

NPDA spotlight audit report

The workforce in paediatric diabetes units 2017-18

This report has been prepared with support from:

The Royal College of Paediatrics and Child Health (RCPCH)

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Front Cover artwork:

Beth Cameron Crossman, entrant of the NPDA art competition asking children and young people to design an image based on the theme of 'a good diabetes clinic visit'.

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Foreword

I am very pleased to introduce the first National Paediatric Diabetes Audit (NPDA) spotlight report on workforce and structures within paediatric diabetes units.

Attending my first NPDA national conference this year, I was struck by the commitment and enthusiasm demonstrated by presenting teams and delegates for making improvements to the care of children and young people with diabetes, and by how essential national audit data has been for highlighting variation in care and outcomes at paediatric diabetes unit (PDU) level.

This report provides an analysis of data submitted by all paediatric diabetes teams in England and Wales about staffing resources, practices around transition to adult diabetes services, and access to specialist diabetes advice. It is good to see that investments in diabetes care have resulted in increased staffing levels across England and Wales over the previous four years, which have been accompanied by national improvement in diabetes outcomes over the same period.

I commend all PDUs to use the findings within this report to compare their own staffing, practices and outcomes with others, and to use the national diabetes network structures and the paediatric diabetes quality programme offered by the RCPCH to their full potential in order to identify and embed best practices across all PDUs caring for children and young people with diabetes in England and Wales. Clinical leadership at local and regional level is needed to ensure optimal use of staff resources to achieve the best possible outcomes for the children and young people with diabetes using their services.

I would like to thank all those involved in writing the report, including the NPDA Project Board, Methodology and Dataset Group, the audit team, and Clinical Lead, Professor Justin Warner. I would like to thank all College members and their wider multidisciplinary paediatric diabetes teams across England and Wales involved in submitting data to the audit, and for their efforts to make improvements within their services based on its results.



Jo Revill

Chief Executive, Royal College of Paediatrics and Child Health

Key terms used within this report

Best practice tariff (BPT)- England only

A national price paid to providers that is designed to incentivise high quality and cost-effective care, with the aim of reducing unexplained variation in clinical quality and encouraging best practice.

HbA1c

The term HbA1c refers to glycated haemoglobin. By measuring glycated haemoglobin (HbA1c), clinicians are able to get an overall picture of what our average blood sugar levels have been over a period of weeks/months. For people with diabetes this is important as the higher the HbA1c, the greater the risk of developing diabetes-related complications. (Diabetes.co.uk)

Multidisciplinary team (MDT)

A group of professionals from one or more clinical disciplines who together make decisions regarding recommended treatment of individual patients. An MDT caring for children and young people with diabetes will typically include consultant paediatricians, paediatric diabetes specialist nurses, dietitians, diabetes educators, and psychologists.

Paediatric diabetes specialist nurse (PDSN)

A specialist nurse who provides support and education to children and young people with diabetes and their families.

Paediatric diabetes unit (PDU)

A clinical unit providing diabetes care for children and young people with diabetes.

Programmed activity (PA)

A 4-hour unit of time (one half day), 10 of which comprise a consultant's work week. One WTE is equivalent to 10 PAs on average.

Whole time equivalent (WTE)

A unit that indicates the workload of an employed person in a way that makes workloads comparable across various contexts. WTE is typically based on hours worked as a proportion of the contracted hours normally worked by a full-time employee in the post. For example, a person working standard hours each day, but only 3 days out of 5, would count as 0.6 WTE.

Introduction

Diabetes mellitus occurs when blood glucose levels are elevated because the body is unable to metabolise it. Over 29,000 children and young people with diabetes are being managed by paediatric diabetes units (PDUs) in England and Wales, the majority of whom (95%) have Type 1 diabetes (RCPCH, 2019). With good diabetes care and blood glucose management, the risks of diabetes-related complications are reduced, enabling children and young people to enjoy a healthy and longer life.

The National Paediatric Diabetes Audit (NPDA) was established in 2003 to monitor the prevalence and incidence of diabetes in England and Wales, and to measure the quality of care provided by paediatric diabetes units (PDUs). It is funded by NHS England and the Welsh Government, commissioned by the Healthcare Quality Improvement Partnership, and delivered by the Royal College of Paediatrics and Child Health (RCPCH). Core NPDA annual reports focus on patient level data submitted by PDUs, and report completion rates of healthcare checks and patient outcomes as measured against standards of care produced by the National Institute for Health and Care Excellence (NICE, NG18). Reported here is the first NPDA spotlight audit focusing on the workforce in PDUs supporting the management of diabetes in children and young people attending PDUs in England and Wales.

Aims of the workforce spotlight audit

NPDA core reports have shown wide variation in the quality of care and outcomes achieved by PDUs in England and Wales. Spotlight audits are aimed at providing the context to these findings. The core NPDA dataset measures implementation of NICE guidance for the management of children and young people with diabetes (NG18, NICE 2015), whereas the spotlight audits conducted by the NPDA for 2017/18 do not measure practice against any particular set of standards and seek instead to highlight variability in the way services differ in their structure and delivery of care. They provide insight into everyday practice and explore how this may be related to outcome. Where a question does relate to a standard, the standard is cited alongside the audit finding. Data is captured at PDU level through a series of questions answered by the PDU with mapping against that submitted to the 2017/18 NPDA patient level core audit where applicable.

This workforce spotlight audit aims specifically to:

- establish the number of PDUs in England receiving [Best Practice Tariff](#) (BPT (NHS Improvement/NHS England, 2019) and what proportion of Tariff funding is being used to support paediatric diabetes services
- enable benchmarking and comparison between PDUs and regions for patient access to support services such as structured education programmes, access to telephone advice on diabetes management 24 hours a day, clinical appointments, and trained staff
- understand how young people with diabetes transition from PDUs into young adult services in England and Wales, and what support is available for this process
- establish the number of children who are considered as being “in need”, “looked after” or are currently on the child protection register (Wales) or have a child protection plan (England) to highlight the increased burden this may place on PDUs
- determine the staffing levels of and training received by healthcare professionals involved in the management and care of children and young people with diabetes in PDUs across England and Wales
- establish vacancy rates amongst multidisciplinary paediatric diabetes teams
- explore relationships between staffing and glycaemic control.

Methodology

The workforce spotlight audit questions were adapted from the workforce audit undertaken by the Children's Policy Research Unit at the University College London in 2014 (Charalampopoulos et al, 2017), to allow comparison with their results and highlight changes in workforce and service provision in the meantime. These questions were reviewed and supplemented by questions prioritised by the multidisciplinary NPDA Dataset and Methodology Group (DSMG). The collection of the resultant dataset was then piloted by clinicals members of DSMG. Refinements were then made before the spotlight audit survey was launched online with data collection between 14 September and 9 November 2018. Staff group to patient ratios were compared against guidelines produced by the International Society for Pediatric and Adolescent Diabetes (ISPAD, 2009) and the Royal College of Nursing (RCN, 2006).

One survey was requested from each PDU, with the instruction that the questions should be answered based on the situation at the unit on the 31 March 2018 - the last day of the 2017-18 NPDA audit year. This enabled comparison of PDU level results of the survey with unit level patient results from the 2017/18 core audit. It was recommended that the survey was completed as a multidisciplinary team to ensure accuracy and agreement of submitted information. In their responses, PDUs were asked to consider all patients that they had primary responsibility for, including those attending transition clinics if responsibility was retained for these.

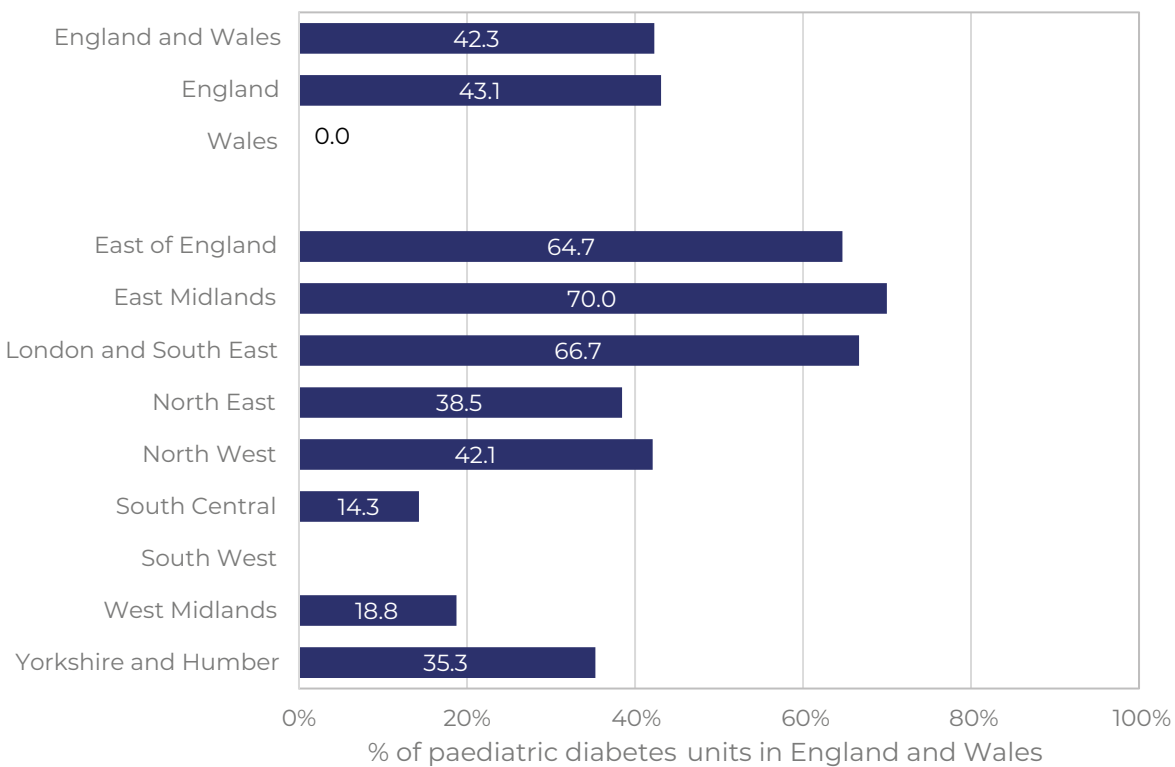
One hundred and seventy-three submissions were received, covering all PDUs in England and Wales. Three units, who had previously submitted a combined submission to the NPDA, sent data for three separate PDUs within their Trust, and three PDUs within the same Health Board in Wales submitted a joint submission.

