



X-PERT Health

2024 Audit Report

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X-PERT Health 2024 Audit Report

Key points

- Attendance of X-PERT Programmes continues to lead to significant health improvements.
- Mean HbA1c reduction was 10.1mmol/mol at 6 months.
- 50.3% of participants were able to reduce or omit diabetes medication by 6 months.
- Body weight, BMI, waist circumference, systolic and diastolic blood pressure, total cholesterol to HDL ratio, and triglycerides to HDL ratio were all reduced.
- Participant empowerment score was increased by 19.9%.
- Results of the 2024 audit met or exceeded all the Audit Standards from the X-PERT clinical trial.



[Health results in infographics all based on 6-month data]

Introduction

A significant number of people in the UK live with, or are at risk of, type 2 diabetes. This significantly increases their risk of physical and mental health complications, and can have a detrimental effect on their quality of life. It also places a severe burden on health services. Education programmes can provide a vital role in addressing these issues, by helping people develop the knowledge, understanding and confidence needed to help them manage their own health. Supporting this, structured diabetes education programmes have been shown to be effective¹⁻⁵ (and cost-effective^{6,7}) in multiple studies.

X-PERT Health is a registered charity which has provided National Institute of Health and Care Excellence (NICE) compliant diabetes education to over 500,000 people, as well as weight and wellbeing programmes to many more. Our mission is to enable all people at risk of, or diagnosed with, long-term conditions to receive good quality education that helps them self-manage their condition, leading to improved health and wellbeing.

As part of NICE criteria, as well as through an ongoing commitment to providing effective and evidence-based resources and programmes, the outcomes of all X-PERT programmes are audited annually. The summary reports of these audits are freely available, from <https://www.xperthealth.org.uk/articles-and-evidence/evidence-base/>. Results are benchmarked against the outcomes of the initial randomised clinical trial of the X-PERT Diabetes Programme⁸ (see Appendix 1 for an overview of the X-PERT Audit Standards).

In addition to auditing overall impact, awards are given in a range of categories to the top performing organisations (and individuals) that are delivering X-PERT programmes. This provides an opportunity to acknowledge and celebrate the significant success many of these centres have in helping to address the needs of their populations.

The current report presents key results, and X-PERT Award winners, from programmes delivered between 1st January 2022 and 31st December 2023.

Methods

The current report is an audit of data from participants who attended an X-PERT programme aimed at people with, or at risk of, diabetes between 1st January 2022 and 31st December 2023. This includes X-PERT Diabetes, X-PERT Diabetes Digital and X-PERT Insulin. These will hereafter be collectively referred to simply as “programmes for people with diabetes”, for brevity, and to reflect the fact that the majority of participants of these programmes have been diagnosed with diabetes (type 2 diabetes, in most cases). Results from different programme types are combined, unless stated; including for face-to-face programmes, remote/virtual programmes (delivered using video-conferencing software) and digital programmes (accessed on an individual basis).

Baseline and post-programme data are entered into a secure database by authorised users at organisations, mostly NHS organisations, licenced to deliver X-PERT programmes. Data are collected as part of routine care, so additional ethical approval is not required. Participants are informed that their data are recorded for the purpose of audit and can opt out at any stage.

Programme-level data

A range of markers are recorded at a programme level – i.e., data are collected and/or presented for each programme, rather than being available for each participant individually. This includes information on programme attendance and completion, participant satisfaction, and participant empowerment.

Programme completion is defined as attending at least two-thirds of the sessions (e.g., at least four sessions for programmes that are six sessions in length). Participant satisfaction is assessed using an eight-point questionnaire specifically developed for X-PERT Programmes, scored as a percentage (where 100% is the highest satisfaction score). Patient empowerment is assessed at baseline and at the end of the programme, using the validated Diabetes Empowerment Scale-Short Form (DES-SF) questionnaire⁹. This questionnaire returns a score out of five, with higher scores denoting greater perceived levels of self-empowerment.

Participant-level data

Time since diagnosis and a range of demographic factors - including age, gender, and ethnicity - are recorded (where available) for everyone who is registered to attend a programme.

A range of health markers are also recorded for each participant, at baseline and various post-programme time points. These include height, body weight, body mass index (BMI), waist circumference (WC), glycated haemoglobin (HbA1c), systolic blood pressure (SBP), diastolic blood pressure (DBP), total cholesterol (TC), low-density lipoprotein-cholesterol (LDL-c), high-density lipoprotein-cholesterol (HDL-c), triglycerides (TG), TC to HDL ratio (calculated by dividing TC by HDL-c), and TG to HDL ratio (calculated by dividing TG by HDL-c).

Usage of diabetes medication is also recorded at baseline and post-programme. This is used to assess changes in medication requirements, though it is based solely on the number of medications taken, it does NOT take into account changes in dose or attempt to rank intensification of treatment based on the class(es) of medication used. The only exception to this is insulin, which *is* ranked as an intensification compared to the use of other classes of diabetes medication, and increases in the number of units taken *is* factored into the assessment. Medication usage can also be recorded in the audit database as “yes” or “no”, without additional details (e.g., regarding which medication(s) are taken) being required.

For medication change and all clinical markers of health, changes at 6 and 12 months are presented in the current report.

