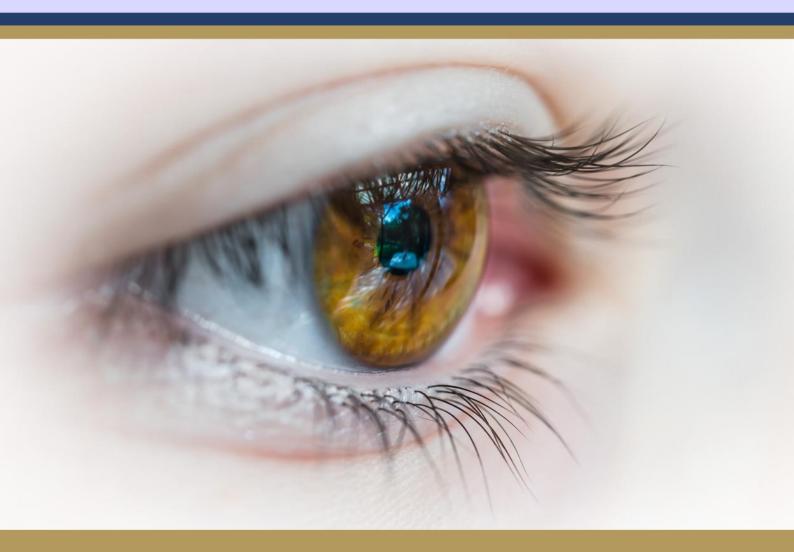




Diabetic Eye Screening Wales Annual Statistical Report 2019-20

November 2021



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

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

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

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

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

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

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

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

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Screening Division of Public Health Wales	DESW Annual Statistical Report
	2019-20

This report is a detailed summary of information on work undertaken by Diabetic Eye Screening Wales for the year from April 2019 to the end of March 2020.

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Rydym yn croesawu gohebiaeth a galwadau ffôn yn Gymraeg. Byddwn yn ateb gohebiaeth yn Gymraeg heb oedi / We welcome correspondence and phone calls in Welsh. We will respond to correspondence in Welsh without delay.

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 third annual statistical report published by Diabetic Eye Screening Wales (DESW); 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 participants 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 Screening Programmes delivered by Screening Division, 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 retinopathy¹ ².

People aged 12 and over with a diagnosis of diabetes, who are registered with a GP in Wales, are eligible and are invited for regular retinal screening with DESW.

In March 2020, the difficult decision was taken to pause some of the national screening programmes in Wales, including DESW, in response to the COVID-19 pandemic. The decision to pause affected clinics scheduled for after March 17th. Although this only affected a very small proportion of the year 2019-20, we are also aware that the emerging pandemic from January – March affected the behaviour of some of those invited for screening with some opting to defer or cancel their appointment.

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

² Early Treatment Diabetic Retinopathy Study (ETDRS) Research Group (1985) Photocoagulation for diabetic macular edema. Early Treatment Diabetic Retinopathy Study report number 1. Arch Ophthalmol 103: 1796–806

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¹ Diabetic Retinopathy Study Research Group (1981) Photocoagulation treatment of proliferative diabetic retinopathy. Clinical application of Diabetic Retinopathy Study (DRS) findings, DRS Report Number 8. Ophthalmology 88: 583–600

- 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, most people with retinopathy do not experience any symptoms or loss of vision; they do not know they are affected
- Regular eye screening is the best way to identify if you have any retinopathy
- Early stage retinopathy can be reversed through keeping blood sugar levels within the target range; more advanced retinopathy can be treated by eye injections or by laser
- DESW screening is a free NHS test carried out in community venues across Wales
- The screening test is not 100% accurate and treatment for diabetic retinopathy carries risks
- Taking part in diabetic eye screening is the participant's 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. Since 2020, clinical and professional oversight of screening has been undertaken by four full time nurses. During the time covered by this report, the programme employed two full time nurses. The programme undertook a service restructure in 2019, expanding the DESW management team supporting all Wales delivery across the clinic booking, clinic delivery and image grading functions to eleven, with support from a secretarial and administration team.

