

The Diabetic Retinopathy Barometer Report

# Turkey



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For detailed information regarding methodology and limitations of the study please refer to the DR Barometer Global Results Report which can be found at [DRBarometer.com](https://www.drbarometer.com)

# Introduction

## Global Study

The International Federation on Ageing, the International Diabetes Federation, and the International Agency for the Prevention of Blindness undertook a comprehensive, two-phase, multi-country study to investigate the global and specific country issues surrounding diabetic eye disease (DED) primarily, diabetic retinopathy (DR) and diabetic macular edema (DME).

This report describes the specific findings from information gathered from adults with diabetes and health care professionals in Turkey.

All people with type 1 and type 2 diabetes are at risk of developing DR, which can lead to loss of vision and eventually to blindness. DME is a type of DR that is particularly associated with vision loss. DR is preventable by prompt diagnosis and appropriate management of diabetes.

Vision loss is preventable if DR is identified in its early stages by screening, as effective treatments are now available to prevent progression. Despite the serious risks of DR, little has been published regarding the global awareness of the risks and prevention and effective management of diabetes associated vision impairment.

This research was made possible with support from Bayer AG. Bayer has funded and facilitated this research, acted as an advisor and will assist in the dissemination of the research findings.

### Goal

The DR Barometer Study sought, in broad terms, to assess the awareness of, and access and barriers to diabetes management, including screening for DED and timely treatment.

This new information from forty-one countries is vital to understanding the barriers to improved outcomes and the actions required to overcome such barriers.

Initiatives that address the gaps in the care pathway are essential to preventing unnecessary blindness and visual impairment to enable people with diabetes to maintain their health and ensure that the contribution that they can make to family and community are not compromised.

### Background

The DR Barometer study used a mixed methods approach. Phase I was a qualitative study comprising 120 semi-structured interviews with a small sample of people with diabetes (n = 9 per country) and health care professionals (n = 6 per country) in each of eight countries: Germany, Saudi Arabia, Japan, Romania, Mexico, Argentina, Uganda, and Bangladesh. The countries were purposively selected for variation across income level and region, as delineated by the World Health Organization and the World Bank.

Phase II was a multi-country quantitative study conducted in 41 countries to investigate the current level of awareness of the risk of DR and of the need for prevention, screening and management to prevent vision loss. The study also sought to better understand the nature of health services and supports available, related national and international policies and the social and economic burden of the disease.

In the quantitative component of the study, both adults with diabetes (patients) and health care professionals (providers) were surveyed. The patient survey consisted of 46 questions divided into four sections covering awareness and knowledge, current care for diabetes and eye complications, screening and treatment of DR and DME, and quality of life.

The provider survey comprised 43 questions covering provider and practice characteristics, and specific information from ophthalmologists. Globally, the patient survey had a total of 4,340 respondents and the provider survey had 2,329 respondents.

Respondents from each country were grouped into regions as defined by the WHO and into the WBIGs.

## Study Populations

The people with diabetes participating in the patient survey were self-selected, predominantly from patient organisations. Therefore, this group comprises people who are more likely to be engaged and motivated in the management of their diabetes. Likewise, the provider respondents were self-selected and the same caution should be applied when interpreting the results.

Even though the sample is not representative of the broader population of people with diabetes and health care professionals, the findings illustrate important trends, and highlight areas of concern.

The results from this survey provide new evidence reflecting concerns from the voices of thousands of patients and health care professionals around the world. This study provides a rich resource for generating unique insights into the real-life experiences of people living with diabetes, and as such is a powerful tool to help improve the lives of current and future generations of people with diabetes.

For the purpose of understanding the impact of the progression of DED, to the patient survey, beyond all respondents, are reported by three subgroups:

- Without DED: people with diabetes without any reported form of DED
- With DED: people with diabetes with reported DED but not DME
- With DME: people with diabetes with reported DED and DME

As reported by 4,340 adults with diabetes who responded to the survey, 20% reported to have been diagnosed with DED and a further 7.6% with DME.

Of the health care professionals who responded to the survey (n = 2,329), 37% were ophthalmologists, 17% were diabetes specialist providers and 16% were primary care providers. The remaining respondents were optometrists, nurses, health educators or other types of professionals.

# Introduction

## Turkey Study

### Demographic Characteristics

Turkey is a country in a demographic transition and will experience rapid population ageing shift within the next two decades. Turkey currently ranks 19th in the world with ~80 million people and is balanced demographically, compared to other countries, having neither the oldest nor the youngest population<sup>2</sup>.