Key findings



- Over three quarters (76.9%) of services offered four appointments with a consultant within the previous year as recommended by NICE (NG18) and specified within BPT criteria for PDUs in England.
- Ninety percent of services reported that their service offered 24-hour clinical telephone advice about diabetes management for children and young people, their parents or carers, seven days a week.
- However, 24-hour advice from a diabetes specialist considered part of the multidisciplinary diabetes team (as recommended by NICE, NG18) was available in less than half (42.3%) of the PDUs, with the remainder commonly providing advice from paediatric ward staff or the on call paediatric registrar out of hours. The percentage varied by country and region (Figure 1).
- There were no significant differences in mean HbA1c (adjusted for casemix or otherwise) between services providing 24-hour advice solely from members of the diabetes MDT and those where it was also provided by non-specialist staff members.

Figure 1: Percentage of PDUs providing 24-hour advice from paediatric diabetes MDT members by country and region

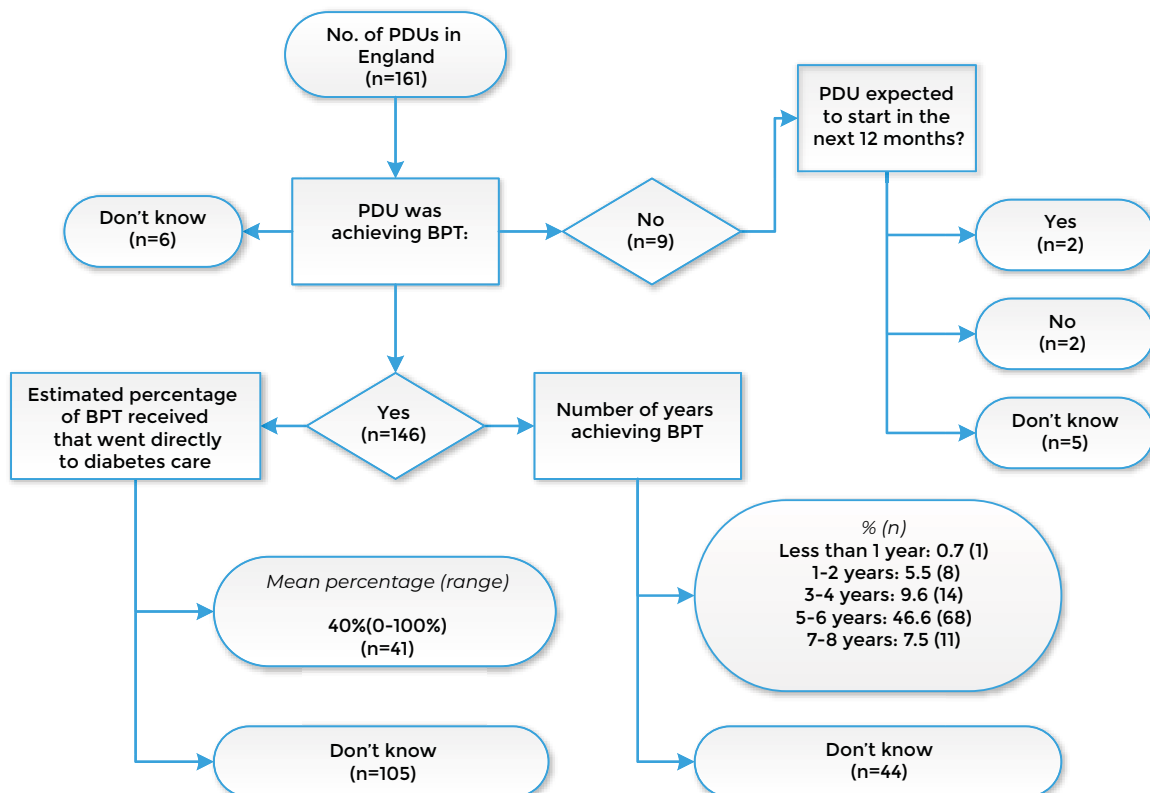




Best practice tariff

A best practice tariff (BPT) for paediatric diabetes services was introduced in England in 2012 to cover the costs of providing multidisciplinary paediatric diabetes care, if services could demonstrate meeting minimum criteria (Randell, 2012).

- Over ninety percent (96.3%) of PDUs in England knew whether they were achieving BPT payments or not. Of those, 94.2% stated that they were achieving BPT payments, compared to 88% in 2014.
- Of the 146 units who stated that they were receiving BPT payments, only 28.1% knew the percentage going directly into diabetes care in their unit (including staff costs, equipment, facilities, network management fees etc). Of these, the average percentage was 40.0%, with a range of 0% to 100%.
- Of the 102 PDUs who knew how long they had been achieving BPT payments, the majority (68/102 units) had been receiving them for 5-6 years.
- The process map below provides a summary of how PDUs responded to the questions relating to BPT.





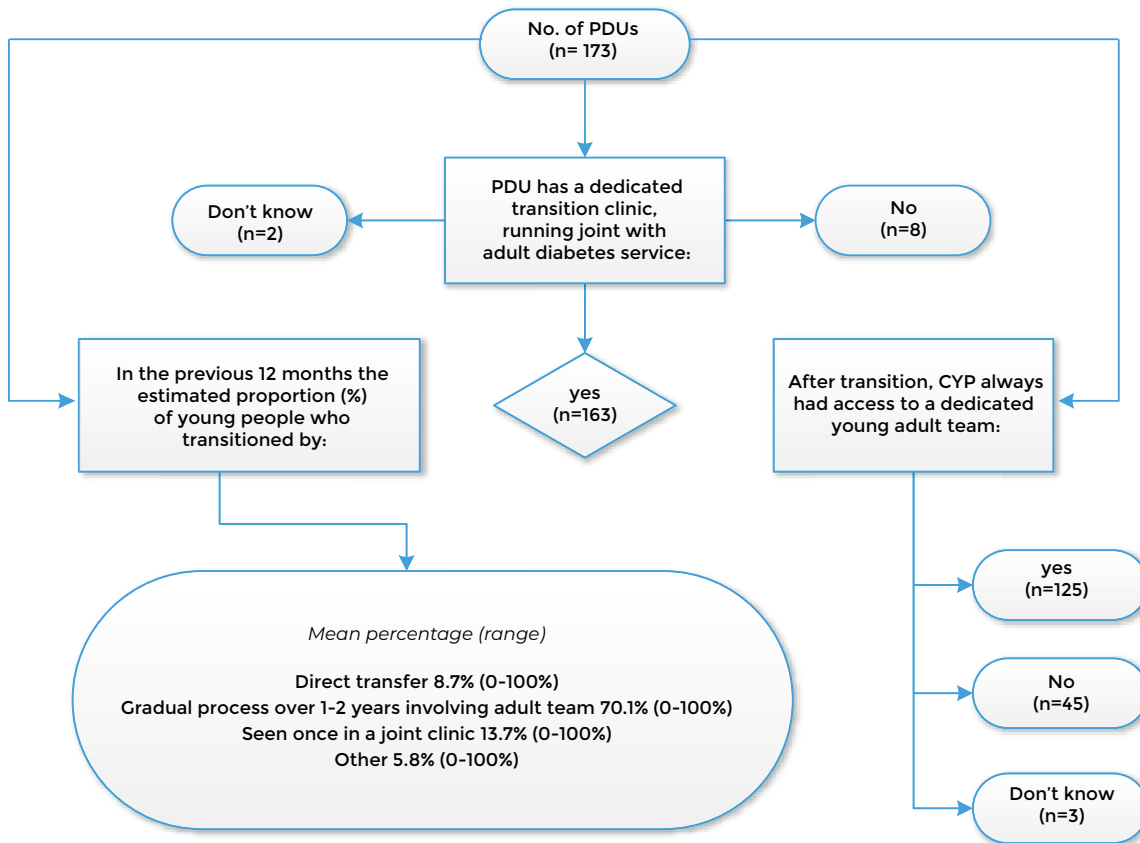
Structured education

- Almost all (98.3%) of PDUs were delivering a structured education programme from diagnosis (within the first month).
- A range of structured education programmes were being delivered within these units. Most units (57.6%) were providing a locally developed programme, with the second most commonly delivered programme being the 'Goals of Diabetes Education' (16.5%). In Wales, a network-developed programme (SEREN, produced by the Children and Young People's Wales Diabetes Network) was in use.
- Around 1 in 5 (18.2%) of PDUs were unaware if their structured education programme was quality assured (n=170). Of those who did know, half (50.4%) reported that their programme was not quality assured.



Transition to young adult services

- The majority (94.2%) of PDUs had a dedicated transition clinic or service, run jointly with adult diabetes services.
- Most PDUs (72.3%) reported that their patients always had access to a dedicated young adult diabetes clinic following transfer from paediatric services.
- The most commonly reported way for young people to transition to adult services was through a gradual process over 1-2 years involving the adult team; on average, the mean estimated percentage of young people who transitioned in this way, reported by PDUs was 70.1%. Eighty PDUs reported that all of their patients experienced this process of transition.
- Eight PDUs reported that all patients were still transitioning via direct transfer, and six PDUs reported that all of their patients were seen once in a joint paediatric and adult diabetes clinic before transfer.
- The process map opposite provides a summary of how PDUs responded to the questions relating to transition.



