

# North West ChiMatters

## Child and Maternal Health Intelligence Briefing



### Self-harm among children in the North West: accident and emergency attendances 2007– 2009 and emergency hospital admissions 2007/08–2009/10

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## Acknowledgements

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## The North West ChiMatters series

*Self-harm among children in the North West: accident and emergency attendances 2007–2009 and emergency hospital admissions 2007/08–2009/10* is the second in a series of reports highlighting intelligence on key public health issues for maternity, children and young people in the North West. The first report was:

Children with long-term conditions in the North West: Emergency hospital admissions for asthma, diabetes and epilepsy 2008/09 (March 2011).  
Available at: [www.nwpho.org.uk/childLTCs](http://www.nwpho.org.uk/childLTCs)

## Key Messages

- Self-harm is a major public health issue, particularly among children and young people. It is difficult to measure the extent of the issue in the population, but evidence suggests that self-harm affects at least one in 15 young people.
- Incidents of self-harm can be measured through accident and emergency attendances and emergency hospital admissions, although these represent only a small proportion of all acts of self-harm.
- There are around 1,100 attendances a year at A&E departments in Cumbria, Lancashire and Merseyside by children and young people as a result of self-harm. A&E attendances are highest between 10 p.m. and 1 a.m., between Saturday and Monday and in the first quarter of the year.
- There are around 2,900 emergency hospital admissions of North West children and young people for self-harm on average per year, resulting in the North West having the second highest admission rate for this in England. Within the North West, rates of emergency hospital admissions for self-harm vary substantially. The rate in Halton is over three times higher than the rate in Trafford. Fifteen out of twenty-three local authorities have rates that are significantly higher than the England rate.
- There is a clear gender difference in emergency hospital admissions for self-harm, with the rate for young females being 3.7 times higher than the rate for young males.
- Emergency hospital admissions for self-harm increase as deprivation increases, and children living in the most deprived areas are 2.3 times more likely than children living in the least deprived areas to be admitted.
- Further resources on self-harm are available through the Child and Maternal Health Observatory website at [www.chimat.org.uk](http://www.chimat.org.uk).

## 1. Introduction

This report presents information on accident and emergency attendances and emergency hospital admissions for self-harm among the population of children and young people aged 0-18 years in the North West of England. It has been produced as part of the Child and Maternal Health Observatory's (ChiMat) programme of work in the North West.

Self-harm is a major public health issue, particularly among children and young people. While it can occur at any age, rates of self-harm are much higher among young people than people of other ages, with the average age of onset being around 12 years.<sup>1,2</sup> Self-harm affects at least one in 15 young people, and is one of the top five causes of acute hospital admission for people of all ages in the UK.<sup>3</sup>

Self-harm can cause considerable difficulties in children and young people's day-to-day lives, affecting their relationships with people around them. For organisations and services in contact with children and young people, self-harm poses considerable challenges.<sup>2</sup>

There is evidence for an increase in the prevalence of self-harm across England<sup>4</sup> and a rise in the contributory factors such as lower levels of wellbeing. Indeed, self-harm is an indicator of mental health and the wellbeing of young people in general. A UNICEF study in 2007 comparing child wellbeing in the developed countries of the world ranked the UK lowest on subjective wellbeing.<sup>5</sup>

A "substantial amount of NHS resources"<sup>1</sup> are used for the assessment and treatment of self-harm. Direct costs of self-harm include those associated with primary, secondary and social care. Indirect costs may include work attendance and productivity (or for younger people, education), long-term disability and premature mortality. Self-harm among young people may often signify the presence of other problems, such as substance misuse, poor school attendance, low academic achievement and unprotected sex.<sup>1</sup> All of these present indirect costs to society. There are other significant consequences of self-harm, including an increased risk of suicide,<sup>3,6</sup> repetition and long-lasting ill health, permanent damage or disability.

## 2. Definition

Definitions of self-harm vary. The National Institute for Health and Clinical Excellence (NICE) define self-harm in clinical guidance as "self-poisoning or self-injury, irrespective of the apparent purpose of the act",<sup>1</sup> including poisoning, asphyxiation, cutting, burning and other self-inflicted injuries. This is acknowledged to be a shorter and broader definition than that adopted by the World Health Organization ("an act with non-fatal outcome, in which an individual deliberately initiates a non-habitual behaviour that, without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognised therapeutic dosage, and which is aimed at realising changes which the subject desired via the actual or expected physical consequences").<sup>7</sup>

The Royal College of Psychiatrists state that at a wider level, self-harm "may also take less obvious forms, including unnecessary risks, staying in an abusive relationship, developing an eating problem (such as anorexia or bulimia), being addicted to alcohol or drugs, or someone simply not looking after their own emotional or physical needs". However, these forms of self-harm often fall outside the scope of published research, intelligence and other evidence specifically on self-harm.

