS patients to register, the usual wait time for a routine appointment and whether the practice was open out of hours.

The dental health needs assessment outlines the background literature and the national policy perspective of dentistry and dental health. This includes a focus on children's dental health, adult's dental health and the dental health of vulnerable people in Cheshire. The following are explored;

- Dental Health- the dental health of the Cheshire population, both children and adults.
- Dental Access- availability of and access to dental care treatment.
- Vulnerable population groups- BME groups, Learning disabled people, Homeless people, Prisoners, and Older people.

# 5. Overall Health in Cheshire Local Authorities

Evidence suggests that general health profiles are indicative of dental health profiles for geographical and socioeconomic areas in England. As with general health, there are many factors which contribute to the variation in dental health across the UK including:

- Socioeconomic factors.
- Geographical differences in service provision.
- Access to services for the general population
- Access to services for vulnerable groups including language or cultural barriers for BME groups, people in institutions or homeless people who cannot regularly access services and people with learning disabilities, or elderly people who have complex and multiple health and social care needs.

Cheshire and Merseyside have more risk factors for poor general health as well as poor dental health than other areas of the UK. The most recent 'Health Profiles' published by PHE were available from July 2014 and can be found, by local authority, here:
http://www.apho.org.uk/default.aspx?RID=49802

Public Health England[63] publishes 'Health Profiles[64]' for every local authority in England. These Health Profiles are designed to help local government and health services identify problems in their areas and decide how to tackle them. They provide a snapshot of the overall health of the local population, and highlight potential problems through comparison with other areas and with the national average. The Health Profiles programme is part of Public Health England, an executive agency of the Department of Health.

The profiles are produced at local authority level because they are intended for use by elected councillors, directors of public health, council officers and other members of the Joint Strategic Needs Assessment (JSNA) process, and by members of the Health and Wellbeing Boards. Health Profiles are now an established part of planning for health improvement.

[63] Public Health England was established on 1st April 2013 to protect and improve the nation's health and wellbeing and to reduce inequalities. It will lead on the development of a 21st century health and wellbeing service, supporting local authorities and the NHS to deliver the greatest possible improvements in public health

[64] Each Health Profile document includes: An 'At a glance' summary description of people's health in the area/ Maps and charts that show how the health in the area compares to the national and local view/ Trended information showing changes in death rates over a ten year period of time/A 'spine chart' health summary showing the difference in health between the area and the average for England for 32 indicators

Cheshire East 2014 Health Profile Summary

The health of people in Cheshire East is varied compared with the England average.

Some headlines taken from the PHE health profiles and updates are:

- Deprivation and child poverty are lower than the England average, however there are still 11.9% (7,680) of children living in poverty.
- Life expectancy for both men and women is higher than the England average. Life expectancy is 8.8 years lower for men and 6.8 years lower for women in the most deprived areas of Cheshire East than in the least deprived areas.
- Estimated levels of adult excess weight (61.2% overweight or obese) and obesity (23.8%) are similar to the England average. In Year 6, 15.6% (527) of children are classified as obese, better than the average for England.
- The rate of alcohol specific hospital stays among those under 18 is 64.8 per 100,000,. This represents 49 stays per year, and is worse than the average for England, although better than the North West average. The rate of alcohol related harm hospital stays amongst adults is 540 per 100,000 population, better than the average for England. This represents 2,023 stays per year.
- Levels of breastfeeding and smoking at time of delivery are worse than the England average.
- Estimated levels of adult smoking are similar to the England average. The rate of smoking related deaths is 241.1 per 100,000 aged 35+, better than the average for England. This represents 1,692 deaths per year.

The complete health profile and updates can be found by following these links:

http://www.apho.org.uk/resource/view.aspx?RID=50215andSEARCH=Cheshire%20EastandSPEAR=

http://fingertips.phe.org.uk/profile/health-profiles/data

Cheshire West and Chester 2014 Health Profile Summary

The health of people in Cheshire West and Chester is varied compared with the England average. Some headlines taken from the PHE Health Profiles and updates are:

- Deprivation and child poverty are lower than the England average, however there are still 15.4% (9,030) of children living in poverty.
- Life expectancy for both men and women is similar to the England average. Life expectancy is 9.7 years lower for men and 8.1 years lower for women in the most deprived areas of Cheshire West and Chester than in the least deprived areas.

- Estimated levels of adult excess weight (68.5% overweight or obese) are worse than the England average. Levels of obesity in adults (25.5%) are similar to the England average. For children in Year 6, 18.4% (574) are classified as obese, also similar to the England average.
- The rate (per 100,000 population) of alcohol-specific hospital stays among those under 18 is 54.4 and similar to the England average. This represents 108 stays per year. The rate (per 100,000) of alcohol related harm hospital stays amongst adults is 552, better than the average for England. This represents 1,823 stays per year.
- Levels of breastfeeding are worse than the England average.
- Estimated levels of adult smoking are similar to the England average. The rate of smoking related deaths is 276.8 per 100,000 aged 35+, also similar to the England average. This represents 1,634 deaths per year.

The complete health profile and updates can be found by following these links:
http://www.apho.org.uk/resource/view.aspx?RID=50215andSEARCH=Cheshire%20West%20and%20ChesterandREGION=50151andSPEAR=
http://fingertips.phe.org.uk/profile/health-profiles/data

Warrington 2014 Health Profile Summary

The health of people in Warrington is also varied compared with the England average.
Some headlines taken from the PHE health profiles and updates are:

- Deprivation and child poverty are lower than the England average, however there are still 14.5% (5,615) of children living in poverty.
- Life expectancy for both men and women is lower than the England average. Life expectancy is 10.7 years lower for men and 6.8 years lower for women in the most deprived areas of Warrington than in the least deprived areas.
- Estimated levels of adult excess weight (70.0% overweight or obese) are worse than the England average. Levels of obesity in adults (21.7%) are similar to the England average. In Year 6, 16.2% (347) of children are classified as obese, better than the average for England.
- The rate of alcohol specific hospital stays among those under 18 is 52.3 per 100,000. This represents 69 stays per year and is similar to the England average. The rate of alcohol related harm hospital stays amongst adults is 734 per 100,000, worse than the average for England. This represents 1,451 stays per year.
- Levels of breastfeeding are worse than the England average.

- Estimated levels of adult smoking are similar to the England average. The rate of smoking related deaths is 334.9 per 100,000 aged 35+, worse than the average for England. This represents 1,033 deaths per year.

The complete health profile and updates can be found by following these links:
http://www.apho.org.uk/resource/view.aspx?RID=50215andSEARCH=WarringtonandSPEAR=
http://fingertips.phe.org.uk/profile/health-profiles/data

Wirral 2014 Health Profile Summary

The health of people in Wirral is varied compared with the England average.
Some headlines taken from the PHE Health Profiles and updates include:

- Deprivation and child poverty are higher than the England average, with 23.4% (13,745) children living in poverty.
- Life expectancy for both men and women is lower than the England average. Life expectancy is 12.4 years lower for men and 10.0 years lower for women in the most deprived areas of Wirral than in the least deprived areas.
- Estimated levels of adult excess weight (66.4%) are similar to the England average. Levels of obesity in adults (18.6%)are better than the average for England. In Year 6, 18.9% (594) of children are classified as obese, similar to the England average.
- The rate of alcohol-specific hospital stays among those under 18 is 80.2 per 100,000, worse than the average for England. This represents 163 stays per year. The rate of adult alcohol related harm hospital stays is 856 per 100,000 aged 35+, worse than the average for England. This represents 2,686 stays per year.
- Estimated levels of adult smoking are similar to the England average. The rate of smoking related deaths is 339.6 per 100,000, worse than the average for England. This represents 2,014 deaths per year.

The complete health profile and updates can be found by following these links:
http://www.apho.org.uk/resource/view.aspx?RID=50215andSEARCH=WirralandSPEAR=
http://fingertips.phe.org.uk/profile/health-profiles/data

# 6. Understanding local Dental Health needs across the life course

In general, there has been an improvement in adults dental health, although for older people dental needs can be very complex. The information examining dental access issues for adults is good. However, there is not enough information collected which examines the dental health of adults, particularly longitudinal data.

However, there is sufficient data to look at children's dental health. Information is routinely collected and published on children's dental health at ages 3, 5, 8, 12 and 15 years old. This means that there is more information on the dental health of children compared to adults.

Healthy teeth are important for children's overall health. Tooth decay affects many children in the UK. Untreated tooth pain can cause pain and infections that may lead to problems with eating, speaking, playing and learning[65]. The links between deprivation, smoking and excessive alcohol consumption were discussed above on p.16. Breastfeeding is presumed to be a protective factor, but there is no evidence available.

There is some local data on nutrition available when lifestyle surveys are carried out. However, although the most recent Merseyside lifestyle survey[66] included a section on nutrition, it does not cover sugar consumption, so is not directly relevant to dental health. There are no routinely collected local indicators on nutrition. Local annual health profile data from Public Health England does include levels of obesity, but recent systematic reviews have found mixed evidence for the association between obesity and poor dental health[67]. The British Dental Association has recently produced a position paper on this topic, noting that obese children are not more likely to have dental decay of baby teeth. For adult teeth, there is a small overall association between obesity and

[65] http://www.cdc.gov/OralHealth/children_adults/child.htm

210504_NHS

[66] Merseyside health an

[67] Silva, Alexandre (2013) Obesity and dental caries: systematic review. *Revista De Saúde Pública* Volume: 47 Issue: 4 (2013-01-01) ISSN: 0034-8910.

Hayden, C.; Bowler, J. O.; Chambers, S.; Freeman, R.; Humphris, G.; Richards, D.; Cecil, J. E.(2013) Obesity and dental caries in children: a systematic review and meta-analysis. *Community Dentistry and Oral Epidemiology*; 41(4) 289-308.

dental decay[68]. Although further research is needed, local data on levels of obesity can be used as a proxy for poor nutrition associated with poor dental health.

## Child Dental Health

Information relating to children's dental health can be found in the ONS (2003) published "Child Dental Health in the United Kingdom: Patterns of care and service use", which provides detailed information at a national level. More information can be found by following this link: http://www.ons.gov.uk/ons/guide-method/method-quality/specific/health-methodology/dental-health/dental-health-of-children/index.html

Headlines of the 2011/12 Children's Dental Health Survey:

- Significant improvements for 12 and 15 year olds observed in every national survey since records were first established in 1973 continue. However, the improvements noted for 5-year olds in previous surveys appear to have slowed down.
- 12 years of age is the key age at which dental health of children is internationally compared (as it is at the start of the permanent dentition being fully established). In England, in 2003, the mean number of those with teeth decayed, filled or missing teeth (DMFT) in 12 year olds was 0.7, the lowest since records were first established.
- 12-year-old children in England now have the best dental health of their age in Europe.
- The proportion of 12 and 15 year-olds having permanent teeth with obvious decay experience has decreased significantly between the 1993 and 2003 surveys. There was also a significant decrease in the proportion of 12 and 15 year-olds with filled permanent teeth.
- In 2003, 57% of 5-year-olds, 62% of 12- year-olds and 50% of 15-year-olds in the UK had never experienced any decay or needed dental restorations.
- In 2003 the proportion of 5-year-olds who had never known decay in England was 59%.
- The proportion of five and eight year-olds that received dental restorations has declined significantly since 1983. However, in both five and eight year-olds filled primary teeth represented a significantly smaller proportion of the total obvious decay experience than in previous surveys.

[68] British Dental Association (2015) http://www.bspd.co.uk/LinkClick.aspx?fileticket=17BxGRXFTbo%3D&tabid=147

## National Dental Epidemiological Data for 3 and 5 year olds

Data from the National Dental Epidemiological Programme for England, Oral Health Survey of 5 year old children, 2012 by local authority has recently been published and more information can be found by following this link: http://www.nwph.net/dentalhealth/survey-results5.aspx?id=1 . A change from negative to positive consent for the 2007-8 and all subsequent surveys means that comparison with earlier survey data cannot be made.

Changes to the LA boundaries across Cheshire Wirral and Warrington makes direct comparison of the 2008 and 2012 surveys in Cheshire West and Chester and Central and Eastern Cheshire difficult (Figures 3 and 4). A small reduction in prevalence in Warrington has been shown. The small increase in prevalence in Wirral may be due to changes in sampling methods between the two surveys rather than a real change in dental health.

**Figure 3**

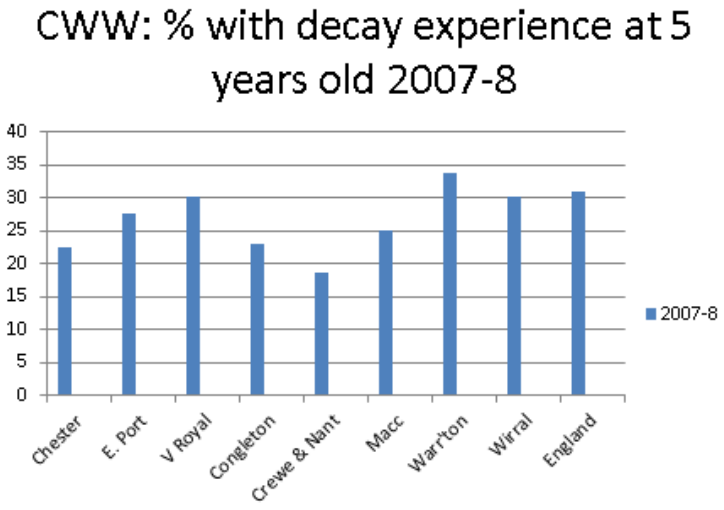
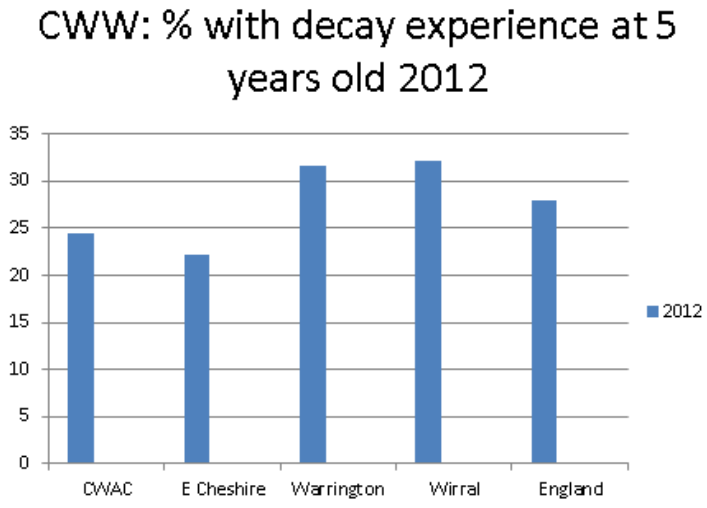



**Figure 4**




*Source for Figs 3&4: PHE dental health survey, CWW (Cheshire, Wirral & Warrington)*

A further 5 year olds survey is currently being undertaken across Cheshire and Merseyside with the fieldwork due for completion by April 2015.

The improvements in dental health amongst 5 year olds observed in the 2012 survey have been partly attributed to the reduction in availability of low fluoride children's toothpaste. Across Cheshire and Merseyside, over the last few years there has been considerable re-focussing of oral health programmes towards those based on the delivery of fluoride toothpaste (including postal schemes and supervised brushing programmes) - so it is likely that the 2012 results reflect the impact of these programmes.

**Table 2: showing data (2012 mid estimates) for 5 year olds and the average number of decayed, missing and filled teeth per child, at the Local Authority, North West and England level.**

| LA Name | 5 year old population | Number examined | Mean $d_3mft$ | Mean $d_3t$ | Mean mt | Mean ft | % $d_3mft$ >0 |
|---|---|---|---|---|---|---|---|
| **England** | 635,925 | 133,516 | 0.94 | 0.73 | 0.11 | 0.11 | 27.9% |
| **North West** | 83,951 | 18,237 | 1.29 | 1.02 | 0.16 | 0.11 | 34.8% |
| **Cheshire East** | 4,120 | 169 | 0.58 | 0.44 | 0.09 | 0.05 | 22.2% |
| **Cheshire West and Chester** | 3,641 | 1,246 | 0.68 | 0.56 | 0.08 | 0.04 | 24.4% |
| **Warrington** | 2,737 | 1,488 | 1.05 | 0.91 | 0.07 | 0.08 | 31.6% |
| **Wirral** | 3,728 | 240 | 1.21 | 0.95 | 0.14 | 0.12 | 32.1% |

**Table 3: showing data (2012 mid estimates) for 3 year olds and the average number of decayed, missing and filled teeth per child, at the Local Authority, North West and England level.**

| LA Name | 3 year old population | Number examined | Mean $d_3mft$ | Mean $d_3t$ | Mean mt | Mean ft | % $d_3mft$ >0 |
|---|---|---|---|---|---|---|---|
| **England** | 665,744 | 53,814 | 3.07 | 2.91 | 4.07 | 0.01 | 11.7% |
| **North West** | 86,208 | 12,128 | 0.47 | 0.43 | 0.03 | 0.01 | 14.3% |
| **Cheshire East** | 4068 | 60 | 0.11 | 0.11 | 0.00 | 0.00 | 11.2% |
| **Cheshire West and Chester** | 3535 | 745 | 0.22 | 0.21 | 0.00 | 0.00 | 7.9% |
| **Warrington** | 2549 | 806 | 0.35 | 0.34 | 0.01 | 0.00 | 10.5% |
| **Wirral** | 3,697 | 825 | 0.39 | 0.35 | 0.02 | 0.02 | 13.4% |

Key for tables 2 and 3:

**Drawn sample=** total number of validated children appropriate to take part in the survey, selected in accordance with Pine et al. (1997b)[69].

**Number examined and (%)=** total number of validated children actually examined, and the percentage of validated children from the drawn sample actually examined.

[69] Pine CM, Pitts NB, Nugent ZJ (1997). British Association for the Study of Community Dentistry (BASCD) guidance on sampling for surveys of child dental health. A BASCD coordinate dental epidemiology programme quality standard. *Community Dental Health*, 14: 10-7.

**$d_3mft$**= Average number of obviously decayed, missing and filled teeth per child
**$d_3t$**= average number of decayed teeth per child
**mt**=average number of missing teeth per child
**ft=** average number of filled teeth per child
**$\%d_3mft$**= percentage of children with decay experience (i.e. with one or more obviously decayed, missing and filled teeth)

source: http://www.nwph.net/dentalhealth/survey-results5.aspx?id=1

## Adult Dental Health

Headlines of the 2009 national Adult Dental Health Survey

1. Across most of the indicators of oral health and disease there has been a continuous improvement in adult's dental health.
2. For all indicators of oral health the continuation of improvement in younger age groups first detected over 20 years ago are now evident up to age 45 years.
3. For older people and older middle aged people, dental needs can be very complex and for those with gum disease or decay, disease can be extensive.
4. In general, good personal health behaviours are shown to be associated with better health and a greater proportion of dentate adults than ever before are engaging in these behaviours.

# 7. Dental Treatment

One way of exploring dental health is to examine the way dentists record information about what treatment they have provided to patients, which gives a valuable insight into the type of treatment being provided in an area, oral health needs (whether there are higher levels of complex treatments indicating that there may be a higher need for services and/or illness prevention) and patient attendance behaviour (whether there are higher levels of urgent treatments which could relate to less general dental health). This data is available for both child and adult patients.

## The type of treatment being provided in Cheshire

Dental treatment is organised into 4 separate charge bands which give an indication how complex the dental treatment is.

The NHS Dental Charges from 1st April 2014 are:

Band 1 treatment; £18.50

Band 2 treatment; £50.50

Band 3 treatment; £219.00

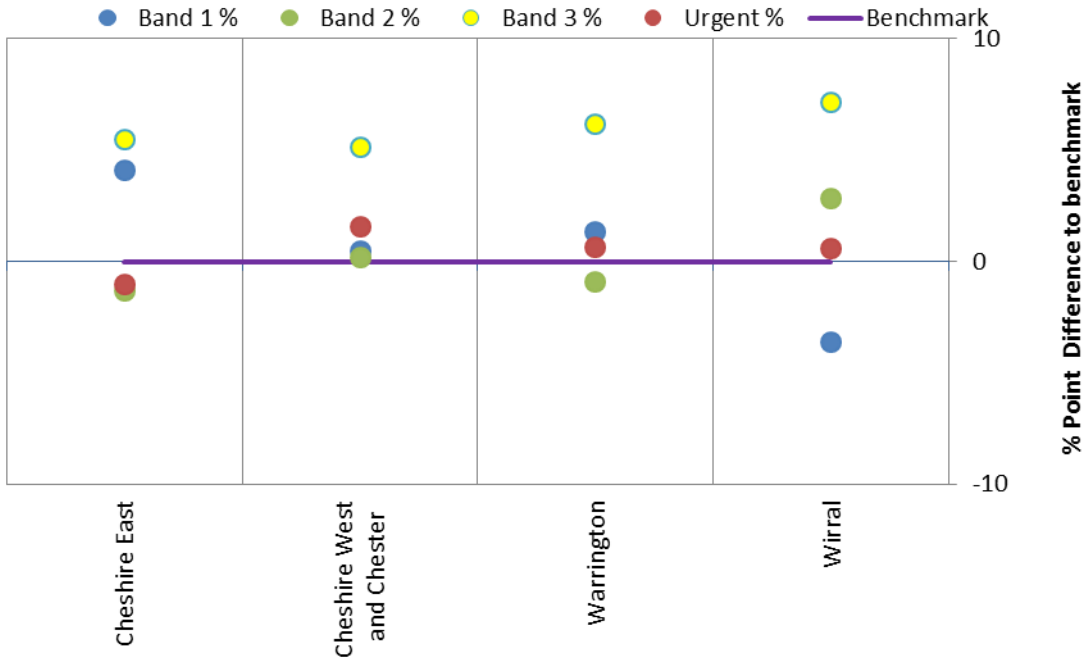
Urgent treatment; £18.50

Analysis of the numbers and proportions of patient charge bands[70] can provide insight into the type of treatment being provided in an area, oral health and patient attendance behaviour. It is also one facet of analysing access rates, namely the "realised access" (see Harris 2013 for a further discussion[71]). Access and the complexity of measuring access and availability to dental care settings and treatment is explored further in chapter 8. A patient information leaflet which explains patient charges and other dental services can be found by following this link:
http://www.nhs.uk/NHSEngland/Healthcosts/Documents/2014/dental-services-leaflet-2014.pdf

Figure 5 below shows the percentage point difference by local authority area compared to national levels for adults as recorded on FP17s (see p.27 for explanation of FP17s). The national level has been labelled as the benchmark, so if the national level is 70% and a local authority has a proportion of 60 then the local authority will be shown as -10.