Additional patient vulnerabilities

- Over ninety percent (93.1%) of PDUs reported data on the number of children and young people with diabetes under their care who were considered a 'child in need', on the child protection register (CPR - Wales only) or had a child protection plan (CPP - England only), and/or considered a 'looked after child'.
- Table 1 provides a breakdown of the reported proportion of children and young people being cared for in PDUs who were also part of the child protection system, based on data from PDUs who knew their numbers. Where available, rates of children and young people under the age of 18 from the general population are reported.
- Compared to the general population aged 18 or under in England and Wales, children and young people with diabetes being managed within a PDU were less likely to be a 'child in need', more likely to be a 'Looked After Child', and almost twice as likely to be on a child protection plan/register.

Table 1: Proportion of children and young people with diabetes in the child protection system

| | England and Wales | England | Wales |
|--|-------------------|--------------------|-----------------------|
| Child in need | | | |
| % of PDUs who knew number within caseload who were a 'child in need' | 87.3 (151/173) | 88.2 (142/161) | 75.0 (9/12) |
| % of cohort | 2.0 (463/23,083) | 2.0 (444/22,082) | 1.9 (19/1001) |
| Rate per 10,000 children and young people with diabetes being managed within a PDU | 200.6 | 201.1 | 189.8 |
| Rate per 10,000 population of children and young people aged under 18 on 31 March 2018, England and on 31 March 2018, Wales* | - | 341.0 ¹ | 300.02 ^{a,b} |
| Child Protection Plan/ child protection register | | | |
| % of PDUs who knew number within caseload who were on a protection plan / register | 92.5 (160/173) | 92.5 (149/161) | 91.7 (11/12) |
| % of cohort | 0.9 (212/24,827) | 0.9 (202/23,566) | 0.8 (10/1,261) |
| Rate per 10,000 children and young people with diabetes being managed within a PDU | 85.4 | 85.7 | 79.3 |
| Rate per 10,000 population of children and young people aged under 18 on 31 March 2018, England and Wales+ | | 45.3 ³ | 47.0 ⁴ |
| Looked after child | | | |
| % of PDUs who knew number within caseload who were a Looked After Child | 91.9 (159) | 91.9 (148) | 91.7 (11) |
| % of cohort | 0.8 (199/24,576) | 0.8 (181/23,315) | 1.4 (18/1,261) |
| Rate per 10,000 children and young people with diabetes being managed within a PDU | 81.0 | 77.6 | 142.7 |
| Rate per 10,000 population of children and young people aged under 18 on 31 March 2018, England and Wales | | 64.0 ⁵ | 102.06 ^{a,b} |
| * Child in need data from Wales may include children on the child protection register and looked after children | | | |
| ^{1,3} Department for Education, 2018, Characteristics of children in need 2017-18 | | | |
| ^{2a} StatsWales, 2018, Children in need per 10,000 population | | | |
| ^{2b} StatsWales, 2018, Children in need by looked after status | | | |
| ^{4,6a} StatsWales, 2018, Looked after children per 10,000 population | | | |
| ⁵ Department for Education, 2018, Children looked after in England | | | |
| ^{6b} StatsWales, 2018, Children receiving care and support | | | |



- Figure 2 shows the mean whole time equivalent (WTE) of health care professionals, considered part of the diabetes multi-disciplinary team, per 1,000 children and young people with diabetes being cared for in PDUs. The mean total staffing level for England and Wales per PDU was 29.4 WTE per 1,000.
- Compared to 2014, the total levels increased from 24.4 to 29.2 WTE and 15.5 to 32.6 WTE in England and Wales, respectively.
- Results varied across regions and ranged from 25.2 WTEs in the North West to 34.4 WTEs in the North East (Table 2 on page 14).

Figure 2: Mean whole time equivalent (WTE) of healthcare professionals per 1000 children and young people with diabetes in England and Wales by country and region.

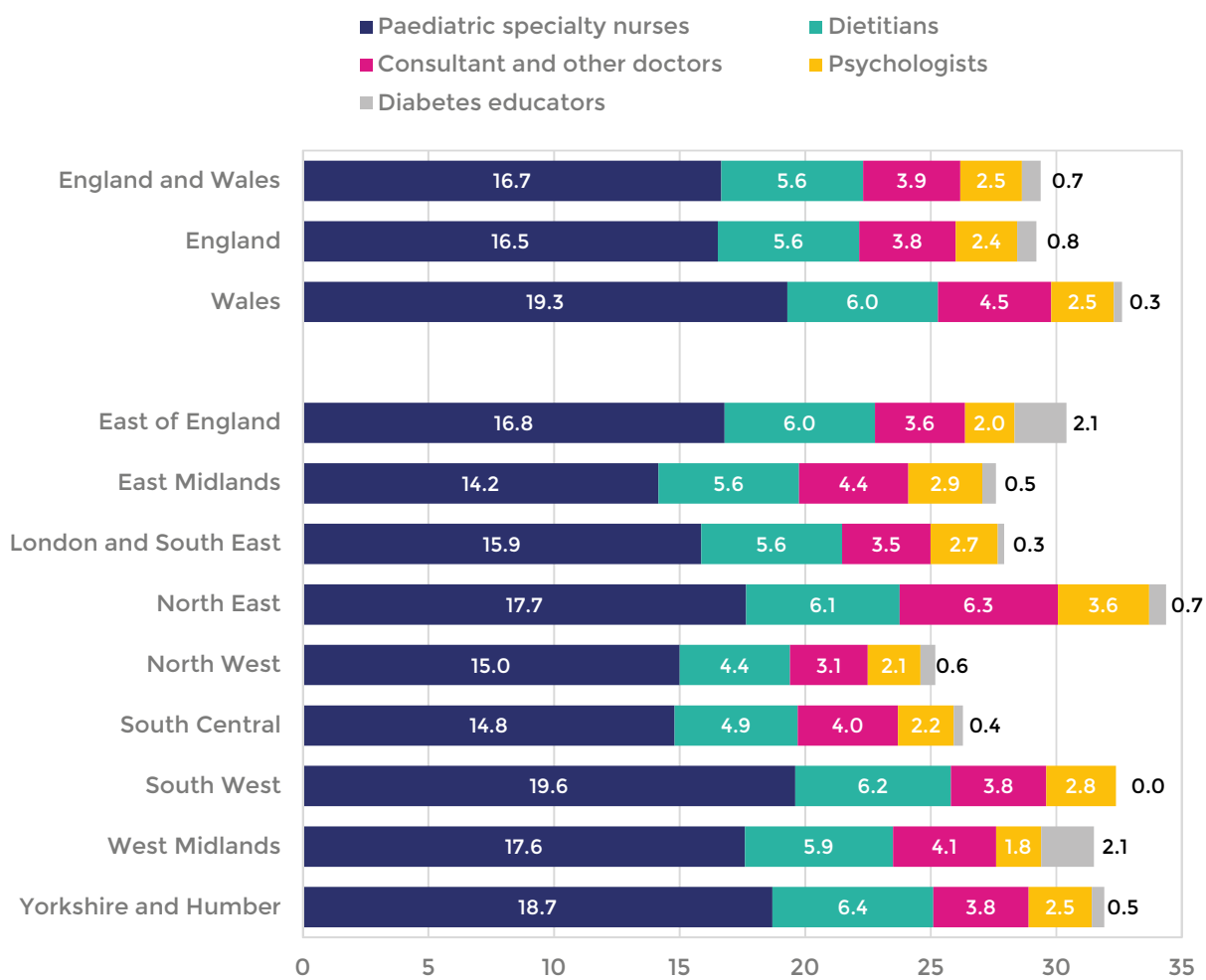


Table 2: Mean whole time equivalent (WTE) of healthcare professionals per 1000 children and young people with diabetes in England and Wales by country and region, in 2014 and 2018

| Country/ region | Paediatric Diabetes specialist nurse | | Dietitian | | Consultant and other doctors | | Psychologist | | Diabetes educators | | Total | |
|---------------------------------------|---|------|-----------|------|------------------------------------|------|--------------|------|-----------------------|------|-------|------|
| | 2014 | 2018 | 2014 | 2018 | 2014 | 2018 | 2014 | 2018 | 2014 | 2018 | 2014 | 2018 |
| England and Wales* | - | 16.7 | - | 5.6 | - | 3.9 | - | 2.5 | - | 0.7 | - | 29.4 |
| ISPAD optimal recommendation** | | 10 | | 5 | | 10 | | 3 | | | | |
| England | 14.2 | 16.4 | 4.9 | 5.6 | 2.9 | 3.8 | 2.2 | 2.4 | 0.2 | 0.8 | 24.4 | 29.2 |
| Wales | 11.4 | 19.3 | 2.1 | 6.0 | 1.9 | 4.5 | 0.0 | 2.5 | 0.1 | 0.3 | 15.5 | 32.6 |
| East of England | 13.6 | 16.8 | 4.7 | 6.0 | 2.7 | 3.6 | 2.4 | 2.0 | 0.1 | 2.1 | 23.5 | 30.4 |
| East Midlands | 11.6 | 14.2 | 4.4 | 5.6 | 2.7 | 4.4 | 2.5 | 2.9 | 0.6 | 0.5 | 21.8 | 27.6 |
| London ⁺ | 14.3 | - | 5.1 | - | 3.7 | - | 2.9 | - | 0.2 | - | 26.2 | - |
| South East ⁺ | 12.1 | - | 4.2 | - | 2.5 | - | 1.4 | - | 0.0 | - | 20.2 | - |
| London and South East ⁺ | - | 15.9 | - | 5.6 | - | 3.5 | - | 2.7 | - | 0.3 | - | 27.9 |
| North East | 18.9 | 17.7 | 7.0 | 6.1 | 4.3 | 6.3 | 2.7 | 3.6 | 0.0 | 0.7 | 32.9 | 34.4 |
| North West | 15.4 | 15.0 | 5.1 | 4.4 | 2.5 | 3.1 | 1.7 | 2.1 | 0.7 | 0.6 | 25.4 | 25.2 |
| South Central | 12.8 | 14.8 | 4.2 | 4.9 | 3.4 | 4.0 | 1.9 | 2.2 | 0.2 | 0.4 | 22.5 | 26.3 |
| South West | 16.6 | 19.6 | 5.3 | 6.2 | 2.8 | 3.8 | 2.5 | 2.8 | 0.0 | 0.0 | 27.2 | 32.4 |
| West Midlands | 15.6 | 17.6 | 5.2 | 5.9 | 3.3 | 4.1 | 1.7 | 1.8 | 0.2 | 2.1 | 26.0 | 31.5 |
| Yorkshire and Humber | 14.0 | 18.7 | 5.2 | 6.4 | 2.7 | 3.8 | 2.6 | 2.5 | 0.0 | 0.5 | 24.5 | 31.9 |