Self-harm is also sometimes referred to as 'intentional self-harm' or 'deliberate self-harm', but NICE use only the term 'self-harm' because to do otherwise would suggest that there may be accidental and non-intentional forms of self-harm, and because "for some people ... acts of self-harm occur seemingly out of the person's control or even awareness, during 'trance-like', or dissociative, states".<sup>1</sup>

### 3. Prevalence and risk factors

It is difficult to quantify the number or proportion of children and young people who are affected by self-harm. Published prevalence figures are likely to underestimate the true degree of self-harm among children and young people, because it is often a hidden and secretive behaviour and young people are reluctant to admit to or talk about it.<sup>2,3</sup> Most acts of self-harm in young people never come to the attention of care services and those close to the child or young person, such as family, are also likely to be unaware of incidents of self-harm.<sup>8</sup> In addition, published research on self-harm uses different definitions and methodologies, so figures may be confusing.<sup>2</sup>

Incidents of self-harm that result in accident and emergency attendance or hospital admission can be measured through accident and emergency attendance data collated by the Trauma and Injury Intelligence Group<sup>i</sup> (TIIG) in the North West and Hospital Episode Statistics. Analysis of these attendances and admissions, such as those presented within this report, provide useful insight into self-harm among the young population. However, it is clear from anecdotal evidence that these are only a small proportion of all acts of self-harm. Young people who attend accident and emergency services as a result of self-harm are predominantly cases of self-poisoning, but these cases are only a small sub-population of self-harm.<sup>2</sup> And certainly, not all injuries lead to hospitalisation, while some might also be explained by other 'legitimate' activities such as sports.<sup>3</sup>

However, having considered all available research data together, the National Inquiry into Self-harm among Young People concluded that between one in 12 and one in 15 young people self-harm.<sup>2</sup>

Although it is difficult to accurately measure the true extent of self-harm among children and young people, among the research conducted on the issue there is evidence of self-harm being more prevalent in certain groups. For example, self-harm has appeared to be more prevalent in older groups (13-15 year-olds) than younger groups (11-12 year-olds); in females compared with males (ratios suggested vary between four to one and 6.5 to one); in Asian females compared with their non-Asian counterparts; among young people in custodial or other institutional/residential settings and in looked after children; among lesbian, gay, bisexual and transgender young people and in young people with learning disabilities.<sup>1,3</sup>

*"There is no such thing as a typical young person who self harms."*  
Truth Hurts. Report of the National Inquiry into Self-harm among Young People.

Self-harm and suicide are often considered separate issues, as self-harm is "usually intended to *harm*: not to kill, or even to inflict serious and/or permanent damage",<sup>2</sup> and so in most cases self-harm does not lead to suicide. However, self-harm is a known risk factor for suicidal behaviour, and self-harm and suicide share some common risk factors including personality disorders, eating disorders, depression and anxiety, aggressive personalities, misuse of alcohol or drugs, childhood emotional, physical or sexual abuse and living in deprived areas. Other important risk factors for self-harm specifically include experiences of greater negative emotion within daily lives, low self-esteem, poor problem solving abilities, difficulty expressing emotion, separation of parents and lower levels of education.<sup>6</sup>

Further resources on self-harm are available through the ChiMat website at [www.chimat.org.uk](http://www.chimat.org.uk). The Mental Health and Psychological Well-being Knowledge Hub may be of particular interest.

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<sup>i</sup> [www.tiig.info](http://www.tiig.info)

## 4. Accident and Emergency attendances

Data on attendances at accident and emergency departments by children and young people aged 0-18 years as a result of self-harm are available for hospitals in Cumbria, Lancashire and Merseyside<sup>ii</sup> between January 2007 and December 2009 (Table 1). The age and gender of the individual are recorded, as well as whether the attendance at A&E resulted in a full admission. Although information on residence is recorded it would not be appropriate to produce local attendance rates for comparison, as information is not complete for all North West residents.

Of the attendances at A&E departments by 0-18 year olds for which data were available for 2007 to 2009, 30.9% were by males and 69.1% were by females.

There is some evidence of differences of patterns of attendance at A&E. The proportion of all attendances that occur in each hour between 10 p.m. and 1 a.m. are significantly higher than those that occur in each hour between 2 a.m. and 10 p.m.; attendances on Saturdays, Sundays and Mondays are significantly higher than on Wednesdays, Thursdays and Fridays; and there are more attendances between January and March than in any other quarter of the year.