[70] There are 3 standard charge bands for all NHS dental treatment, depending on the level and complexity of the treatment provided. Band 1: e.g. an examination, diagnosis, advice on health promotion, scale & polish, Band 2: e.g. all listed previously, plus fillings, root canal work or removal of teeth, Band 3: e.g. all listed previously plus crowns, dentures and bridges, finally, there is a band for 'urgent care'.
[71] Harris, R.V (2013) Operationalisation of the construct of access to dental care; a position paper and proposed conceptual definitions. Community Dental Health

**Figure 5: Charge Band % point difference for Adults to England Level 2013/14**




**Source: NHSBSA Information Services, 12th June 2014**

Figure 5 indicates a number of areas of interest:

1. Band 1 treatment is lower than the national average for Wirral local authority, yet much higher in the Cheshire East local authority. This indicates that people in the Cheshire area, have different patterns of attending dental services for certain dental procedures across the geographical region. The below average rate of Wirral could be attributed to:

A. People in Wirral have problems accessing dental services, although access for other types of treatment is greater than the national average so this is unlikely to be the case.
B. People in Wirral have better overall dental health than the national average and therefore need to attend the dentist less, although this is unlikely as treatment in more complex bands (band 2 and 3) is greater than the national average.
C. Due to a reason which is unclear from Figure 5, people in Cheshire delay accessing dental care until they have a more serious dental health issue which falls into band 2 or band 3 treatment. We would need more information to explore this, but one explanation could be that this delay in treatment could be related to the charges of band 1 treatment and how they are considered as non urgent and therefore non-essential costs thus people are more likely to put this type of treatment off.

2. Looking at the Band 3 treatment we can see that it is much higher than the national average for all local authorities in Cheshire. This indicates that people in Cheshire have a greater uptake for complex dental work, than would be expected, particularly in Warrington and Wirral. Reasons for this could include:

A. Evidence suggests that people in Cheshire have worse dental health than would be expected and therefore have more complex treatments as a result. This is likely as they access the dentist overall, at similar or greater levels than the population nationally.
B. People in Cheshire have a greater access to band 3 level treatments than the population nationally. Historically, people from lower socioeconomic groups were more likely to have their teeth extracted than people in higher socioeconomic groups, to prevent further costly dental work on poor quality teeth. This cohort is ageing and therefore, there will be more people who require crowns, dentures and bridges than would be expected nationally.

Finally, there is another important area of interest that Figure 5 draws attention to.

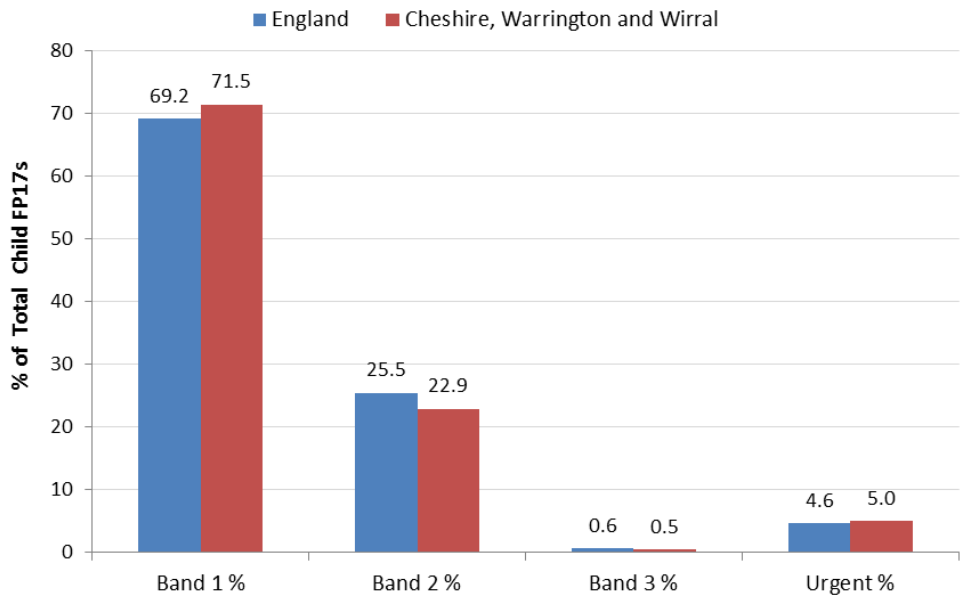
3. The further the spread of the band charges (coloured dots) from the benchmark (purple line) of the national figure, the more unequal the dental health of the population in that local authority. For example, Wirral has less than expected numbers of people attending for prevention care (band 1), with higher numbers of people than the average attending for complex care (band 3 and urgent). This has implications which include:

A. People in lower socioeconomic areas are less likely to have good dental health, and there are a number of reasons for this (see Section 8 on deprivation). Figure 5 indicates that people in the most deprived local authority in Cheshire (Wirral) have less chance of preventing poor dental health as they are attending dental practices less than they should for routine and health promotion reasons.
B. People in higher socioeconomic areas are more likely to have good dental health and there are a number of reasons for this. Figure 5 indicates that people in the more affluent local authorities in Cheshire are more likely to have better dental health as they are attending dental practices more than the other areas, and near the national level.
   Therefore, there is an indication that there could be inequalities in dental health as indicated by the type of treatment received.
C. There is also an indication that illness prevention and health promotion work should target people in Cheshire to increase the proportion of people who visit the dentist for routine and

illness prevention work. It is possible that this could decrease the numbers of people attending for more complex and therefore usually more costly work.

Figure 6 below shows the percentage of child FP17s by charge band for child patients resident in Cheshire. It shows that the Cheshire figures are similar to the figures for England. However, the number of children receiving Band 1 treatment is slightly more than the national average yet the number of children receiving Band 2 treatment is slightly less than the national average.

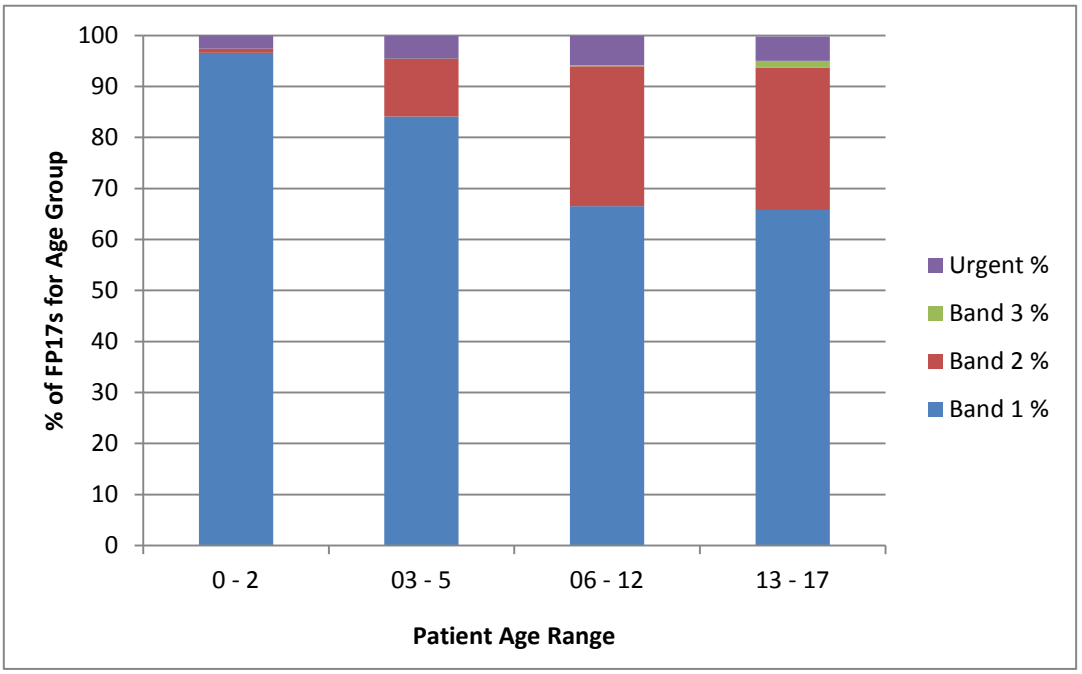
**Figure 6: % of Child FP17s by Charge Band 2013/14 for Child patients resident in Cheshire**

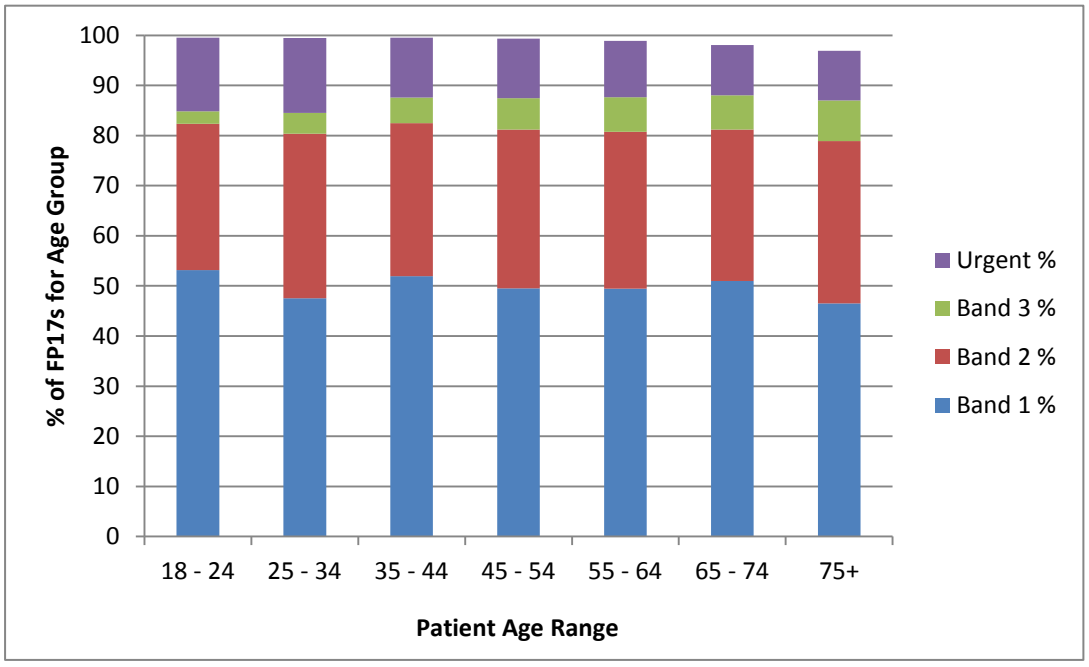



**Source: NHSBSA Information Services, 12th June 2014**

Figure 7 shows a breakdown of band information by age group, for child patients resident in Cheshire. In general, the younger the child, the more often the treatment is basic or routine (band 1). 96% of patients aged 0-2 years old receive the most routine dental care and this is the same for the rest of the country, on average. In comparison, 66% of children aged 13-17 receive routine dental care (Band 1), 28% of children aged 13-17 receive more complex care (Band 2) and around 1% of children aged 13-17 receive band 3 treatment.

**Figure 7: % of Child and Adult FP17s by Charge Band and Patient Age Range 2013/14 for patients resident in Cheshire**




**Source: NHSBSA Information Services, 12th June 2014**

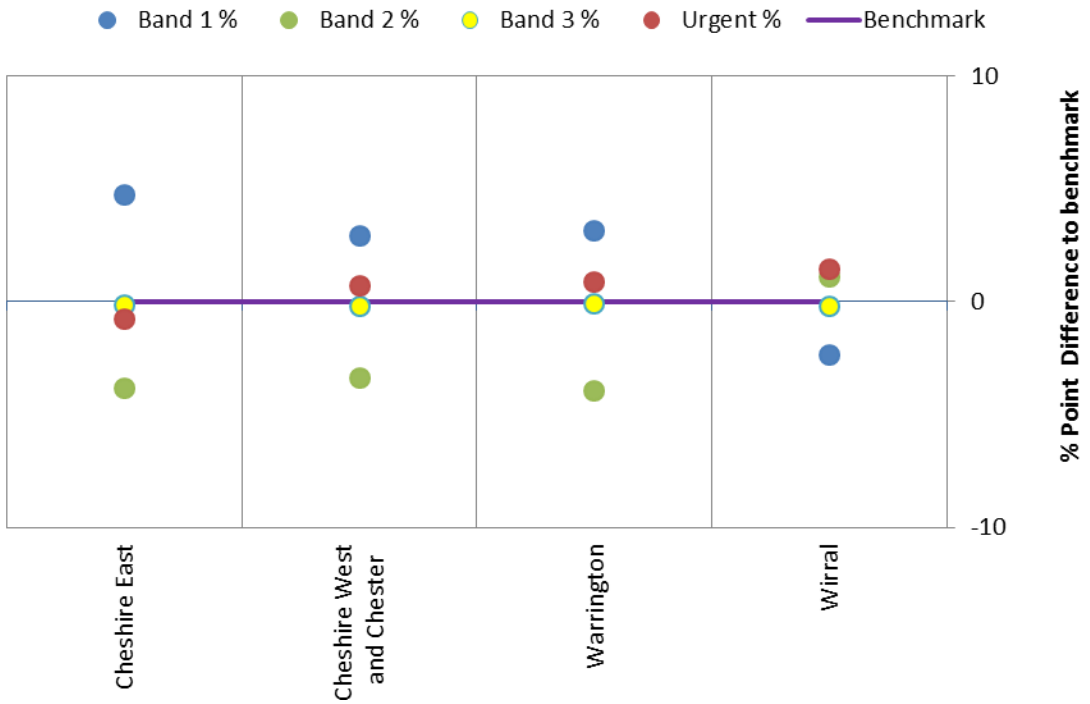
There are also differences in the ages a child receives urgent dental treatment. Only 3% of children aged 0-2 have had urgent dental treatment (both in England and Cheshire) yet almost 6% of children aged 6 to 12 and 5% of children 13-17 in Cheshire have had urgent dental treatment. Data for urgent treatment is similar to England averages.

The percentage point difference for each area compared to national levels is shown in Figure 8. As in Figure 5, the national level has been labelled as the benchmark and the area percentage compared to this.

Figure 8 shows a number of interesting things:

- The number of Band 1 treatment in Cheshire East, Cheshire West and Chester and Warrington is higher than the national average.
- The number of Band 2 treatment in the same areas is lower than the national average.
- The number of Band 1 treatments in Wirral is not higher than the national average like other areas of Cheshire, but lower, and the numbers of Band 2 treatment is higher. Evidence suggests that the absence of Band 1 treatment creates a need for more complex treatments.
- The higher the incidence of Band 1 treatment, the less the need for Band 2 treatment, as more complex care is more likely to be avoided and this pattern can be seen in Figure 8.
- Band 3 treatment is approximately the same across all areas of Cheshire and is similar to national levels.
- Urgent care is also similar across all areas of Cheshire.

**Figure 8: Charge Band % point difference for Child Patients to England Level 2013**




**Source: NHSBSA Information Services, 12th June 2014**

For further explanation on the dental services available, how to find an NHS dentist, what treatment you can get and how much it will cost from 1st April 2014, please see the link below:

http://www.nhs.uk/NHSEngland/Healthcosts/Documents/2014/dental-services-leaflet-2014.pdf

## Patients who are exempt from paying towards the costs of treatment

Patients are split into 3 types according to age and exemption status;

1. Paying Adults- pay a charge to the full cost of treatment
2. Non Paying Adults- are exempt or remitted from paying a charge to the full cost of the treatment
3. Children

Table 4a below shows the numbers of adults in Cheshire who are exempt from paying towards dental care costs and the reasons why they are exempt.

**Table 4a Numbers of adults in Cheshire exempt from paying towards dental care costs**

| Exemption Type | Total Banded FP17s | Band 1 | Band 2 | Band 3 | Urgent |
|---|---|---|---|---|---|
| **18+ in Further Education** | 8,306 | 5,085 | 2,292 | 264 | 665 |
| **Charge Payer** | 550,283 | 302,614 | 164,182 | 24,813 | 58,674 |
| **Expectant Mother** | 8,815 | 4,486 | 2,611 | 381 | 1,337 |
| **Full Remission** | 6,576 | 2,398 | 2,396 | 876 | 906 |
| **Income Related Employment Support Allowance** | 13,917 | 3,859 | 5,406 | 1,831 | 2,821 |
| **Income Support** | 29,287 | 9,794 | 10,835 | 3,383 | 5,275 |
| **Job Seekers Allowance** | 17,624 | 4,743 | 7,069 | 2,010 | 3,802 |
| **Nursing Mother** | 11,083 | 4,874 | 3,956 | 834 | 1,419 |
| **Partial Remission** | 1,236 | 486 | 421 | 211 | 118 |
| **Pension Guarantee Credit** | 26,329 | 9,544 | 9,899 | 3,769 | 3,117 |
| **Prisoner** | 143 | 38 | 55 | 33 | 17 |
| **Tax Credit** | 55,773 | 19,985 | 20,998 | 5,164 | 9,626 |

**Source: NHSBSA Information Services, 12th June 2014**

Table 4b below shows the number of children in Cheshire who are exempt from paying towards dental care costs and the reasons why they are exempt.

**Table 4b Numbers of children in Cheshire exempt from paying towards dental care costs**

| Exemption Type | Total Banded FP17s | Band 1 | Band 2 | Band 3 | Urgent |
|---|---|---|---|---|---|
| **Expectant Mother** | 4 | 1 | 1 | 0 | 2 |
| **Nursing Mother** | 2 | 0 | 1 | 1 | 0 |
| **Prisoner** | 1 | 0 | 1 | 0 | 0 |
| **Under 18** | 256,765 | 183,765 | 58,833 | 1,187 | 12,980 |

**Source: NHSBSA Information Services, 12th June 2014**

The patient charge band information taken from the FP17 form is the only information which is collected for both child and adult patients. The following information is collected only for child patients.

## Re-attendance rates and what they can indicate

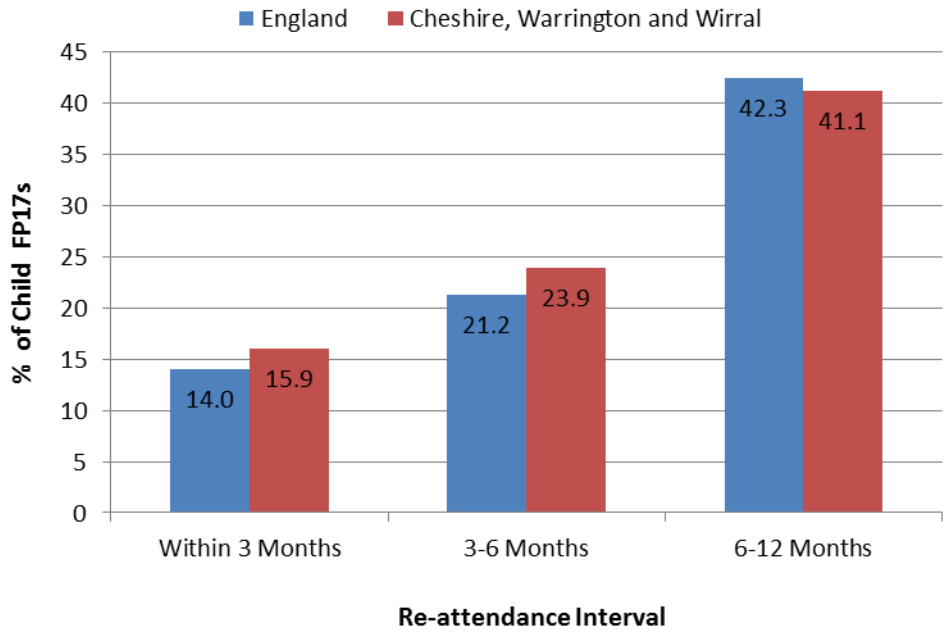
The interval between one course of dental treatment and the next is an important measure of the quality of service provided. National Institute of Clinical Excellence (NICE) guidelines recommend an interval of between three months and two years, depending on the oral health of the patient. Intervals shorter than three months fall outside the NICE guideline range, and may indicate poor quality treatment or diagnosis.

Even within the NICE guideline range, a large proportion of intervals at the lower end of the range may indicate unnecessary re-examinations of patients.