* Data was reported for the UK as a whole in 2014

** ISPAD. Clinical practice consensus guidelines (2009). Recommended optimal social worker level: 3 per 1,000

+ Staffing levels are not directly comparable with those reported in 2014 because the London and South East region merged since the time of the previous analysis

- Increases were seen across all disciplines within the MDT, although fell short of the optimal numbers recommended by ISPAD for doctors. In England and Wales, the ratio of WTE consultants per 1,000 patients was 3.8 and 4.5 respectively, less than half that recommended by ISPAD of 10 per 1,000 patients. The average caseload for paediatric diabetes specialist nurses (PDSNs) has fallen from 73 in 2014 to 60 in 2018 per WTE, but with massive variability across the country from 19 to 137 patients per WTE. Seventy percent (122 out of 173) of PDUs are now compliant with the Royal College of Nursing ratio of 1:70 and over 90% are meeting the ISPAD recommendation of 1:100. 1 in 4 PDSN's are now nurse prescribers. There have been increases in youth workers and social workers attached to diabetes services.



Consultants and other doctors

- All services had at least one consultant in post, with 77.5% being led by two or more consultants - an increase from 42% in 2014.
- The ratios of contracted WTE consultants, and of consultants and other doctors per 1,000 children and young people with diabetes, were 3.2 and 3.9, respectively; with the latter being lower than the ISPAD recommended optimal ratio of 10 per 1,000. The ratio of WTE consultants and other doctors per 1,000 children and young people with diabetes was 3.8 in England (compared to 2.9 in 2014) and 4.5 in Wales (compared to 1.9 in 2014).
- The total number of consultant Programmed Activities (PAs) per week actually worked in the paediatric diabetes services was 971.1, higher than the total number that they were contracted to work in diabetes (862.5 PAs).
- The mean number of years spent working as a consultant was 9.8, and the mean number of years looking after children with diabetes was 11.1.
- 88.5% of consultants had specific training in paediatric diabetes before taking on care of children with diabetes, and 74.4% of other doctors had had specific training.
- Amongst consultants with specific training in paediatric diabetes, 52.0% had accredited training (e.g. a post graduate certificate, master's level or above, or CPD), as had 37.9% of other doctors before taking on the care of children with diabetes.
- 15.6% of PDUs were attended by a doctor in training, down from 29% in 2014.



Paediatric diabetes specialist nurses (PDSNs)

- There were 551 PDSNs employed across England and Wales, with 99.1% working in both hospital and community settings, 84.9% adjusting insulin doses under protocol, and 28.3% being nurse prescribers.
- At PDU level, 87.9% had at least one PDSN who was able to adjust insulin and 55.5% of PDUs employed at least one PDSN who was a nurse prescriber. There was a statistically significant difference in mean adjusted HbA1c in services where a nurse prescriber was employed - 67.1 mmol/mol vs 68.5 mmol/mol (P value = 0.0130)
- The total number of WTE PDSNs in England and Wales was 451.3.
- Overall, there was an average caseload of 60 patients for one WTE PDSN, compared to 73 patients per WTE in 2014.
- Caseload per one WTE ranged from 19.0 to 137.0 patients. Nearly three-quarters (70.5%) of PDUs were meeting or surpassing the Royal College of Nursing recommended ratio of 1:70 patients, and almost all (96.0%) PDUs were meeting or surpassing the ISPAD optimal recommendation of 1:100 patients.
- The level of WTE PDSN support per 1,000 children and young people varied by region and country, with the highest level of 19.6 WTE PDSN being reported in the South West, and the lowest level of 14.2 WTE PDSN being reported in East Midlands.



Dietitians

- There were 282 dietitians employed across England and Wales, the majority (81.9%) of whom worked in both hospital and community settings, an increase from 66% in 2014. Less than half (42.6%) were able to adjust insulin dose under protocol, (a decrease from 44% in 2014), and 6.0% were a supplementary prescriber adjusting insulin via a clinical management plan and under the supervision of an independent prescriber.
- All but one PDU (99.4%) were attended by at least one dietitian, with 153.0 WTE dietitians in total across England and Wales.
- The overall number of WTE dietitians per 1,000 patients was 5.6; higher than the ISPAD recommended optimal number of 5 per 1,000.



Psychologists

- Almost ninety percent (89.0%) of services were attended by at least one psychologist, and there were 66.4 WTE psychologists in total.
- The overall WTE per 1,000 patients was 2.5, slightly lower than the ISPAD optimal recommendation of 3 per 1,000.



Diabetes educators

- One in ten (11.0%) PDUs had at least one diabetes educator (defined as any member of the diabetes team outside the PDSN workforce responsible specifically for delivering the structured education programme); a percentage unchanged from 2014.
- There were 20.2 WTE diabetes educators in total across England and Wales.



Social workers

- Two (1.2%) PDUs were attended by at least one social worker, with 1.7 WTE in total in England and Wales.



Youth workers

- Thirteen (7.5%) PDUs were employing the services of at least one youth worker, with an overall total WTE of 8.3.



Team support

- Twenty-two (12.7%) PDUs had no dedicated administrative staff working within their service (excluding data clerks/clinical audit support). The average WTE for admin staff dedicated to diabetes team support in units with an administrator was 0.7, and the total WTE for administrators was 97.1.
- Over two-thirds (68.8%) of PDUs had no dedicated data assistants/clinical audit support staff working within their service (excluding other administrative staff). The average WTE for data support staff where in PDUs they were employed dedicated to the diabetes team per unit was 0.51, and the total WTE for data support staff was 27.6.
- Eighteen (10.4%) PDUs had no dedicated administrative staff or data assistants/clinical audit support staff working within their service.



Staff vacancies

- Over a third of PDUs (38.7%) reported at least one staffing vacancy.

Consultant and other doctor vacancies

- Across England and Wales, there were nine consultant vacancies, totalling 13.5 PAs, giving a PA vacancy rate of 1.6%.
- Of all consultant vacancies, the majority (6) had been vacant for longer than three months.
- Only one 'other doctor' post was vacant.

PDSN vacancies

- Thirty-four PDSN posts were vacant, equivalent to 36.3 WTEs, giving a WTE vacancy rate of 7.4% across England and Wales.
- Of all vacant PDSN posts, the majority (26) had been vacant for longer than three months.

Dietitian vacancies

- Twenty-one dietitian posts were vacant, equivalent to 12.2 WTE, giving a WTE vacancy rate of 7.4%.
- Of all vacant dietitian posts, the majority (17) had been vacant for longer than three months.

Psychologist vacancies

- Nineteen psychologist posts were vacant, equivalent to 10.1 WTE, giving a WTE vacancy rate of 13.2%.
- Of all vacant psychology posts, almost all (18) had been vacant for longer than three months.



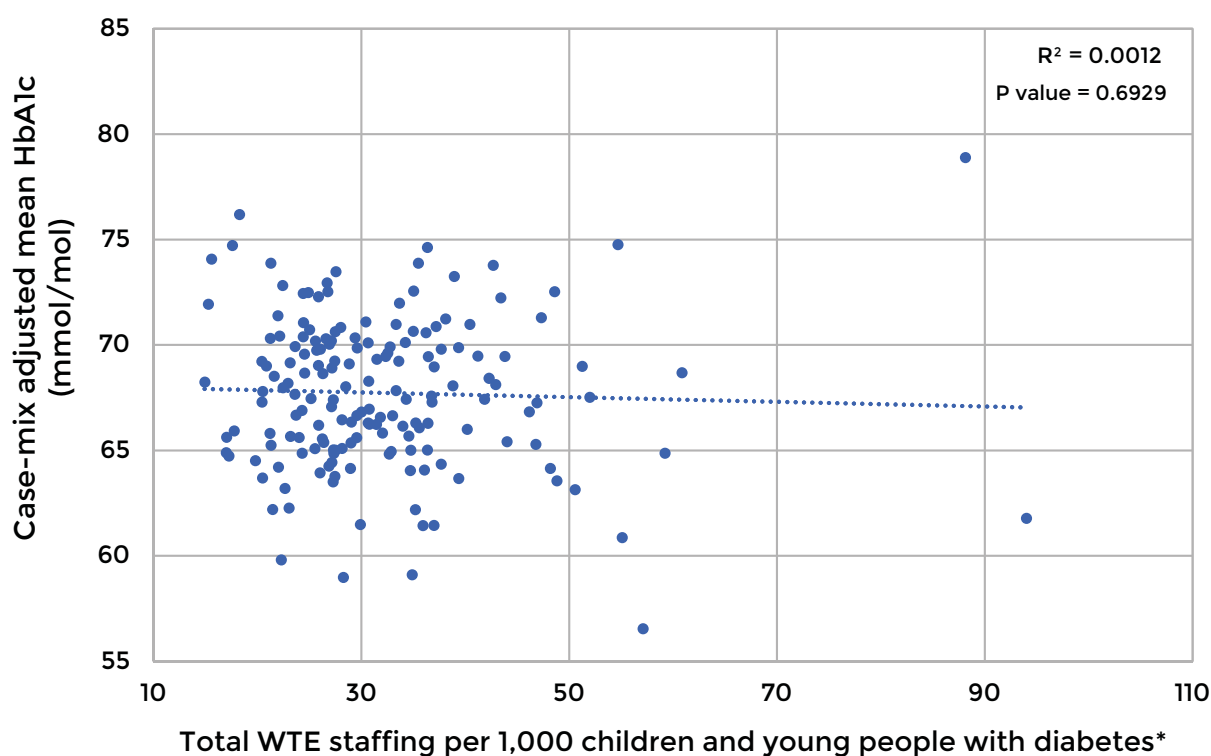
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Staffing levels vs. glycaemic control