X-PERT Awards

Awards are given to the best performing organisations (or individuals) in the following categories:

- **Best participant engagement:** This award considers the number of participants who attended a programme, the number (and percentage) who completed a programme, the proportion of participants who were from ethnic minority groups, participant satisfaction, and changes in participant empowerment.
- **Greatest improvement in glycated haemoglobin (HbA1c):** This award considers changes in blood glucose management, as indicated by a reduction in glycated haemoglobin (HbA1c). The number of participants for whom relevant data are available is also considered. Separate awards are given for the 6-month and 12-month time points.
- **Greatest reduction in diabetes medication requirements:** This award considers the number and percentage of participants who were able to reduce their need for diabetes medication. Separate awards are given for the 6-month and 12-month time points.
- **Greatest improvement in body weight management:** This award considers improvements in body weight, body mass index (BMI) and waist circumference (WC). The number of participants for whom relevant data are available is also considered. Separate awards are given for the 6-month and 12-month time points.
- **Greatest reduction in cardiovascular disease risk:** This award considers changes in SBP, DBP, TC to HDL ratio, and TG to HDL ratio. The number of participants for whom relevant data are available is also considered. Separate awards are given for the 6-month and 12-month time points.
- **X-PERT Organisation of the Year:** This award is based on self-nominations from organisations who believe they have excelled through their delivery of X-PERT Programmes over the previous 12 months. The winner(s) are based predominantly on the content of the relevant submissions, though audit data are used to support decisions where necessary.
- **Best participant experience:** This award is based on self-nominations from organisations who believe they have excelled in ensuring an excellent experience for participants of their programmes during the period covered by this audit, in relation to their entire population and/or particular groups of people within their population. The winner is based predominantly on the content of the relevant submissions, though audit data are used to support decisions where necessary.
- **X-PERT Educator of the Year:** This award is based on nominations from participants and/or colleagues of individuals delivering X-PERT Programmes. The winner is based predominantly on the content of the relevant submissions, though audit data are used to support decisions where necessary.

Results and Discussion

Programme Level Data

Data for programmes run for people with diabetes during this audit period are presented in Table 1.

Significantly more programmes were run in the period covered by the current audit than that on which the 2023 report was based (1,311 *versus* 997). This translated to greater numbers of individuals registered to attend a programme (9,512 *versus* 7,612), and in the number of participants who attended (6,677 *versus* 4,685) and completed (5,733 *versus* 3,935) programmes.

The rates of attendance (70.2% *versus* 61.5%) and completion (85.9% *versus* 84.0%) were also both higher, with the latter exceeding the target set in the X-PERT Audit Standards ($\geq 80\%$; see Appendix 1).

Evaluation scores (mean = 95.2%) and improvements in empowerment (+19.9%) also both exceeded the 2023 results (94.0% and +19.5%, respectively) *and* the targets set in the X-PERT Audit Standards ($\geq 90\%$ and +10%, respectively).

Table 1. Programme level data for programmes run for people with diabetes

Programmes	1,311
Participants registered to attend	9,512
Participants who attended a programme	6,677 (70.2% of those registered)
Participants who completed a programme	5,733 (85.9% of attendees)
Mean evaluation score	95.2%
Mean empowerment score change	+19.9% (from 3.72/5 to 4.46/5)

Participant characteristics

Table 2 summarises characteristics of people who were registered to attend a programme. The mean age of participants was 60 years, and the majority of participants (88.4%) were between the ages of 45 and 84 years. There were a similar number of male and female participants (47.6% versus 52.2%).

68.4% of participants had their ethnicity recorded as white, compared to [82% of people in England and Wales in the most recent census](#). This suggests that organisations delivering X-PERT programmes were effectively able to engage with ethnic minority groups. This is important, as individuals from such populations have an increased risk of type 2 diabetes and complications associated with it.

As previously noted, the majority of participants (95.1%) had been diagnosed with type 2 diabetes, with most of them (63.4%) having been diagnosed within the last year. This is a reflection of commissioning practices rather than a recommendation from X-PERT Health. Although it is important that people who are newly diagnosed receive quick and adequate support, it is the position of X-PERT Health that all people with type 2 diabetes, irrelevant of how long ago they received their diagnosis, can benefit from good quality education, and through making lifestyle changes that are suitable for them. It is therefore encouraging to see that 851 people who had been living with diabetes for more than 10 years (15% of those for whom relevant data were available) had attended a programme.

Table 2. Characteristics of participants registered to attend programmes for people with diabetes

		Number (percentage)
Age (n = 7,344) Mean: 60 years (SD = 12)	Less than 25 years	12 (0.2%)
	25 - 34 years	127 (1.7%)
	35 - 44 years	586 (8.0%)
	45 - 54 years	1,247 (17.0%)
	55 - 64 years	2,143 (29.2%)
	65 - 74 years	2,079 (28.3%)
	75 - 84 years	1,019 (13.9%)
	85 years and above	131 (1.8%)
Gender (n = 7,369)	Male	3,508 (47.6%)
	Female	3,844 (52.2%)
	Other	17 (0.2%)
Ethnicity (n = 5,463)	White	3,738 (68.4%)
	Black	293 (5.4%)
	Asian	1,196 (21.9%)
	Chinese	25 (0.5%)
	Mixed	78 (1.4%)
	Other	133 (2.4%)
Diabetes Type (n = 7,595)	Type 1 diabetes	20 (0.3%)
	Prediabetes	315 (4.2%)
	Type 2 diabetes	7,225 (95.1%)
	Other	35 (0.5%)
Diabetes Duration (n = 5,673)	Less than 1 years	3,594 (63.4%)
	1-5 years	678 (12.0%)
	6-9 years	550 (9.7%)
	10 years or more	851 (15.0%)

HbA1c improvements following attendance of a programme for people with diabetes

Health results at 6 and 12 months are summarised in Table 3 and Table 4, respectively.

HbA1c was reduced by a clinically meaningful amount at both 6 months (10.1mmol/mol) and 12 months (8.4 mmol/mol). These outcomes are comparable to the results of the 2023 X-PERT audit, where HbA1c was reduced by 10.8mmol/mol and 8.3mmol/mol at 6 and 12 months respectively. The number of participants on which these results are based was significantly higher for the 2024 audit however (2,638 *versus* 1,611 at 6 months; 2,542 *versus* 1,217 at 12 months). This year's results can therefore be considered to be more robust.