An area with a high proportion of FP17s falling within shorter periods, which Figure 9 below shows, could indicate:

- poor quality of treatment or diagnosis
- unnecessary re-examinations of patients
- poor dental standards
- a lack of understanding or implementation of the NICE Guidelines
- poor dental health in an area

**Figure 9: % of FP17s by re-attendance interval for child patients resident in Cheshire**




**Source: NHSBSA Information Services, 12th June 2014**

## The intensity of resource use by Units of Dental Activity (UDA) information

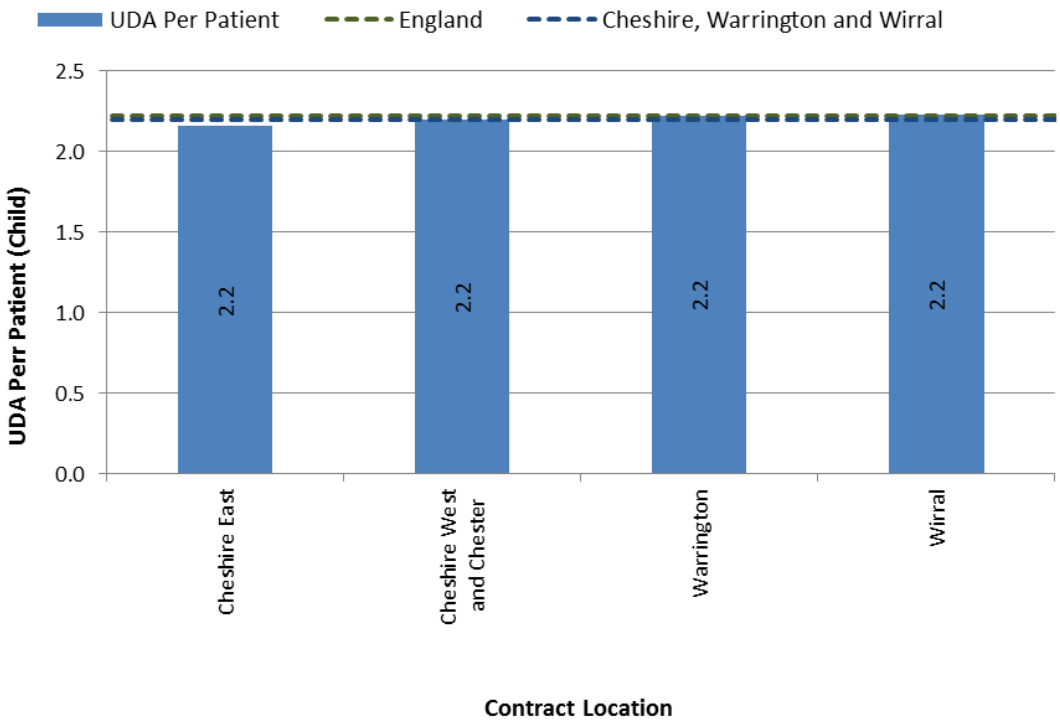
The average number of units of dental activity (UDA) claimed for each patient is a fundamental measure of the intensity of resource use. High rates can indicate a number of areas of concern:

- Resources are not being managed in the most cost effective way
- Patient access is being compromised
- Unusually high frequencies of treatments
- An unusual mix of band 3 treatments compared to other bands
- A genuinely high level of need in that area

The average UDA per patient is calculated by dividing the total number of UDA for children by the number of child patients treated. The number of patients treated is a count of the unique patient identities on scheduled FP17s based on contracts located in the area.

Figure 10 shows the average rate for contracts location in each local authority area, with an England and Cheshire rate shown as a benchmark.

**Figure 10: UDA per patient for child patients resident in Cheshire 2013/14**




**Source: NHSBSA Information Services, 12th June 2014**

## Extraction data for children in Cheshire

For the majority of patients, dental treatment is provided with the use of local anaesthesia (LA) with or without the additional use of sedation, however for some patients the provision of dental care with LA with or without sedation is impossible. Department of Health Guidance published in 2000 stated that from 1st January 2002, all dental care provision under general anaesthesia (GA) should be provided in a hospital setting[72]. The groups of patients who may require dental treatment under general anaesthesia are:

- Young children requiring extraction of decayed teeth (usually multiple teeth)
- Extremely anxious children requiring dental extractions and restorative care – who have been unable to accept treatment with LA even with the additional use of sedation
- Children with behavioural problems who may require pre-medication and for whom treatment with LA and sedation has been unsuccessful
- Children who require minor oral surgery procedures
- Adults with learning disabilities who are unable to accept dental care with LA and sedation

[72] Department of Health (2000) A conscious decision: a review of the use of general anaesthesia and conscious sedation in primary dental care.

The largest group of patients requiring dental care under general anaesthetic are children requiring removal of multiple decayed teeth – this frequently follows at least one episode of acute pain or infection. Despite improvements in children's dental health, there are still significant numbers of children in Cheshire who require this service.

The extraction data for children by local authority area is published by PHE and is available in more detail here: http://www.nwph.net/dentalhealth/extractions.aspx

The database gives details about admission of children to hospital for extraction of one or more decayed primary or permanent teeth. Information focuses on 0 to 19 year olds and is available for 2011/12 and 2012/13 by (former) PCT and local authority of child's residence and grouped by Government Office Region (Table 5). Data were extracted from the Hospital Episode Statistics (HES) dataset which records inpatient care from National Health Service (NHS) hospitals across England. Within this dataset, a unit of care (a finished consultant episode [FCE]) equates to the period a patient spends under the care of a single hospital consultant.

No assumptions can be made about the method of anaesthesia provided for these procedures but it is likely that the majority of episodes involved general anaesthetic. It is possible that different coding protocols are applied in some sites and this could explain some of the variation.

The vast majority of teeth extracted will have been removed because of decay, particularly in children aged 5 and 8 years old. In older children it is likely that an increase in the number of extractions will be for orthodontic purposes. In some instances the data are an underestimate of the number of admissions, as the Community Dental Service may provide the extraction service in hospital premises but the episodes may not be included in hospital data recording.

**Table 5: Number of admissions for tooth extraction (at least one tooth) for children by local authority in Cheshire 2012/13**

| | Number of admissions (% of the population in brackets) | | | | |
|---|---|---|---|---|---|
| **Local Authority** | **Age 0-4 years** | **Age 5-9 years** | **Age 10-14 years** | **Age 15-19** | **Total 0-19 yrs** |
| **Cheshire East** | 21 (0.1%) | 69 (0.3%) | 109 (0.5%) | 55 (0.3%) | 254 (0.3%) |
| **Cheshire West and Chester** | * | 32 (0.2%) | 97 (0.5%) | 52 (0.3%) | 181 (0.2%) |
| **Warrington** | 21 (0.2%) | 31 (0.3%) | 54 (0.4%) | 29 (0.2%) | 135 (0.3%) |
| **Wirral** | 8 (0%) | 22 (0.1%) | 74 (0.4%) | 69 (0.4%) | 173 (0.2%) |

Key
*denotes figure <6 suppressed because of disclosure control
Source: http://www.nwph.net/dentalhealth/extractions.aspx

ONS (2003) published 'Child Dental Health in the United Kingdom: Patterns of care and service use', which provides detailed information at a national level: http://www.ons.gov.uk/ons/guide-method/method-quality/specific/health-methodology/dental-health/dental-health-of-children/index.html

The ONS report describes the dental health of children at ages 5, 8, 12 and 15 years old.

Table 6 is taken from the British Dental Association and Royal Pharmaceutical Society Health Histories series (2011). They have data which shows there is a decrease in the proportion of 8, 12 and 15 year olds over time that have had extractions, across all social classes in 2003. The proportion of extraction for social classes IV and V tends to lag behind that for social groups I, II, and III non-manual. The table below shows how the proportion of 15 year olds who have had an extraction in the lower SES groups in 1993 is similar to that of the higher SES groups in 1983, and again proportions are similar in 2003 for lower SES groups as they are in 1993 for higher SES groups.

**Table 6: showing the national figure for the proportion of 15 year olds who have ever had an extraction, by social class**

| Year of survey | Social class | Proportion of 15 year olds who have had an extraction |
|---|---|---|
| **2003** | IV,V | 54% |
| **1993** | I, II, II non manual | 50% |
| | | |
| **1993** | IV, V | 63% |
| **1983** | I, II, III non manual | 66% |

*Source: British Dental Association and Royal Pharmaceutical Society Health Histories series (2011)*

ONS (2003) suggest that attempts to reduce the number of admissions to hospital for the extraction of teeth need to address several areas, which include: engagement of primary and secondary care providers; establishment of clear acceptance criteria and triage of referrals; provision of training and support for primary care teams in the management of caries among children in acute and chronic stages; commissioning and implementation of oral health improvement interventions with the local authority; and clear agreement about provision of support for families before and after hospital

## Treatment provided, re-attendance intervals and deprivation

This section provides an analysis of the courses of treatment (CoTs) by treatment band and IMD 2010 for child patients resident in the area. The analysis examines the treatment bands, Bands 1-3 and also treatment called 'Urgent'. The total number of CoTs for residents in the area have been analysed by IMD National Quartiles, with percentages of the total for each treatment band and quartile used for comparative purposes.

Generally it is expected that Band 1 Treatments are the most frequent. However the proportion that is made up of Band 1 treatments may differ depending on deprivation. In the most deprived areas, Band 1 treatments often account for a noticeably lower proportion than the overall proportion, with higher levels in each of the other treatment bands. An inference from this is that in more deprived areas there are higher levels of more serious treatment, reflecting increased dental need. In the least deprived areas, treatments involving check-ups and examinations reflect lesser needs.

Re-attendance patterns are based on the length of time between re-attending at an NHS dentist for patients resident in the area. As previously mentioned, NICE guidelines recommend that the recall interval should be appropriate to the level of risk of dental disease for each patient. For adults the recommendations are that the shortest interval (exceptionally) should be 3 months. The longest should be 24 months, where there is no sign or risk of dental disease in the patient. If guidelines were being followed then a relatively small proportion of treatments would be expected to be within 3 months of a previous course of treatment.

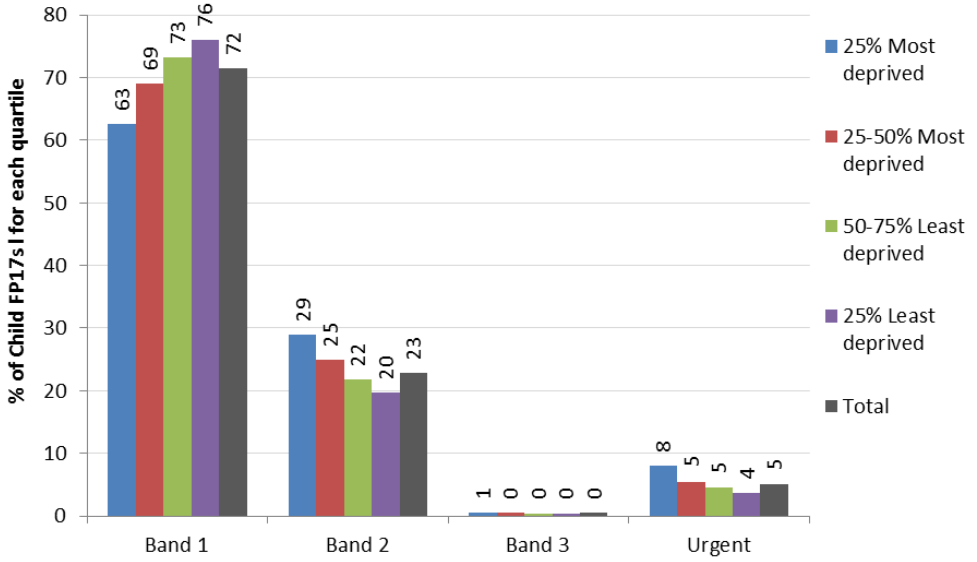
Figure 11 below shows the proportion of total FP17s by re-attendance intervals under a year for child patients resident in the area by the relative deprivation of the patients' resident area, defined as before using IMD National Quartiles.

A high proportion of re-attendance interval within 3 months could signify greater dental need whilst low levels in the 6-12 month interval may suggest that a significant number of child patients are not having the regular check-ups.

The figure shows;

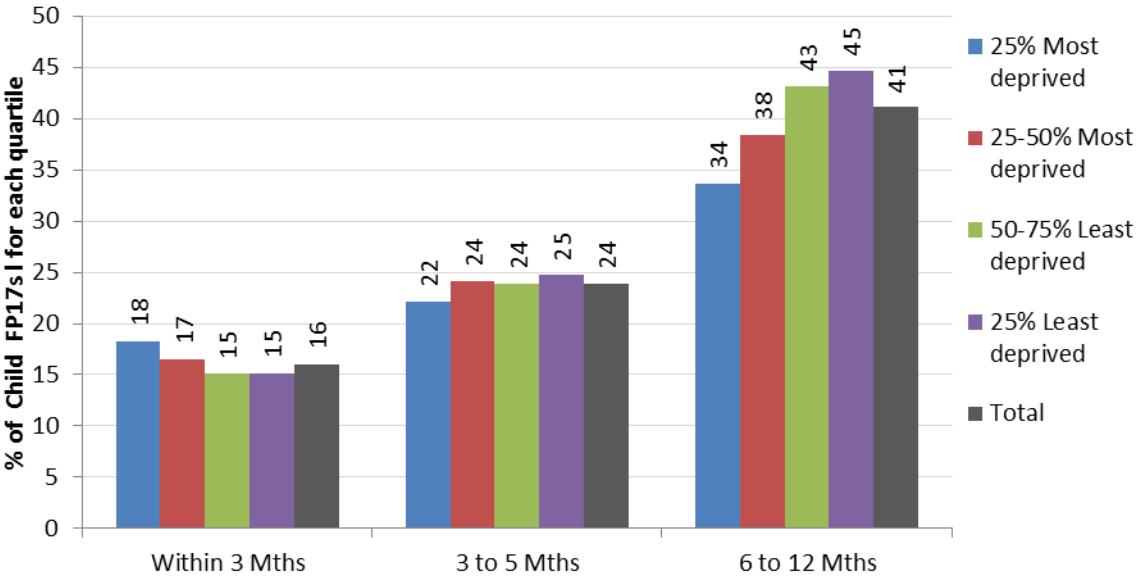
- For Band 1 treatments, children are more likely to be in the least deprived group (76%) of the population than in the most deprived group (63%). The likelihood of having a Band 1 treatment increases with affluence. Overall, more children have Band 1 treatment than any other form of treatment.
- For Band 2 treatments, there are 9% more children needing Band 2 treatment in the most deprived group, compared to the least deprived group.
- For Band 3 treatment, numbers are very small, but there would appear to be no difference between whether the child is in the most deprived group or the least deprived group in terms of accessing complex dental care.
- For urgent dental care, a child in Cheshire is twice as likely to need urgent care if they are in the most deprived group compared to the least deprived group.

**Figure 11: Treatment bands for child patients resident in Cheshire 2013/14 as % of total FP17s by IMD national quartiles.**




**Source: NHSBSA Information Services, 12th June 2014**

**Figure 12: Child re-attendance interval in Cheshire as % of total FP17s**




**Source: NHSBSA Information Services, 12th June 2014**

## Domiciliary and out of hours care for adult patients

Domiciliary dental care is dental treatment that is provided in the patient's home. It was outside the scope of this piece of work to focus on domiciliary or out of hours' car for adult patients. There was no data for Cheshire, however in Merseyside in 2013/14, seven people were seen by domiciliary dental care services aged 44 and under. For the 45-74 age group, 31 people were seen. For the over 75 years old group 62 people were seen.

Collating postcodes of domiciliary services providers with other known indicators on expected levels of need and mapping service providers to the geographical boundaries of local authorities would be useful further work. It would be helpful to see if domiciliary services are providing a service which best meets the needs of the local population.

# 8. Dental Service Access and Availability

This chapter of the dental health need assessment in Cheshire and Merseyside explores a number of issues around access to and availability of dental services including looking at access and availability from a geographical perspective. We also present data in this chapter, exploring the differences in localities in Cheshire and Merseyside in the child and adult patient access rates, patient centred factors that may promote or hinder access, deprivation and its impact on access rates, and the opening times of practices in each local authority.

## The concept of 'access' to services

Getting 'access' to dental care is often cited as one of the most important concerns that the population and therefore politicians have regarding dentistry. In the 1990s in many areas of the country NHS dentists decided to move their practices into the private sector, thereby limiting the amount of NHS services available. Since dental practices can provide a mix of NHS and private care it is often difficult to measure the complete extent of provision of dental services to the population (data on private dental services are not available). The needs assessment does not include consideration of the contribution of the private sector to meeting the population's dental needs. However, for completeness the information was gathered during the telephone survey with every registered CQC dental practice in Cheshire is presented on page 52. Nevertheless, because the private sector contributes, sometimes significantly, to the supply of dental services, and hinges on an individual's ability to pay, the availability of NHS dental services is often an equity and therefore a public health issue.

'Access' to services is a term commonly used to mean the 'ability to make use of services', and so politicians and policy makers often use this to capture their concerns about the equity or fairness of people's ability to use dental services which are local to them. This 'service availability' aspect may have different dimensions which make utilisation difficult such as:

- Proximity of the NHS practice (the pertinent issue may not just be the geographic distance but it's ease of use bearing in mind public transport links)
- Dental practice opening times to accommodate work commitments/carer responsibilities etc.

'Service availability' issues may not just involve the currently available local NHS dental practice capacity in the area, but also the population's *knowledge* about the availability of local services, how to access these services, and any eligibility for exemption from NHS charges. Perceived availability of

NHS services may be different from actual availability and may be just as much an equity issue as the availability of NHS dentistry itself.

'Service availability' however only captures one aspect of what it means to 'access' dentistry. It only captures issues about 'opportunity to access services' (Harris, 2013)[73] -although this dimension is the most easily measured and captures most readily the issues around (perceived or real) limited availability of NHS dental services.

There are however other aspects of dental service utilisation which are known to reflect inequalities in the population – and could also be considered as contributing to issues about 'access to dental care'. This reflects current views that health-seeking behaviour is generally viewed as a series of steps and sequential 'barriers' to receiving effective and equitable care; and that inequalities can arise at a number of points in the process.

They are:

- Differences in readiness to seek care (low socio-economic groups) more often seeking care when in pain
- Candidacy – once a patient gets in contact with a service, how readily they are received for a course of treatment on an equitable basis to other patients seeking care
- Equitable, effective care – how likely a patient is to receive evidence-based care. For example, because of a stereo-typing of patients, low SES patients may be less likely to receive certain types of care. This includes a whole set of measures including patient satisfaction measures as well as care outcomes as reported by patients (PROMs).

**Measures of 'access'**

In this dental health needs assessment, when 'access rates' are referred to, the measure used is

- the proportion of the population who have attended a NHS dentist in the past 24 months

This is generally used merely to reflect the 'service availability' dimension of access to care. The data is readily available because it reflects political and policy driven concerns about limited 'access' to NHS dental services.

It doesn't take into account:

- The number of times the person has attended the service within 24 months.

[73] Harris, R.V (2013) Operationalisation of the construct of access to dental care; a position paper and proposed conceptual definitions. Community Dental Health.

- The amount of care provided and whether this is effective or equitable care
- The amount of care needed to make sure a person's oral health is corrected.

Future needs assessments should move to start to address these wider issues to do with equity of access to NHS care.

Research studies have been focusing on dental health and the factors which improve or worsen oral and dental health for many years. There is now a body of research, which suggests that socioeconomic disadvantage impacts on oral health and that the more disadvantaged a person is, the more likely it is they will have poor oral health[74]. Research also suggests that lack of availability to dental care services also explains why some people do not seek dental treatment. Usually, it is reported that increasing levels of socioeconomic disadvantage is associated with worsened oral health but, simultaneously, with decreased utilisation of dental care services. People with severe socioeconomic disparities were 7–9 times as likely to refrain from seeking the required dental treatment. Studies report[75] that these associations persist even after controlling for living alone, education, occupational status and lifestyle factors. Lifestyle factors explained only 29% of the socioeconomic differences in poor oral health among men and women, whereas lack of availability to dental care services explained about 60%.

This health need assessment will draw together the available evidence on availability of dental care services in the Cheshire area.

## LPHO telephone survey

During February 2015, the researchers in LPHO conducted a telephone survey with Care Quality Commission registered dental practices (both private and NHS) to determine the level of availability the local population had to dental appointments, the waiting times, and the provision of adult NHS services in Cheshire in February 2015.

### Aim

The aim of this telephone survey was to gather information to inform the dental health needs assessment. We particularly wanted information on how accessible and available CQC registered practices are to the local population and sought information on;

1. The opening times of each practice including out of hours opening times
2. Usually, how long existing patients would wait for a routine dental appointment

[74] Milsom, K.M., Jones, C., Kearney-Mitchell. P., Tickle, M (2009) http://www.nature.com/bdj/journal/v206/n5/pdf/sj.bdj.2009.165.pdf
[75] Wamala, S., Merlo, J., Bostrom, G (2006) http://jech.bmj.com/content/60/12/1027.full.pdf+html

3. Whether the practice was accepting new NHS adult patients, either currently, at that point in time or ever), and therefore, are they fully private practices.

We are aware of the limitation in survey data and also how this data only presents us with an approximation of the services available in Cheshire at that point in time. The survey was conducted during weeks 2 and 3 of February 2015.

