

NPDA Results Online:

A user guide for parents

Overview

The National Paediatric Diabetes Audit (NPDA) collects data from all paediatric diabetes clinics in England and Wales about the care they have provided to all children and young people using their services. The aim is to provide information that leads to improved quality of care for children and young people with diabetes.



Each year, key national findings are summarised and published. The results from each clinic and region are presented within [NPDA Results Online](#). This website allows you to see and compare the results of local clinics in each audit year. The results shown within NPDA Results Online are for children and young people with Type 1 diabetes as numbers with other types of diabetes are usually too small at each clinic to provide useful data for comparison.

You can use NPDA Results Online to see how many children and young people using the services are:

- Receiving the recommended diabetes-related health checks
- Achieving blood glucose targets



How to use the website

The side bar on the left shows the options available for viewing results.

- 
 Annual Reports → View and download the full annual report for your clinic
- 
 Unit Data → View and compare clinic results for measures of your choice
- 
 CCG/LHB Data → View and compare overall results for your [clinical commissioning group](#) or [local health board](#)
- 
 Network Data → View and compare overall results of clinics within regions
- 
 Outlier Data → Compare clinics based on four key performance measures (see page 7)

Reviewing your clinic's results

Clinic (unit) results are presented within an annual report and are also broken down by individual audit measures. 'Audit measures' refer to the data collected by the NPDA, such as the percentage of children and young people who have received particular health checks.

Unit Data

(Please select your criteria below)

Audit Measures:	<input type="text" value="Select a specific audit measure"/>		
Chart Type:	<input type="text" value="Select a Chart Type"/>		
Primary Unit/Hospital:	<input type="text" value="Select a primary Unit/Hospital"/>		
2nd Unit/Hospital:	<input type="text" value="Select a second Unit/Hospital (OPTIONAL)"/>		
3rd Unit/Hospital:	<input type="text" value="Select a third Unit/Hospital (OPTIONAL)"/>		
4th Unit/Hospital:	<input type="text" value="Select a fourth Unit/Hospital (OPTIONAL)"/>		
Data year range from:	<input type="text" value="2015-16"/>	To Data year:	<input type="text" value="2015-16"/>

ALSO DISPLAY:

Region Average National Average

[Help](#)

[View Chart](#)

- **Audit measures** - Select which specific audit measure you wish to look at from a drop-down list
- **Chart type** - Choose what type of chart/graph you'd like to display (see the glossary for descriptions of these)
- **Primary unit/hospital** - Select which clinic you would like to review
- **2nd - 4th unit/hospital** - Select any other clinics that you would like to compare with your primary clinic.
- **Date year range** - Select which year(s)'s results you are interested. Please not with a caterpillar chart, you can only view one audit year at a time.
- **Regional and national averages** - Tick these if you would like to compare the results of your chosen clinic(s) with the regional and/or national results.
- **View chart** - Once all fields have been filled, click this to see your graph.

Key health checks



The NPDA looks at how many children and young people with Type 1 diabetes receive key health checks recommended by NICE within each audit year. Three of these are recommended for children of all ages (HbA1c, height and weight, and thyroid). The other four health checks are recommended for children aged 12 years and above. The audit looks at whether key health checks are being provided and what the results of these health checks are:

1) HbA1c

- HbA1c is a measure of blood glucose levels.
- At the time of measurement, HbA1c indicates average blood glucose levels over the previous six to eight weeks.

2) Height and weight

- Height and weight are used to check if someone is a healthy weight for their height, calculated as the Body Mass Index (BMI).

3) Blood pressure

- Blood pressure is checked to ensure that it is not too high (hypertension).

4) Urinary albumin

- Urine is tested for the presence of a protein called albumin to check for risk of kidney disease.
- Small amounts of albumin can leak into the urine when the kidney is damaged.

5) Thyroid

- Thyroid function is checked because children and young people with diabetes are at higher risk of having thyroid disease.

6) Eye screening

- Eyes are checked for eye disease (retinopathy).

7) Foot Examination

- Foot examination checks for any damage to the nerves or blood vessels (neuropathy).

How to interpret results

Care process completion



'Care processes' refer to the health checks described above.

Who is included?

- Only children and young people who have received a full year of care are included in these results.

What do the results mean?

- Higher percentages are better than lower ones because they reflect higher numbers of children and young people receiving the recommended checks.
- Lower health check completion rates may reflect a need for improvement in recording of health checks, engaging with the children and young people using the service, or improving service design.
- If your clinic has higher completion rates of healthcare checks than the regional or national averages, this usually means that children and young people using this service are more likely than those using other services to receive all the recommended health checks within the year.

Please note: The audit collects data from visits to clinic between the 01 April and 31 March the following year. Due to this, some children and young people may not have their annual review before the end of the audit. These individuals may not be recorded as receiving all health checks within the audit period so clinic completion rates of 100% are unlikely.

Health check screening at diagnosis



NICE guidance also recommends for children and young people with Type 1 diabetes to be screened for thyroid and coeliac disease when they are diagnosed.