Following attendance at A&E, 41.4% of attendees were admitted to hospital, 27.5% were discharged, 22.3% given a follow-up appointment and 8.8% had another outcome.

**Table 1: Accident and Emergency attendances for self-harm (0-18 years), 2007-09 (average number per year).**

<b>Hospital</b>	<b>Average number per year</b>
Alder Hey Children's Hospital	29
University Hospital Aintree	149
Arrowe Park Hospital	138
Burnley General Hospital	58
Blackpool Victoria Hospital	55
Chorley and South Ribble Hospital	28
Cumberland Infirmary	135
Furness General Hospital	44
Ormskirk and District General Hospital	40
Royal Preston Hospital	47
Royal Blackburn Hospital	62
Royal Lancaster Infirmary	32
Royal Liverpool University Hospital	37
Southport and Formby District General Hospital	62
West Cumberland Hospital	107
Westmorland General Hospital	19
Whiston Hospital	68
<b>Total</b>	<b>1,110</b>

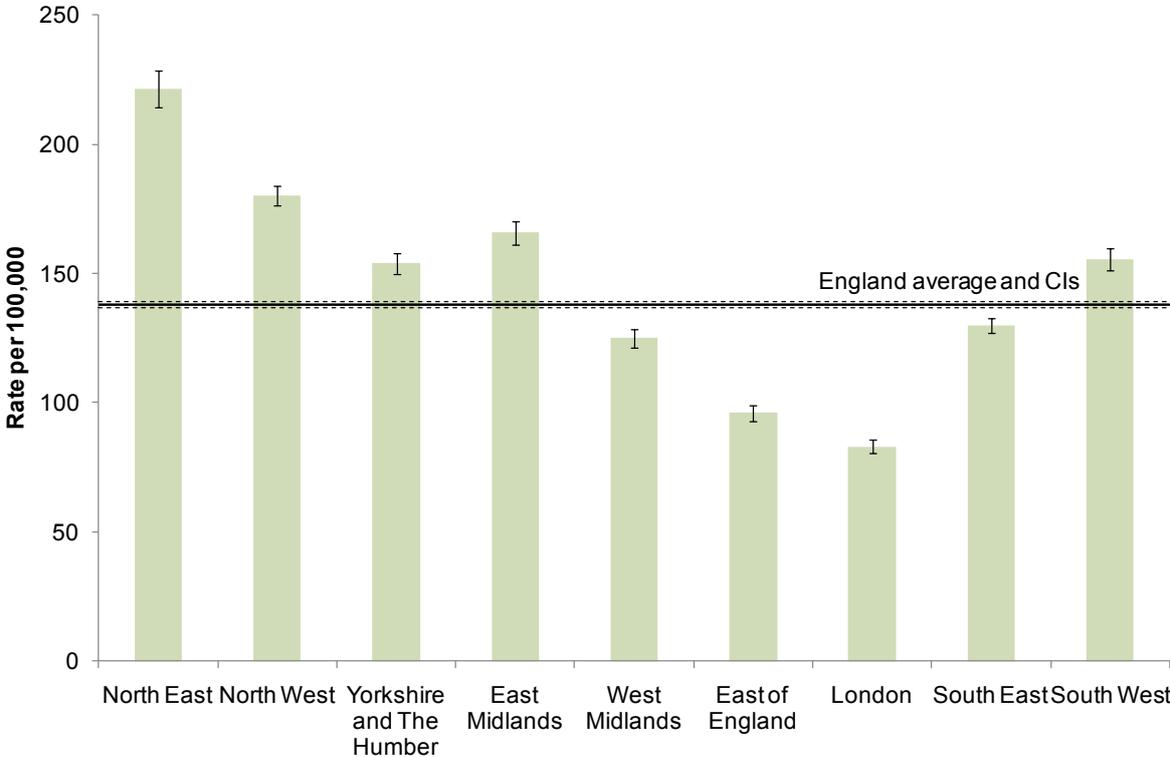
Source: Trauma and Injury Intelligence Group. Centre for Public Health, Liverpool John Moores University: Liverpool.

<sup>ii</sup> Data are only available for two emergency departments in Cheshire ; and data for Greater Manchester are only available for 2009. Therefore, these areas have been excluded from the table. For information on emergency department attendances for self-harm in Greater Manchester please see [www.tiig.info/writedir/f7ddGreater%20Manchester%20self%20harm%20report%20March%202011.pdf](http://www.tiig.info/writedir/f7ddGreater%20Manchester%20self%20harm%20report%20March%202011.pdf)

## 5. Emergency hospital admissions

Between 2007/08 and 2009/10, there were 2,854 emergency hospital admissions of North West resident children for self-harm per year on average, equating to an emergency hospital admission rate of 179.9 per 100,000 population aged 0-18. This is the second highest regional rate in England and is significantly above the England average of 137.8 per 100,000 (Figure 1).