- A series of univariate regression models were constructed once the data (which was skewed) had been log transformed. No association was found between the service level adjusted mean HbA1c and total and profession specific staffing levels. This is in line with the findings of similar analyses conducted by the Child Policy Research Unit, UCL (Charalampopoulos et al, 2017).
- Figure 3 shows no relationship between total WTE for MDT staff per 1,000 children and young people with diabetes and casemix adjusted mean at each PDU. This means that once caseload had been controlled for, overall, PDUs with more staff per patient were not achieving better outcomes than PDUs with less.

Figure 3: Scatter plot of case-mix adjusted mean HbA1c and the level of total WTE MDT staff per 1,000 children and young people with diabetes



*Total staffing levels are composed of the total WTE that consultants actually worked and the total contracted WTE of other healthcare professionals considered part of the MDT team (i.e. doctors other than consultants, PDSN, dietitian, diabetes educator, and psychologists)

Discussion

This PDU level spotlight audit on the paediatric diabetes workforce and structures provides a timely update to the findings from the workforce audit conducted by Charalampopoulos et al (2017) four years previously.

Although almost all PDUs provide some sort of 'out of hours' support and advice to families of a child with diabetes, in less than half, this was provided by a healthcare professional from a diabetes MDT with expert knowledge. There remains a large regional variability in this practice from 0% in Wales and the South West to 70% of PDUs in the East Midlands. However, there was no difference in HbA1c outcome for those that provided this service and those who did not. From these audit findings it could be concluded that 24-hour support may not alter a long-term outcome such as HbA1c, but it may provide other benefits not measured in this audit.

Despite almost all Trusts with a PDU in England now receiving BPT, there is huge variability in how much of those funds filter down to the PDU themselves to support clinical diabetes care. BPT was instigated to drive improvements in diabetes care in England, as was the [RCPCCH quality improvement programme](#). BPT should be utilised to support this process.

Almost all children and young people now receive some form of structured education at diagnosis but little is known about the quality assurance of such programmes. This requires further work if standardisation is to be achieved across England and Wales.

There remains variable practice across England and Wales with regards to transition despite standards now in place for both nations (Diabetes Transition Service Specification NHS England, 2016; All Wales standard for people with diabetes moving from paediatric to adult services within NHS Wales, 2017). Just over 70% of PDUs have access to a dedicated young adult clinic post-transition and 7 out of every 10 young adults who undergo transition, go through a gradual process over 1-2 years involving the adult team. Eight PDUs in England and Wales still perform transition by direct transfer of patients.

Children with diabetes were almost twice as likely to be on the Child Protection Register (Wales) or have a Child Protection Plan (England). There were slightly fewer 'children in need' with diabetes, which possibly reflects reticence of teams within PDUs to use this lower level of multi-agency support, and slightly more 'looked after children' with diabetes compared to the general population. This emphasises the increased burden that this places upon PDUs caring for these individuals and the social impact of managing a chronic disease. In light of these findings, PDUs should ensure they have robust policies around non-attendance of appointments to ensure that clues to a bigger problem aren't missed.

There have been marked increases across England and Wales in the numbers of healthcare professionals caring for children and young people with diabetes (Figure 2 and Table 2). Increases were seen across all members of the MDT, although fell short of the optimal numbers recommended by ISPAD for doctors. Caseload for PDSNs has fallen but there remains massive variability across the country.

Only a quarter of PDSNs are nurse prescribers, this figure is disappointing since nurse prescribers can provide active supervision and support for their other team members, and considering that overall, PDUs employing a nurse prescriber were shown to have significantly better HbA1c outcomes compared to those without.

Given the significant psychological burden associated with the management of diabetes, it is concerning that over 10% of PDUs do not have a psychologist within their MDT. Data from the 2017/18 core national report (RCPCH, 2019) showed that nearly a third of children and young people with Type 1 and 2 diabetes with a recorded outcome of psychological support were assessed as requiring additional psychological or CAMHS support outside of MDT clinics. It is also concerning that 10% of PDUs had no dedicated administrative staff or data assistants/clinical audit support staff working within their service, suggesting that highly skilled resource is being directed away from where it is needed in these services.

There have been increases in youth workers and social workers attached to diabetes services, which is a welcome development towards engaging more fully with children and young people to help them manage their diabetes effectively, and supporting those within the child protection system and the wider MDT with the additional challenges associated.

It is concerning to see that many units have gaps in the workforce that are taking a considerable length of time to recruit to. This will clearly impact on the delivery of safe and effective care of our patients and families. It also puts additional strain on an already busy workforce with the risk of workforce fatigue and burnout.

There was no relationship between overall staffing numbers and glycaemic control measured by mean case mix adjusted PDU HbA1c. This tends to suggest that increasing staff numbers is not always the answer to gaining improvements in outcomes. The RCPCH now offer a robust Quality Improvement programme to all PDUs which incorporates quality improvement collaboratives, self- and peer-review, and inspires PDUs to improve within the parameters of the existing workforce.

Conclusion

There have been marked increases in the workforce caring for children and young people with diabetes in England and Wales since 2014 with investment coming from BPT in England and Health Board funding in Wales. The NPDA core audit report demonstrates ongoing improvements in paediatric diabetes outcomes but more work is required to reduce the variability seen across the two nations. This spotlight audit demonstrates that transitional care still remains suboptimal and efforts should be made to comply with existing service specifications and standards. PDUs need to consider carefully how they utilise their workforce as there is wide variability in outcome compared to available resources.

Recommendations

1. All PDUs should offer the recommended four appointments a year for children and young people with diabetes and provide 24-hour clinical telephone advice about diabetes management for children and young people, their parents or carers, seven days a week.
2. In England, where BPT is provided to PDUs delivering diabetes care, PDUs need to be aware of how this valuable resource is being used to support clinical services for children and young people with diabetes. Where less than 100% is being used for diabetes care, clinical leads should discuss with their senior management teams and funding bodies.
3. Service specifications and standards of care for young people with diabetes undergoing transition from paediatric to young adult services have been published by NHS England and the NHS in Wales. PDUs should follow the guidance to ensure a safe and smooth process ensuring optimal patient experience. This will be measured by the RCPCH Quality Assurance Programme.
4. Children with diabetes are almost twice as likely to be on the Child Protection Register or have a Child Protection Plan. PDUs should ensure they have robust policies around nonattendance of appointments to ensure that clues to a bigger problem aren't missed, and consider the employment of social workers within the MDT as recommended by ISPAD.
5. All PDU MDTs should contain a psychologist, and administrative support. Where this is not in place, negotiations should take place with senior hospital management.
6. With the increased staffing levels for provision of clinical care for children and young people with diabetes since 2014, PDUs should explore how to utilise staff resource optimally to achieve the best possible outcomes. All PDUs should participate in local, regional and national quality improvement initiatives such as the RCPCH National Children and Young People's Diabetes Quality Programme in order to do so.

Data tables

For patient level data, the total number of patients in the denominator will be the total number of patients reported by the clinics returning data for each question.

| Q no. | Question | Data item | England and Wales | England | Wales |
|-------|---|---|-------------------|-----------------|---------------|
| 1 | Number of paediatric diabetes units who submitted spotlight data | Total - n | 173 | 161 | 12 |
| 2 | Number of patients with Type 1 diabetes receiving treatment within PDUs on 31st March 2018. | Total - n | 25847 | 24549 | 1298 |
| 3 | Number of patients with other types of diabetes receiving treatment within PDUs on 31st March 2018. | Total - n | 1243 | 1205 | 38 |
| 4 | Number of patients with all types of diabetes receiving treatment within PDUs on 31st March 2018. | Total - n | 27090 | 25754 | 1336 |
| 5 | Were all patients with all types of diabetes within your service offered an appointment with a consultant at least four times within the previous year? (N.B offered does not necessarily mean they attended) | Yes - % (n/N) | 76.9 (133/173) | 80.1 (129/161) | 33.3 (4/12) |
| | | No - % (n/N) | 19.1 (33/173) | 16.8 (27/161) | 50.0 (6/12) |
| | | Don't know - % (n/N) | 4.0 (7/173) | 3.1 (5/161) | 16.7 (2/12) |
| 6 | On 31st March 2018, how many of your patients with all types of diabetes that you provided care for were a "child in need"? | Units with a known response - % (n/N) | 87.3 (151/173) | 88.2 (142/161) | 75.0 (9/12) |
| | | Percentage of CYP in PDUs with a known response - % (n/N) | 2.0 (463/23083) | 2.0 (444/22082) | 1.9 (19/1001) |
| | | Rate per 10,000 patients | 200.6 | 201.1 | 189.8 |
| 7 | On 31st March 2018, how many of your patients with all types of diabetes that you provided care for were on a child protection register (Wales) or had a child protection plan in place (England)? | Units with a known response - % (n/N) | 92.5 (160/173) | 92.5 (149/161) | 91.7 (11/12) |
| | | Percentage of CYP in PDUs with a known response - % (n/N) | 0.9 (212/24827) | 0.9 (202/23566) | 0.8 (10/1261) |
| | | Rate per 10,000 patients | 85.4 | 85.7 | 79.3 |
| 8 | On 31st March 2018, how many of your patients with all types of diabetes that you provided care for were a "looked after child" (child in care)? (N.B denominator excludes units who didn't know). | Units with a known response - % (n/N) | 91.9 (159) | 91.9 (148) | 91.7 (11) |
| | | Percentage of CYP in PDUs with a known response - % (n/N) | 0.8 (199/24576) | 0.8 (181/23315) | 1.4 (18/1261) |
| | | Rate per 10,000 patients | 81.0 | 77.6 | 142.7 |
| 9 | Does your service provide access to 24-hour telephone advice on diabetes management for CYP/parents/carers, seven days a week? | Yes - % (n/N) | 90.2 (156/173) | 95.0 (153/161) | 25.0 (3/12) |
| | | No - % (n/N) | 9.8 (17/173) | 5.0 (20/161) | 75.0 (9/12) |
| | | Don't know - % (n/N) | 0.0 (0/173) | 0.0 (0/173) | 0.0 (0/173) |