The screening team, who deliver the screening clinics, are staffed by 35 Health Care Assistants and 33 Retinal Photographers, operating from three bases across Wales. Following the service restructure, our Screeners are supported by local managers who combine management and clinic delivery responsibilities. All retinal images taken across Wales are reviewed and graded by our grading team of 15 who are based in Treforest, South Wales. The Graders are managed by staff who perform both grading and management duties.

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

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- Eligible people are invited to attend for eye screening in over 130 community venues across Wales, such as hospitals, health centres, GP practices, or a DESW mobile unit
- Participants 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 images will be graded to identify whether there is any diabetic retinopathy present, and if present the severity of the retinopathy
- 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 reinvited for screening by DESW in around 12 months
 - Where there is retinopathy that is just short of being referable with additional risk factors, the participant may be re-called for DESW screening in 6 months to monitor their retinopathy (surveillance)
 - Participants with potentially sight threatening retinopathy are 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
 - Sometimes, the images taken are not clear enough to make a full assessment ('inadequate' images). These participants are either re-invited for more images to be taken or referred to Ophthalmology for an assessment with different equipment.

2 Headline Statistics 2019-20

This report covers activity from April 2019 to March 2020 inclusive.

- Coverage of the programme was 60.3% within 12 months (at 31st March 2020)
- The uptake rate of offered screening appointments was 80.9% (at 31st March 2020).

Between 1st April 2019 and 31st March 2020:

 13,360 additional referrals were received for people who were newly diagnosed with diabetes or newly registered with a GP in Wales

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- 136,088 individuals were invited to attend eye screening
- 110,087 individuals attended eye screening clinics (including people who attended on more than one occasion)
- 19.1% of those invited did not attend a DESW eye screening appointment
- DESW reported 116,009 screening results, including 4,181 (3.6%) reported as 'inadequate'
- DESW identified the presence of some diabetic retinopathy in 35,157 individuals (30.3% of those screened)
- 4,156 people (3.6 % of those who received a screening result)
 were identified with potential sight threatening diabetic retinopathy
 and referred by DESW to Ophthalmology for specialist assessment
- Throughout 2019-20, screening coverage and recall waiting times was below standard, with variation in waiting times seen in different geographical areas.

As a result of the Coronavirus (Covid-19) pandemic, DESW screening clinic delivery was paused on 18th March 2020. The programme continued to produce screening results for all outstanding cases, fully pausing normal delivery on 3rd April 2020, when this work had been completed.

3 Data

3.1 Coverage

Standard: A minimum of 80% of eligible active participants should have a reported result in the last 12 months.

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

Service growth continued during 2019-20 at a rate of 4%, with a further 13,360 referrals received by the programme for people receiving a diabetes diagnosis or registering with a GP in Wales.

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DESW invited 136,088 participants for eye screening, with 110,087 individuals attending our clinics (including people who attended on more than one occasion). The service non-attendance rate, for those people who do not take up their screening invite, was 19.1% which is consistent with previous years.

The coverage standard is not reached either across Wales or for any individual health board. This is due to screening clinic capacity and the increasing number of people within our eligible active population across Wales.

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Table 1: Diabetic eye screening coverage by health board

Health Board	Eligible active participants	Reported results	Coverage (%)
Aneurin Bevan UHB	36,609	23,471	64.1%
Betsi Cawaladr UHB	38,974	21,307	54.7%
Cardiff and Vale UHB	24,251	14,168	58.4%
Cwm Taf Morgannwg UHB	28,110	18,077	64.3%
Hywel Dda UHB	23,260	14,057	60.4%
Powys Teaching LHB	7,381	4,861	65.9%
Swansea Bay UHB	22,171	13,087	59.0%
All Wales	182,197	109,898	60.3%

Wales totals include a small number of participants where the Health Board is not recorded