**Figure 1: Rate of emergency hospital admissions for self-harm (0-18 years) per 100,000 population. English regions 2007/08–2009/10.**



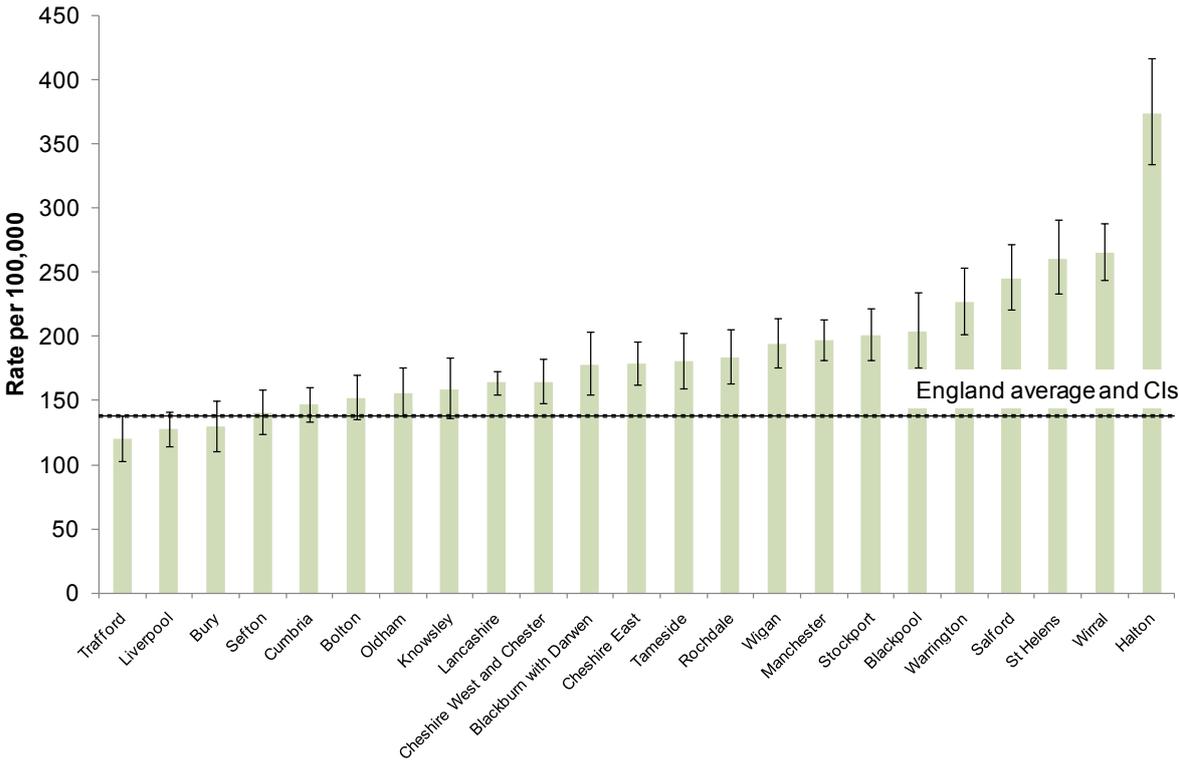
Source: NWPHO from Hospital Episode Statistics and Office for National Statistics mid-year population estimates.

## 5.1 Rates by local area

### 5.1.1 Rates by local authority

Within the North West, the rate of child emergency hospital admissions for self-harm varies from 119.9 per 100,000 population in Trafford to 373.7 per 100,000 in Halton, a difference of over three-fold. Fifteen out of twenty-three local authority areas had admission rates significantly higher than the England average (Lancashire to Halton, Figure 2). As well as being above the England average, the rate for Halton is significantly higher than all other North West local authority areas.