| Q no. | Question | Data item | England and Wales | England | Wales |
|-------|--|---|-------------------|----------------|-----------------|
| 10 | If your patients have access to a 24-hour/seven-day telephone advice service, who provides this? (Select all that apply) | Consultant - % (n/N) | 70.5 (110/156) | 71.2 (109/153) | 33.3 (1/3) |
| | | PDSN - % (n/N) | 71.8 (112/156) | 72.5 (111/153) | 33.3 (1/3) |
| | | Dietitian - % (n/N) | 5.1 (8/156) | 5.2 (8/153) | 0 (0/3) |
| | | Diabetes educator - % (n/N) | 1.3 (2/156) | 1.3 (2/153) | 0 (0/3) |
| | | Psychologist - % (n/N) | 0 (0/156) | 0 (0/153) | 0 (0/3) |
| | | Other doctor - % (n/N) | 33.3 (52/156) | 32.7 (50/153) | 66.7 (2/3) |
| | | Other ward staff - % (n/N) | 20.5 (32/156) | 20.3 (31/153) | 33.3 (1/3) |
| | | Other - % (n/N) | 6.4 (10/156) | 6.5 (10/153) | 0 (0/3) |
| | | Other (please specify) | | | |
| 11 | If your patients have access to a 24-hour/ seven-day telephone advice service, was it provided by MDT? | Yes - % (n/N) | 42.3 (66/156) | 43.1 (66/153) | 0 (0/3) |
| | | No - % (n/N) | 57.7 (90/156) | 56.9 (87/153) | 100.0 (3/3) |
| 12 | Does your service have a dedicated transition clinic/service, run jointly with adult diabetes services? | Yes - % (n/N) | 94.2 (163/173) | 94.4 (152/161) | 91.7 (11/12) |
| | | No - % (n/N) | 4.6 (8/173) | 5 (8/161) | 0 (0/12) |
| | | Don't know - % (n/N) | 1.2 (2/173) | 0.6 (1/161) | 8.3 (1/12) |
| 13 | After transfer from paediatric services, do your patients always have access to a dedicated young adult diabetes clinic? | Yes - % (n/N) | 72.3 (125/163) | 71.4 (115/152) | 83.3 (10/11) |
| | | No - % (n/N) | 26 (45/163) | 26.7 (43/152) | 16.7 (2/11) |
| | | Don't know - % (n/N) | 1.7 (3/163) | 1.9 (3/152) | 0 (0/11) |
| 14 | In the previous 12 months, what is the estimated proportion (%) of young people who transition from your service by: | Direct transfer - % (range) | 8.7 (0 - 100) | 8.4 (0 - 100) | 12.9 (0 - 37.5) |
| | | A gradual process of transition over 1-2 years meeting members of the adult team during the process - % (range) | 70.1 (0 - 100) | 72 (0 - 100) | 45.1 (0 - 100) |
| | | Seen once in a joint paediatric/ adult diabetes clinic - % (range) | 13.7 (0 - 100) | 11.5 (0 - 100) | 42 (0 - 100) |
| | | Other - % (range) | 5.8 (0 - 100) | 6.2 (0 - 100) | 0 (0 - 0) |
| 15 | At diagnosis (within the first month), was a structured education programme delivered for patients with Type 1 diabetes locally? | Yes - % (n/N) | 98.3 (170/173) | 98.1 (158/161) | 100.0 (12/12) |
| | | No - % (n/N) | 1.7 (3/173) | 1.9 (3/161) | 0 (0/12) |
| 16 | At diagnosis (within the first month), what structured education programme do you deliver for patients with Type 1 diabetes locally? | DAFNE - % (n/N) | 0.0 (0/170) | 0.0 (0/161) | 0.0 (0/12) |
| | | DEAPP - % (n/N) | 2.4 (4/170) | 2.5 (4/158) | 0 (0/12) |
| | | Goals of diabetes Education - % (n/N) | 16.5 (28/170) | 17.7 (28/158) | 0 (0/12) |
| | | SEREN - % (n/N) | 9.4 (16/170) | 2.5 (4/158) | 100.0 (12/12) |
| | | Locally developed programme - % (n/N) | 57.6 (98/170) | 62 (98/158) | 0 (0/12) |
| | | Combination of one or more structured programme and a locally developed programme - % (n/N) | 5.9 (10/170) | 6.3 (10/158) | 0 (0/12) |
| | | Other - % (n/N) | 8.2 (14/170) | 8.9 (14/158) | 0 (0/12) |

| Q no. | Question | Data item | England and Wales | England | Wales |
|-------|---|--|-------------------|------------------|---------------|
| 17 | Is the structured education programme delivered at diagnosis defined in your response to the previous question quality assured? | Yes - % (n/N) | 40.6 (69/170) | 38.6 (61/158) | 66.7 (8/12) |
| | | No - % (n/N) | 41.2 (70/170) | 42.4 (67/158) | 25.0 (3/12) |
| | | Don't know - % (n/N) | 18.2 (31/170) | 19 (30/158) | 8.3 (1/12) |
| 18 | Is your paediatric diabetes service currently achieving Best Practice Tariff Payments (Centres in England only)? | Yes - % (n/N) | 90.7 (146/161) | 90.7 (146/161) | - |
| | | No - % (n/N) | 5.6 (9/161) | 5.6 (9/161) | - |
| | | Don't know - % (n/N) | 3.7 (6/161) | 3.7 (6/161) | - |
| 19 | Of those who answered yes to Q51, for how many years were they achieving Best Practice Tariff Payments | Less than 1 year | 0.7 (1/146) | 0.7 (1/146) | - |
| | | 1-2 years | 5.5 (8/146) | 5.5 (8/146) | - |
| | | 3-4 years | 9.6 (14/146) | 9.6 (14/146) | - |
| | | 5-6 years | 46.6 (68/146) | 46.6 (68/146) | - |
| | | 7-8 years | 7.5 (11/146) | 7.5 (11/146) | - |
| | | Don't know - % (n/N) | 30.1 (44/146) | 30.1 (44/146) | - |
| 20 | Of those who answered yes, what percentage of BPT received goes directly into diabetes care in your unit (including staff costs, equipment, facilities, network management fees etc.) | PDUs with a known response - % (n/N) | 28.1 (41/146) | 28.1 (41/146) | - |
| | | Mean percentage of BPT that was going directly into diabetes care - % (range) | 40 (0.0 - 100.0) | 40 (0.0 - 100.0) | - |
| | | Proportion of PDUs (with a known response) where it was reported that no BPT went direct-ly into diabetes care in their unit - % (n/N) | 61 (25/41) | 61 (25/41) | - |
| 21 | If you are not achieving Best Practice Tariff Payments, do you expect to start within the next 12 months? | Yes - % (n/N) | 22.2 (2) | 22.2 (2) | - |
| | | No - % (n/N) | 22.2 (2) | 22.2 (2) | - |
| | | Don't know - % (n/N) | 55.6 (5) | 55.6 (5) | - |
| 22 | Enter the total number (head count) of individual paediatric consultants providing the children and young people's diabetes service (Full time or part time, do not include adult physicians involved in transitional care) | Total - n | 393 | 368 | 25 |
| | | Proportion of PDUs with at least one consultant - % (n/N) | 100.0 (173/173) | 100.0 (161/161) | 100.0 (12/12) |
| | Mean number of years working as a consultant | Mean - (total no. of years working as a consultant/ total number of consultants) | 9.8 (3846/393) | 9.8 (3612/368) | 9.4 (234/25) |
| | | Less than 4 years - % (n/N) | 23.7 (187/393) | 22.8 (176/368) | 36.0 (11/25) |
| | | 4 to 9 years - % (n/N) | 29.3 (115/393) | 30.2 (111/368) | 16.0 (4/25) |
| | | 10 to 14 years - % (n/N) | 19.6 (77/393) | 19.6 (72/368) | 20.0 (5/25) |
| | | 15 to 19 years - % (n/N) | 13.2 (52/393) | 13.6 (50/368) | 8.0 (2/25) |
| | | 20 to 24 years - % (n/N) | 8.7 (34/393) | 8.4 (31/368) | 12.0 (3/25) |
| | | 25 years or more - % (n/N) | 3.8 (15/393) | 3.8 (14/368) | 4.0 (3/25) |
| | | No data - % (n/N) | 1.8 (7/393) | 1.6 (6/368) | 4.0 (3/25) |