It is important to note that the 12-month results are not necessarily based on the same participants for whom data are available at 6 months, thus the smaller magnitude of change at the later time point should **not** be interpreted as an increase in HbA1c between 6 and 12 months. This is also why the baseline values are different for any given variable at each time point.

The observed changes in HbA1c compare favourably to the outcomes of the X-PERT clinical trial⁸, against which the outcomes of ongoing implementation are benchmarked (see Appendix 1), where the mean reduction in HbA1c was 0.4% (now documented as 4.3 mmol/mol) at 4 months and 0.6% (now documented as 6.5mmol/mol) at 14 months. The X-PERT outcomes published in a 2021 paper exploring real world implementation were also superior to those of the initial trial of the programme (and comparable to those of the 2023 and 2024 audits), with a mean HbA1c reduction of 8.6mmol/mol at 12 months¹⁰. Apparent improvements in participant outcomes since the clinical trial may be due to developments to the programmes, such as the inclusion of multiple dietary approaches to support patient choice. This change acknowledges that one size does not fit all, and helps participants to identify lifestyle options that suit their needs and preferences.

Previous research has found that a 1.0% decrease in HbA1c (in IFCC units, which corresponds to a reduction of approximately 11mmol/mol in the DCCT units now used in the UK) is associated with a 21% decrease in the risk of diabetes-related complications *and* in the risk of deaths related to diabetes¹¹. The mean improvements reported here are approaching this threshold, whilst 899 participants at 6 months (34% of those with relevant data) and 796 at 12 months (31% of those with relevant data) achieved a HbA1c reduction of greater than this. It is therefore likely that participants of X-PERT programmes will have a significantly reduced risk of such outcomes.

It is also likely that achieving improvements in blood glucose management through making lifestyle changes is superior to achieving comparable reductions in HbA1c through pharmaceutical intervention(s). This is because lifestyle changes are more likely to have beneficial effects on other elements of physical and mental health and wellbeing, and are less likely to result in unwanted side-effects. As explored subsequently, the evidence available from X-PERT audits suggests the improvements seen by X-PERT participants are likely due to lifestyle changes, rather than increased medication usage.

Changes in other health results following attendance of a programme for people with diabetes

Although HbA1c, as a marker of diabetes control, is the primary health-based outcome on which X-PERT programmes for people with diabetes are audited, it is also important to consider whether health improvements are being achieved more holistically. To this end, other relevant health results, including anthropometric markers and indicators of CVD risk, are considered as part of X-PERT audits too. These results are also shown in Table 3 and Table 4, for 6-month and 12-month data respectively.

On this front, meaningful reductions in body weight, BMI and WC were observed at both 6 months and 12 months. These changes exceeded those seen in the initial X-PERT clinical trial, and therefore surpass key targets set in the X-PERT Audit standards (see Appendix 1).

Further, and as with previous audits, there were also improvements in a wide range of markers of CVD risk at both 6 months and 12 months, including meaningful reductions in TC to HDL ratio and TG to HDL ratio. When considering these results, it is worth noting that mean levels of SBP and DBP were below national targets at baseline for both the 6- and 12-month results. Significant reductions would not therefore be targeted or desired. Similar is true for HDL-cholesterol, where baseline levels already exceeded national targets.

Overall, and most importantly, the improvements observed in markers of CVD risk, alongside improvements in markers of body size and blood glucose control, are likely to result in a significant decrease in the risk of a range of long-term complications, as well as improvements in participants' quality of life.

Table 3. Health results for participants of programmes for people with diabetes at 6 months

	Baseline (mean ± SD)	6 months (mean ± SD)	Difference (mean ± 95%CI)
Body Weight (kg) [n = 1,681]	93.5 ± 22.3	90.1 ± 21.6	-3.4 (-3.6 to -3.3)
Body Mass Index (kg/m ²) [n = 1,720]	32.8 ± 7.1	31.6 ± 6.9	-1.2 (-1.3 to -1.1)
Waist Circumference (cm) [n = 146]	105.0 ± 18.1	98.3 ± 17.8	-6.7 (-7.1 to -6.3)
HbA1c (mmol/mol) [n = 2,638]	63.4 ± 18.9	53.3 ± 13.5	-10.1 (-10.2 to -10.0)
Systolic Blood Pressure (mmHg) [n = 1,469]	133 ± 14	130 ± 13	-3 (-3 to -3)
Diastolic Blood Pressure (mmHg) [n = 1,470]	79 ± 10	77 ± 9	-2 (-2 to -2)
Total Cholesterol (mmol/l) [n = 1,779]	4.7 ± 1.3	4.3 ± 1.1	-0.4 (-0.4 to -0.4)
LDL-cholesterol (mmol/l) [n = 432]	2.5 ± 1.0	2.4 ± 1.0	-0.1 (-0.2 to 0.0)
HDL-cholesterol (mmol/l) [n = 1,769]	1.2 ± 0.4	1.3 ± 0.4	0.1 (0.1 to 0.1)
Triglycerides (mmol/l) [n = 1,393]	2.3 ± 1.5	1.9 ± 1.1	-0.4 (-0.5 to -0.3)
Total Cholesterol to HDL Ratio [n = 1,706]	4.0 ± 1.3	3.5 ± 1.1	-0.5 (-0.5 to -0.5)
Triglycerides to HDL Ratio [n = 1,347]	2.1 ± 1.7	1.6 ± 1.4	-0.5 (-0.6 to -0.4)

HbA1c = glycated haemoglobin; LDL = low-density lipoprotein; HDL = high-density lipoprotein.