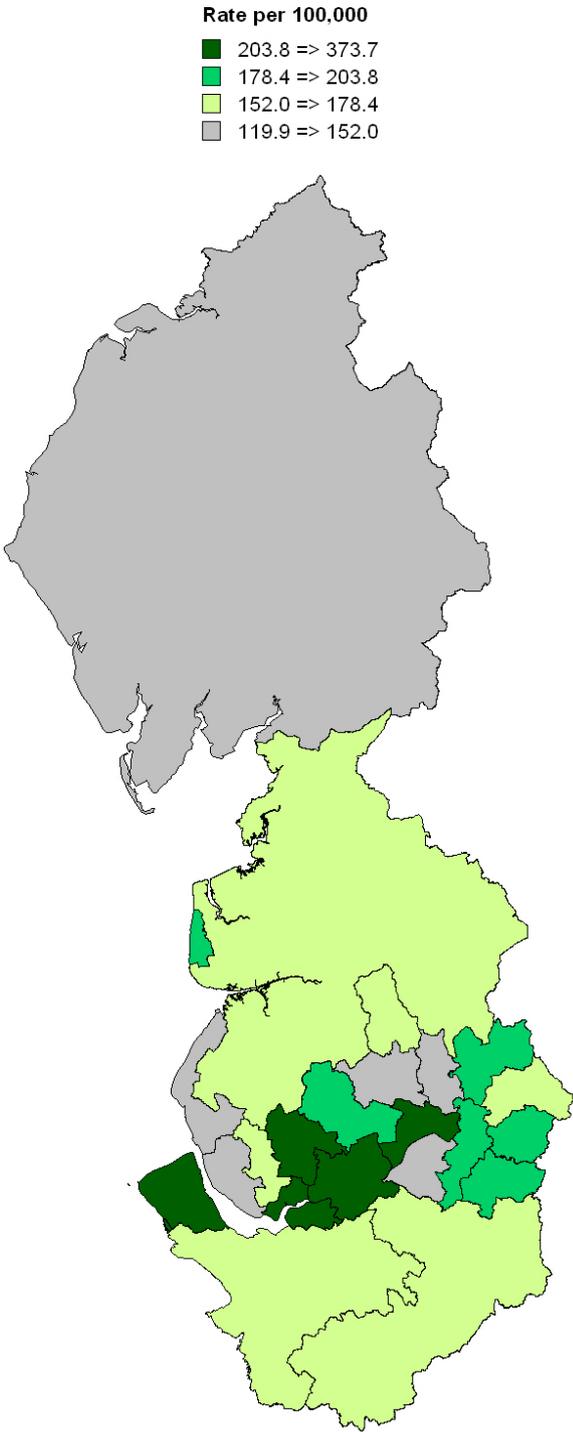
**Figure 2: Rate of emergency hospital admissions for self-harm (0-18 years) per 100,000 population. North West local authorities, 2007/08–2009/10.**



Source: NWPHO from Hospital Episode Statistics and Office for National Statistics mid-year population estimates.

**Map 1: Rate of emergency hospital admission for self-harm (0-18 years) per 100,000 population. North West local authorities, 2007/08–2009/10.**

Local authority	Rate
Blackburn with Darwen	178.0
Blackpool	203.8
Bolton	152.0
Bury	129.4
Cheshire East	178.4
Cheshire West & Chester	164.7
Cumbria	146.9
Halton	373.7
Knowsley	158.6
Lancashire	163.9
Liverpool	127.6
Manchester	196.6
Oldham	156.1
Rochdale	183.6
Salford	245.4
Sefton	140.7
St Helens	260.7
Stockport	201.2
Tameside	180.2
Trafford	119.9
Warrington	226.7
Wigan	194.2
Wirral	265.5
<b>North West</b>	<b>179.9</b>
<b>England</b>	<b>137.8</b>



Source: NWPHO from Hospital Episode Statistics and Office for National Statistics mid-year population estimates. Crown copyright. All rights reserved. NWPHO/DH (licence 100020290). June 2011.  
 Note: Colour coding in the table represents the significance (at a 95% confidence level) of the local rate compared with the England average. Red = significantly worse; yellow = no significant difference. No local authority rates are significantly better.

### 5.1.2 Rates by primary care trust

Emergency hospital admission rates for self-harm can also be calculated at primary care trust (PCT) level, which allows comparison with similar PCTs. Some PCTs have emergency hospital admission rates for self-harm that are significantly different from their most similar PCT<sup>iii</sup> (Figure 3). Identifying and sharing ‘what works’ may help improve admission rates. Those areas with a significantly higher rate than their most similar PCT are:

- Halton and St Helens in comparison to Ashton, Leigh and Wigan (307.7 and 194.2 per 100,000 population respectively);
- Wirral in comparison to Sefton (265.5 and 140.7 per 100,000 population respectively);
- Warrington in comparison to Central Lancashire (226.7 and 169.0 per 100,000 population respectively);
- Stockport in comparison to Trafford (201.2 and 119.9 per 100,000 population respectively); and
- Tameside and Glossop in comparison to Bury (177.8 and 129.4 per 100,000 population respectively).