## Method

Dental practice lists were taken from the Care Quality Commission and researchers organised them into Cheshire and Merseyside based practices based on the coding in the CQC spreadsheet. A total of 249 Cheshire practices were contacted by the researchers, with 217 able to provide details for the survey. Those excluded were practices that were specialist hospital, community or prison based and the 13 orthodontist practices, and some listed practices were duplicated- they had different telephone numbers and names listed although the practice was the same. The researchers phoned each practice until they were able to speak with us and provide information with regards to the opening times of the practice, including out of hours availability, i.e. at least one weekday beyond 9am-5pm and/or at least occasional Saturday opening. Waiting times for routine, non-emergency appointments and whether they accepted NHS patients, and whether they had an NHS contract were the main areas of questioning. The researchers entered all the information into a spreadsheet and details of this are available by request.

## Results

This section describes the results of the telephone survey; whether there is the option to seek NHS dental care in Cheshire, whether practices provide out of hours care for patients and how long a usual wait time is for a routine appointment in an NHS practice.

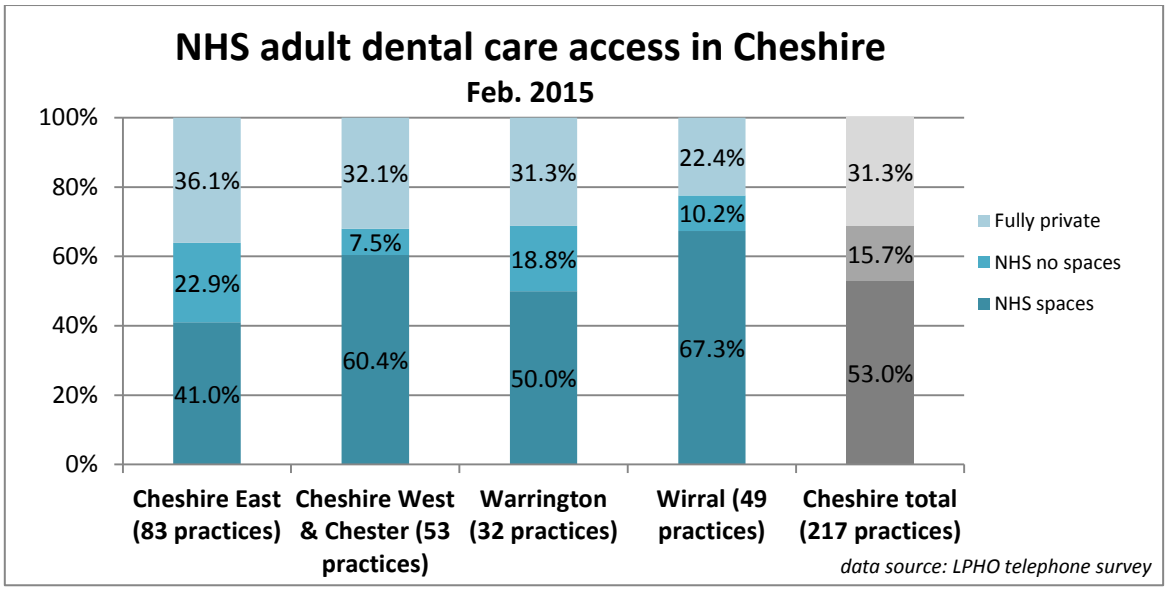
### *NHS access*

Cheshire had a total of 217 dental practices which provided information for this survey. As shown in Figure 13, just under a third of practices (31.3%) are fully private, not accepting any NHS adult patients and just over two-thirds (68.7%) hold adult NHS contracts and do accept NHS patients. Only just over half of all practices registered on the CQC list had current spaces for NHS patients at the time of the survey (53.0%, February 2015). Of NHS practices only, 77.2% were accepting new NHS adult patients.

Compared to the rest of Cheshire, Cheshire East had relatively fewer practices currently able to accept NHS patients (only 41.0%) and Wirral had the most (67.3%)

There were 7 practices which although not currently accepting new NHS patients, said they will be able to do so in April 2015.

**Figure 13**




*NHS out of Hours access*

Of the 150 dental practices in Cheshire that accept NHS patients, 31.3% had good out of hours provision on a weekday, opening until 6pm or later and before 9am at least one day per week. A further 52.7% had limited out of hours provision, between 5pm-6pm and. There were 16% that had no out of hours access, only opening Monday to Friday 9-5pm (Figure 14) (see Table 8 below, p.74, for actual numbers).

Cheshire West and Chester had the highest levels of good out of hours access (38.9%). Almost all practices in Wirral (97.4%) had some out of hours access, either good or limited.

Of NHS dentists in Cheshire, only 12% were open at least occasionally on a Saturday, with 1 in 10 (10.0%) having regular Saturday sessions. Warrington had the highest proportion opening on a Saturday, at 18.1% (13.6% opened regularly) (Figure 15).

**Figure 14**

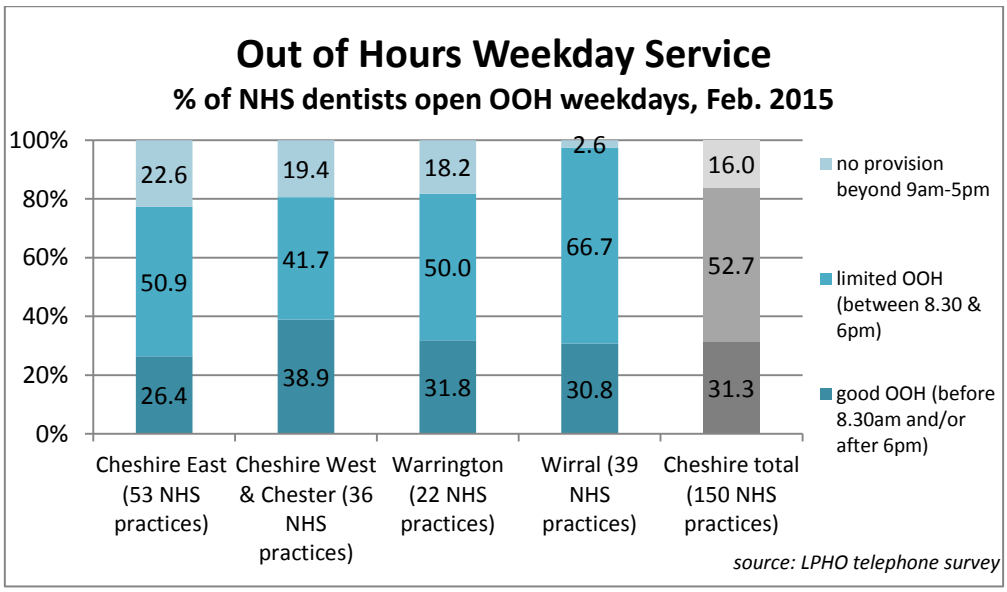
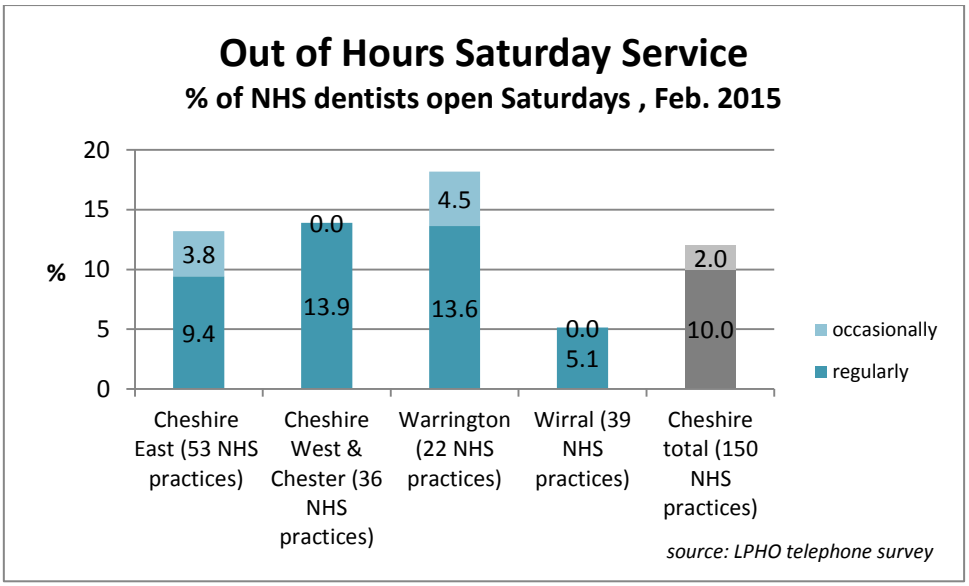



**Figure 15**

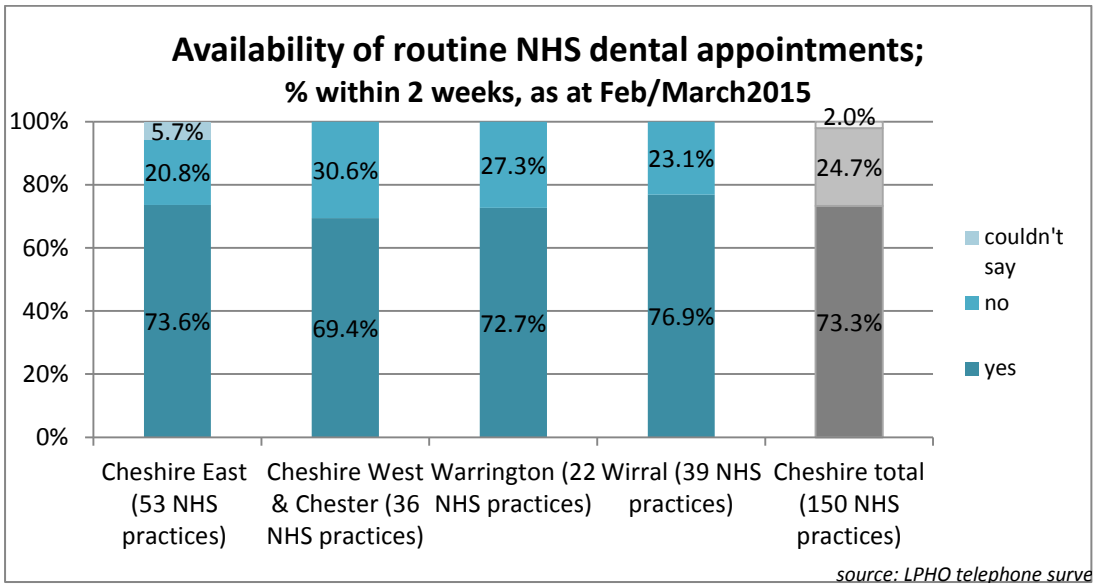



*NHS appointment waiting times*

Practices were asked how long an NHS patient would usually have to wait for a routine dental appointment. Across Cheshire, almost three-quarters of practices (73.3%) reported that patients would usually be seen within 2 weeks (Figure 16).

There was not a great deal of variation between local authorities - Wirral had the highest proportion of practices being able to offer routine appointments within two weeks at 76.9%.

**Figure 16**




## Strengths and Limitations of this survey

Strengths

- A survey is a useful way of collecting data from a large number of respondents and also provides a high level of capability in representing the large population of dental practices.
- From the 249 practices listed in Cheshire, we contacted and retrieved information from 217 appropriate practices (excluding orthodontists, prison based practices and duplicates).
- Numerous questions could be asked relatively cheaply and quickly and analysed quickly which suited the nature of this task.

Limitations

- It is possible but unlikely, due to the nature of the questions that the respondents, usually dental practice receptionists, may not provide accurate answers to the questions, and this could be for a number of reasons.
- The respondents may be uncomfortable providing information which presents them in an unfavourable light e.g how long does a patient usually wait for a routine appointment.

## Conclusions

Before we conducted the telephone survey we had produced GIS maps to locate the CQC list of dental practices and map them in accordance with the index of multiple deprivation, noted which practices were near care homes to see if services were appropriately located for the older population, and plotted drive and walk times to see whether the population could reasonably access

the locations of the dental practices. However, once this survey data was collected we revised the maps to indicate the dental practices that provide NHS adult care.
In discussion with the steering group, the authors of the report feel that the provision of NHS dental practices accepting new NHS patients is good in Cheshire.

## 'Proximity to local dental practices'

This section explores how close to local populations dental practice are using walking and drive time maps. Dental access by deprivation quintiles is also considered. This enables assessment of any differences in accessibility to primary care dental services for different local authorities. These local authority-specific maps can be found in each of the local authority summaries provided at the front of the main report.

For driving an 8.4 minute drive was used assuming the national speed limit minus 10%. For walking, access was assessed using 15 and 30 minute availability, assuming an average walking speed of 2mph. Where areas outside of a local authority are accessible within the times above, the shading has been shown on the map. Accessibility is limited to the road network within the local authorities shown.

The maps included below relate to the Cheshire geographical region. The individual local authority maps in the summaries at the front of the report show accessibility to dental practices within the chosen authority. For example in the drive maps, the blue shaded areas show where residents can access a dentist within 8.4 minutes in their local authority. White areas are those where they cannot access a dentist within that time. They may be able to access a dentist within another Cheshire and Merseyside authority in 8.4 minutes, but this is not shown on the individual maps in the summaries. In addition, these maps have some blue shading that is not within the local authority, these are Cheshire and Merseyside residents who could drive into a local authority and access a dentist within 8.4 minutes. The overall Cheshire map (Map 2, p.61) shows accessibility to any dentist within Cheshire. Any white areas on this map are areas of inaccessibility, i.e. where they cannot access a Cheshire dentist within 8.4 a minute drive.

### Walk Time Maps:

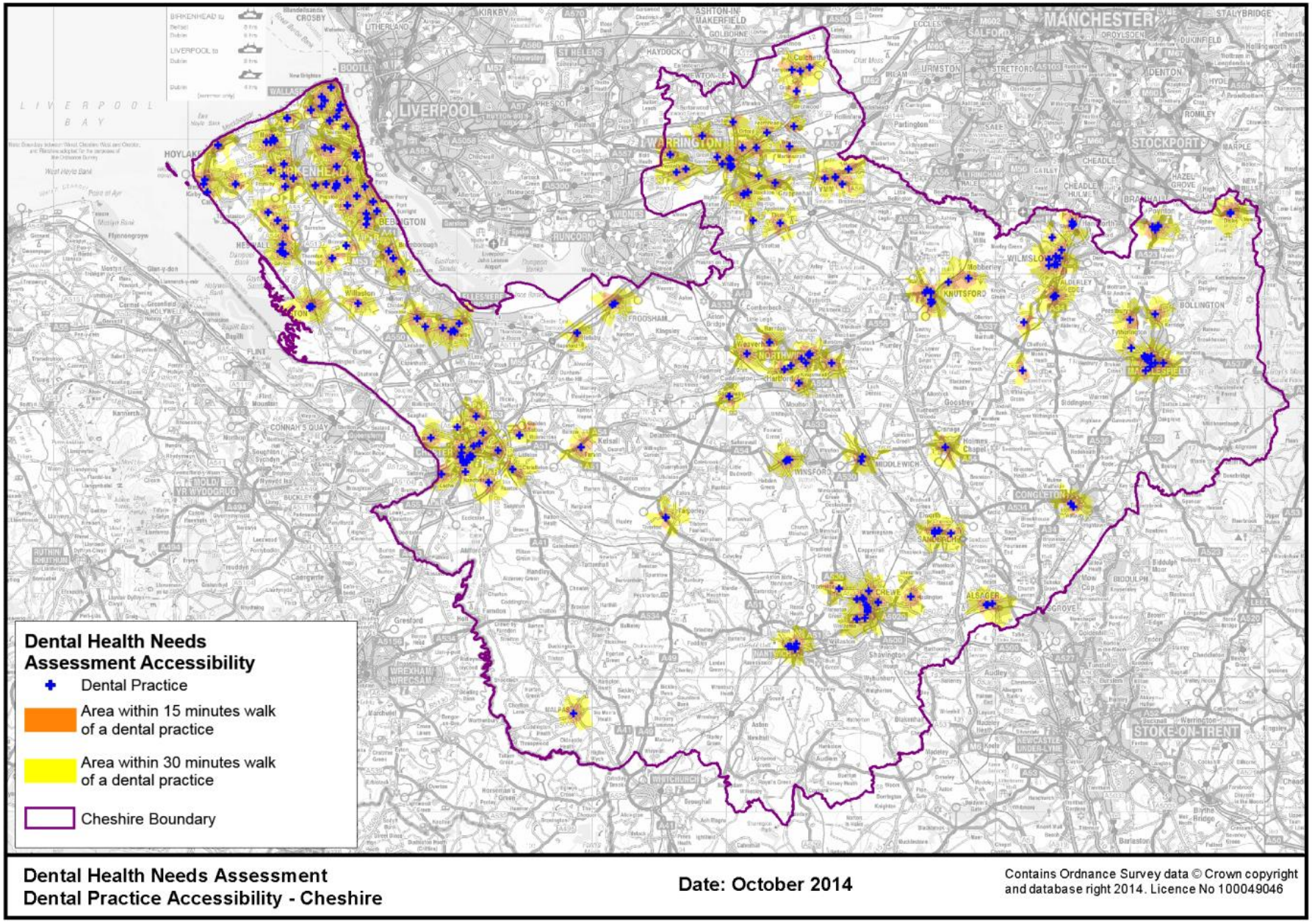
Map 1 provides an overview of the level of access to dental practices across Cheshire if the person requiring access is only able to walk to the nearest practice. The orange areas are within 15 minutes' walk of a dental practice and the yellow areas are within 30 minutes' walk of a dental practice. Vast

areas of Cheshire are outside the areas deemed a 'reasonable distance' from a dental practice. This indicates there is a need for more dental practices to be located away from current dental practices to serve populations of Cheshire who are currently unable to walk a reasonable distance to a dental practice.

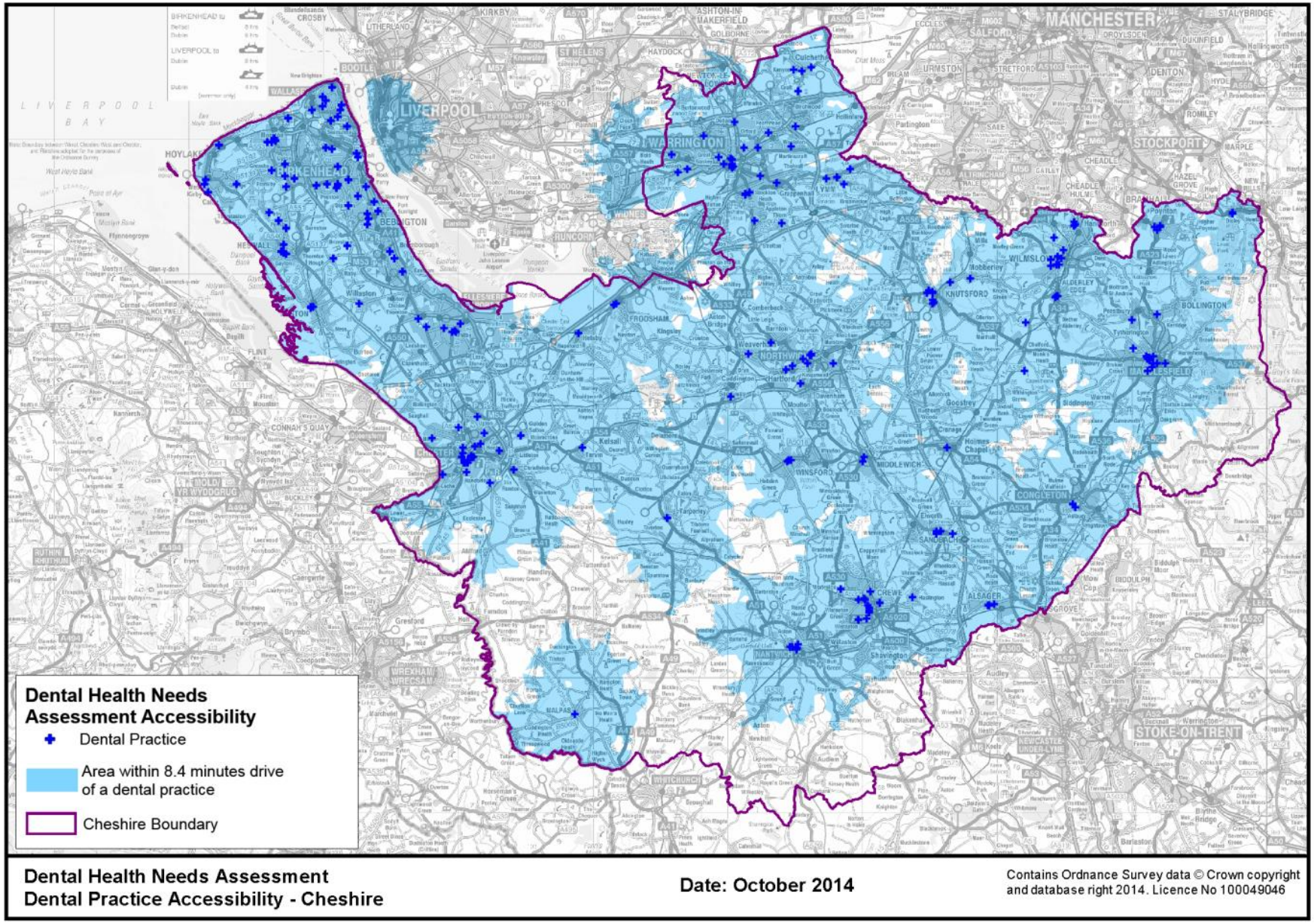
## Drive Time Maps:

Map 2 shows how most of the Cheshire area is within a reasonable distance by car to access a dental practice and these are the areas shaded blue. However, there are some areas of Cheshire where dental services cannot be accessed within a reasonable drive time in a car. The boundaries of Cheshire East, particularly towards Whitchurch and moving south east of Macclesfield cannot access a dental practice within a 8.4 minute drive. In Cheshire West and Cheshire the area of northwest of Wrexham including Farndon, Churton, Broxton and Tattenahll would need to drive more than the 'reasonable' time to access dental practices and although the vast majority of Warrington can access a dental practice by car in a reasonable time, the area north of Burtonwood up to the boundary are further away than 8.4 minutes in a car. All of Wirral dental practices can be accessed within 8.4 minute drive.