Table 4. Health results for participants of programmes for people with diabetes at 12 months

	Baseline (mean ± SD)	12 months (mean ± SD)	Difference (mean ± 95%CI)
Body Weight (kg) [n = 1,598]	86.7 ± 22.2	84.3 ± 21.8	-2.4 (-2.6 to -2.2)
Body Mass Index (kg/m ²) [n = 1,608]	31.3 ± 7.0	30.5 ± 6.9	-0.8 (-0.9 to -0.7)
Waist Circumference (cm) [n = 81]	102.0 ± 14.4	98.7 ± 14.7	-3.3 (-3.7 to -2.8)
HbA1c (mmol/mol) [n = 2,542]	63.2 ± 19.1	54.8 ± 15.0	-8.4 (-8.5 to -8.3)
Systolic Blood Pressure (mmHg) [n = 1,458]	130 ± 14	128 ± 13	-2 (-2 to -2)
Diastolic Blood Pressure (mmHg) [n = 1,444]	79 ± 9	78 ± 8	-1 (-1 to -1)
Total Cholesterol (mmol/l) [n = 1,745]	4.7 ± 1.2	4.3 ± 1.1	-0.4 (-0.4 to -0.4)
LDL-cholesterol (mmol/l) [n = 392]	2.5 ± 1.0	2.4 ± 1.0	-0.1 (-0.2 to 0.0)
HDL-cholesterol (mmol/l) [n = 1,585]	1.2 ± 0.4	1.2 ± 0.4	0.0 (0.0 to 0.0)
Triglycerides (mmol/l) [n = 656]	2.1 ± 1.2	1.9 ± 1.0	-0.2 (-0.3 to -0.1)
Total Cholesterol to HDL Ratio [n = 1,546]	4.2 ± 1.5	3.7 ± 1.2	-0.5 (-0.6 to -0.4)
Triglycerides to HDL Ratio [n = 622]	1.9 ± 1.5	1.6 ± 1.0	-0.3 (-0.4 to -0.2)

HbA1c = glycated haemoglobin; LDL = low-density lipoprotein; HDL = high-density lipoprotein.

Changes in medication requirements following attendance of a programme for people with diabetes

A summary of the change in medication usage at 6 and 12 months can be found in Table 5 and Table 6, respectively. For many people, reducing the amount of medication they need to take can be a strong motivator to make lifestyle changes. Reducing medication requirements also helps to reduce the cost associated with managing type 2 diabetes. Diabetes medications account for approximately 15% of all prescription costs in England, with £1.53 billion spent on drug items prescribed for the treatment of diabetes in the 2022/23 financial year¹². The median cost of diabetes medications per patient for this period was £448. The X-PERT Audit Standard (see Appendix 1) is for at least 50% of participants to have reduced diabetes medication or have remained on the same dose.

In the current audit, more than half of participants with relevant data available at 6 months were able to reduce or omit the amount of diabetes medication they were taking compared to baseline (576/1144; 50.3%). This is a slight increase on the 2023 audit, where 48.3% of participants were able to achieve this. There was no change in medication requirements for a further 408 participants (35.7% of those with available data), thus the total percentage who *did not increase* their medication requirements (78.2%) was significantly above the target outlined in the X-PERT Audit Standards (50%).

The majority of participants recorded as having “reduced or omitted” their medication in the current audit had been able to omit it entirely (522/576; 90.6%). Based on the average cost of diabetes medication per patient noted above, it would be expected that the NHS would save approximately £233,856 per year as a result of this. Further savings would be expected for those who reduced their medication but did not omit it entirely, though it is not possible to quantify this based on the available data.

Although a significant number of participants were able to reduce or omit their diabetes medication at 12 months (n=372; 26.5% of those with available data), the number who were able to do so was lower than at 6 months. This was also the case in the 2023 audit. As outlined previously, it is important to note that the participants with data available at 12 months are not necessarily the same participants for whom data were available at 6 months. These outcomes should **not** therefore be interpreted as medication needs being increased between 6 months and 12 months.

Table 5. Change in use of diabetes medications after 6 months for participants of programmes for people with diabetes

	Number (percentage)
Increased medication	160 (14.0%)
Same/equivalent medication	408 (35.7%)
Reduced medication (but still taking some)	54 (4.7%)
Omitted medication entirely	522 (45.6%)
Reduced <i>or</i> omitted medication	576 (50.3)

Table 6. Change in use of diabetes medications after 12 months for participants of programmes for people with diabetes

	Number (percentage)
Increased medication	291 (20.8%)
Same/equivalent medication	739 (52.7%)
Reduced medication (but still taking some)	100 (7.1%)
Omitted medication entirely	272 (19.4%)
Reduced <i>or</i> omitted medication	372 (26.5%)

Potential remission of Type 2 diabetes following attendance of a programme for people with diabetes

Recent evidence has made it clear that it is possible for many people to place their type 2 diabetes into remission¹³⁻¹⁷. This is contrary to traditional perspectives on the nature of the condition, which considered it to be inevitably progressive. Importantly, this advancement (alongside others) allows a much more hopeful and optimistic tone to be taken with patient care and support. Type 2 diabetes remission is generally considered to be when an individual achieves two HbA1c readings outside of a diabetic range (i.e., below 48mmol/mol), with at least three months between them, and with no diabetes medication being taken in order to achieve this¹⁸. Although the time-bound, repeated-measures element of this definition (i.e., two measurements with at least three months between them) cannot be assessed using the data available for the current audit, HbA1c readings and medication usage at a single time point can be considered to infer potential remission rates for X-PERT participants.

Of the 2,489 participants recording as having type 2 diabetes at baseline *and* with HbA1c data available at 6 months, 962 (38.7%) had an HbA1c below 48mmol/mol at 6 months. Of these, 123 (4.9%) were recorded as taking no diabetes medication at 6 months, and a further 663 had an “unknown” medication status at 6 months. The diabetes remission rate for those with relevant data available, not-withstanding the absence of repeated HbA1c tests (see above), would therefore be anywhere between 4.9% and 31.6%.