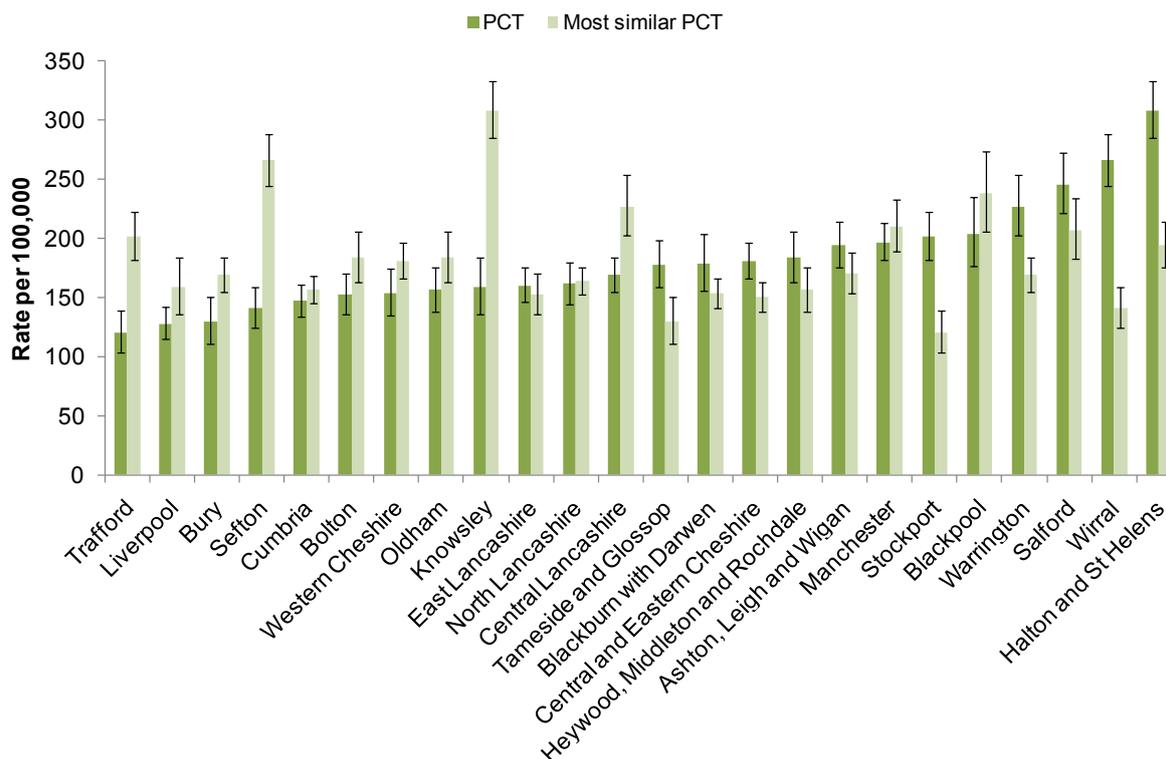
Areas that have significantly lower rates than their most similar PCT are:

- Trafford in comparison to Stockport (119.9 and 201.2 per 100,000 population respectively);
- Bury in comparison to Central Lancashire (129.4 and 169.0 per 100,000 population respectively);
- Sefton in comparison to Wirral (140.7 and 265.5 per 100,000 population respectively);
- Knowsley in comparison to Halton and St Helens (158.6 and 307.7 per 100,000 population respectively); and
- Central Lancashire in comparison to Warrington (169.0 and 226.7 per 100,000 population respectively).

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<sup>iii</sup> Most similar PCT based on National Statistics 2001 Area Classification of Health Areas. For information on the classification see: [www.statistics.gov.uk/about/methodology\\_by\\_theme/area\\_classification/ha/default.asp](http://www.statistics.gov.uk/about/methodology_by_theme/area_classification/ha/default.asp)

**Figure 3: Rate of emergency hospital admission for self-harm (0-18 years) per 100,000 population. North West PCTs, 2007/08–2009/10.**



Source: NWPHO from Hospital Episode Statistics and Office for National Statistics mid-year population estimates.