**Map 1: Dental practice accessibility across the Cheshire area; practices within walking distance**



**Map 2: Dental practice accessibility across the Cheshire area; practices within a reasonable driving distance**



## Indices of Multiple Deprivation (IMD) Maps:

The IMD 2010, part of the English Indices of Deprivation, is an overall measure of multiple deprivation experienced by people living in an area[76]. It is a composite score based on 38 indicators grouped in seven domains: income; employment; health and disability; education, skills and training; barriers to housing and other services; crime; living environment. Each domain's contribution to the overall score is weighted differently, with income and employment deprivation weighted the most.

IMD 2010 scores are published for small geographical areas known as 'Lower Super Output Areas' (LSOAs).

- The local authority average deprivation score is a 'population weighted average' of the combined scores for the LSOAs in a local authority.
- The local authority extent most deprived measure is the percentage of people in the local authority living in the most deprived fifth ('quintile') of LSOAs in England.

Maps exploring IMD levels and geographical locations of dental practices have been produced to identify:

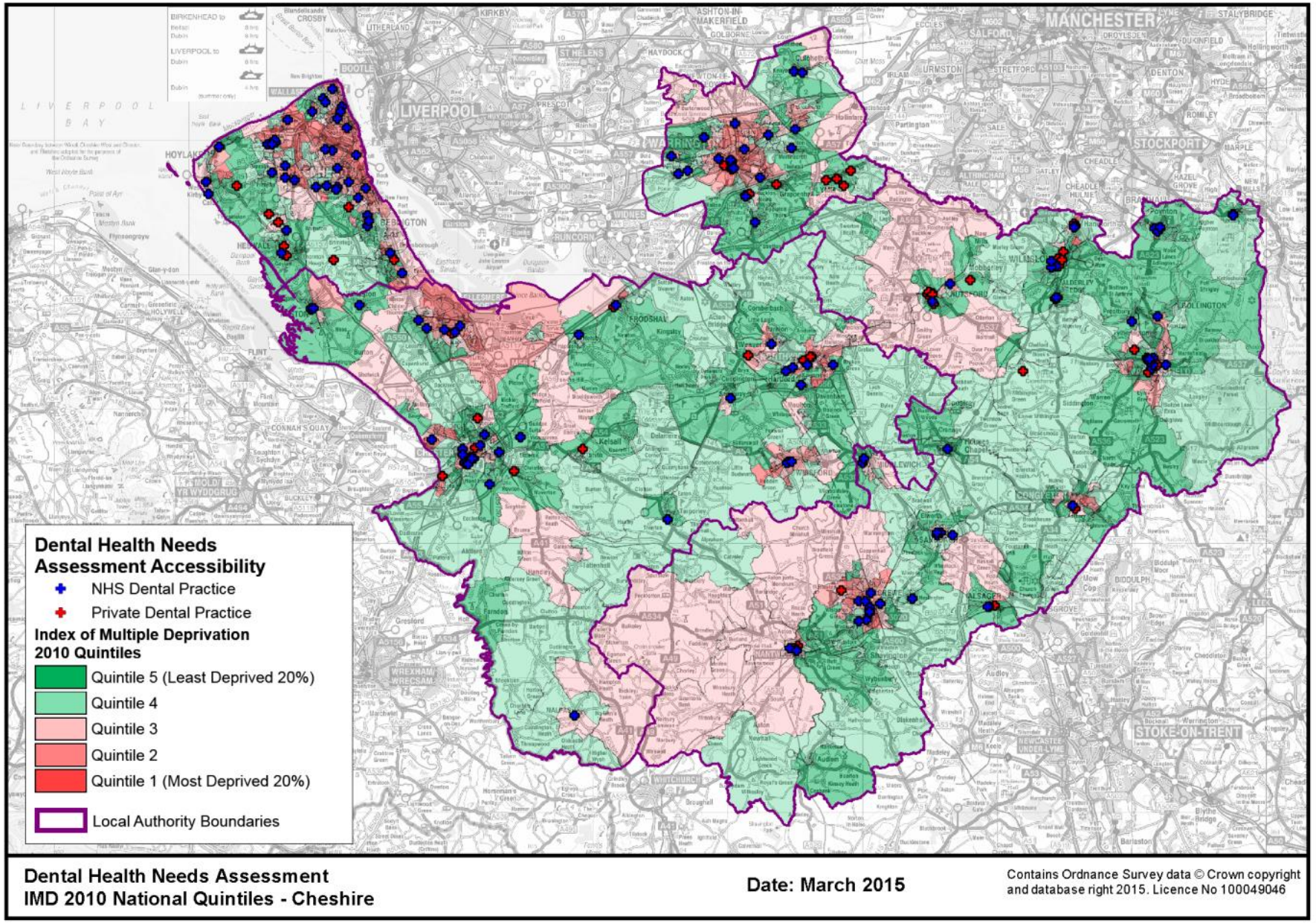
- Whether more dental practices are located in areas of high deprivation as there is evidence to suggest there would be more dental care need in these areas.
- Whether more dental practices are located in areas of low deprivation where need may be lower.
- Whether there are enough dental practices in areas with high levels of need.

Map 3 shows

- Dental practices are not evenly spread geographically across Cheshire
- Areas of high deprivation seem to have more dental practices than areas with low deprivation at the Cheshire area level
- Affluent areas of Cheshire can be directly next to areas of deprivation and there is not always a gradient of IMD Quintiles, across Cheshire in a geographical nature.
- Dental practices are concentrated around places of high deprivation and therefore areas where you could expect high levels of need such as Birkenhead, Warrington town centre and Crewe and in areas which serves both deprived and affluent communities such as Chester and Northwich. There is also a concentration of dental practices in areas of affluence such as Wilmslow and Macclesfield.

[76] More information on calculating IMD levels can be found here: http://www.communities.gov.uk/documents/statistics/pdf/1871538.pdf

**Map 3: Cheshire IMD 2010 Quintiles showing geographical location of dental practice and level of deprivation by geographical location.**

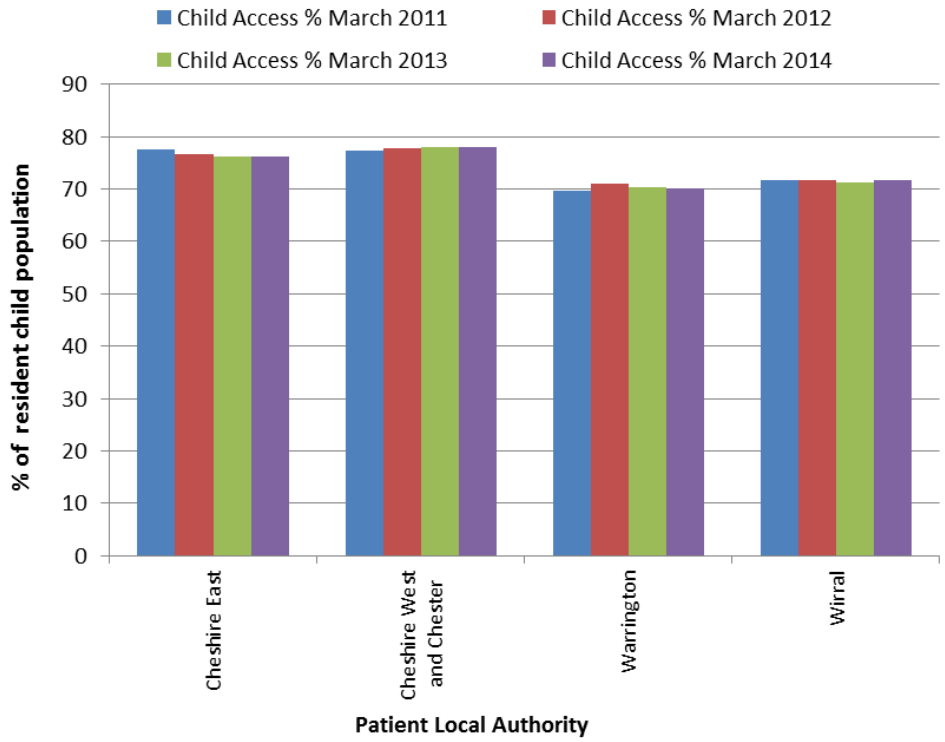


## Can the population of Cheshire obtain dental services when they need to?

An important aspect of the effectiveness of dental commissioning is the ability of patients to obtain needed dental treatment when they request it. One measure used to describe this access is the number of patients seen as a proportion of the resident population; the 'access' rate. Access rates can be affected by the amount of dental provision in an area, the oral health needs of the population, the deprivation or the prosperity of the resident populations and many other factors. A low access rate does not equate solely to a lack of provision. Access rates are expressed as a percentage of the area population and are calculated using 24 months of scheduled data.

Figure 17 below shows the child access rate for each local authority area in Cheshire in order to highlight any changes over time and enable comparisons between different localities within the overall area. Figure 17 shows that the rate of children attending the dentist are gradually decreasing in Cheshire East, and is relatively stable in the other local authorities. Warrington and Wirral have lower rates of access than Cheshire East and Cheshire West and Chester.

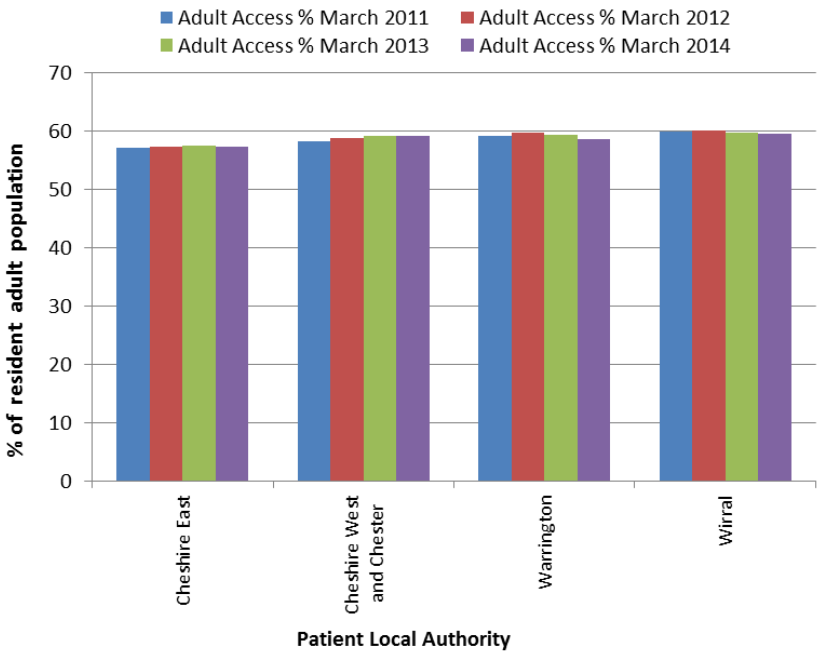
**Figure 17: Child Access Rates Trend by Local Authority in Cheshire (2011-2014)**




**Source: NHSBSA Information Services, 12th June 2014**

Figure 18 below shows the adult access rate for each local authority area in Cheshire in order to highlight any changes over time and enable comparisons between different localities within the overall area.

**Figure 18: Adult Access Rate Trend by Local Authority in Cheshire (2011-14)**



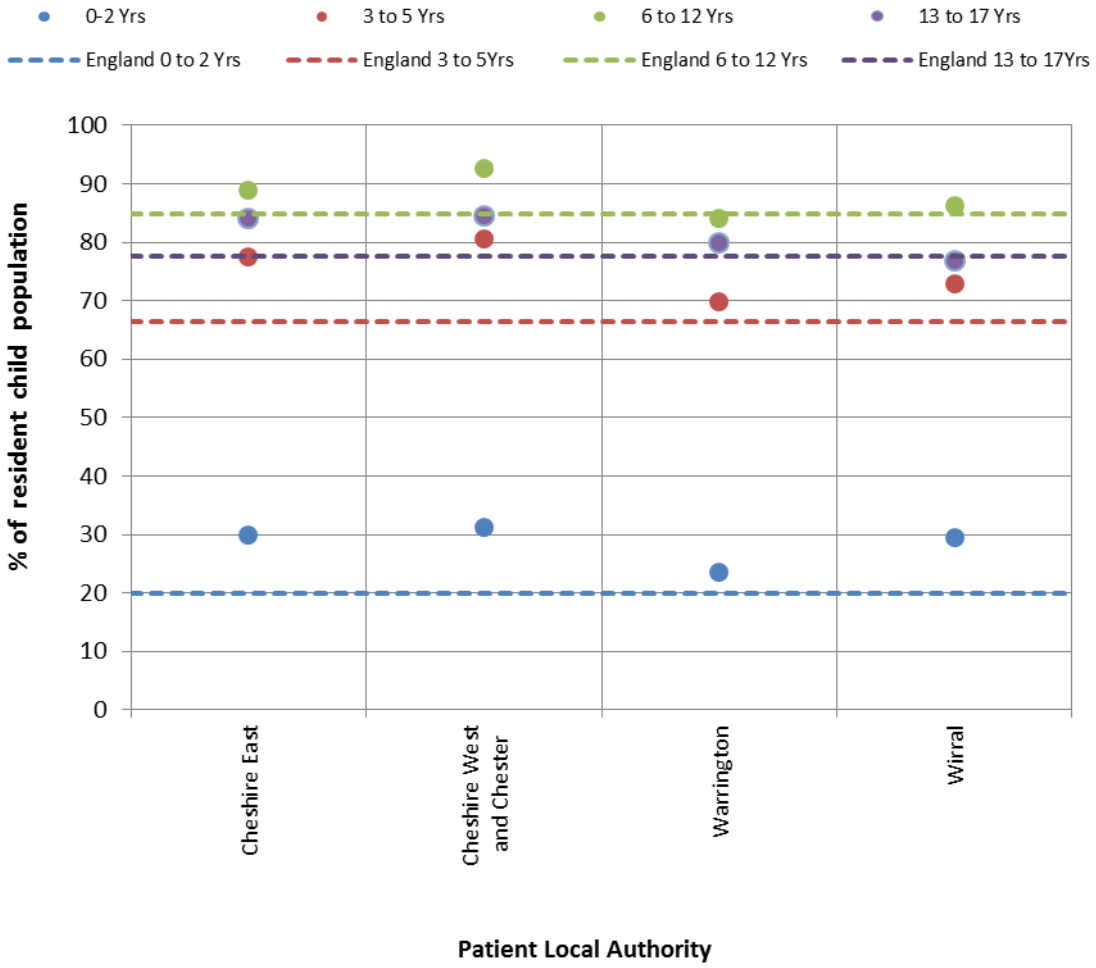

**Source: NHSBSA Information Services, 12th June 2014**

Figure 18 shows that;

- The access rate has stayed relatively stable in Cheshire East, is increasing in Cheshire West and Chester and is decreasing slightly in Warrington and Wirral

Figure 19 shows the access rate for children, by age group, for each local authority in Cheshire. For all age groups under 18 years old, except in Wirral for the 13-17 year olds, and Warrington for the 6 to 12 year olds, the rate of accessing dental services is higher on average than the national rate.

**Figure 19: Cheshire Local Authorities Child Access by Age Bands March 2014**

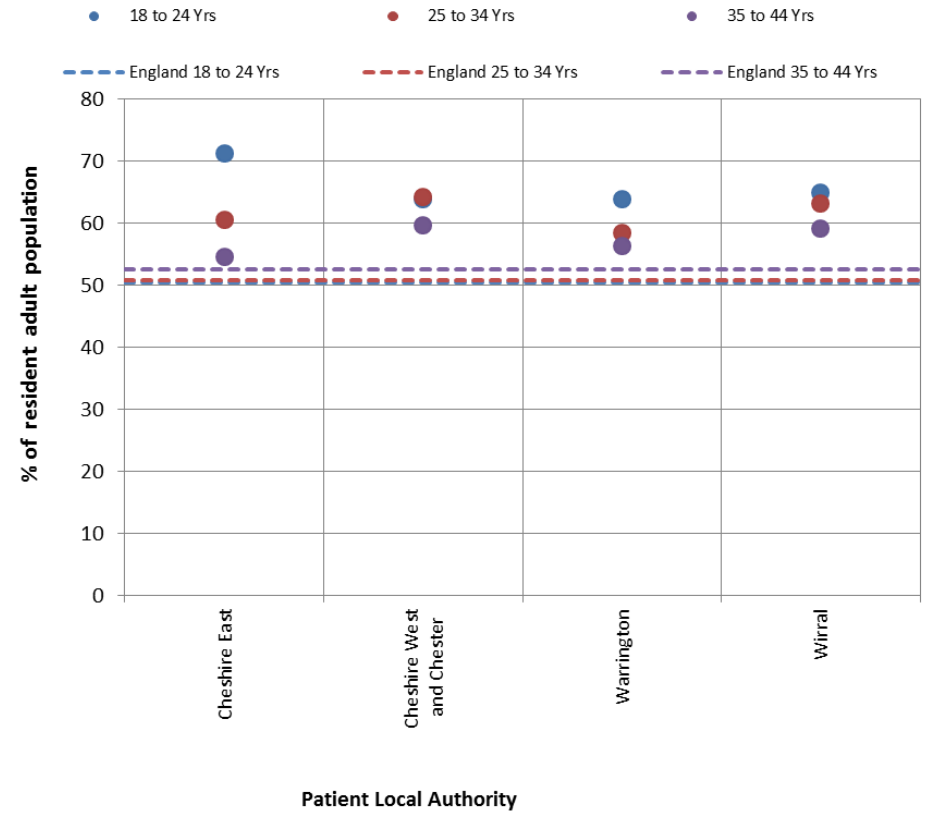


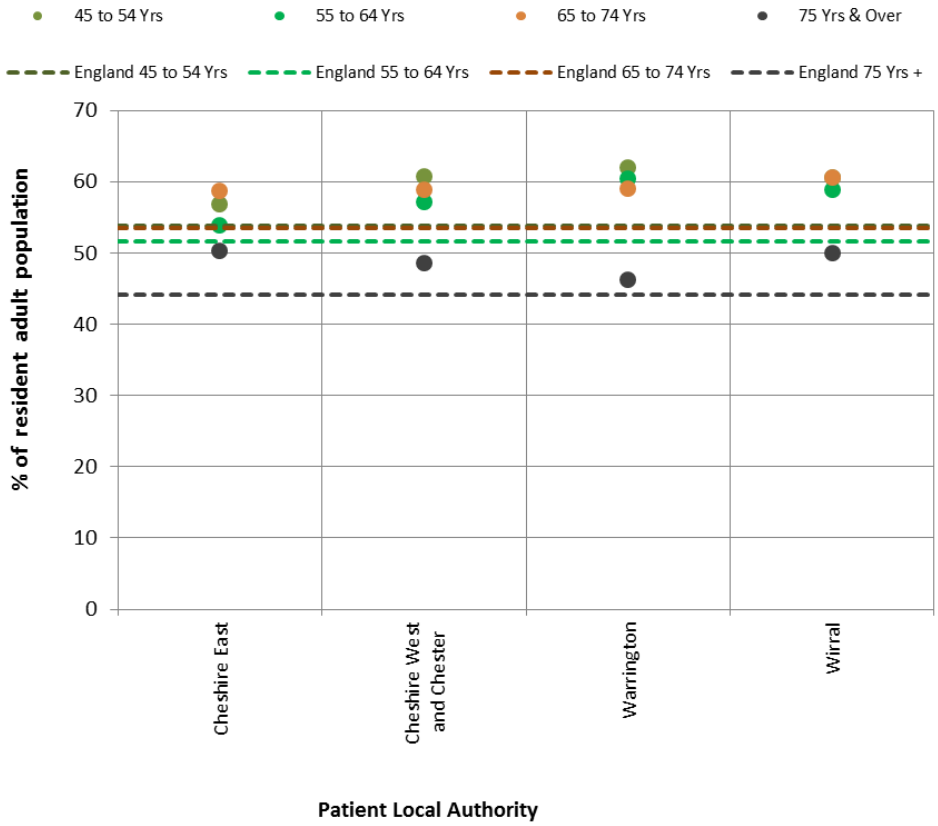

**Source: NHSBSA Information Services, 12th June 2014**

Figure 20 shows the differences in Cheshire (by local authority and by age band) in the percentage of the adult population who access dental health services compared to the England average.

For all adults in the Cheshire Local Authority area, access is greater than the national average (particularly up to age 45), particularly for 18-24 year olds, especially Cheshire East, where over 70% of this age group access services compared 50% nationally.