| Q no. | Question | Data item | England and Wales | England | Wales |
|-------------|---|---|-----------------------|-----------------------|---------------------|
| 22 cont. | Mean number of years looking after children with diabetes | Mean - (total no. of years working with CYP with diabetes/total number of consultants) | 11.1 (4368/393) | 11.1 (4093/368) | 11.0 (275/25) |
| | | Less than 4 years - % (n/N) | 12.7 (50/393) | 12.2 (45/368) | 20.0 (5/25) |
| | | 4 to 9 years - % (n/N) | 35.6 (140/393) | 36.4 (134/368) | 24.0 (6/25) |
| | | 10 to 14 years - % (n/N) | 18.1 (71/393) | 17.9 (66/368) | 20.0 (5/25) |
| | | 15 to 19 years - % (n/N) | 16.3 (64/393) | 16.3 (60/368) | 16.0 (4/25) |
| | | 20 to 24 years - % (n/N) | 9.7 (38/393) | 9.5 (35/368) | 12.0 (3/25) |
| | | 25 years or more - % (n/N) | 5.9 (23/393) | 6.0 (22/368) | 4.0 (1/25) |
| | | No data - % (n/N) | 1.8 (7/393) | 1.6 (6/368) | 4.0 (2/25) |
| 23 | Enter the total number of Programmed Activities (PAs) per week that these consultants actually work in paediatric diabetes care (including Direct Clinical Care (DCC) and Supporting Professional Activities (SPAs) | Total (n) | 971.1 | 921.4 | 49.7 |
| | | Caseload per PA - (no. patients/no. PAs) mean | 27.9 (27090/971.1) | 28.0 (25754/921.4) | 26.9 (1336/49.7) |
| | | Caseload per PA - range | 7.8 - 425.0 | 7.8 - 425.0 | 12.5 - 373.0 |
| | | WTE per 1000 patients - mean (n) | 3.6 | 3.6 | 3.7 |
| | | WTE per 1000 patients - range | 0.0 - 12.8 | 0.0 - 10.5 | 0.0 - 10.5 |
| 24 | Enter the total number of PAs per week for the diabetes service that actually appear in the job plans/ contracts (including DCC and SPAs) of these consultants | Total (n) | 862.5 | 816.2 | 46.3 |
| | | Caseload per PA - (no. patients/no. PAs) mean | 31.4 (7090/862.5) | 31.6 (25754/816.2) | 28.9 (1336/46.3) |
| | | Caseload per PA - range | 7.8 - 425.0 | 7.8 - 425.0 | 17.0 - 250.0 |
| | | WTE per 1000 patients - mean (n) | 3.2 | 3.2 | 3.5 |
| | | WTE per 1000 patients - range | 0.0 - 12.8 | 0.0 - 12.8 | 0.0 - 6.0 |
| 25 | Did consultants have specific training in paediatric diabetes before taking on care of children with diabetes? | Yes - % (n/N) | 88.5 (348/393) | 88.4 (329/372) | 87.5 (21/24) |
| | If yes, please provide a description of the training? | Accredited - Postgraduate training in diabetes (Post-graduate, Masters level or above) or CPD - % (n/N) | 52.0 (181/348) | 52.9 (173/327) | 38.1 (8/21) |
| | | Non-accredited training (e.g. seminars, online course) - % (n/N) | 30.7 (107/348) | 30.6 (100/327) | 33.3 (7/21) |
| | | Other - % (n/N) | 11.2 (39/348) | 10.1 (33/327) | 28.6 (6/21) |
| | | Not specified - % (n/N) | 5.2 (18/348) | 0.6 (2/329) | 0 (0/21) |

| Q no. | Question | Data item | England and Wales | England | Wales | |
|-------|---|---|-------------------|----------------|----------------|--------------|
| 26 | How many Whole Time Equivalent (WTE) other doctors do you have contracted to work for your paediatric diabetes service? (e.g. Non-consultant grade doctors including associate specialists and trust grade doctors) | PDUs where there is at least one other doctor contracted to work in the unit - % (n/N) | 18.5 (32/173) | 18.6 (30/161) | 16.7 (2/12) | |
| | | WTE - total | 18.7 | 17.3 | 1.4 | |
| | | WTE per 1000 patients - mean | 0.7 | 0.7 | 1.0 | |
| | | WTE per 1000 patients - range | 0.0 - 22.2 | 0.0 - 22.2 | 0.0 - 11.9 | |
| 27 | Other doctor (non-consultant grade) had specific training in paediatric diabetes before taking on care of children with diabetes? | Total - n | 39 | 35 | 4 | |
| | | Yes - % (n/N) | 74.4 (29/39) | 75.8 (25/33) | 100 (4/4) | |
| 28 | If other doctor had specific training in diabetes, what training did they have? | Accredited - Postgraduate training in diabetes (Post-graduate, Masters level or above) or CPD - % (n/N) | 37.9 (11/29) | 36 (9/25) | 50.0 (2/4) | |
| | | Non-accredited training (e.g. seminars, online course) - % (n/N) | 58.6 (17/29) | 60 (15/25) | 50.0 (2/4) | |
| | | Don't know - % (n/N) | 3.4 (1/29) | 4.0 (1/25) | 0.0 (0/4) | |
| 29 | How many Whole Time Equivalent (WTE) doctors in training do you have contracted to work for your paediatric diabetes service? | Total WTE - n | 22 | 21 | 1 | |
| | | PDUs with at least some level of WTE doctors in training - % (n/N) | 15.6 (27/173) | 16.1 (26/161) | 8.3 (1/12) | |
| 30 | How many Whole Time Equivalent (WTE) PDSNs do you have contracted to work for your paediatric diabetes service? | Total WTE - n | 451.3 | 425.5 | 25.8 | |
| | | PDSN WTE per 1000 patients | 16.7 | 16.5 | 19.3 | |
| | | Caseload per 1 WTE PDSN | 60.0 | 60.5 | 51.8 | |
| | | Caseload per 1 WTE PDSN PDSN-to-patient ratio > 1: 70 (%) (Royal College of Nursing recommended ratio) | 70.5 (122/173) | 68.9 (111/161) | 91.7 (11/12) | |
| 31 | For each PDSN in your service, are they: | Total - n | 551 | 514 | 37 | |
| | | Permitted to work in the community (i.e. can-do home and school visits) for diabetes? | Yes - % (n/N) | 99.1 (546/551) | 99.2 (510/514) | 97.3 (36/37) |
| | | | No - % (n/N) | 0.9 (5/551) | 0.8 (4/514) | 2.7 (1/37) |
| | Don't know - % (n/N) | | 0.0 (0/551) | 0.0 (0/514) | 0.0 (0/37) | |
| | A nurse prescriber? | Yes - % (n/N) | 28.3 (156/551) | 29.8 (153/514) | 8.1 (3/37) | |
| | | No - % (n/N) | 69.9 (385/551) | 68.3 (351/514) | 91.9 (34/37) | |
| | | Don't know - % (n/N) | 0.5 (3/551) | 0.6 (3/514) | 0.0 (0/37) | |
| | Do they adjust insulin doses under protocol? | Yes - % (n/N) | 84.9 (468/551) | 86.2 (443/514) | 67.6 (25/37) | |
| | | No - % (n/N) | 12.5 (69/551) | 32.4 (12/37) | 11.1 (57/514) | |
| | | Don't know - % (n/N) | 2.2 (12/551) | 2.3 (12/514) | 0.0 (0/37) | |

| Q no. | Question | Data item | England and Wales | England | Wales |
|-------|---|---|-------------------|-----------------|---------------|
| 32 | At PDU level, was there at least one PDSN employed who... | PDUs with at least some level of WTE PDSN - % (n/N) | 99.4 (172/173) | 99.4 (160/161) | 100.0 (12/12) |
| | Permitted to work in the community (i.e. can do home and school visits) for diabetes? | Yes - % (n/N) | 100.0 (173/173) | 100.0 (161/161) | 100.0 (12/12) |
| | | No - % (n/N) | 0.0 (0/173) | 0.0 (0/161) | 0.0 (0/12) |
| | | Don't know - % (n/N) | 0.0 (0/173) | 0.0 (0/161) | 0.0 (0/12) |
| | A nurse prescriber? | Yes - % (n/N) | 55.5 (96/173) | 58.4 (94/161) | 16.7 (2/12) |
| | | No - % (n/N) | 45.5 (77/173) | 41.6 (67/161) | 83.3 (10/12) |
| | | Don't know - % (n/N) | 0.0 (0/173) | 0.0 (0/161) | 0.0 (0/12) |
| | Do they adjust insulin doses under protocol? | Yes - % (n/N) | 87.9 (152/173) | 89.4 (144/161) | 66.7 (8/12) |
| | | No - % (n/N) | 10.4 (18/173) | 8.7 (14/161) | 33.3 (4/12) |
| | | Don't know - % (n/N) | 1.7 (3/173) | 1.9 (3/161) | 0 (0/12) |
| 33 | How many WTE dietitians do you have in your paediatric diabetes service? | Total - n | 153.0 | 145 | 8 |
| | | Dietitian WTE per 1000 patients | 5.6 | 5.6 | 6.0 |
| | | Caseload per 1 WTE dietitian | 177.1 | 177.6 | 167.0 |
| 34 | For each dietitian in your service, were they: | Total - n | 282 | 264 | 18 |
| | Permitted to work in the community (i.e. can do home and school visits) for diabetes? | Yes - % (n/N) | 81.9 (231/282) | 84.8 (224/264) | 77.8 (14/18) |
| | | 82.2 (217/264) | 11.3 (32/282) | 11 (29/264) | 16.7 (3/18) |
| | | 77.8 (14/18) | 4.3 (12/282) | 4.2 (11/264) | 5.6 (1/18) |
| | A supplementary prescriber adjusting insulin via a clinical management plan and under the supervision of an independent prescriber? | Yes - % (n/N) | 7.1 (20/282) | 7.6 (20/264) | 0 (0/18) |
| | | No - % (n/N) | 13.8 (39/282) | 13.6 (36/264) | 16.7 (3/18) |
| | | Don't know - % (n/N) | 4.3 (12/282) | 4.2 (11/264) | 5.6 (1/18) |
| | Able to adjust insulin doses under a local diabetes protocol? | Yes - % (n/N) | 6.0 (17/282) | 6.4 (17/264) | 0 (0/18) |
| | | No - % (n/N) | 91.1 (257/282) | 90.5 (239/264) | 100.0 (18/18) |
| | | | 2.8 (8/282) | 3 (8/264) | 0 (0/18) |
| 35 | At PDU level, was there at least one dietitian employed who.. | PDUs with at least some level of WTE dietitians - % (n/N) | 99.4 (172/173) | 99.4 (160/161) | 100.0 (12/12) |
| | Was a supplementary prescriber adjusting insulin via a clinical management plan and under the supervision of an independent prescriber? | Yes - % (n/N) | 4.0 (7/173) | 3.7 (6/161) | 0 (0/12) |
| | | No - % (n/N) | 6.9 (12/173) | 7.5 (12/161) | 100.0 (12/12) |
| | | Don't know - % (n/N) | 90.8 (157/173) | 90.1 (145/161) | 0 (0/12) |
| | Was able to adjust insulin doses under a local diabetes protocol? | Yes - % (n/N) | 2.3 (4/173) | 2.5 (4/161) | 41.7 (5/12) |
| | | No - % (n/N) | 43.9 (76/173) | 44.1 (71/161) | 58.3 (7/12) |
| | | Don't know - % (n/N) | 54.3 (94/173) | 54.0 (87/161) | 0 (0/12) |