**Table 2: Rate of emergency hospital admission for self-harm (0-18 years) per 100,000 population. North West PCTs, 2007/08–2009/10.**

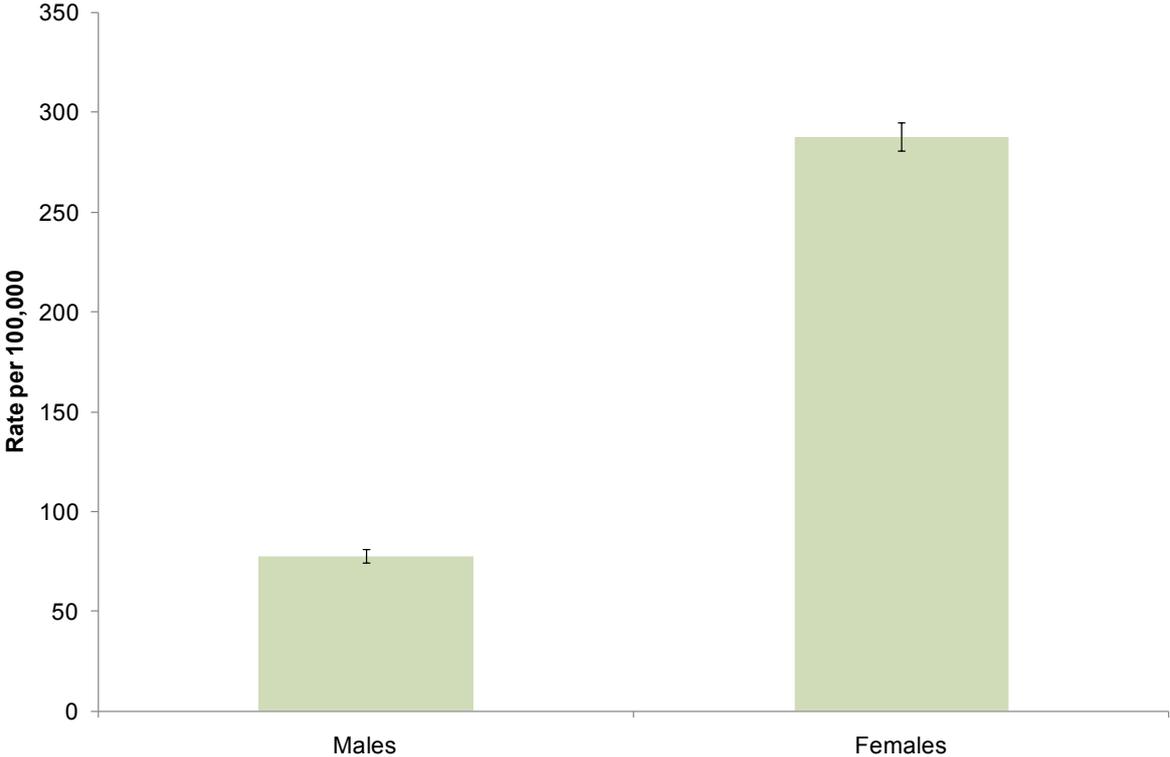
PCT	Rate	PCT	Rate
Ashton, Leigh and Wigan	194.2	Liverpool	127.6
Blackburn with Darwen	178.0	Manchester	196.6
Blackpool	203.8	North Lancashire	161.4
Bolton	152.0	Oldham	156.1
Bury	129.4	Salford	245.4
Central and Eastern Cheshire	181.0	Sefton	140.7
Central Lancashire	169.0	Stockport	201.2
Cumbria	146.9	Tameside and Glossop	177.8
East Lancashire	160.2	Trafford	119.9
Halton and St Helens	307.7	Warrington	226.7
Heywood, Middleton and Rochdale	183.6	Western Cheshire	153.5
Knowsley	158.6	Wirral	265.5

Source: NWPHO from Hospital Episode Statistics and Office for National Statistics mid-year population estimates.

### 5.2 Rates by gender

Between 2007/08 and 2009/10, the child emergency admission rate for self-harm in the North West was 3.7 times higher for females than it was for males (287.8 per 100,000 compared with 77.7) (Figure 4). This concurs with other evidence that around four times as many girls as boys have direct experience of self-harm.<sup>9</sup> However, the National Inquiry into Self-harm among Young People advises caution in viewing self-harm as a greater problem for young women “not least because young males may well engage in different forms of self-harm, such as hitting and punching themselves or breaking bones, which may be easier to hide or to be explained away as the result of an attack, an accident or a fight”.<sup>2</sup>

**Figure 4: Rate of emergency hospital admissions for self-harm (0-18 years) per 100,000 population, by gender. North West, 2007/08–2008/09.**