**Figure 20: Cheshire Local Authority Adult Access by Age bands (March 2014)**



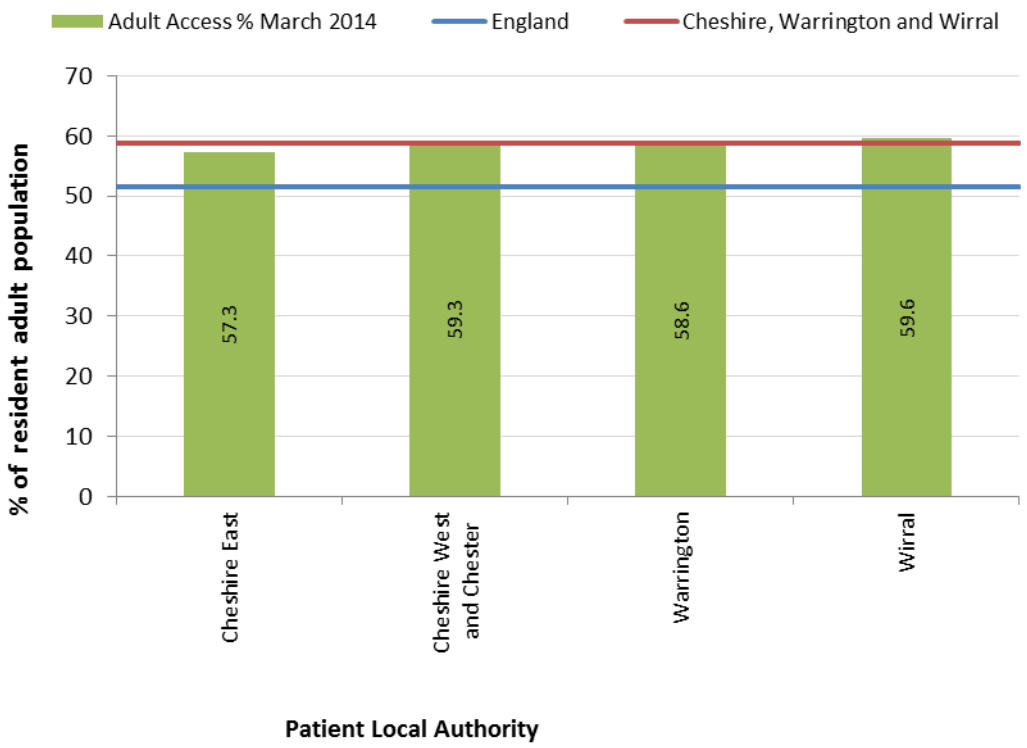

**Source: NHSBSA Information Services, 12th June 2014**

The access rate is lower than other age groups for the people aged 75+ but still above the figure for the national average in all areas in Cheshire.

Figure 21 below shows the access rate for each local authority area in Cheshire in the most recent period (March 2014) compared with England. The figure shows that;

- For all local authorities the adult access rate is better than the national average.
- Cheshire West and Chester, Warrington and Wirral have similar access rates, and Cheshire East has slightly lower access rates.

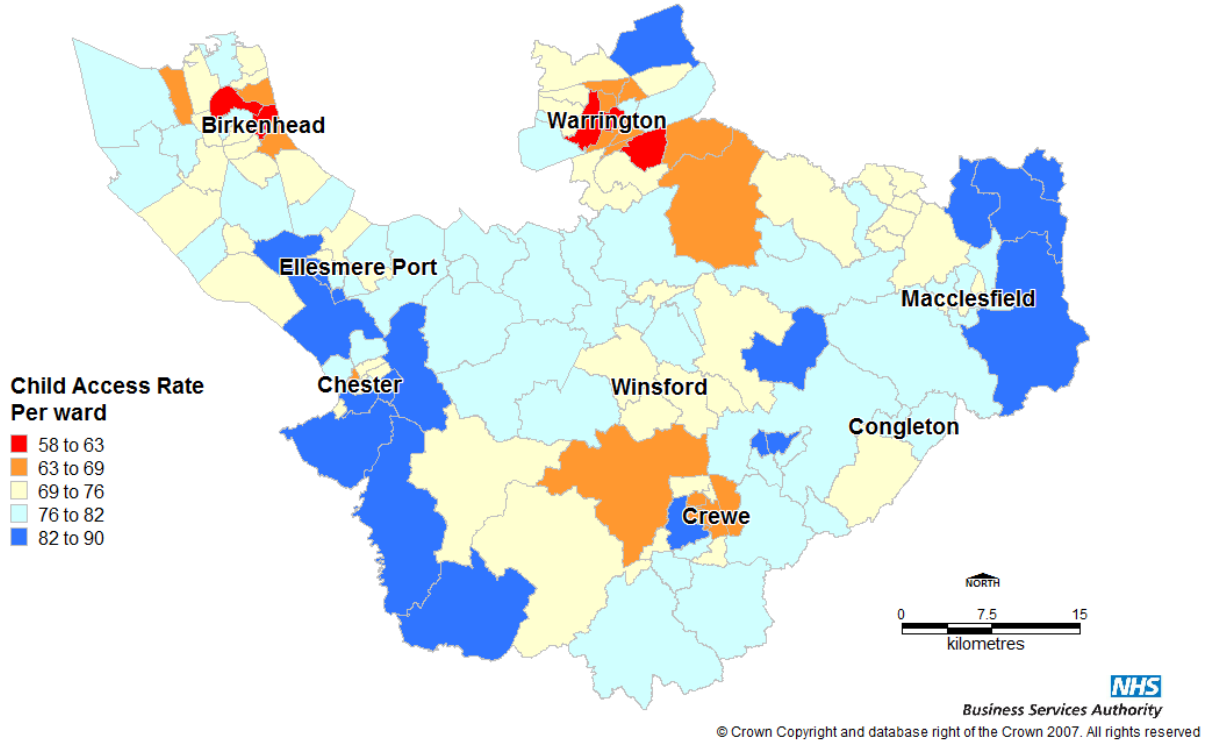
**Figure 21: Adult Access (March 2014) by Local Authority in Cheshire compared with England**




**Source: NHSBSA Information Services, 12th June 2014**

Map 4 shows the child access rate per electoral ward in the Cheshire area. The wards coloured in red have the lowest rates of access and the wards shaded in blue have the highest rates of access. The highest child access rate (where a high number of children access the dentist over a 24 month period) is in wards of Chester, near Macclesfield and in parts of Ellesmere Port. The lowest child access rate is in wards in areas of Birkenhead and Warrington. The differences in access are not unexpected as research evidence shows that the most deprived areas often have lower access rates and the most affluent areas often have higher access rates. Deprivation and dental access is discussed in more detail in the next section.

**Map 4: Access rate Resident Child Patients in Cheshire 24 month period until March 2014**




## Patient centred factors that promote or hinder access to services

Previous research shows that some of the obstacles to attending the dentist were linked to patient centred factors such as dental anxiety, the costs of treatment or the attributes of the dental practice[77]. In the national Adult Dental Health Survey (ADHS, 2009) there is a chapter focusing on 'access and barriers to care' http://www.hscic.gov.uk/catalogue/PUB01086/adul-dent-heal-surv-summ-them-the8-2009-re10.pdf

Nationally, treatment costs, dental anxiety, and the dentist/patient relationship appear to be related to health and care outcomes. Being previously affected by treatment costs was associated with delaying attendance and having a poor level of oral health. The influence of cost on decisions about dental treatment applied to some degree to all groups in society.

Dental anxiety is recognised as a key barrier to dental care and the ADHS (2009) report confirms the expected relationship between dental anxiety and visiting the dentist. It also indicates its association with dental health. The inter-relationship of the barriers considered in the ADHS report has not been assessed and research is scarce but it seems likely that these barriers interact in complex ways.

A summary of the national findings is presented below. Local data is not available.

[77] Finch et al (1988) *Barriers to the receipt of dental care,* Social and Community Planning Research

## The cost of dental treatment

The ADHS (2009) reports that nationally, 26% of people said that the type of dental treatment they had opted for had been affected by the cost and 19% said they had delayed dental treatment due to cost. The figures for the North West population are similar to the national figures.

- Differences in the proportion of adults who said that cost had an effect on the type of dental treatment were observed between age groups. Over 30% of adults aged 25- 34, 35 to 44, 45 to 54 were influenced by cost compared to 15% of those aged 74-85 and 11% of over 85s.
- Overall, 20% of women were influenced by cost and 17% of men.
- There was a higher proportion (20%) of more deprived people who delayed dental treatment because of cost, compared to those in a higher social group (17%) and these national figures are similar to the North West figures.

## Dental anxiety and the relationship to oral health

Dental anxiety ranges from people who feel relaxed during dental treatment to those who are dentally anxious but who cope, to those people who are dentally phobic and avoid dental care[78][79].

In the ADHS (2009) the MDAS[80] scale was used to assess the level of dental anxiety. From a total of 25, a score above 19 indicates extreme dental anxiety, indicative of dental phobia.

Nationally:

- 51% of people scored 5-9 indicating no/low levels of anxiety
- 36% of people scored 10-18 indicating a moderate level of anxiety
- 12% of people scored 19+ indicating extreme levels of anxiety
- 30% of people would be very anxious if they were getting tooth drilled
- 28% of people would be very anxious if they were having a local anaesthetic injection

Dental anxiety peaks age 16-24 when 15% of this group score 19+ on the MDAS, which then gradually decreases with age until age 85+ when there is a peak in anxiety levels (with 9% of people scoring 19+ on the MDAS).

[78] Freeman R. (2004) *Practice building – relationships around the patient*. In FJT Burke and R Freeman. Preparing for dental practice. OUP. Oxford.

[79] Swallow JN. (1970) Fear and the dentist. *New Society*: 5; 819-821

[80] Humphris, Morrison, and Lindsay (1995) The Modified Dental Anxiety Scale: validation and United Kingdom norms. *Community Dent Health* Sep 12 (3) 143-50

The relationship between levels of dental anxiety and self-assessed dental health is complex. Poorer dental health may stem from neglect arising from the avoidance of dental care due to anxiety about visiting the dentist or it may be that some individuals expect that they need considerable dental treatment and are therefore extremely dentally anxious. For example, 10% of adults with good or very good self-assessed dental health were very/extremely anxious about going to the dentist compared with 34% of adults with bad or very bad self-assessed dental health. Overall, 9% of those who rated their dental health as good or very good had an MDAS score of 19 or more compared with 30% of adults with bad or very bad self-assessed dental health.

## Relationship with the dentist and dental practice

A number of questions[81] were asked in the ADHS (2009) to try to establish the factors which may influence people attending the dentist and subsequently inform policy in improving dental services.

- Nationally, there were no differences between men and women and the quality of the relationship with their dentist.
- Younger people tended to be more negative about at least one element of their most recent interaction with the dentist (22% of 16-24 and 26% of 25-34) compared to older people (16% of 65-74 and 17% of 75-84).
- People who self-reported that their dental health was bad or very bad were more negative across all questions than people who self-reported that their dental health was good or very good. For example, for question 1 "Did the dentist listen carefully to what you said about your oral health?" 26% of people with bad or very bad dental health were negative, compared to 6% of people with good or very good self-reported dental health.
- There was a socioeconomic gradient in reporting negative elements in the most recent interaction with a dentist, so 7% of people in the highest SES group said the dentist had not listened carefully to them compared to 11% of people in the lowest SES group. Previous research suggests that improving communication between health professionals and patients is key to increasing satisfaction with services[82].

[81] These questions asked the respondent to indicate whether: 1) the dentist had listened carefully to what they had to say about their oral health; 2) they had been given enough time to discuss their oral health; 3) they were involved in the decisions about any dental care or treatment they may have needed; 4) they got answers that they could understand from the dentist; 5) the dentist treated them with dignity and respect; and 6) they had confidence and trust in the dentist. The purpose of these questions was to determine the success of the interactions between patients and dentists and to investigate whether people felt involved in decisions about their oral health.

[82] Turnberg, L. (1997) *Improving Communication between Doctors and Patients: A report of a working party.* London, Royal College of Physicians

- A large majority (80%) of those interviewed were satisfied with all aspects of their interaction with the dentist at their most recent visit but this was not universal. The quality of the relationship between dentist and patient assessed at the last visit to a dentist was markedly associated with the patients' assessment of their overall self-rated dental health, the length of time since their last dental visit and their level of dental anxiety. Generally speaking people whose last experience with a dentist was problematic gave a low rating of their own oral health, had not attended for a longer time and were more likely to be extremely dentally anxious than those whose experience was more positive. These findings suggest that dentist-patient communication, whilst generally good, can be a real barrier to achieving optimal dental health and care in just the same way as other more familiar barriers such as cost and anxiety.

## Where is the dental service need the greatest in Cheshire?

Research has shown[83] [84] that dental disease correlates closely with social and economic deprivation, meaning that usually, dental need is greater in areas of deprivation and in areas of prosperity, dental need is less. There has been a reported seven fold difference between the populations of (former) PCTs in England with the best dental health compared to the worst dental health[85]. The British Dental Association Oral Health Inequalities Policy (2009) has set out their commitment to reducing health inequalities through addressing the factors that can influence poor oral health such as diet and nutrition, oral hygiene, fluoride exposure, tobacco, alcohol and injury and have also set out their commitment to promoting initiatives and actions that tackle health inequalities in oral health across the population.

Socio-economic factors that are key determinants of oral health inequalities include deprivation, age, gender, ethnicity, environment, psycho-social factors, poverty and lifestyle. Some of these factors are outside the scope of this report, but more information on the British Dental Association's report (2009) can be found here: http://www.bda.org/Images/oral_health_inequalities_policy.pdf

[83] The Office of National Statistics (1998), Adult Dental Health Survey, Oral health in the United Kingdom
[84] Independent Inquiry into Inequalities in Health (Acheson Report), 1998; Department of Health, Choosing Better Oral Health: An Oral Health Plan for England, 2005
[85] British Association for the Study of Community Dentistry, 2003/04 survey of five-year-olds

## *Measuring deprivation*

The Index of Multiple Deprivation (IMD)[86] 2010 is the official measure of relative deprivation for small areas in England. It combines a number of indicators, chosen to cover a range of social, economic and housing issues into a deprivation score for each small area in England. These small areas are called Lower Layer Super Output Areas (LSOAs) and have an average population of 1500 people (also see p.61).

The aim of linking the IMD levels to the LSOAs is to assess whether the area population is noticeably over-represented in the most deprived areas and under-represented within the least deprived communities compared with England as a whole.

The data used in the following figures and tables, was the 2011 population estimates for LSOAs in England and Wales by Single Year of Age and Sex, ONS. Amalgamated rates may differ. The number of patients is based on the home postcode recorded in the personal details of each FP17, and if this information is not available then the patient was not included in the data presented.

Table 7 shows the percentage of the Cheshire region population (approximately 1.2 million people) who are ranked into the deprivation quartiles compared to the percentage of the population of England.

**Table 7: Child and Adult Population of Cheshire and England within IMD quartiles and the access rates of the population for each quartile**

| | Children's access to dental services | | Adults access to dental services | |
|---|---|---|---|---|
| Quartiles Rank | **% of Cheshire Population (% England population) in Quartile** | **% of Population in Cheshire who Access Dental Services (% England population)** | **% of Cheshire Population (% England population) in Quartile** | **% of Population in Cheshire who Access Dental Services (% England population)** |
| **25% Most deprived** | 23.4 (28.2) | 70.5 (67.5) | 19.5 (23.9) | 58.1 (53.3) |
| **25-50% Most deprived** | 17.7 (24.2) | 74.2 (69.2) | 18.5 (25.3) | 59.8 (52.0) |
| **50-75% Least deprived** | 21.0 (23.0) | 75.4 (71.1) | 22.8 (25.5) | 60.1 (51.9) |
| **25% Least deprived** | 37.8(24.6) | 77.1 (72.3) | 39.6 (25.2) | 61.2 (51.0) |

[86] More information on calculating IMD levels can be found here: http://www.communities.gov.uk/documents/statistics/pdf/1871538.pdf)

The table shows that in Cheshire, there are fewer people in the most deprived groups than nationally, for both children and adults. More people are 'less deprived' than the national average too, with 37.8% of children and adults being in the least deprived category, compared to 24.6% nationally.

The table also shows the proportion of Cheshire's child and adult population attending an NHS dentist that fall within each IMD 2010 quartile. The aim is to assess whether access is noticeably affected by levels of deprivation. Table 7 shows that in all groups, the access rate is higher than the national average for child and adult access to dentists, in some groups (adults in the 50-75% least deprived or 25% least deprived groups) access rates are around 10% higher than national access rates.

## Distance travelled to a dental practice and treatment locations

The distance travelled to a dentist can be seen as an indicator of need and effectiveness of dental commissioning. Distance travelled is calculated by measuring a straight line between the home postcode of a patient and contract location.

Maps 1 and 2 above show how accessible dental practices are in Cheshire in terms of a reasonable walking and driving time (p.59 & 60).

We attempted to produce maps based on public transport accessibility but have been unable to do so.

## Opening times for practices

Dental practices are not required to open between any specific times although in most areas there are some dental practices which open outside the usual working hours of Monday- Friday 9am-5pm. The opening times of practices have an impact on how often the general population can access dental services. As reported in Section 8 above, the telephone survey found that the majority of NHS dental practices in Cheshire are open during 'normal working hours' of 9am-5pm. Many of the practices are open less than 9 hours per day. Some practices open for extended hours, for example, they may open 8am-4pm or 8am-7pm one weekday. The majority of the practices which open on a Saturday are only open in the morning (see Table 8 for numbers. Percentages are reported earlier in Figures 14 and 15).

**Table 8: Numbers of NHS dental practices with out of hours opening times by local authority**

| | Open weekdays beyond 9am-5pm, NHS | | | Open Saturday, NHS | | | |
|---|---|---|---|---|---|---|---|
| **numbers** | good OOH (before 8.30am and/or after 6pm) | limited OOH (between 8.30 and 6pm) | no provision beyond 9am-5pm | regularly | occasionally | not open | Total NHS practices |
| **Cheshire East** | 14 | 27 | 12 | 5 | 2 | 46 | 53 |
| **Cheshire West and Chester** | 14 | 15 | 7 | 5 | 0 | 31 | 36 |
| **Warrington** | 7 | 11 | 4 | 3 | 1 | 18 | 22 |
| **Wirral** | 12 | 26 | 1 | 2 | 0 | 37 | 39 |
| **Cheshire total** | **47** | **79** | **24** | **15** | **3** | **132** | **150** |

*Source: LPHO telephone survey.*

## Reported success in obtaining a NHS dental appointment and overall patient experience

The GP Patient Survey (2014) published aggregated 2012-13 (wave 2) and 2013-14 (wave 1) dental statistics. More information can be found by following this link:
http://www.england.nhs.uk/statistics/2013/12/12/2345gppsw1201314/

Patients were surveyed for their overall experience of primary care services, which includes dentists, and specifically asked questions about access[87]. 1.3 million adults were contacted and 450,000 replies received, with an overall response rate of 34%. National figures suggest that of the people who had tried to get a dental appointment in the previous 2 years;

- 84% rated trying a get an appointment a positive experience[88]
- 93% were successful in getting an appointment
- younger adults and those from BME groups were less successful in getting an appointment.

From April 2010 it has been mandatory to complete the ethnicity marker on the FP17 so that commissioners can see if all ethnicity categories are being seen by dentists and therefore commission appropriate services to meet the needs of these groups.

[87] Questions in the GP patient survey included: 1. When did you last try and get an NHS dental appointment for yourself? 2. Was the NHS dental appointment you were trying to get with a dental practice you had been to before for NHS dental care? 3. What is your overall experience of NHS dental services?

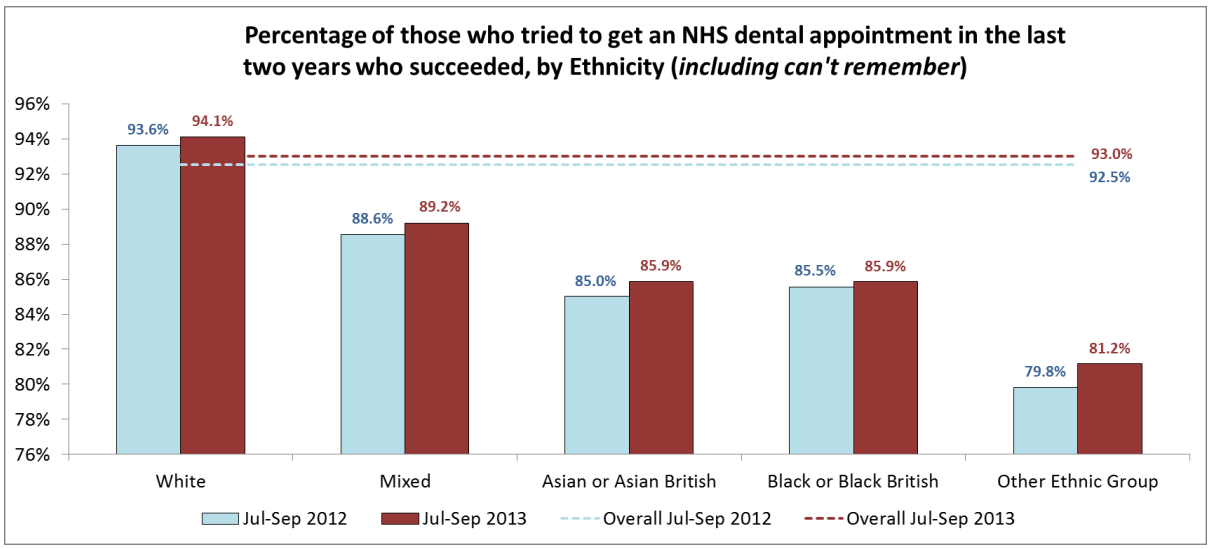
[88] 'Positive experience' is the result of 48% of people rating the experience very good and 36% of people rating the experience as fairly good.

In England, 75.9% of FP17s have attempted to record ethnicity including the times a patient has declined attending the dentist.

In England, 61.5% of FP17s have recorded the ethnic group of the patient, excluding patients who have declined attending the dentist.