Chart 1: Diabetic eye screening coverage by health board

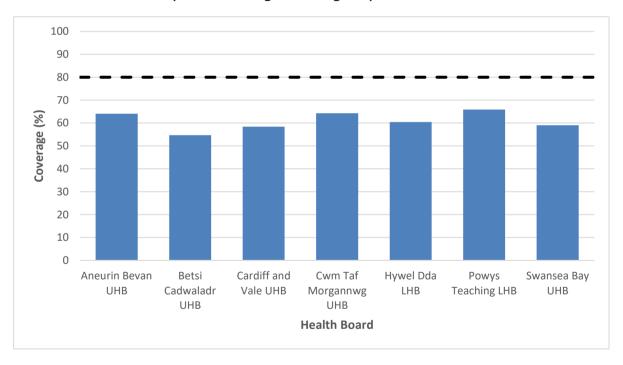


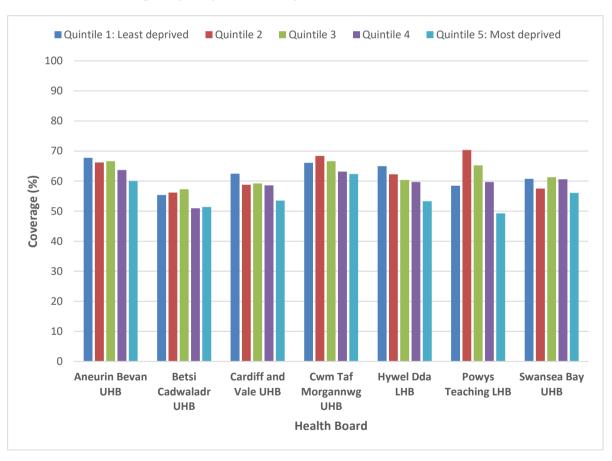
Table 2 and chart 2 show the coverage information described by deprivation quintile. Tackling inequalities is a key public health priority to support good health and wellbeing across the whole population. At an all Wales level, the difference in coverage between most and least deprived is 7.2%.

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Table 2: Coverage by deprivation quintile

Health Board	Least deprived 1	2	3	4	Most deprived 5	Total
Aneurin Bevan UHB	67.7%	66.2%	66.6%	63.7%	60.0%	64.1%
Betsi Cawaladr UHB	55.4%	56.2%	57.3%	51.0%	51.4%	54.7%
Cardiff and Vale UHB	62.5%	58.8%	59.2%	58.6%	53.5%	58.4%
Cwm Taf Morgannwg						
UHB	66.1%	68.4%	66.6%	63.2%	62.3%	64.3%
Hywel Dda UHB	65.0%	62.3%	60.4%	59.7%	53.3%	60.4%
Powys Teaching LHB	58.5%	70.3%	65.2%	59.7%	49.3%	65.9%
Swansea Bay UHB	60.7%	57.5%	61.3%	60.6%	56.1%	59.0%
All Wales	61.9%	61.6%	61.8%	59.8%	57.2%	60.3%

Chart 2: Coverage by deprivation quintile



3.2 Uptake

Table 3: Uptake by Health Board

Health Board	Invited	Attended	Uptake (%)
Aneurin Bevan UHB	29,442	23,649	80.3%
Betsi Cawaladr UHB	26,781	21,971	82.0%
Cardiff and Vale UHB	17,644	14,123	80.0%
Cwm Taf Morgannwg UHB	22,536	18,385	81.6%
Hywel Dda UHB	17,197	14,170	82.4%
Powys Teaching LHB	6,083	5,164	84.9%
Swansea Bay UHB	16,313	12,622	77.4%
All Wales	136,088	110,087	80.9%

Wales totals include a small number of participants where the Health Board is not recorded

3.3 Timely offer of screening

Standard: A minimum of 95% of eligible active participants should be offered a recall appointment within 12 months of their last screening outcome.

97% of participants 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. Participants who do not attend their screening appointment are sent a reminder letter and offered a routine recall in 12 months.

This standard is not reached either across Wales or for any individual health board. This is due to clinic capacity across Wales. Waiting times for screening appointments vary between health board areas, with appointments offered typically between 14 and 18 months from the last screening result.