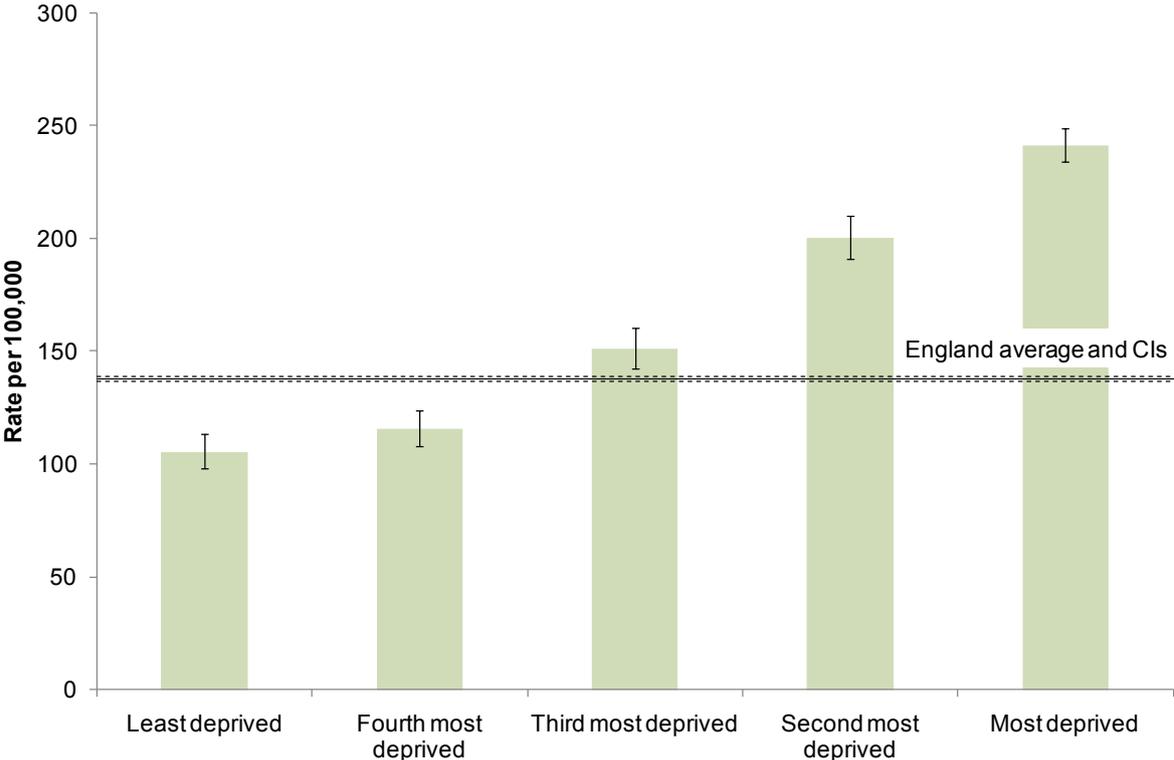


Source: NWPHO from Hospital Episode Statistics and Office for National Statistics mid-year population estimates.

### 5.3 Rates by deprivation

Within the North West, the rate of emergency hospital admissions for self-harm increases as deprivation increases (Figure 5). Children living in the most deprived national fifth of areas within the North West are 2.3 times more likely than children living in the least deprived fifth of areas to be admitted to hospital for self-harm (241.3 per 100,000 population compared with 105.5). Children living in the most deprived three-fifths of areas are significantly more likely than the national average to be admitted to hospital for self-harm, while children living in the least deprived two-fifths of areas are significantly less likely than the national average to be admitted.

**Figure 5: Rate of emergency hospital admissions for self-harm (0-18 years) per 100,000 population, by Index of Multiple Deprivation 2010 quintile. North West, 2007/08–2008/09.**



Source: NWPHO from Hospital Episode Statistics, Office for National Statistics mid-year population estimates and Index of Multiple Deprivation 2010, Communities and Local Government.

## 6. Definitions

As part of the national commissioning dataset, all emergency department attendances are categorised into a patient group, which includes deliberate self-harm as well as road traffic accident, assault, sports injury, firework injury, other accident, brought in dead and other than above. Patients are usually grouped into a patient group upon arrival at the emergency department by reception staff or triage nurses. For further information, see [www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=289](http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=289)

The emergency hospital admission information in this report is derived from Hospital Episode Statistics (HES) and covers children aged 0-18 years inclusive. Data relate to a pooled average of 2007/08 to 2009/10. The International Classification of Diseases 10<sup>th</sup> revision (ICD-10) codes used to identify admissions were X60-X84 as an external cause.

Population statistics used to produce rates of admission are from the Office for National Statistics mid-year population estimates: number of children aged 0-18 years in 2007 plus number in 2008 plus number in 2008 (the latter used as proxy for 2009), aggregated from single year of age lower layer super output area level data.

95% confidence intervals (CIs) are presented in the charts, displayed as error bars. They illustrate the limits within which we can be 95% confident the true value lies. If one area's confidence intervals do not overlap another area's, the difference between the areas is described as statistically significant.

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