For the 12-month data set, there were 2,414 participants recorded as having type 2 diabetes at baseline who also had HbA1c data available at 12 months. 800 (33.1%) of these had an HbA1c below 48mmol/mol at 12 months, of whom 183 (7.6%) were not taking any diabetes medication and 333 had their diabetes medication usage recorded as “unknown”. The remission rate would therefore be between 7.6% and 21.4%.

Differences in outcomes based on mode of delivery

Since the COVID-19 pandemic organisations have been able to offer X-PERT programmes remotely, using video conferencing software (e.g., MS Teams or Zoom) and specially adapted resources (e.g., digital versions of activity boards) to facilitate this. Results are not presented separately for different modes of delivery during the current report as there were limited differences in outcomes, though a brief comparison is made here.

Analyses of these different methods of delivery found that the mean age of participants was slightly lower for remote programmes than for face-to-face programmes (57.8 years *versus* 63.6 years at 6 months, and 55.0 years *versus* 63.7 years at 12 months). There were no clear and consistent differences between modes of delivery for the gender or ethnicity of participants. Where there were variations, these suggest that the proportion of non-white participants may be higher for remote programmes.

Where differences were observed for health markers these tended to favour remotely delivered programmes. In particular, there was a notable difference between these modes of delivery for HbA1c change, where reductions were greater for remotely delivered programmes at both 6 months (-12.2mmol/mol *versus* -9.0mmol/mol) and 12 months (-10.1mmol/mol *versus* -6.6mmol/mol). The mean reduction in waist circumference after 6 months was also greater for participants of remote programmes than for face-to-face programmes (-8.1cm *versus* -3.0cm), though there was no difference at 12 months. It would be premature to suggest that remotely delivered programmes are more effective, but it is noteworthy that where there are differences they do favour this mode of delivery, particularly considering it is face-to-face programmes for which there is a clear and consistent evidence based demonstrating effectiveness.

2024 Audit Award Winners

A list of award winners is included below. A brief overview of how the winners for each award were decided can be found in Appendix 2.

- **Best Participant Engagement**

1st: Barts Health - Tower Hamlets (*1st in 2023*).

2nd: Derbyshire Community Health Service NHS Foundation Trust.

3rd: Hounslow Community Diabetes Service (*commended in 2023*).

Commendations: Durham & Darlington NHS FT, Shropshire Community Health NHS – Shropshire, Public Health Collaboration.

- **Greatest Improvement in Glycated Haemoglobin (HbA1c) at 6 Months**

1st: Derbyshire Community Health Service NHS Foundation Trust (*commended in 2023*).

=2nd: Worcestershire Acute Hospitals NHS Trust – Worcestershire (*1st in 2023*).

=2nd: Durham & Darlington NHS FT (*commended in 2023*).

Commendations: Berkshire Healthcare NHS Foundation Trust, Shropshire Community Health NHS – Shropshire, Public Health Collaboration.

- **Greatest Improvement in Glycated Haemoglobin (HbA1c) at 12 Months**

1st: Worcestershire Acute Hospitals NHS Trust – Worcestershire (*1st in 2023*).

2nd: Barts Health – Tower Hamlets.

3rd: Derbyshire Community Health Service NHS Foundation Trust (*commended in 2023*).

Commendations: Shropshire Community Health NHS – Shropshire, Berkshire Healthcare NHS Foundation Trust, Public Health Collaboration, Betsi Cadwaladr UHB, Hounslow Community Diabetes Service, Stockport NHS Foundation Trust.

- **Greatest Reduction in Diabetes Medication Requirements at 6 Months**

1st: Durham & Darlington NHS FT.

2nd: Shropshire Community Health NHS – Shropshire (*commended in 2023*).

3rd: Barnsley Hospital NHS FT.

Commendations: Hounslow Community Diabetes Service, Cardiff & Vale UHB.

- **Greatest Reduction in Diabetes Medication Requirements at 12 Months**

1st: Barnsley Hospital NHS FT.

2nd: Hounslow Community Diabetes Service (1st in 2023).

3rd: Shropshire Community Health NHS – Shropshire (commended in 2023).

Commendations: Stockport NHS Foundation Trust, Barts Health – Tower Hamlets, Cardiff & Vale UHB.

- **Greatest Improvement in Body Weight Management at 6 Months**

1st: Public Health Collaboration (1st in 2023).

2nd: Berkshire Healthcare NHS Foundation Trust (2nd in 2023).

3rd: Durham & Darlington NHS FT (commended in 2023).

Commendations: Shropshire Community Health NHS – Shropshire, Derbyshire Community Health Service NHS Foundation Trust, Hounslow Community Diabetes Service, Bexley Health Neighbourhood Care.

- **Greatest Improvement in Body Weight Management at 12 Months**

1st: Public Health Collaboration (1st in 2023).

2nd: Shropshire Community Health NHS – Shropshire (commended in 2023).

3rd: Berkshire Healthcare NHS Foundation Trust (2nd in 2023).

- **Greatest Reduction in Cardiovascular Disease Risk at 6 Months**

1st: Durham & Darlington NHS FT (commended in 2023).

2nd: Derbyshire Community Health Service NHS Foundation Trust (commended in 2023).

3rd: Shropshire Community Health NHS – Shropshire (commended in 2023).

Commendations: Hounslow Community Diabetes Service, Essex Partnership University NHS FT - West Essex, Berkshire Healthcare NHS Foundation Trust, Barnsley Hospital NHS FT, Cardiff & Vale UHB, Public Health Collaboration, Bexley Health Neighbourhood Care.

- **Greatest Reduction in Cardiovascular Disease Risk at 12 Months**

=1st: Berkshire Healthcare NHS Foundation Trust (2nd in 2023).

=1st: Barts Health – Tower Hamlets (commended in 2023).