Figure 22 below is taken from the GP Patient Survey 2014 results. It shows that nationally, in all ethnic groups, people were more successful in getting appointments in 2013 compared to the same period in 2012. It indicates that that those from minority ethnic groups are less successful at obtaining appointments.

**Figure 22: The percentage of those who tried to get an NHS appointment in the last two years, who succeeded, by ethnicity. England.**




**Source: GP Patient Survey** https://gp-patient.co.uk/why-use-survey

The GP Patient Survey (2014) also provides data at the level of Merseyside, Cheshire, Wirral and Warrington. Table 9 below shows the proportion of people who were successful in getting NHS dental appointments. For Cheshire, Wirral and Warrington the response rate was 37%[89], for Merseyside the response rate was 30%[90] and for England the response rate was 34%[91]. The proportion of people able to successfully get an NHS dental appointment in Cheshire, Wirral and Warrington and Merseyside is above the national average.

[89] 27,101 forms distributed, 9,911 forms completed
[90] 43,734 forms distributed and 12,943 forms completed
[91] 1,313,496 forms distributed and 447,133 forms completed

**Table 9: showing the proportion of people who were successful in getting NHS dental appointment and their overall experience of NHS dental services**

| Area | Proportion of people successful in getting NHS dental appointment | | Overall experience of NHS dental services | | | | |
|---|---|---|---|---|---|---|---|
| | **Yes** | **No** | **% Very Good** | **% Fairly Good** | **% Neither good nor poor** | **% Fairly Poor** | **% Very Poor** |
| Cheshire, Wirral and Warrington | 96% | 3% | 56% | 33% | 6% | 3% | 2% |
| Merseyside | 94% | 5% | 53% | 33% | 8% | 3% | 3% |
| England | 93% | 5% | 48% | 36% | 9% | 4% | 3% |

The overall experience of NHS dental services in Cheshire, Wirral, and Warrington and Merseyside is also above the national average and overall positive experience of dental services is increasing throughout England (particularly over the past 5 years). This could be for a number of reasons:

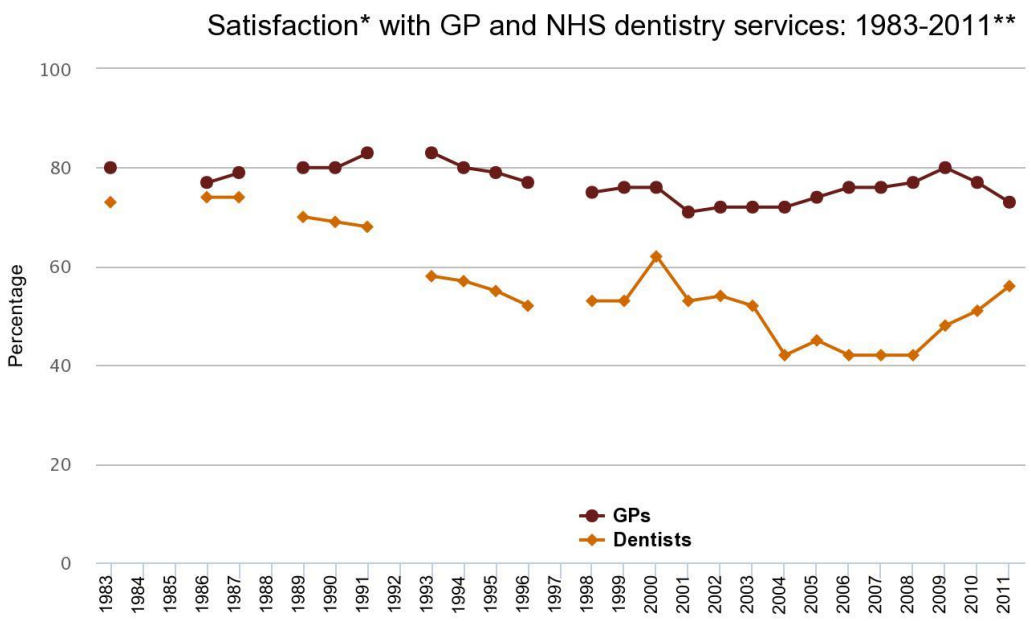
- There is an increase of the quality of service people receive. Evidence suggests[92] that there is an increase in perception of improvement across the NHS Health and Social Care system, including dental health services. N.B There is also a discussion about whether these perceptions are based on actual experience, media influence or political drivers, (see the BSA 29 report[93] for further discussion).
- Increased funding, targets set for (the former) PCTs to improve access (following the Steele report[94], 2009), a growth in the number of dentists carrying out NHS work and a new contract introduced in 2006, could have made a difference to the satisfaction of the public for dental health services, although as Figure 23 from the Kings Fund report shows (on the next page), the impact of these improvements were not seen until 2009 onwards.
- People may rate their overall experience of dental services as better in Cheshire and Merseyside than the rest of England as they are expressing their satisfaction with overall NHS services as a proxy for their satisfaction with dental health services.
- Alternatively, evidence has suggested[95] that lower SES is associated with less health consciousness (thinking about things to do to keep healthy) and stronger beliefs in the influence of chance on health. Over half of the population of Merseyside is within the lower

[92] http://www.cqc.org.uk/sites/default/files/documents/cqc_soc_report_2013_lores2.pdf
[93] http://www.bsa-29.natcen.ac.uk/read-the-report/health/satisfaction-with-the-nhs.aspx
[94] http://www.sigwales.org/wp-content/uploads/dh_101180.pdf
[95] Wardle, J. & Steptoe, A (2003) Socioeconomic differences in attitudes and beliefs about health lifestyles. Journal of Epidemiology & Community Health, 57, 440-443 http://jech.bmj.com/content/57/6/440.full

SES groups. Attitudes to health and health care can arise through variations in life opportunities, exposure to material hardship and ill health over the person's life. Therefore, people from lower SES groups are more likely to be satisfied with health services in general, and to rate experiences as more positive than higher SES groups who are more likely to look critically at the interaction with health professionals, and the outcome of consultation.

Figure 23 below was taken from the Kings Fund (2011) report on the BSA survey results. The figure compares the satisfaction with dental services against GP services and reports that while satisfaction with GPs is decreasing, satisfaction with dentistry services is increasing. This indicates that people are not using the overall experience with NHS services as a proxy for their satisfaction with dental care services. More information can be found here: http://www.kingsfund.org.uk/projects/bsa-survey-results-2011/satisfaction-nhs-services-results-1

**Figure 23**




* Very satisfied and quite satisfied **Question not asked in 1984, 1985, 1988, 1992, 1997
Source: http://www.kingsfund.org.uk/projects/bsa-survey-results-2011/satisfaction-nhs-services-results-1

# 9. Vulnerable groups and their dental experience

Aneurin Bevan launched the NHS on 5th July 1948 with one of the key principles being that it 'meets the needs of everyone'.

One of the founding principles of the NHS is to provide a comprehensive service to all, "irrespective of gender, race, disability, age, sexual orientation, religion, belief, gender reassignment, pregnancy and maternity or marital or civil partnership status... at the same time it has a wider social duty to promote equality through the service it provides and to pay particular attention to groups or sections of society where improvements in health and life expectancy are not keeping pace with the rest of the population"[96]. In the context of the dental health need of and services provided to the populations of Cheshire and Merseyside, this principle is a reminder that dental need is likely to be greater in areas of psychosocial and material deprivation and that services should do all they can to maximise the improvements for groups who are vulnerable for whatever reason. For the purpose of this dental health need assessment we have been able to look more closely at the needs of some vulnerable groups in our local community; these include black and minority ethnic groups, children and adults with learning disabilities, homeless people, older people and the prison population.

Woods et al (2005)[97] published "Vulnerable groups and access to healthcare; a critical interpretative review". This was a report for the National Co-ordinating Centre for NHS Service Delivery and Organisation Research and Development with the aim being to produce a logical, plausible and useful explanation, grounded in a comprehensive but not exhaustive body of evidence about access to health care. They reported that people in more deprived circumstances do show a readiness to access health care services, but are more likely to manage health as a series of minor and major crises, rather than treating diseases as requiring maintenance and prevention. This is likely to be linked to the normalisation of ill-health in more deprived communities as well as the range of resources people are required to mobilise in order to use services.

Recently, the Royal College of General Practitioners (2013) provided guidance on improving access for extremely vulnerable groups including gypsies and travellers, homeless people and sex workers which was a guide to commissioners in CCGs and Health and Wellbeing Boards. More information can be found here: http://www.nhsconfed.org/resources/2014/01/rcgp-guidance-on-improving-access-for-extremely-vulnerable-groups

[96] https://www.gov.uk/government/publications/the-nhs-constitution-for-england
[97] http://www.nets.nihr.ac.uk/__data/assets/pdf_file/0004/81292/ES-08-1210-025.pdf

## BME Groups

The NHS constitution, which applies to NHS dental services, states that a comprehensive service is available to all irrespective of race and that people have a right not to be discriminated against in the provision of NHS services on the grounds of race (NHS Constitution 2013)[98]. However; differences in access to services do exist.

Inequalities in oral and dental diseases and access to dental services exist and evidence suggests that people living in deprived areas experience more tooth decay, periodontal disease and oral cancer than those living in more affluent areas. There is also variation in some oral diseases between different ethnic groups which is, in the main, related to social inequalities. There is some evidence from surveys to suggest differences in the way certain black and minority ethnic groups utilise dental services compared to the general population.

This section of the dental health needs assessment briefly covers the main areas of concern reported in the literature.

- Dental disease experience
- Uptake of dental services
- Barriers to access
- Cost
- Language
- Mistrust of dentists
- Culture and religious influence
- Differences in reasons for attendance

One study qualitatively interviewed 51 people most likely to experience deprivation in Kensington, Chelsea and Westminster in 2009[99]. They found that the majority of the sample frequently visited the dentist (63.3% compared to 49% nationally) and that the group were less likely than the general population to have Band 3 treatment. However, interestingly, there was a significantly higher rate of extractions than in the general population (30.8% compared with 7.9%) and over 40% of the sample were not happy with previous treatment compared to 20% nationally.

There is limited research focused on access for black and minority ethnic groups to dental services in Merseyside and Cheshire, and most local evidence is small scale and descriptive. Figure 22 in the

[98] https://www.gov.uk/government/publications/the-nhs-constitution-for-england
[99] http://www.rbkc.gov.uk/pdf/dentistry%202009-10.pdf

previous section above presents national data indicating that those from minority ethnic groups are less successful at obtaining appointments.

## Children and Adults with Learning Disabilities

### Background

People with learning disabilities and autism are one of the most vulnerable groups in society, experiencing health inequalities, social exclusion and stigmatisation. Generally, children and adults with a learning disability often have greater and more complex needs than the general population and this is no different when accessing dental health services. They are also more likely than the general population to have needs that are not identified or treated[100].

For the purposes of this dental health need assessment, the definition of a learning disability is[101]:

- significantly reduced ability to understand new or complex information, to learn new skills
- reduced ability to cope independently which starts before adulthood with lasting effects on development.

Learning disabilities are usually detected from childhood and can result from a number of causes such as genetics, chromosomal abnormalities or environmental factors. Sometimes there is no known cause for learning disabilities.

In 2013, Liverpool Public Health Observatory was commissioned to conduct a health need assessment for Merseyside and North Cheshire for children and adults with learning disabilities. The full report is available here:

http://www.liv.ac.uk/media/livacuk/instituteofpsychology/publichealthobservatory/94,HNA,for,learning,disabilities,FULL,REPORT.pdf

For the health needs assessment, data was taken from the Learning Disability Observatory 'Improving Health and Lives' website and the 'Projecting Adult Needs and Service Information system' to estimate the expected numbers of people with learning disability and autism. Data on

[100] Weston C, Beck C, Marshall E, Holley K (2012) *A health needs assessment for adults with a learning disability in Lincolnshire. Full Report*. NHS Lincolnshire. http://www.research-lincs.org.uk/UI/Documents/LD%20HNA%20report%20v1.pdf

[101] Department of Health. Valuing People: A New Strategy for Learning Disability for the 21st Century. 2001.

people who are known to services, where available was taken from the NHS Information Centre (numbers reported by social services) GP QOF data and directly from local authorities.

## Dental health

Evidence of poor dental health amongst those with learning disabilities was presented in a review of the literature by Ouellette-Kuntz in 2005[102]. There is an increased incidence of gum disease with gingivitis being 1.2–1.9 times higher than in the general population. Periodontal disease, oral mucosal pathology, and moderate to severe malocclusion occurred at rates seven times higher in the population with learning disability compared to the general population. Ouellette-Kuntz also noted a survey of health problems among adults with learning disability, which found that dental disease was the most common health problem present in 86% of the subjects.

The review also found evidence that knowledge and practice of dental hygiene is often poor among individuals with learning disabilities. The need for improved dental services for persons with intellectual disabilities was highlighted, with one study finding that 25% of individuals with learning disabilities had unmet dental needs and another that they were more likely to be admitted to hospital for dental procedures than the general population. A Lincolnshire health needs assessment found that hospital admissions for those with learning disability are more likely to be for emergency and for digestive symptoms (including dental caries) and injury and poisoning than in the general population[103]. A study by Emerson et al found that lower rates of routine dental care amongst people with learning disabilities have been reported[104].

There is a shortage of literature on the dental health of people with learning disabilities who live in institutions. The Winterbourne View Serious Case Review provides evidence of poor quality care in Winterbourne View hospital, with some people reported as having poor dental health care[105] .

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[102] Ouellette-Kuntz H (2005) Understanding Health Disparities and Inequities Faced by Individuals with Intellectual Disabilities. *Journal of Applied Research in Intellectual Disabilities*. Volume 18, Issue 2. http://onlinelibrary.wiley.com/doi/10.1111/j.1468-3148.2005.00240.x/pdf

[103] Weston C, Beck C, Marshall E, Holley K (2012) *A health needs assessment for adults with a learning disability in Lincolnshire. Full Report.* NHS Lincolnshire. http://www.research-lincs.org.uk/UI/Documents/LD%20HNA%20report%20v1.pdf

[104] Emerson E, Baines S, Allerton L and Welch V (2012) *Health Inequalities & People with Learning Disabilities in the UK: 2012.* IHAL, Improving Health and Lives: Learning Disabilities Observatory. http://www.improvinghealthandlives.org.uk/publications/1165/Health_Inequalities_&_People_with_Learning_Disabilities_in_the_UK:_2012

[105] *Transforming care: A national response to Winterbourne View Hospital Department of Health Review: Final Report*, December 2012. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/127310/finalreport.pdf.pdf

The Liverpool Public Health Observatory learning disability health needs assessment (see previous page) estimated that in Merseyside and North Cheshire, there are 33,579 people with a learning disability aged 18 and over, with only 5,325 who are known to services (2011/12). The health needs assessment included data on hospital admissions amongst people with a learning disability in Merseyside and North Cheshire in 2012/13. Dental caries (tooth decay) accounted for 7% of total admissions and 16% of elective admissions. They were the main cause of an admission and the main cause of an elective admission among the learning disability population in Merseyside and North Cheshire.

Box 1 gives an example of good practice in London relating to dental health and learning disability. The Department of Health's '*Valuing People's oral health – a good practice guide for improving the oral health of disabled children and adult's* carries forward many of the key principles included in '*Valuing people'*, the Government's White Paper on learning disability[106]. The guidance recommends that oral health needs to be integrated into holistic health policy at all levels and should be included

**Box 1**

**Dental health and learning disability example of good practice: Westminster oral health project**

*'The Good Oral Health Project'* was commissioned by NHS Westminster and run in partnership with Westminster Learning Disability (WLDP) and the Central London Community Healthcare Community Dental Service (CDS). The aim of the project was to develop a better dental service in the Westminster area for adults with Learning Disabilities.

There were two phases to the project. The first phase was a baseline assessment of dental preventive, clinical, educational and service needs among the client group. The second phase involved a proactive approach to bring the most appropriate educational, preventive and treatment services to the clients.

- Of 411 people on the learning disability register: 318 were contacted, and 269 have been seen. Only 30 had their own 'high street' dentist
- Findings: 28% had dental decay, 11% had no teeth
- All service users seen were offered an oral health action plan.

As a result of this project the number of people receiving treatment within the Community Dental Service has almost doubled. Oral health awareness is much higher now in carers and support workers. The secret of their success was described as access to good data, a commitment from mainstream primary care services and commissioning and good partnership working between services.

*Taken from the 'Improving Health and Lives' website*
*http://www.improvinghealthandlives.org.uk/search.php?q=GOOD+PRACTICE&f=21*

[106] Department of Health (2007) Valuing People's oral health – a good practice guide for improving the oral health of disabled children and adults
http://www.sepho.org.uk/Download/Public/12757/1/valuing_peoples_oral_health%5B1%5D.pdf

in every individual care plan. It has been noted that effective integration of oral health into the mainstream health agenda is required to ensure oral health issues are not omitted or dealt with separately and seen as 'the dentist's' problem[107].

## Homeless People

People who are homeless find it more difficult to access primary care, preventive health services and continuing treatment regimes. As problems are left to become more serious, they are more likely to attend A&E or become hospital inpatients, using hospital services at a rate four to eight times greater than the general population[108].

The range of health problems faced by single homeless people have been widely documented [109]. They are likely to have complex health needs, including inter-related mental health problems, drug misuse problems, and alcohol dependence. Single homeless people are also at increased risk of injury, pneumonia, tuberculosis, dental problems and hypothermia [110].

A Northern Irish oral health needs assessment in 2007[111] found that homeless people had greater experience of tooth decay compared with adults in the general population. They had greater numbers of missing and decayed teeth, lower numbers of filled teeth and higher levels of gum disease. Increased experience of discomfort, toothache and difficulty with eating due to decayed teeth were also found amongst homeless people. The effect of being older and homeless for longer was reflected in the increased experience of missing teeth and gum disease.

The homeless population was significantly more dentally anxious than the general population, with 27% of the sample having test scores that were indicative of dental phobia, compared with 10% in the general population.

Nearly 50% of the sample stated that they felt at least 'occasionally' ashamed and/or felt self-conscious about the appearance of their teeth. This would suggest that for these homeless people, quality of life was affected by their oral health status and in particular the appearance of their teeth.

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[107] British Dental Journal news section: http://www.nature.com/bdj/journal/v204/n2/full/bdj.2008.24.html
[108] Homeless Link (online) *Health and Homelessness*. http://homeless.org.uk/health#.UtUY8ftta_g
[109] DfCLG, (2013) *Evaluating the Extent of Rough Sleeping. A new approach*. Department for Communities and Local Government.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6009/1713784.pdf
[110] Gavine A (2013) No Second Night Out. *Lancet UK Policy Matters*. May 17th.
http://ukpolicymatters.thelancet.com/no-second-night-out/
[111] Collins J, Freeman R (2007) Homeless in North and West Belfast: an oral health needs assessment. *Br Dent J.* May; 202(12):E31. http://www.ncbi.nlm.nih.gov/pubmed/17510662

A Scottish study in 2011 found that depression in Scottish homeless people is related to dental health status and oral-health-related factors[112].The authors concluded that improving dental health care and oral-health-promoting activities for this group would not only benefit the primary outcome, namely, oral health, but also have the potential to indirectly reduce the low self-esteem, hopelessness and depression acutely felt in people experiencing homelessness.

Liverpool Public Health Observatory recently undertook a health needs assessment of homelessness in Liverpool City Region[113]. This included a summary of the national and local Homeless Link audit findings. The national Homeless Link audit found that 8 in 10 (82%) single homeless people have one or more physical health conditions[114]. The top four reported physical health needs related to joints/muscular pain; chest pain/breathing; dental; and eyesight. Dental problems were reported by 29% of single homeless people. The audit was replicated in Liverpool, where almost one third (32%) reported dental problems[115]. *(Liverpool was the only Liverpool City Region local authority to have undertaken the Homeless Link audit).*

In the Liverpool homelessness audit, although 1 in 3 homeless clients had dental problems, access to dental care for homeless people in Liverpool was not as good as access to GPs, with 39% not registered at all. However, since 2006 when the new dental contract came into place, there has been no need to register with a dental practice. An individual can call for an appointment or have an emergency slot at any practice if they have availability. Liverpool have linked Brownlow Group GP practice with Ropewalks dental practice to ensure that any homeless population who need dental treatment can have one place that they can attend which is central to the city centre.

***The Faculty for Homeless and Inclusion Health, Charter of Healthcare Standards***

The Faculty for Homeless and Inclusion Health has published a Charter of Healthcare Standards for healthcare professionals, which they should expect to meet when coming into contact with individuals who are homeless[116]. This included a standard for dental care, which stated that the

[112] Coles, Emma; Chan, Karen; Collins, Jennifer; et al. (2011) Decayed and missing teeth and oral-health-related factors: Predicting depression in homeless people. *Journal of Psychosomatic Research* Volume: 71 Issue: 2 Pages: 108-112 http://www.ncbi.nlm.nih.gov/pubmed/21767692

[113] Liverpool Public Health Observatory (2014). *Homelessness in Liverpool City Region: A Health Needs Assessment* *http://www.liv.ac.uk/media/livacuk/instituteofpsychology/publichealthobservatory/homelessnessinlrc2.pdf*

[114] Homeless Link (2010) *The Health and Wellbeing of people who are homeless: Key Findings from the Health Needs Audit Pilot,* Homeless Link, London. http://homeless.org.uk/sites/default/files/Health%20Audit%20Findings_National%20evidence.pdf

[115] Homeless Link (2013) *Homelessness Health Needs Audit*. Liverpool City Council.

