



Sgrinio Llygaid Diabetig Cymru  
Diabetic Eye Screening Wales



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# Diabetic Eye Screening Wales Annual Statistical Report 2017-18

February 2019



# About us

Public Health Wales exists to protect and improve health and wellbeing and reduce health inequalities for people in Wales.

We are part of the NHS and report to the Minister for Health and Social Services in the Welsh Government.

Our vision is for a healthier, happier and fairer Wales. We work locally, nationally and, with partners, across communities in the following areas:

**Health protection** – providing information and advice and taking action to protect people from communicable disease and environmental hazards

**Primary, community and integrated care** – strengthening its public health impact through policy, commissioning, planning and service delivery

**Microbiology** – providing a network of microbiology services which support the diagnosis and management of infectious diseases

**Safeguarding** - providing expertise and strategic advice to help safeguard children and vulnerable adults

**Screening** – providing screening programmes which assist the early detection, prevention and treatment of disease

**Health intelligence** – providing public health data analysis, evidence finding and knowledge management

**NHS quality improvement and patient safety** – providing the NHS with information, advice and support to improve patient outcomes

**Policy, research and international development** – influencing policy, supporting research and contributing to international health development

**Health improvement** – working across agencies and providing population services to improve health and reduce health inequalities

## Further information

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This report is a detailed summary of information on work undertaken by Diabetic Eye Screening Wales for the year from April 2017 to the end of March 2018.

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### **Quality Assurance Statement**

Screening data records are constantly changing. The databases used by Public Health Wales Screening Division are updated on a daily basis when records are added, changed or removed (archived). This might relate to when a person has been identified as needing screening; has had screening results that need to be recorded, or has a change of status and no longer needs screening respectively. Data is received from a large number of different sources with varying levels of accuracy and completeness. The Screening Division checks data for accuracy by comparing datasets – for example GP practice data – and corrects the coding data where possible. It should be noted that there are sometimes delays in data collection – for example a person might not immediately register with their GP. These delays will therefore affect the completeness of the data depending on individual circumstances. In addition, the reader should be aware that data is constantly updated and there might be slight readjustments in the numbers cited in this document year on year because of data refreshing.

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# 1 Introduction

Welcome to the first annual statistical report published by Diabetic Eye Screening Wales (DESW) as part of Public Health Wales.

DESW (previously Diabetic Retinopathy Screening Service for Wales) was initially commissioned as a national service by Welsh Government in July 2002. DESW became operational in June 2003 and by 2004 was delivering a service to patients in all Health Board areas. The service was hosted by Cardiff and Vale University Health Board until April 2016 when it transferred to join the other population based all Wales Screening Programmes delivered by Public Health Wales.

The service aims to detect diabetic retinopathy before sight loss occurs. Research evidence shows that with early identification and treatment, loss of vision can be prevented in 70 – 90% of people with sight threatening diabetic retinopathy (VISION 2020 WHO <https://www.iapb.org/vision-2020/>).

DESW is the only life-long UK screening programme. All people aged 12 and over with a diagnosis of diabetes, who are registered with a GP in Wales, are eligible for regular retinal screening with DESW.

During 2017/18, for the first time, DESW agreed a set of service standards to measure performance of the service. These have been published on a monthly basis since April 2018, and will result in the publication of its first Official Statistical report in 2020.

## 1.1 Key messages for the public

- Regular eye screening reduces your risk of sight loss caused by diabetic retinopathy.
- Diabetic retinopathy is a common complication of diabetes that affects the 'seeing' part of the eye: the retina.
- Retinopathy is caused when small blood vessels in the retina grow or leak. Over time, this can affect vision temporarily or permanently.
- Until it gets to a late stage, people with retinopathy do not experience any symptoms or loss of vision; they do not know they are affected.
- Regular screening is the best way to identify if you have any retinopathy.

- Early stage retinopathy can be reversed through good blood sugar control; more advanced retinopathy can be treated by eye injections or by laser.
- DESW screening is a free NHS test carried out in community clinics and hospitals across Wales.
- The screening test is not 100% accurate and treatment for diabetic retinopathy carries risks.
- Taking part in DESW screening is a choice.

## **1.2 Programme delivery**

The Screening Division of Public Health Wales is responsible for managing, delivering and quality assuring the programme. The programme employs a full time Head of Programme, sessional Clinical Director and Associate Specialist. Clinical and professional oversight of screening is undertaken by 2 full time nurses. Additionally, the 8 staff within the DESW management team support all Wales delivery across the clinic booking, clinic delivery and image grading functions, with support from a secretarial and administration team.