3rd: Hounslow Community Diabetes Service (1st in 2023)

Commendations: Derbyshire Community Health Service NHS Foundation Trust, Essex Partnership University NHS FT - West Essex, Stockport NHS Foundation Trust, Betsi Cadwaladr UHB, Barnsley Hospital NHS FT, Public Health Collaboration.

- **X-PERT Organisation of the Year**

Winner: Derbyshire Community Health Service NHS Foundation Trust.

- **Best Participant Experience**

Winner: Hounslow Community Diabetes Service.

- **X-PERT Educator of the Year**

1st: Pat Peach (Stockport NHS Foundation Trust).

2nd: Zara Christopher (Cwm Taf Morgannwg UHB).

3rd: Louise Clarke (Derbyshire Community Health Service NHS Foundation Trust).

Commendations: Julie Dutton (West Meads Surgery), David Sogan (Public Health Collaboration), Polly Murray (Public Health Collaboration), Vicky O'Doherty (Berkshire Healthcare NHS Foundation Trust).

We will be in touch with all educators who were nominated for the X-PERT Educator of the Year award to inform them that this was the case. This was a highly competitive category, and all nominees should be proud to have been nominated.

As with previous years, the selection of winners was particularly difficult in many categories, with many organisations returning excellent results, and multiple high-quality nominations being received for the best organisation, best participant experience, and best educator awards. Congratulations to all the award winners.

In addition to the winners listed above, we would also like to acknowledge the organisations who performed well without winning any of the awards. In particular, we would like to commend **Shropshire Community Health NHS – Shropshire**, who achieved 2nd, 3rd, or a commendation for eight of the nine categories where the award was based on audit data. This consistently high performance is excellent and deserves recognition. Other organisations that were recognised in multiple categories without winning any of the awards this year were **Cardiff & Vale UHB**, **Essex Partnership University NHS FT - West Essex**, **Bexley Health Neighbourhood Care** and **Betsi Cadwaladr UHB**. Again, their excellence in multiple categories should be celebrated.

Lastly, we would like to thank all individuals and organisations involved with the delivery of X-PERT programmes for your continued effort and excellence. Whether amongst the award winners or not, you are all part of a collective effort that helps thousands of people every year to take control of their own health and wellbeing. The results presented within this report only scratch the surface of the true impact this has on people's lives. The significance of this should not be underestimated, and we hope to have you by our side striving to help many more people in the coming years.

Strengths and limitations

Audits of the real-world implementation of education programmes (and other interventions) are, by nature, pragmatic processes that have notable strengths, but also important limitations. The primary strength is the ability to analyse relatively large amounts of data that are collected during routine practice. That data are collected through routine practice also means the outcomes are, arguably, a better reflection of the interventions' effectiveness in the real world than tightly controlled (and thus somewhat artificial) trials are.

The annual X-PERT Audit also has the benefit of considering a range of relevant markers of health, whereas other audits often have a narrow focus on just one or two outcomes. Without assessing multiple factors it is difficult to consider *why* certain changes might have occurred. For example, with diabetes education programmes, it is not possible to draw conclusions as to *why* diabetes control has improved without taking into account factors like medication usage. For the current audit, we can see that medication usage was reduced, alongside improvements in blood glucose control. As a result, it can be inferred that the reduction in HbA1c is likely due to lifestyle changes made by participants. For other programmes, where medication usage is not reported, the same inferences cannot be made. It cannot therefore be ruled out that any apparent benefits of other programmes may be due to increased medication usage, rather than the programme actually being effective.

Another strength of the X-PERT Audit is that only matched data are used, i.e., for each health marker, participants are only included in analyses if they have baseline *and* post-programme data available. This is in contrast to the audit methods used by some other organisations, where *all* data available at baseline and *all* data available post-programme are used, irrelevant of whether the data are from the same participants at each time point. The X-PERT Audit is therefore a better representation of whether there have actually been changes in relevant health markers than some other audits are.

Important limitations of audits of this nature include a reliance on incomplete and imperfect data collection and entry. For any given variable, the number of participants for whom there is "missing" data is significantly greater than would be the case for a high-quality trial. This risks introducing bias to the outcomes; for example, it is possible that data are more likely to be entered for participants who complete a programme, who may be more likely to have benefitted from attending than those who do not complete one.

The rigour of data collection is also lower than would be expected for a trial. This is particularly important for measures such as blood pressure and waist circumference, for which the results can be heavily influenced by measurement technique. Some of the data may also be self-reported, particularly for markers of body size. Although this is common practice in a real-world audit, it again increases the risk of bias and of lower quality data being included in analyses.

Conclusions

Attendance of X-PERT programmes for people with, or at risk of, diabetes continues to lead to improvements in a range of important markers of health. Notably, this includes clinically meaningful reductions in HbA1c at 6 and 12 months, with a significant number of participants also being able to reduce or omit diabetes medications. Improvements in participant empowerment, markers of body size, and indicators of cardiovascular disease risk were also observed. These findings suggest participants of X-PERT programmes are likely to have improved health and wellbeing, and a significantly reduced risk of short- and long-term health complications.

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Appendices

Appendix 1. X-PERT Audit Standards

Audit Standard from RCT	
Participant attendance	At least 80% of participants who attend a programme to complete a programme
Participant satisfaction	At least 90%
Participant empowerment	An increase of at least 10% from baseline
Glycated haemoglobin	A decrease in HbA1c of at least 4mmol/mol at 6 months and at least 6mmol/mol at 12 months
Body weight/BMI	No increase
Waist circumference	A reduction of at least 2cm
Systolic blood pressure	A reduction (if relevant) of at least 5mmHg
Prescribed diabetes medication	At least 50% of participants to either reduce diabetes medication or to remain on the same dose

Appendix 2. Justification for Award winners

Best Participant Engagement: Barts Health – Tower Hamlets, the 2023 winners, again placed first in this category, just beating Derbyshire Community Health Service NHS Foundation Trust to the award. They were amongst the top performers in all relevant categories, with high numbers for programmes (n=88), attendees (n=633) and completers (n=632); attendance and completion rates amongst the highest of all centres (99.8% for both); an excellent mean evaluation score (97%); and an impressive increase in empowerment score (+44.7%). They also had the highest proportion of participants from minority ethnic groups (88%). Hounslow Community Diabetes Service take third place, having been commended in this category in 2023.