[116] Hewett N (ed) (2013) *Standards for commissioners and care providers*. Faculty for Homeless and Inclusion Health. http://www.pathway.org.uk/wp-content/uploads/2014/01/Standards-for-commissioners-providers-v2.0-INTERACTIVE.pdf

commissioners for healthcare for excluded groups must identify an individual to champion access to dental care (e.g. head of dental services) (p.34 of Charter).

The Northern Irish oral health needs assessment[117] mentioned on the previous page concluded that dental fears and anxieties about the appearance of their teeth are real concerns for this client group and must be incorporated into planning initiatives. In addition, their chaotic lifestyle means that a combination of treatment opportunities (such as mobile clinics with other health professionals in hostel localities) must be provided in conjunction with consultation and essential assistance from healthcare co-ordinators for homeless populations.

## Older People

As the population ages and the numbers of older people increase, the complexity of their dental health needs will also increase; there will be an associated rise in demand on the service and a change in the nature of care required. Older people's dental treatment can be complicated and preventing oral disease and maintaining dental health will contribute to keeping treatment simple and help older people to stay healthy in the general sense.

Successive national Adult Dental Health Surveys have shown each cohort retaining more teeth than their predecessors. Research evidence[118] often reports that for older people, oral or dental health is not seen as important as it should be, particularly to older people who may be frail and unwell. Worden (2006) surveyed 126 care homes in the north west of England to see which assessment tools were used to determine residents' health and noted that oral health was only infrequently mentioned.

Research studies report that residents in care homes have more unmet needs than older people living in the community, fewer teeth than their peers in the community and more poorly fitting dentures[119].

There is a growing evidence base of the challenges faced by older people in accessing dental health services. Use of professional dental services is low amongst older people, particularly the socioeconomically disadvantaged[120]. Challenges include:

- Impaired mobility in frail elderly people hinders access to care
- Older people living in rural areas may find poor public transport systems difficult to navigate

[117] Collins J, Freeman R (2007) Homeless in North and West Belfast: an oral health needs assessment. *Br Dent J.* May; 202(12):E31. http://www.ncbi.nlm.nih.gov/pubmed/17510662
[118] Worden (2006) http://www.tandfonline.com/doi/pdf/10.1080/13607860600637794
[119] Steele (1998) http://www.nature.com/bdj/journal/v189/n11/full/4800840a.html
[120] Petersen PE, Holst D. (1995) Utilization of dental health services. In: Cohen L, Gift HC, editors. Disease Prevention and Oral Health Promotion.

- There can be a financial hardship following retirement and the cost of dental work can be a worry
- A lack of dental tradition amongst older people can present a barrier to accessing services
- Older people may have negative attitudes towards oral health care

Another challenge identified as specific to older people was whether the locations of dental practices and care homes made it logistically possible to reasonably expect residents of care homes to be able to access dental services.

The World Health Organisation has published guidance called "Active Ageing"[121] in which it emphasizes how important oral health promotion is for older people in terms of the impact of oral diseases on general health and quality of life. The World Health Organisation Oral Health Programme encourages national oral health planners to strengthen the implementation of systematic oral health policies to improve quality of life for older people[122].

A National Improvement Strategy was published by the Scottish Government in May 2012 focusing on priority groups including frail older people, people with special care needs and homeless people[123].

**Dependent older people**

With the aim of evaluating existing oral health practices, staff training and the impact of poor oral health, Public Health England (PHE) carried out a North West Survey of dependant older people[124]. This was conducted as part of the dental public health intelligence programme in England and covered services supporting dependant elderly people in three settings:

*1. 'Care in your home' (CIYH) services provided by agencies, for care of adults over 65 years.*
These services may be provided by local authorities or in private contract with the client or their family. PHE note that a far greater number of older people receive support from CIYHs than live in residential care, and it is therefore possible that the impact of such services on oral health could be substantial both in the short and long term.

[121] World Health Organization. Active Ageing: a Policy Framework. Geneva, Switzerland: WHO; 2002.
[122] Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century – the approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiology 2003;31 (Suppl. 1): 3–24
[123] http://www.shancocksltd.co.uk/download.php?op=view_article&article_id=356
[124] Public Health England 2015. *Dental public health intelligence programme: North West oral health survey of services for dependant older people, 2012 to 2013*. http://www.nwph.net/dentalhealth/oldersurvey.aspx

*2. Adult residential and nursing homes, including hospices, in which adults over 65 years were resident.*

Older people in residential care are likely to be among the most dependent older people and have the highest needs for support with daily oral health care and assistance with identification of a need to seek treatment services. PHE point out that if oral hygiene or chronic or acute oral conditions are neglected then the impact can be great in terms of discomfort, exacerbation of pre-existing conditions, and ability to eat.

*3. Wards in hospitals providing in- patient care for adults over 65 years.*

It was noted that during a hospital stay, oral care may be of low priority when more challenging conditions are being treated, but if this is neglected in the long-term, the impact can be large with respect to infection and complications of other general conditions, discomfort and the ability to eat.

Of the 'care in your home' services, over a third (37%) did not undertake any formal assessment of clients' oral healthcare needs. More than half (54%) provided no staff training on assessing a client's need for assistance with oral hygiene (Table 10).

In contrast, a formal assessment of oral health needs was conducted in 90% of the residential homes in the survey (77% as part of a care plan). However there were still around two-thirds (32%) where there was no training provided for staff on assessing a client's need for assistance with oral hygiene (Table 10).

In 84% of hospitals, a formal assessment of the oral health needs of patients aged over 65 on admission was carried out (53% as part of a care plan). More than 1 in 4 (28%) hospitals provided no training for staff in assessing patients' needs for assistance with oral hygiene.

**Table 10**
**North West oral health survey, 2012 to 2013: Staff Training**

| | **'Are staff trained to assess need for assistance with oral hygiene, for clients/patients aged 65+?'** | | |
|---|---|---|---|
| **Services for dependent older people aged 65+** | **Yes** | **No** | **Number answering question** |
| **'Care in your home' services** | 46% | 54% | 169 |
| **Residential care** | 66% | 32% | 210 |
| **Hospital** | 72% | 28% | 94 |

Source: PHE http://www.nwph.net/dentalhealth/oldersurvey.aspx

The surveys identified gaps in policy, training and knowledge across all agencies, but especially in 'care in your home' services. There was a clear demand for training by professionals and provision of leaflets and guidance. In residential homes there was a request for better access to domiciliary dental treatment.

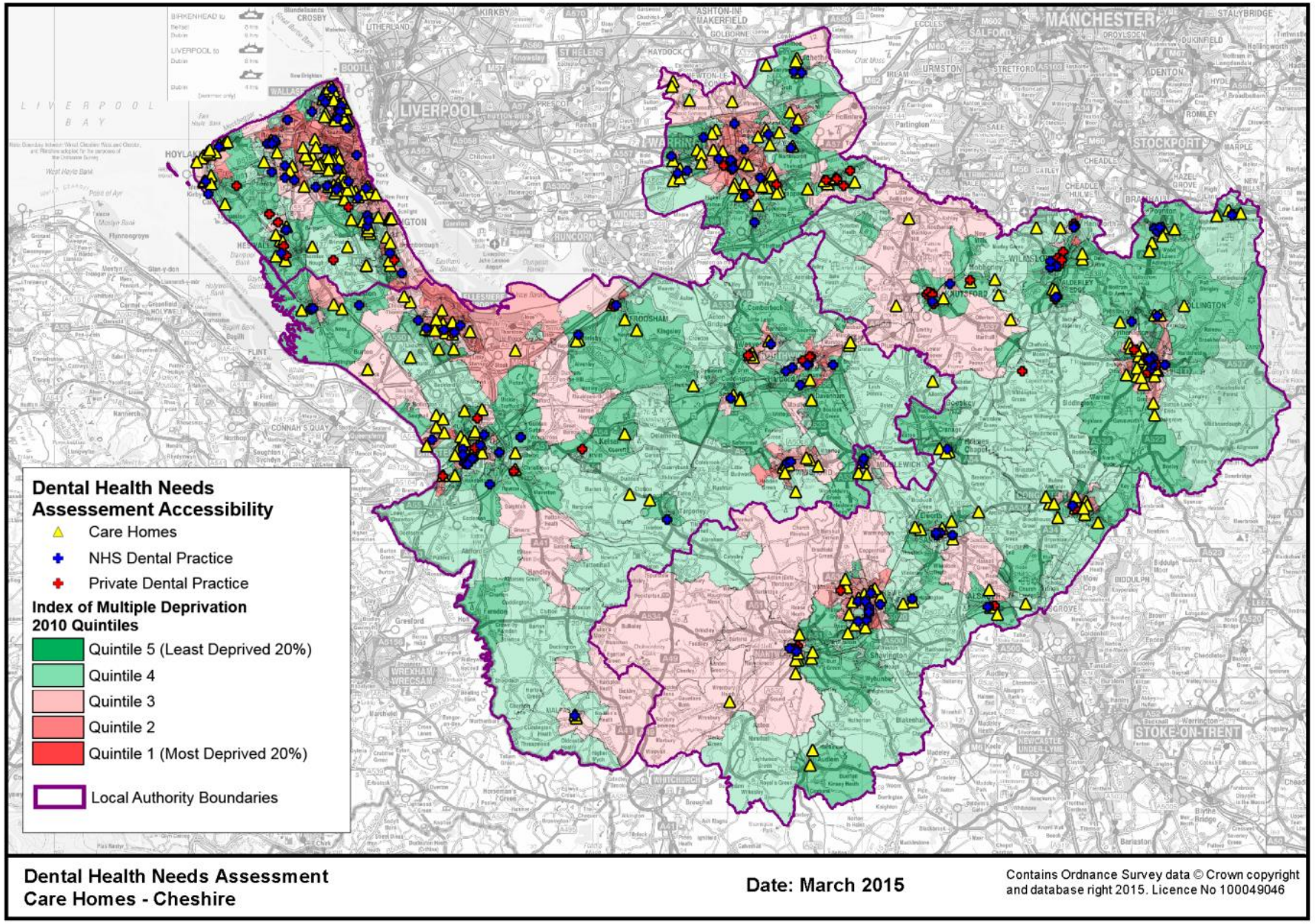
Full results of all 3 surveys are available online at
http://www.nwph.net/dentalhealth/oldersurvey.aspx

Using care home postcode data and dental practice postcode data we have mapped the geographical locations of care homes and dental practices to see whether the current provision is meeting the required need (Map 5). These maps also include the Index of Multiple Deprivation 2010 Quintiles to show where the locations of dental practices and care homes are, in terms of being in the most deprived or least deprived areas of the locality. As previously mentioned, we have also identified the NHS dental practices from the private dental practices.

- There is a concentration of care homes and NHS and private dental practices near cities and towns such as Warrington city centre, Birkenhead, Chester, Macclesfield, Wilmslow and Crewe.
- There are also areas of Cheshire with care homes which are not within reasonable distance to an NHS or private dental practice for example those to the south of Cheshire East

To access the care home maps for each individual local authority in Cheshire, please go to the Local Authority Summaries of the Dental Health Need Assessment at the front of the report.

**Map 5: Dental practice accessibility and care home locations across Cheshire with IMD levels identified.**



# The Prison Population

> *'The amount of untreated dental disease amongst all prisoners is approximately four times greater than the level found in the general population coming from similar social backgrounds.'*
>
> – Strategy for Modernising Dental Services for Prisoners in England 2003

The Ministry of Justice, National Offender Management Service North West Strategic Commissioning Plan for 2010-2013 published the numbers of prisoners in North West prisons and the percentage of the North West prison population in each prison. The national population of prisoners is 84,542 and the North West population is 11,068. Table 11 shows the numbers in each prison in the Cheshire and Merseyside region. More information on the most recent commissioning plan can be found here: http://www.justice.gov.uk/downloads/publications/noms/2010/north-west-regional-commissioning-plan.pdf

**Table 11 showing the population of prisoners in each prison in the Cheshire and Merseyside region**

| Prison | Number of prisoners | % of NW prison population |
|---|---|---|
| Altcourse | 1232 | 11.13 |
| Kennett | 324 | 2.93 |
| Liverpool | 1288 | 11.64 |
| Risley | 1062 | 9.60 |
| Styal | 435 | 3.93 |
| Thorn Cross | 246 | 2.22 |
| Chesh. & Mside total | 4587 | 38.45 |
| **NW TOTAL** | **11 068** | **100** |

**Source: http://www.liv.ac.uk/media/livacuk/instituteofpsychology/publichealthobservatory/87_Health,needs,assessment,of,adult,offenders_210612.pdf**

Providing dental services in a prison presents dentists with many unique challenges including;

- Concerns about threats to personal security
- Inability to move freely
- Delivering modern dental services in an environment which often require modernisation
- Compliance of prison specific clinical guidance

The challenges are illustrated in Figure 24:

**Figure 24: The Challenges in Providing Effective Dental Care to Prisoners[125]**


Many prisoners suffer from mental health issues or learning difficulties, at higher levels than the general population[126]. Dental issues may be exacerbated by complicated drug and alcohol addiction and dependence problems. The World Health Organisation[127] (2007) reported that "prisoners with substance misuse problems are likely to report toothache very soon after entering prison, as any opiate drugs they took suppressed the toothache".

It has been recognised that the prison population is generally from marginalised communities that have poor access to primary healthcare[128]. The combination of this with an increasingly ageing population (people over 60 are now the fastest growing age group in the prison system[129]), brings additional challenges to an already stretched prison healthcare system.

[125] Harvey S et al. Reforming prison dental services in England. A guide to good practice. London, Department of Health, 2005: http://www.ohrn.nhs.uk/conferences/past/D160905PCW.pdf and http://www.euro.who.int/__data/assets/pdf_file/0018/249201/Prisons-and-Health,-12-Dental-health-in-prisons.pdf?ua=1

[126] Department of Health (2003) Strategy for Modernising Dental Services for Prisoners in England

[127] WHO (2007) Health in Prisons; A WHO guide to the essentials in prison health. Eds. Moller, L., Stover, H et al.

[128] Heath, L. & Iqbal, Z (2007) Measuring the health status of prisoners" Prison Service Journal, Issue 174, p42

[129] National Association of Prison Dentistry UK (2010) dentistry in prisons: a guide to working within the prison environment" Stephen Hancocks Ltd, London.

In 2008 a research study explored the oral health status of male prisoners in the UK[130]. A total of 122 prisoners (mean age 36.4 yrs, with 43% of the sample being of white origin and 37% of black origin) were interviewed and then had an oral examination. A large proportion of the men reported tobacco use (80%), alcohol use (83%), drug dependency (84%) and having a high sugar diet (57%). Overall, oral health was poor. There were higher levels of decay than the general population and lower levels of missing and filled teeth. They also found a higher level of dental anxiety and a higher frequency of use of emergency dental services. Similarly, a study of prisoners in the north west of England showed that decayed, missing or filled teeth scores of people entering prison are around twice as high as those of the general population[131].

A report funded by the Department of Health was published in 2005 called "Reforming prison dental services in England. A guide to good practice" and outlines the challenges and some solutions to dental care access in prisons. More information can be found here: http://www.ohrn.nhs.uk/conferences/past/D160905PCW.pdf

It was previously suggested that one weekly clinical session for every 200 people in prison is an acceptable level of care[132]; however, it is unlikely this will still be relevant because of the increase in the prison population. The transient nature of the prison population as a result of short sentences or being relocated to other facilities also means courses of treatment are often disrupted or left incomplete[133].

Access to dental care services for those in prison was reported in a 2014 Public Health England survey[134]. The average waiting time for an examination was found to be less than six weeks in 55% of cases, with 35% having a wait of six to 12 weeks. Only 3% of dentists reported a waiting time for examinations of longer than 18 weeks. For treatment, over a third of patients (38%) are seen within four weeks, with 44% of people in prison waiting longer than four weeks and 12% waiting in excess of ten weeks

People in category B and C prisons were likely to wait six to twelve weeks for an examination, but three to four weeks for a follow up treatment appointment. People in category A and D prisons were

[130] Heidari et al. (2008) an investigation into the oral health status of male prisoners in the UK. Journal of Disability and Oral Health http://www.shancocksltd.co.uk/download.php?op=view_article&article_id=260

[131] Jones CM, Woods K, Neville J, Whittle JG. (2005). Dental health of prisoners in the North West England in 2000: Literature review and dental health survey results. Community Dental Health 22: 113-17

[132] Gerrish and Forsyth (1995). Prison Dental Services in England and Wales. Department of Health Publications.

[133] National Association for Prison Dentistry United Kingdom (NAPDUK) (2013) 'The status of prison dentistry in England and Wales'.

[134] PHE Survey of prison dental services in England and Wales (2014) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/328177/A_survey_of_prison_dental_services_in_England_and_Wales_2014.pdf

more likely have an examination appointment within six weeks, and the follow-up treatment wait was five to six weeks.

The British Dental Association (2012) published a report which focused on the oral health needs of prisoners, and also proposed solutions to some of the issues presented above. Please see link for more information. http://www.bda.org/Images/oral_health_in_prisons_eng.pdf

A recent oral health needs assessment of vulnerable groups in London gives more details on the particular oral health problems and barriers to care that are faced by older adults, adults with learning disabilities, adults with serious mental illness, adults with drugs and alcohol abuse and homeless people[135]. Examples of interventions and resources available for improving the oral health of these groups of people are outlined. Recommended actions included:

- ensure all strategies and health plans for each vulnerable group have an oral health input
- develop oral health risk assessments and oral health care plans for each vulnerable group
- train dental staff in how to meet the particular needs of each vulnerable group
- improve access to services.

[135] Public Health England (2014) *An oral health needs assessment of vulnerable groups in Camden and Islington* https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/401579/PHE_standard_publication_Vulnerable_Needs_Ass4.pdf

# 10. Fluoridation in Cheshire

Fluoride occurs naturally in most water supplies, though the actual amount present varies depending on the source. Some water supplies can contain fluoride if they originate from sources underground where there are rocks that contain fluoride- rich minerals.

Water supplies in the North West are naturally low in fluoride – and normally contain less than 0.2mg fluoride per litre.

Some water supplies have fluoride added to raise the concentration to 1.0mg per litre. This figure includes the fluoride that was already there naturally.

**Who decides where fluoridation takes place and what is the process?**

Under the Water Act 2003, a health body can direct a water company to fluoridate a water supply in an area if it is technically feasible, but they must consult the public first before introducing any new schemes. The water company acts as a contractor and cannot refuse to fluoridate the supply if directed to do so.

On April 1 2013, the Secretary of State for Health became responsible for existing water fluoridation schemes via Public Health England, and Local Authorities became responsible for proposing and carrying out consultation on new schemes and extensions to existing schemes.

**Why is fluoride added to water?**

Fluoride is added to the water supply at the request of the appropriate body because a small amount of fluoride in the diet strengthens the enamel on teeth, especially in children. This prevents tooth decay.

The recent Public Health England report, 'Water Fluoridation Health Monitoring for England (2014)', compared a range of dental and non-dental health indicators in fluoridated and non-fluoridated areas in England and found that:

- Children in fluoridated areas of England generally had fewer teeth affected by decay than those in non-fluoridated areas, and by the age of five or twelve, children in fluoridated areas where less likely to have had any tooth decay at all than those in non-fluoridated areas.
- 45% fewer children aged 1 to 4 years in fluoridated areas were admitted to hospital for dental caries – primarily to have decayed teeth extracted under a general anaesthetic – than in non-fluoridated areas.

## Where does it happen now?

Agreements are in place between Public Health England and United Utilities which require artificial fluoridation at three of our water treatment works. Two of these works are in West Cumbria, the third is at Hurleston in Cheshire. The agreement for fluoridating these supplies date back to the early 1970s.

The Hurleston water treatment works supplies water to Crewe, Alsager and Nantwich.

## Who pays for fluoridation?

East Cheshire Local Authority meets all the costs associated with fluoridation of the water supply in Cheshire. This includes the cost of the chemical, maintenance of the equipment, monitoring and any additional sundry costs. The fluoridation of water does not have any impact on customer's bills in the region.

## How is fluoridation carried out?

There are two chemicals approved for the artificial fluoridation of water: these are disodium hexafluorosilicate (Na2SiF6) and hexafluorosilicic acid (H2SiF6). United Utilities uses hexafluorosilicic acid for its scheme in Cheshire. All products and processes that come into contact with drinking water must be approved. A list of all approved products and processes can be found on the 'Drinking Water Inspectorate (DWI) website'. The chemicals are generally added at the water treatment works. Strict guidelines, laid down by the Government, detailing how water should be fluoridated artificially, have to be followed.

The maximum concentration is continually monitored as the water leaves the water treatment works. The maximum permitted concentration of fluoride in drinking water is 1.5mg per litre (1.5 parts per million of fluoride)

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The information contained in this "Fluoridation in Cheshire" section has been developed by the Public Health England Water Fluoridation Lead John Morris and his team (Andrew Wood).

Questions about existing fluoridation schemes should be addressed to Public Health England. Any questions on possible future fluoridation schemes in Cheshire and Merseyside should be addressed to the Local Authorities

Liverpool Public Health Observatory

Liverpool Public Health Observatory (LPHO) is commissioned by the Merseyside Directors of Public Health, through the Cheshire and Merseyside Public Health Intelligence Network, to provide public health research and intelligence for the local authorities of Halton, Knowsley, Liverpool, St. Helens, Sefton and Wirral.

LPHO is situated within the University of Liverpool's Division of Public Health and Policy

To contact LPHO, e-mail obs@liv.ac.uk or telephone 0151 794 5570.


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