The screening team, who deliver clinics, are staffed by 32 Health Care Assistants and 32 Retinal Photographers, operating from 3 bases across Wales. All retinal images taken across Wales are reviewed and graded by our Grading team which consists of 14 trained staff, based in Treforest (staffing figures relate to 2017/18).

## **1.3 Screening pathway**

- People aged 12 years and older with a diagnosis of diabetes, who are registered with a GP in Wales, are referred to DESW for regular eye screening.
- Eligible people are invited for eye screening in over 130 community venues across Wales, such as hospitals, health centres, GP practices, or a DESW mobile unit.
- Participants will have a short consultation with a DESW Health Care Assistant. After a check of visual acuity (eye chart), eye drops are administered to make pupils bigger.
- After around a 20 minute wait for the eye drops to work, the photographer will take photographs of the back of the eyes using a special camera. The appointment will then be over.

- In the next few weeks after the appointment, the images will be graded to identify whether there is any diabetic retinopathy present, and the severity of this.
- Letters containing the screening results and explaining the next steps are sent to all participants:
  - Where there is no retinopathy, or only a limited amount of background retinopathy present, the participant will be re-invited for screening by DESW in around 12 months
  - Where there is more extensive retinopathy, or if the most sensitive part of the eye (the macular) is affected, the participant may be re-called for DESW screening in 6 months to monitor their condition (surveillance), or referred to their local hospital Ophthalmology Department for specialist assessment
  - If the participant is pregnant, they will be re-called in 3 months, regardless of whether any retinopathy is present.

## **2      Headline Statistics 2017-18**

This report covers activity from April 2017 to March 2018 inclusive.

For the period shown, DESW did not have agreed service performance standards. These were applied with effect from April 2018. The new standards have been noted for information with each data table but the service was not working to these standards during this period.

## 3 Data

### 3.1 Coverage

Coverage is defined as the percentage of eligible active patients, at a particular point in time, who have a reported result in the previous 12 months. Ineligible patients include those who have no perception of light in both eyes (are completely blind). Inactive patients include those who are under hospital eye service care, or who have chosen to 'opt-out' of eye screening during the period.

Clinic availability, service uptake, clinic waiting times and the timeliness of final grading outcomes all impact on coverage. Additionally, the rapid and continued growth in the number of people being diagnosed with diabetes also affects the coverage rate, because new patients will be eligible but not have a previous result within the period being measured.

Whilst coverage levels across Wales are broadly consistent, the service has work to do to improve performance and support more patients to attend screening within a 12 month period.

From April 2018, the service has set a coverage standard of 80%. Considerable work is being undertaken to review and address the issues that impact on coverage, although this work will take some time to make a substantial impact on patient experience.

**Table 1:** Diabetic Eye Screening Coverage by Health Board

Region	Eligible active patients	Reported results	Coverage (%)
Abertawe Bro Morgannwg UHB	30836	20231	65.6%
Aneurin Bevan UHB	36020	24547	68.1%
Betsi Cadwaladr UHB	36840	23335	63.3%
Cardiff and Vale UHB	22699	15136	66.7%
Cwm Taf UHB	17631	11268	63.9%
Hywel Dda UHB	22487	16157	71.9%
Powys Teaching HB	7727	5225	67.6%
<b>All Wales</b>	<b>174240</b>	<b>115899</b>	<b>66.5%</b>



### 3.2 Timely offer of screening

This data shows the extent to which DESW are offering screening appointments in a timely manner, broken down by health board area. 97% of patients screened are recalled for DESW screening, rather than being referred to Ophthalmology. The vast majority (95%) are placed on a routine recall pathway, which means that they should be screened within 12 months of their last screening result. Patients who do not attend their appointment are also offered a routine recall in 12 months.

Clinic availability has a significant impact on this standard, both from the perspective of how often the service can offer screening clinics in each geographical area, and if it is possible to arrange extra clinics where there has been an unexpected increase in new or surveillance patients who need to be seen more quickly.

From April 2018, the service has set the standard that 95% of patients should be offered a recall appointment within 12 months of their last screening outcome. The work being undertaken to improve service coverage rates will also impact on this standard.