| Q no. | Question | Data item | England and Wales | England | Wales |
|-------|--|---|-------------------|----------------|--------------|
| 36 | How many Whole Time Equivalent (WTE) diabetes educators do you have contracted to work for your paediatric diabetes service? (i.e. someone responsible specifically for the structured education programme and outside the PDSN and/ or dietetic workforce). | Total WTE | 20.2 | 19.8 | 0.4 |
| | | PDUs with at least some level of WTE diabetes educator - % (n/N) | 11.0 (19/173) | 10.6 (17/161) | 16.7 (2/12) |
| | | WTE per 1000 patients | 0.7 | 0.8 | 0.3 |
| | | Caseload per 1 WTE | 3071.3 | | |
| 37 | How many Whole Time Equivalent (WTE) psychologists do you have contracted to work for your paediatric diabetes service? | Total WTE | 20.2 | 19.8 | 0.4 |
| | | PDUs with at least some level of WTE psychologist - % (n/N) | 89.0 (154/173) | 90.7 (146/161) | 66.7 (8/12) |
| | | Total WTE | 66.4 | 63.1 | 3.3 |
| | | WTE per 1000 patients | 2.5 | 2.4 | 2.5 |
| | | Caseload per 1 WTE | 408.0 | 408.3 | 400.6 |
| 38 | How many Whole Time Equivalent (WTE) youth workers do you have contracted to work for your paediatric diabetes service? | Total WTE | 8.3 | 7.1 | 1.2 |
| | | PDUs with at least some level of WTE youth worker - % (n/N) | 7.5 (13/173) | 6.8 (11/161) | 16.7 (2/12) |
| 39 | How many Whole Time Equivalent (WTE) social workers do you have contracted to work for your paediatric diabetes service? | Total WTE | 1.7 | 1.7 | 0.0 |
| | | PDUs with at least some level of WTE social worker - % (n/N) | 1.2 (2/173) | 1.2 (2/161) | 0.0 (0/12) |
| 40 | How many Whole Time Equivalent (WTE) administrative staff work for your paediatric diabetes service (excluding data clerks/clinical audit support)? (Where administrative staff do other duties such as endocrinology, estimate the time dedicated to diabetes). | Total WTE | 97.1 | 89.9 | 7.3 |
| | | PDUs with at least some level of WTE administrative staff - % (n/N) | 87.3 (151/173) | 87.6 (141/161) | 83.3 (10/12) |
| | | WTE per 1000 patients | 3.6 | 3.5 | 5.4 |
| 41 | How many Whole Time Equivalent (WTE) data assistants/clinical audit support staff work for your paediatric diabetes service? (Where data support staff do other duties such as endocrinology, estimate the time dedicated to diabetes). | Total WTE | 27.6 | 27.6 | 0 |
| | | PDUs with at least some level of WTE administrative staff - % (n/N) | 31.2 (54/173) | 33.5 (54/161) | 0.0 (0/12) |
| | | WTE per 1000 patients | 1.0 | 1.1 | 0.0 |
| 42 | Did you have any vacant positions within your paediatric diabetes team on the 31/03/2018? | Yes - % (n/N) | 38.7 (67/173) | 37.9 (61/161) | 50.0 (6/12) |
| | | No - % (n/N) | 59.0 (102/173) | 59.6 (96/161) | 50.0 (6/12) |
| | | Don't know - % (n/N) | 2.3 (4/173) | 2.5 (4/161) | 0.0 (0/12) |

| Q no. | Question | Data item | England and Wales | England | Wales |
|-------|--|---|-------------------|-----------------|-------------|
| 43 | Please provide details of any vacant doctor posts that your PDU had on the 31 March 2018 | Consultants | | | |
| | | Total vacant posts - n | 9.0 | 9.0 | 0.0 |
| | | Percentage of total posts (vacant and filled) - % (n/N) | 2.2 (9/402) | 2.4 (9/377) | 0 (0/25) |
| | | Percentage of total posts (vacant and filled) vacant for more than 3 months - % (n/N) | 1.5 (6/402) | 1.6 (6/377) | 0.0 (0/25) |
| | | Total PAs vacant - n | 13.5 | 162.0 | 0.0 |
| | | Percentage of total PAs (vacant and filled) - % (n/N) | 1.5 (13.5/876) | 1.6 (13.5/830) | 0.0 (0/46) |
| | | Percentage of total WTEs (vacant and filled) - % (n/N) | 1.5 (1.35/87.6) | 1.6 (1.35/83.0) | 0.0 (0/4.6) |
| | | Other doctor | | | |
| | | Total vacant posts - n | 1 | 1 | 0 |
| | | Percentage of total posts (vacant and filled) - % (n/N) | 3.0 (1/33) | 3.2 (1/31) | 0.0 (0/2) |
| | | Percentage of total posts (vacant and filled) vacant for more than 3 months - % (n/N) | 3.0 (1/33) | 3.2 (1/31) | 0.0 (0/2) |
| | | Total WTE vacant - n | 0.5 | 0.5 | 0.0 |
| | | Percentage of total WTE (vacant and filled) - % (n/N) | 2.6 (0.5/19.2) | 2.8 (0.5/17.8) | 0.0 (0/1.4) |
| | | Consultant and other doctor | | | |
| | | Total vacant posts - n | 10 | 10 | 0 |
| | | Percentage of total posts (vacant and filled) - % (n/N) | 2.3 (10/435) | 2.5 (10/408) | 0 (0/27) |
| | | Percentage of total posts (vacant and filled) vacant for more than 3 months - % (n/N) | 1.6 (7/435) | 1.7 (7/408) | 0 (0/27) |
| | | Total WTE vacant - n | 1.9 | 1.9 | 0.0 |
| | | Percentage of total WTE (vacant and filled) - % (n/N) | 1.7 (1.9/106.8) | 1.8 (1.9/100.8) | 0.0 (0/6.0) |

| Q no. | Question | Data item | England and Wales | England | Wales |
|-------|---|---|-------------------|------------------|-----------------|
| 44 | Please provide details of any other vacant posts that your PDU had on the 31 March 2018 | PDSN | | | |
| | | Total vacant posts - n | 34 | 31 | 3 |
| | | Percentage of total posts (vacant and filled) - % (n/N) | 5.8 (34/585) | 5.7 (31/545) | 7.5 (3/40) |
| | | Percentage of total posts (vacant and filled) vacant for more than 3 months - % (n/N) | 4.4 (26/585) | 4.2 (23/556) | 7.5 (3/40) |
| | | Total WTE vacant - n | 36.3 | 34.5 | 1.8 |
| | | Percentage of total WTE (vacant and filled) - % (n/N) | 7.4 (36.3/487.6) | 7.5 (34.5/460.0) | 6.5 (1.8/27.6) |
| | | Dietitian | | | |
| | | Total vacant posts - n | 21 | 16 | 5 |
| | | Percentage of total posts (vacant and filled) - % (n/N) | 6.9 (21/303) | 5.7 (21/280) | 21.7 (21/23) |
| | | Percentage of total posts (vacant and filled) vacant for more than 3 months - % (n/N) | 5.6 (17/303) | 4.6 (13/280) | 17.4 (4/23) |
| | | Total WTE vacant - n | 12.2 | 9.2 | 3.0 |
| | | Percentage of total WTE (vacant and filled) - % (n/N) | 7.4 (12.2/165.1) | 5.9 (9.2/154.1) | 27.3 (3.0/11.0) |
| | | Psychologist | | | |
| | | Total vacant posts - n | 19 | 16 | 3 |
| | | Total posts vacant for more than 3 months - (n) | 18 | 15 | 3 |
| | | Total WTE vacant - n | 10.1 | 7.1 | 3.0 |
| | | Percentage of total WTE (vacant and filled) - % (n/N) | 13.2 (10.1/76.5) | 10.1 (7.1/70.2) | 47.4 (3/6.3) |
| | | Other (admin, data and other) | | | |
| | | Total vacant posts - n | 22 | 22 | 0 |
| | | Total posts vacant for more than 3 months - (n) | 21 | 21 | 0 |
| | | Total WTE vacant - n | 8.8 | 8.8 | 0.0 |
| | | Percentage of total WTE (vacant and filled) - % (n/N) | 7.0 (8.8/124.5) | 7.5 (8.8/117.2) | 0 (0/7.3) |

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