

95% Confidence Interval

APPENDIX 2

If Confidence intervals overlap, the samples are not significantly different.
Calculated using the Wilson method as recommended by Public Health Observatories

| 2011/12 Quarter 3 | | | |
|-----------------------------|-------------|-------|-------------|
| | Lower Level | Value | Upper Level |
| England | 53.6 | 54.0 | 54.5 |
| West Midlands | 53.3 | 54.7 | 56.1 |
| Telford & Wrekin | 19.3 | 24.1 | 30.1 |

This table shows England and West midlands are not significantly different, but Telford & Wrekin is significantly different to both National and West Midlands.

Rate of Change

The rate of changes in CHC funding per 50,000 population has been analysed using the Mann-Whitney test. It covers the quarterly changes over the last 3 years (11 Quarters).

The Mann-Whitney U-value test has been used as the sample is less than 30.

The Mann-Whitney U-value test ranks the rate of change. If both samples are very similar you would expect the ranks below and above the middle value to be split 50:50 from both samples. A 50:50 split is demonstrated in this test by a U-value of 50.

Rate of change between Quarters

| | Year 2009/10 | | | | Year 2010/11 | | | | Year 2011/12 | | |
|-----------------------------|--------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|--------------|-----------|-----------|
| | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | Quarter 1 | Quarter 2 | Quarter 3 |
| England | | 4.9 | 6.2 | 0.8 | 0.5 | 0.8 | 1.3 | 2.9 | 0.4 | 3.8 | -1.2 |
| West Midlands | | 3.3 | 6.8 | 1.6 | -3.7 | 0.4 | -1.1 | -2.1 | 1.6 | 0.6 | 0.1 |
| Telford & Wrekin | | 5.2 | -7.0 | -30.3 | 19.5 | -10.2 | -11.8 | -15.3 | -11.9 | -39.7 | -17.0 |

Using the data above gives a U value of 19.

The value is the same against England and West Midlands.

Using a Mann-Whitney look up table gives a critical value relevant for the sample size of how far away from 50 the value would need to be before being counted as significant.

In this instance the critical value is 27, meaning a number less than 27 is considered significant.

The rate of change of CHC clients over the last 3 years in Telford & Wrekin can therefore be considered as significantly different to National and West Midlands changes.

As the sample contains 20 measures a Z-score was also calculated at the same time as the U-value.

The Z-score was 2.3056 against both National and West Midlands.

Using a Z-score look up table this represents a p-value of 0.0209

A p-value less than 0.05 is considered significant, again demonstrating that Telford & Wrekin rate of change is statistically significantly different to both National and West Midland changes.