**Table 2:** Patients Recalled Within 12 Months by Health Board

Region	Recall offered	Recall offered within 12 months	%
Abertawe Bro Morgannwg UHB	22935	15581	67.9%
Aneurin Bevan UHB	28600	21152	74.0%
Betsi Cadwaladr UHB	26398	18254	69.1%
Cardiff and Vale UHB	16697	13643	81.7%
Cwm Taf UHB	12853	8666	67.4%
Hywel Dda UHB	18446	15497	84.0%
Powys Teaching HB	6037	4599	76.2%
<b>All Wales</b>	<b>131966</b>	<b>97392</b>	<b>73.8%</b>

### 3.3 Report of screening result

This standard provides a measure of the timeliness of the screening service once the face to face screening appointment has taken place. In order for the result to be produced; screeners must accurately record patient demographics and capture a high quality image, the grading team must produce a final grade outcome, including repeated re-assessment for complex images, and the administration team must fulfil print and postal requirements on a daily basis.

The data below relates to the production of result letters for patients, rather than the standard copies sent to GPs. The breakdown by health board shows a high degree of consistency, which is to be expected because the grading and administration teams who deal with all results are both based centrally and cases are processed in date order within different urgency categories, rather than on a clinic by clinic basis. Whilst the service only operates between Monday and Friday, the days counted within the 21 day target include weekends and bank holidays.

The standard applied from April 2018 is for 85% of patient result letters to be printed within 21 days of the screening appointment.

**Table 3:** Results printed by Health Board

Region	Results letters printed	Results printed within 21 days	%
Abertawe Bro Morgannwg UHB	19884	19849	99.8%
Aneurin Bevan UHB	24164	23748	98.3%
Betsi Cadwaladr UHB	22897	22703	99.2%
Cardiff and Vale UHB	14932	14675	98.3%
Cwm Taf UHB	11330	11272	99.5%
Hywel Dda UHB	15899	15649	98.4%
Powys Teaching HB	5203	5191	99.8%
<b>All Wales</b>	<b>114309</b>	<b>113087</b>	<b>98.9%</b>

### 3.4 Retinopathy identified

The table overleaf shows the number and proportion of patients in each health board area whose screening result shows retinopathy or no retinopathy. The all Wales figures show that 69.1% of the screened population across Wales had no retinopathy identified from their screening encounter.

There is a high degree of consistency across the Welsh population in relation to the proportion of people with retinopathy and the area that they live in. The figure showing 'any retinopathy' includes the presence of all retinopathy grades: from mild, background retinopathy to proliferative retinopathy that requires urgent hospital referral. The presence and severity of retinopathy can fluctuate dependent on how well controlled the person's blood glucose level is. An individual who is in the 'any retinopathy' category one year can move to 'no retinopathy' at their next screening event.

The 'ungradable' category relates to those patients who have attended for their eye screening assessment, but it has not been possible to capture a clear photograph of their retina to enable grading to take place. An example of this would be that the patient has a cataract which obscures the retina from view. Ungradable patients may be either referred to Hospital Eye Service or recalled for screening, dependent upon individual circumstances.

**Table 4:** Retinopathy Breakdown by Health Board

Region	Results reported	No retinopathy	%	Any retinopathy	%	Ungradeable	%
Abertawe Bro Morgannwg UHB	19884	13817	69.5%	5675	28.5%	392	2.0%
Aneurin Bevan UHB	24164	16709	69.1%	6976	28.9%	479	2.0%
Betsi Cadwaladr UHB	22897	15903	69.5%	6536	28.5%	458	2.0%
Cardiff and Vale UHB	14932	10203	68.3%	4450	29.8%	279	1.9%
Cwm Taf UHB	11330	7794	68.8%	3293	29.1%	243	2.1%
Hywel Dda UHB	15899	10954	68.9%	4597	28.9%	348	2.2%
Powys Teaching HB	5203	3585	68.9%	1504	28.9%	114	2.2%
<b>All Wales</b>	<b>114309</b>	<b>78965</b>	<b>69.1%</b>	<b>33031</b>	<b>28.5%</b>	<b>2313</b>	<b>2.0%</b>

The data below provides further detail on the figures shown in table 4. As can be seen, whilst across Wales 28.5% of patients screened have some retinopathy, in practice the much smaller proportion shown below may be considered for surveillance, or referral to hospital eye service for specialist assessment and treatment.