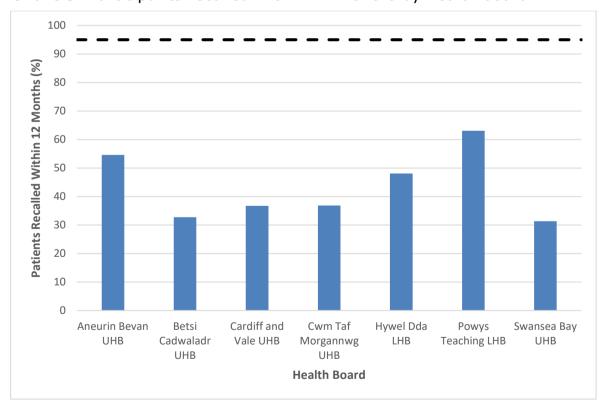
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Table 4: Participants recalled within 12 months by health board

Health Board	Recall offered	Recall offered within 12 months	%
Aneurin Bevan UHB	25,198	13,760	54.6%
Betsi Cawaladr UHB	20,842	6,824	32.7%
Cardiff and Vale UHB	13,691	5,029	36.7%
Cwm Taf Morgannwg UHB	18,401	6,781	36.9%
Hywel Dda UHB	13,782	6,626	48.1%
Powys Teaching LHB	5,217	3,289	63.0%
Swansea Bay UHB	13,076	4,099	31.3%
All Wales	110,351	46,408	42.1%

Wales totals include a small number of participants where the Health Board is not recorded

Chart 3: Participants recalled within 12 months by health board



3.4 Report of screening result

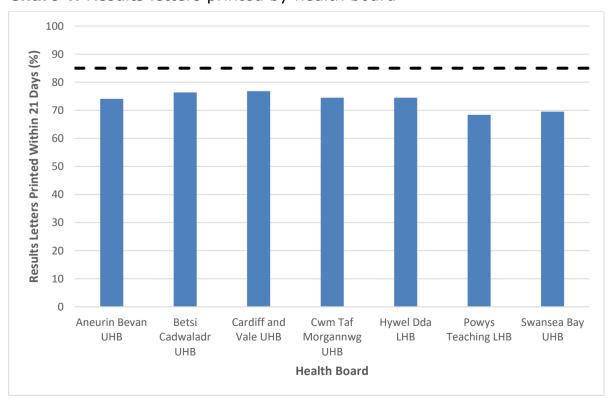
Standard: A minimum of 85% of participant result letters should be printed within 21 calendar days of the screening appointment.

During this period this standard was not met due to capacity within the service. This has been rectified and this standard is now consistently being met.

Table 5: Results letters printed by health board

Health Board	Results letters printed	Results printed within 21 days	%
Aneurin Bevan UHB	24,867	18,414	74.1%
Betsi Cawaladr UHB	22,632	17,296	76.4%
Cardiff and Vale UHB	14,731	11,309	76.8%
Cwm Taf Morgannwg UHB	19,548	14,526	74.5%
Hywel Dda UHB	15,033	11,191	74.5%
Powys Teaching LHB	5,459	3,740	68.4%
Swansea Bay UHB	13,739	9,539	69.5%
All Wales	116,009	86,015	74.2%

Chart 4: Results letters printed by health board



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3.5 Retinopathy identified

Table 5 shows the number and proportion of participants in each health board area whose screening result shows any retinopathy or no retinopathy. The all Wales figures show that 66.1% of the screened population across Wales had no retinopathy identified from their screening.

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 the person's blood glucose level over time. An individual who is in the 'any retinopathy' category one year can move to 'no retinopathy' at their next screening event.

The 'inadequate' category relates to those participants 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 participant has a cataract which obscures the retina from view, or there have been technical issues with the camera. Participants with inadequate images may be either referred to Hospital Eye Service or recalled for screening, dependent upon individual circumstances.

Screening Division of Public Health Wales	DESW Annual Statistical Report
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Table 6: Presence of retinopathy breakdown by health board

Health Board	Results reported	No retinopathy	%	Any retinopathy	%	Inadequate image	%
Aneurin Bevan UHB	24,867	16,654	66.97	7,351	29.56	845	3.40
Betsi Cawaladr UHB	22,632	15,138	66.89	6,667	29.46	867	3.83
Cardiff and Vale UHB	14,731	9,682	65.73	4,577	31.07	549	3.73
Cwm Taf Morgannwg UHB	19,548	12,844	65.70	5,907	30.22	652	3.34
Hywel Dda UHB	15,033	9,781	65.06	4,640	30.87	633	4.21
Powys Teaching LHB	5,459	3,658	67.01	1,649	30.21	180	3.30
Swansea Bay UHB	13,739	8,909	64.84	4,366	31.78	455	3.31
All Wales	116,009	76,666	66.1%	35,157	30.3	4,181	3.6%