Commendations: Durham & Darlington NHS FT, Shropshire Community Health NHS – Shropshire.

Greatest Improvement in Glycated Haemoglobin (HbA1c) at 6 Months: Derbyshire Community Health Service NHS Foundation Trust recorded the largest mean HbA1c reduction (-15.0mmol/mol) and had the second highest number of participants with available data for this metric (n=466). These excellent results made them worthy winners in this highly competitive category. Worcestershire Acute Hospitals NHS Trust – Worcestershire and Durham & Darlington NHS FT were able to hold off the competition to take the remaining places, though it was not possible to separate them, so they have been awarded joint second place.

Commendations: Berkshire Healthcare NHS Foundation Trust, Shropshire Community Health NHS – Shropshire, Public Health Collaboration.

Greatest Improvement in Glycated Haemoglobin (HbA1c) at 12 Months: Worcestershire Acute Hospitals NHS Trust – Worcestershire win this award, with a mean HbA1c reduction of 13.1mmol/mol, having taken first place for the HbA1c reduction award in 2023, when 6- and 12-month results were considered together. Barts Health – Tower Hamlets just beat Derbyshire Community Health Service NHS Foundation Trust to second place, primarily through having data for significantly more participants at this time point. For Derbyshire, first place for 6-month results and third place for 12-month results is an excellent achievement after being commended in the combined category for HbA1c reduction last year.

Commendations: Shropshire Community Health NHS – Shropshire, Berkshire Healthcare NHS Foundation Trust, Public Health Collaboration, Betsi Cadwaladr UHB, Hounslow Community Diabetes Service, Stockport NHS Foundation Trust.

Greatest Reduction in Diabetes Medication Requirements at 6 Months: Durham & Darlington NHS FT were a clear winner in this category, with the highest number of participants who were able to reduce or omit diabetes medication (n=226) as well as one of the highest percentages of relevant participants who were able to do so (81.3%, which was only bettered by organisations with significantly less data available for this category). Shropshire Community Health NHS – Shropshire were also able to help over 100 people reduce or omit diabetes medication at this time point, and just beat Barnsley Hospital NHS FT to second place.

Commendations: Hounslow Community Diabetes Service, Cardiff & Vale UHB.

Greatest Reduction in Diabetes Medication Requirements at 12 Months: Barnsley Hospital NHS FT placed first for deprescribing at 12 months, having come third in the 6-month deprescribing category. This is an excellent achievement for an organisation that were not amongst those who received recognition in this category last year. Hounslow Community Diabetes Service came second, having won the deprescribing award in 2023 (showing continued excellence in this area); and Shropshire Community Health NHS – Shropshire add a third place for 12-month results to their 2nd place for 6-month results.

Commendations: Stockport NHS Foundation Trust, Barts Health – Tower Hamlets, Cardiff & Vale UHB.

Greatest Improvement in Body Weight Management at 6 Months: As in 2023, Public Health Collaboration were worthy winners here. Their body weight results (-6.1kg/-6.5%) were excellent, with a greater mean reduction than all other organisations, but it was the reduction in waist circumference that sealed them first spot. For this metric, they had both the biggest reduction (-10.7cm) and the most matched data (n=70) of all organisations. Berkshire Healthcare NHS Foundation Trust (2nd) and Durham & Darlington NHS FT (3rd) also achieved excellent results in this category, to add to the recognition received by both in 2023.

Commendations: Shropshire Community Health NHS – Shropshire, Derbyshire Community Health Service NHS Foundation Trust, Hounslow Community Diabetes Service, Bexley Health Neighbourhood Care.

Greatest Improvement in Body Weight Management at 12 Months: Public Health Collaboration added the 12-month award for body weight management to the 6-month honours. As noted above, they also won the corresponding 2023 award, when these time points were combined, showing continued excellence in this area. With the biggest reductions in body weight (-6.1kg/-7.1%), BMI (-2.0kg/m²) and waist size (-6.2cm) this award is well deserved. Again, they also had more data than other organisations for waist size. Shropshire Community Health NHS – Shropshire take second place and Berkshire Healthcare NHS Foundation Trust third, adding to recognition for this year's 6-month weight management award and the corresponding award in 2023 in both cases.

Commendations: Essex Partnership University NHS FT - West Essex, Stockport NHS Foundation Trust, Barts Health - Tower Hamlets, Hounslow Community Diabetes Service.

Greatest Reduction in Cardiovascular Disease Risk at 6 Months: In a category that can be particularly difficult to decide, due to the inclusion of a range of different health markers, Durham & Darlington NHS FT were clear winners for the 6-month CVD risk reduction award, by virtue of being amongst the centres with the biggest reductions and with the most available data for SBP (-4.6mmHg, n=468), DBP (-3.3mmHg, n=467), TC to HDL ratio (-0.5, n=480) and TG to HDL ratio (-0.7, n=474). Derbyshire Community Health Service NHS Foundation Trust (2nd) and Shropshire Community Health NHS – Shropshire (3rd) also performed well across all of these metrics, though could not quite rival Durham & Darlington's outcomes. It is noteworthy that all of the organisations who were placed in this category were commended last year, suggesting they were all able to improve on what were already impressive outcomes.

Commendations: Hounslow Community Diabetes Service, Essex Partnership University NHS FT - West Essex, Berkshire Healthcare NHS Foundation Trust, Barnsley Hospital NHS FT, Cardiff & Vale UHB, Public Health Collaboration, Bexley Health Neighbourhood Care.