**Table 5:** Retinopathy Outcomes by Health Board

Region	Sight threatening retinopathy/ maculopathy	% of screened diabetic population with sight threatening retinopathy/ maculopathy by region	Severe retinopathy/ maculopathy *	% of screened diabetic population with severe retinopathy/ maculopathy by region
Abertawe Bro Morgannwg UHB	1283	6.5%	233	1.2%
Aneurin Bevan UHB	1440	6.0%	301	1.2%
Betsi Cadwaladr UHB	1374	6.0%	261	1.1%
Cardiff and Vale UHB	1096	7.3%	174	1.2%
Cwm Taf UHB	685	6.0%	157	1.4%
Hywel Dda UHB	999	6.3%	222	1.4%
Powys Teaching HB	275	5.3%	49	0.9%
<b>All Wales</b>	<b>7152</b>	<b>6.3%</b>	<b>1397</b>	<b>1.2%</b>

\* number of people with sight threatening retinopathy/maculopathy that is severe – note, these patients appear in both the sight threatening and severe categories.

### 3.5 Referrals to Ophthalmology

DESW refers patients to Ophthalmology on both an urgent and routine basis, dependent upon the severity of their retinopathy.

The figures below show the number of urgent referrals made by DESW during 2017-18. At an all-Wales level, 64% of urgent referrals related to diabetic retinopathy, and 36% to other observed issues. Again, the figures show a high degree of consistency across geographical areas.

From April 2018, the service is measuring itself against a standard of 95% of patients with an urgent diabetic retinopathy result (R3A – active proliferative retinopathy) being referred to Ophthalmology within 2 weeks of their screening appointment.

**Table 6:** Referrals to Ophthalmology by Health Board

Region	Urgent referrals to Ophthalmology for DR	Urgent referrals to Ophthalmology for other lesions *	Total urgent referrals
Abertawe Bro Morgannwg UHB	116	66	182
Aneurin Bevan UHB	137	78	215
Betsi Cadwaladr UHB	131	70	201
Cardiff and Vale UHB	79	43	122
Cwm Taf UHB	81	39	120
Hywel Dda UHB	115	64	179
Powys Teaching HB	22	22	44
<b>All Wales</b>	<b>681</b>	<b>382</b>	<b>1,063</b>

\* If, whilst assessing an image for diabetic retinopathy, the grader observes a non-diabetic issue of concern, this may also prompt a routine or urgent referral.

## 4 Definitions

This section provides further detail on the calculations used in this report.

### Eligible active

Eligible active population definition includes patients in the following states:

- Awaiting a screening appointment/procedure
- Undergoing screening / grading
- Under Ophthalmology care for non-diabetic conditions
- Marked as post office return

Eligible active population excludes suspended and inactive patients:

### Suspended:

- Under ophthalmology care for diabetic retinopathy
- Screening postponed
- Temporary physical/learning or mental disability
- Screening refused
- Under 12

### Inactive:

- Opted out of screening
- Medically unfit
- No light perception in both eyes
- Terminal illness
- Deceased
- Discharged
- Moved out of area
- No longer diabetic
- Permanent physical/learning/mental disability
- Registered blind

### Uptake

Uptake: % of eligible patients who have attended a screening invitation.

The uptake of diabetic eye screening is maximised within the principles of informed choice and a minimum of 80% of patients attending a digital screening event where images are captured.

Denominator = Eligible active patients who have been offered a screening appointment between month start and month end.

Numerator = Eligible active patients who have attended a screening appointment between month start and month end. This includes patients who attended but couldn't be photographed for technical reasons and patients who were unable to comply with the screening procedure.

### **Coverage**

Coverage: % of a defined cohort of eligible active participants who have a reported result in the last 12 months

Denominator = Eligible active patients as recorded at month end.

Numerator = Eligible active patients at month end, for whom a result letter was printed within the previous 12 months.

### **Health Board**

This is the patient's health board of residence.

### **Invited**

Patients who have a first offered appointment (not cancelled by programme), within the report month.

### **Tested**

The number of patients with a final grading result.

### **Sight Threatening Retinopathy/Maculopathy**

Comprised of grading outcomes indicating pre-proliferative or proliferative retinopathy: R2M0, R2M1, R3AM0, R3AM1, R3SM0, R3SM1. Also includes a grading outcome of minimal background retinopathy with maculopathy R1M1.

### **Severe Retinopathy/Maculopathy**

Comprised of grading outcomes indicating severe (proliferative) retinopathy: R3AM0, R3AM1, R3SM0, R3SM1.



## 5 Production Team

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