Screening Division of Public Health Wales	DESW Annual Statistical Report
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The data below provides further detail on the figures shown in table 5. As can be seen, whilst across Wales 30.3% of participants screened have some retinopathy, a much smaller proportion have sight threating retinopathy identified, which may require referral to hospital eye service for specialist assessment and treatment.

Table 7: Retinopathy outcomes by health board

Health Board	Sight threatening retinopathy/ maculopathy	% of screened diabetic population with sight threatening retinopathy/maculopathy by Health Board	Severe retinopathy/ maculopathy *	% of screened diabetic population with severe retinopathy/ maculopathy by Health Board
Aneurin Bevan UHB	1,326	5.33	102	0.41
Betsi Cawaladr UHB	1,300	5.74	119	0.53
Cardiff and Vale UHB	996	6.76	69	0.47
Cwm Taf Morgannwg UHB	1,201	6.14	92	0.47
Hywel Dda UHB	877	5.83	85	0.57
Powys Teaching LHB	301	5.51	20	0.37
Swansea Bay UHB	980	7.13	98	0.71
Wales	6,981	6.0%	585	0.5%

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

3.6 Referrals to Ophthalmology

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

Of those receiving a potential sight threatening diabetic retinopathy grade, a total of 4,156 people (3.6% of those who received a screening result) were referred by DESW to Ophthalmology for specialist assessment. The majority of these referrals (86.0%, 3,646 individual referrals) were routine.

From April 2018, the service has a standard of 95% of participants with an urgent diabetic retinopathy result (R3A – active proliferative retinopathy) being referred to Ophthalmology within 2 weeks of their screening appointment. Table 7 summarises performance against this standard by health board.

Table 8: Urgent referrals for active proliferative retinopathy (R3A) to ophthalmology within 14 days by health board

Health Board	Number of urgent R3A referrals made	R3A referrals made within 14 days	%
Aneurin Bevan UHB	97	88	90.7%
Betsi Cawaladr UHB	115	103	89.6%
Cardiff and Vale UHB	67	61	91.0%
Cwm Taf Morgannwg UHB	89	84	94.4%
Hywel Dda UHB	84	77	91.7%
Powys Teaching LHB	19	17	89.5%
Swansea Bay UHB	95	86	90.5%
All Wales	569	518	91.0%

Table 8 shows the number of urgent referrals made by DESW during 2019-20. At an all-Wales level, 59% of urgent referrals related to diabetic retinopathy, and 41% to other observed issues (table 9).

Table 9: All urgent referrals to ophthalmology by health board

Health Board	All urgent referrals to Ophthalmology for DR	All urgent referrals to Ophthalmology for other lesions *	Total urgent referrals
Aneurin Bevan UHB	105	88	193
Betsi Cawaladr UHB	120	87	207
Cardiff and Vale UHB	68	51	119
Cwm Taf Morgannwg UHB	91	59	150
Hywel Dda UHB	89	50	139
Powys Teaching LHB	20	26	46
Swansea Bay UHB	102	49	151
All Wales	595	410	1005

^{*} 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.

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4 Definitions

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

Eligible active

Eligible active population definition includes participants 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 participants:

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 participants who have attended a screening invitation.

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

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

Numerator = Eligible active participants who have attended a screening appointment between month start and month end. This includes participants who attended but couldn't be photographed for technical reasons and participants 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 participants as recorded at month end.

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

Health Board

This is the participant's health board of residence.

Invited

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

Tested

The number of participants with a final grading result.

Sight Threatening Retinopathy/Maculopathy

Comprised of grading outcomes indicating pre-proliferative or proliferative retinopathy: R2M0, R2M1, R3AM0, R3AM1, 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.

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5 Production Team

The production team for this report employed within Public Health Wales are listed below:

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This report is not being published as Official Statistics.