Greatest Reduction in Cardiovascular Disease Risk at 12 Months: After considering all relevant information, it was not possible to separate Berkshire Healthcare NHS Foundation Trust and Barts Health – Tower Hamlets, so we have joint winners for this category. Berkshire performed slightly better for blood pressure results, whilst Barts Health had a slight advantage in relation to blood lipid improvements. Both organisations ultimately performed well across all relevant metrics, and so are worthy joint winners. Hounslow Community Diabetes Service take third place, having won the corresponding award in 2023. The significant number of participants for whom they had data for helped them to edge out the commended organisations for this place.

Commendations: Derbyshire Community Health Service NHS Foundation Trust, Essex Partnership University NHS FT - West Essex, Stockport NHS Foundation Trust, Betsi Cadwaladr UHB, Barnsley Hospital NHS FT, Public Health Collaboration.

X-PERT Organisation of the Year: Amongst strong competition, Derbyshire Community Health Service NHS Foundation Trust stood out as worthy winners of the inaugural X-PERT Organisation of the Year award. Their submission demonstrated a strong commitment to continued development, including with regards to the audit process itself. This latter point is reflected in the fact they were amongst the best performers in terms of the amount of data that had been entered in many categories.

Derbyshire delivered a significant number of programmes to a significant number of participants, with excellent evaluation scores too. These factors all contributed to them taking second place for the participant engagement award. Their delivery included programmes in rural and urban communities, across a large geographical area. They also delivered both face-to-face and remote programmes to good effect. Further, targeted programmes were run with the aim of supporting specific groups of people with additional needs (e.g., programmes were run for participants with hearing impairments) and/or from groups who were often harder to reach (e.g., programmes were run for younger people, and programmes using multilingual educators were run to support South Asian communities).

Participant feedback was broad and effusive, and highlighted a range of benefits beyond markers audited by X-PERT Health. 100% of participants reported that they would be likely or very likely to recommend the programme to a friend or family member (with over 90% of these participants responding that they would be “very likely” to do so).

Lastly, the improvements in health results achieved by participants of programmes in Derbyshire were excellent. This is demonstrated by the fact they came 1st for HbA1c reduction at 6 months, 3rd for HbA1c reduction at 12 months, and 2nd for CVD risk reduction at 6 months. They were also commended in two other categories which, alongside their 2nd place for participant engagement, means they were acknowledged in 6 of a possible 9 awards.

Best Participant Experience: This award was deservedly won by Hounslow Community Diabetes Service. Hounslow’s mean participant satisfaction score of 97% helped them to 3rd place for the participant engagement award. This, alongside their excellent work in engaging ethnic minority groups, was a big part of their success in this category.

The Hounslow team delivered X-PERT Diabetes and X-PERT Insulin programmes in both face-to-face format and virtually. They also delivered programmes at a range of different times to try and accommodate as many people as possible, including those who work during the day. In an area where over half of the population is from ethnic minority groups, 79% of their attendees reported their ethnicity as non-white. To help engage these communities, programmes were run in South Asian dialects. These underserved communities have an increased risk of type 2 diabetes and its complications, and so the work carried out to support them by Hounslow Community Diabetes Service is well worthy of recognition.

It is also noteworthy that Hounslow exceeded their 2023 audit results in ALL categories, showing continued development and improvement. As noted before, Hounslow were placed or commended for 8 of the 9 award categories based on audit results, showing excellent performance across the board. Although their work with ensuring an excellent experience for harder to reach, higher risk groups, was the primary reason for them winning this award, this fact helped to finalise the decision.

X-PERT Educator of the Year: In another tightly contested category, Pat Peach of Stockport NHS Foundation Trust was chosen as the winner of the 2024 X-PERT Educator of the Year Award. The nomination for Pat, who has been a member of the team delivering X-PERT Programmes in Stockport for 16 years, was effusive in its praise. Pat was commended, amongst other things, for being a pleasure to work with, and for always going the extra mile. This includes helping to keep her colleagues up to date with new research and guidelines, regularly taking food items into her programmes to help support and encourage discussions, and providing excellent individual support to participants in addition to excelling in her role as a group facilitator.

Beyond the picture of Pat, as a person, that was so beautifully painted by the nomination, it was her role in helping to ensure X-PERT Programmes could continue to run during challenging times for the Stockport NHS Foundation Trust team that elevated her case and ultimately won her this award. Pat went out of her way to support ongoing delivery, including juggling the responsibilities of her other roles and switching shifts to fit X-PERT Programmes in.

On a review of available audit data, Pat had more participants registered than the other candidates for this award, and was amongst the very top performers for participant satisfaction and improvement in patient empowerment. Although it was primarily for the content of the nomination itself that Pat was chosen as the winner of the award, these data strengthened her case.

Zara Christopher of Cwm Taf Morgannwg UHB placed second for this award. The nomination for Zara highlighted how her role had helped the team to meet their referral to treatment time targets by helping to free up specialists for one-to-one consultations. The nomination was supported by a range of comments, including how she is loved by staff and participants, how she has had a huge impact on the Cwm Taf Morgannwg UHB diabetes services, and how proud her team are of her.

Louise Clarke of Derbyshire Community Health Service NHS Foundation Trust came third, with her nomination, from a participant of one of her programmes, talking of how well she engaged with people in her groups on a personal level, in addition to how she excellently led the group. Louise had some of the best attendance and completion rates of all of the nominees, as well as some of the biggest improvements in participant empowerment, body weight and HbA1c.

Commendations: Julie Dutton (West Meads Surgery), David Sogan (Public Health Collaboration), Polly Murray (Public Health Collaboration), Vicky O'Doherty (Berkshire Healthcare NHS Foundation Trust).