How is this determined?

In the NPDA, these processes are considered complete if:

- The child or young person received their diagnosis within the audit period.
- The child or young person was screened for thyroid and/or coeliac disease within 90 days of their diagnosis of Type 1 diabetes.

What do these results mean?

- A higher percentage means that more children and young people are receiving the recommended health checks at the time of diagnosis.
- Lower health check screening at diagnosis completion rates may reflect lack of recording of health checks, staffing shortages, less engagement with the children and young people using the service, or sub-optimal service design.
- If your clinic has a higher percentage than the regional or national average, this means that children and young people attending this clinic are more likely than those using other services to receive all the recommended health checks within the year.

HbA1c



NICE guidance recommends an HbA1c of 48mmol/mol (6.5%) or lower to reduce the risk of diabetes-related complications. NPDA results show that low numbers of children and young people with Type 1 diabetes are meeting this target, although this number is increasing year on year.

What does unadjusted/ adjusted HbA1c mean?

- HbA1c has been shown to be higher amongst teenagers, females, children and young people living in deprived areas, and those of non-white ethnicity. The characteristics of the children and young people using each clinic can therefore have an impact on a clinic's average HbA1c. As these factors, are outside of the clinic's control, the NPDA calculates 'adjusted' HbA1c results to take account of these differences using a statistical technique to enable fairer comparison of HbA1c results achieved by the clinic.
- The statistical adjustment applied is based on a limited range of available patient data, and there may be other patient characteristics outside of clinics' influence that may affect their HbA1c.

Which HbA1c result should I look at?

- The '**mean HbA1c**' shows the average HbA1c across all children and young people with Type 1 diabetes with one or more recorded by the clinic within each audit year. The HbA1c results from each patient are added up and divided by the number of patients with results to give this number.

- The '**median HbA1c**' gives the middle value if all recorded HbA1c results for all children and young people with Type 1 diabetes at the clinic within the audit year were lined up from low to high.
- When comparing HbA1c results from different clinics, we recommend using the **adjusted mean HbA1c** results.
- To compare the same clinic's results over time, we recommend comparing the median HbA1c value. The median is less affected by extreme results, such as very high HbA1cs from a small number of children and young people using the service. This means it provides a more consistent measure for comparison, as it is less likely to be 'skewed'.
- Most children and young people will have several HbA1cs recorded during each year. Clinic results are calculated from the median HbA1c recorded for each child or young person with Type 1 diabetes so that children and young people with higher numbers of recorded HbA1cs do not 'skew' the results.

What do these results mean?

- When it comes to HbA1c results, lower average (mean or median) values are better than higher ones as they reflect a higher proportion of children and young people within the service with lower blood glucose levels.
- Research has shown that several clinic factors are linked to lower average HbA1c. These include giving clear messages to children and young people with diabetes and their parents/carers regarding diet, HbA1c target, physical activity, treatment of hypoglycaemia, and the importance of structure in everyday life, committed team members, positive team attitudes, and lower target values for HbA1c.
- Higher HbA1c levels may be linked with several factors such as lack of blood glucose monitoring, lack of treatment guidelines, reduced attendance of clinic visits, inadequate staffing, and reduced team cooperation. Additionally, vague or inconsistent messages to children and young people with diabetes and their parents/carers and lack of appropriate engagement with the diabetes team may also be contributing factors.

Outlier plots

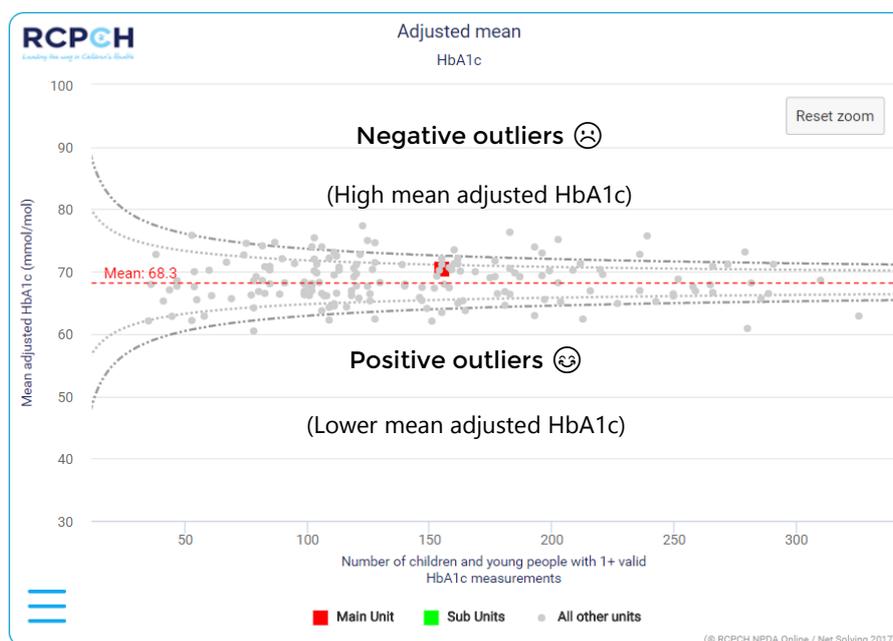


In clinical audits including the NPDA, an outlier is a clinic which has performed statistically much better or worse than others. The NPDA has four key measures which define outliers:

- 1) **Completion rate of health checks for those aged 12+** (higher values= greater completion of health checks)
- 2) **Adjusted mean HbA1c** (lower values = better control of blood glucose levels)
- 3) **Adjusted percentage of children and young people with an HbA1c less than 58 mmol/mol** (higher values = more children and young people with optimal control of blood glucose levels)
- 4) **Adjusted percentage of children and young people with an HbA1c more than 80 mmol/mol** (higher values = more children and young people with high blood glucose levels putting them at greater risk of diabetes complications).

Example

In the example below, the measure displayed is 'adjusted mean HbA1c'. Clinic results are represented by the grey dots. Your selected clinic is the red square.



- Any results between the dashed red line and the first dotted line on either side are not considered to be performing significantly worse or better on this measure compared to the average.

- Any results above or below the outside dashed lines of the funnel are considered to be significantly worse or better. On this measure, lower means are better, so the ones below dashed line are considered to be positive outliers, and those above the top dashed line are considered to be negative outliers.
- The main clinic chosen to compare below (shown as a red square) is within the red dashes and first dotted line, so it is not an outlier.

FAQs

How is this information being used by my clinic?

The findings from the audit helps clinics to understand how effectively they are working together with children and young people around their diabetes management. This includes identifying which of the recommended health checks are being delivered and if blood glucose diabetes control targets are being achieved (HbA1c levels). It allows clinics to see where to focus efforts to improve the care they provide.

If you would like more detail, please speak with your clinic about how they use this information.

The results from the clinic I attend are different to others, what does this mean?

There are various reasons why clinics achieve different results, including natural year on year variation, different team approaches, variations in data management, funding, staffing, and characteristics of the children and young people using the service. If you are concerned about your local clinic's results and what they might mean for your child's care, you can discuss them with your diabetes team who will be able to provide you with more information.

What is a care process?

A care process refers to a recommended health check for children and young people with diabetes.

Is my child included in this report?

The NPDA collects data on every child or young person receiving care in England and Wales from a paediatric diabetes clinic, unless they or their parents have asked the clinic not to submit their data. Individual patients will never be identifiable in any NPDA report, as we only report summaries of data.

Do I need to give consent for my child's data to be included in the audit?

No. The NPDA has special permission to collect personal information called "Section 251 approval". This means we don't have to ask permission for it from children and young people with diabetes. We have been given this special permission because:

- Our work can improve public health
- Our work helps improve diabetes care
- We have shown that we can keep personal information safe

If you would like more information, you can download the [NPDA's Privacy Statement](#).

What should I do if I my child is not receiving the healthcare checks described in this report?

It is important to discuss any concerns that you may have with your child's diabetes care with your local diabetes team. This will enable you to work together to optimise the care that your child receives.

Glossary

Body Mass Index (BMI) A measure of someone's size based on their weight and height. It is used to determine if someone is a healthy weight for their height.

CCG Also known as Clinical Commissioning Groups, are clinically-led NHS bodies responsible for the planning and commissioning of health care services for their local area.

Chart – bar A bar chart demonstrates each result using a horizontal bar.

Chart – caterpillar A caterpillar chart plots the results from all paediatric diabetes units lined up in order of their performance.

Chart – column A column chart demonstrates each result as a vertical, rectangular column.

Cholesterol A fatty substance which is vital for the normal functioning of the body. Excessively high levels of cholesterol can have an effect on health.

Coeliac disease An autoimmune disease (meaning that the immune system mistakenly attacks healthy tissue in the body) caused by the gut's reaction to gluten.

Glucose A blood sugar which acts as a major source of energy for the body.

Healthcare Quality Improvement Partnership (HQIP) An independent organisation established to promote quality in healthcare, to increase the impact that clinical audit has on healthcare quality improvement.

Ketones Poisonous chemicals produced when the body breaks down fat for energy instead of glucose.

LHB Local Health Boards are part of the National Health Service in Wales. They are responsible for planning, funding and delivering healthcare services within their local area.

NICE The National Institute for Health and Care Excellence (NICE) provides national guidance and advice to improve health and social care.

Structured Education Programme A programme of self-management education, tailored to the child or young person's and their family's needs, both at the time of initial diagnosis and on an on-going basis throughout the child's or young person's attendance at the diabetes clinic. This is a programme offered in addition to the education provided at routine outpatient consultations.

Thyroid disease A disease which causes the thyroid to produce either too much or too little hormone.

Urinary albumin A test to check urine for the presence of a protein called albumin. Small amounts of albumin leak into the urine when the kidney is damaged. Therefore, urinary albumin can be used as a test for kidney disease.