The nation's population is projected to reach over 85 million (84,247 088) in 2023 and peak with 93 million (93,475,575) in 2050<sup>1</sup>. This demonstrates that with the current population at ~80 million, Turkey will see a ~22% increase in their total population by 2050<sup>2</sup>.

Demographically Turkey is ageing. In 2015, a high percentage (63.1%) of Turkey's population was aged between 15 to 59 years of age and only 12.6% were 60 years and older. By 2050, however, approximately 1 in 3 (~32%) will be 60 years of age or older<sup>2</sup>.

### Diabetes Profile<sup>3</sup>

There are 415 million people with diabetes in the world and more than 59.8 million people in the European Region. By 2040, this number is anticipated to rise to 71.1 million.

Fifty-six countries comprise the European Region with diverse populations ranging from Norway, the Russian Federation, Turkey, and Iceland. While the European region has the second-lowest age-adjusted comparative diabetes prevalence rate of any IDF region (after Africa), there are still many countries with relatively high diabetes prevalence rates.

Turkey has the highest age-adjusted comparative prevalence (12.8% [11.5-15.3 $\pm$ ] comparative prevalence, 12.5% [11.2-14.9 $\pm$ ] raw prevalence) and the third-highest number of people with diabetes in the European region after Germany and the Russian Federation. There are over 6.3 million (5,680.4-7,547.5 $\pm$ ) cases of people living with diabetes in Turkey, which accounts to ~11% of people living with diabetes in the region.

Deaths attributed to diabetes in Turkey in 2015 were 52,094, which accounts to ~8% of diabetes related deaths experienced in the region. The estimated number of undiagnosed cases was ~2.7 million (2,943.6-3,911.1 $\pm$ ).

### Study Populations: Turkey

As reported by 426 respondents with diabetes in Turkey, 12% were diagnosed with DED and a further 2.6% with DME.

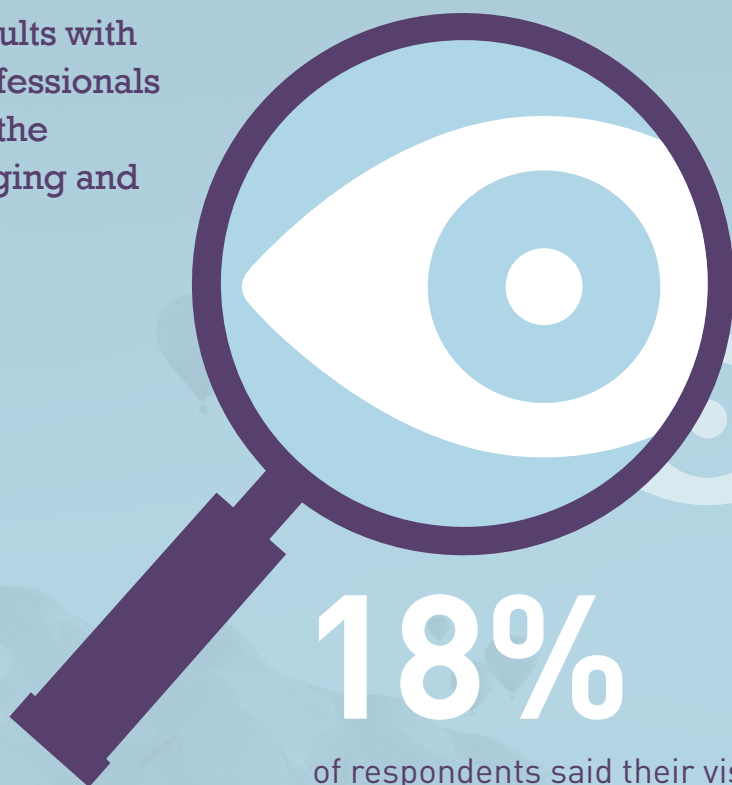
One hundred and seventy-five health care professionals completed the survey in Turkey. Of these, 14 were diabetes specialist providers (8%), 46 were ophthalmologists (26%), and 64 were primary care providers (37%). The remaining respondents were either optometrists, nurses, health educators or other types of professionals.

# The DR Barometer Study: Turkey Overview

The DR Barometer study was conducted in 41 countries. In Turkey, 426 adults with diabetes and 175 health care professionals provided new information about the experiences of living with, managing and treating diabetes, DR and DME.

# 34%

of patients said that **long wait times for an appointment** were a barrier to eye exams

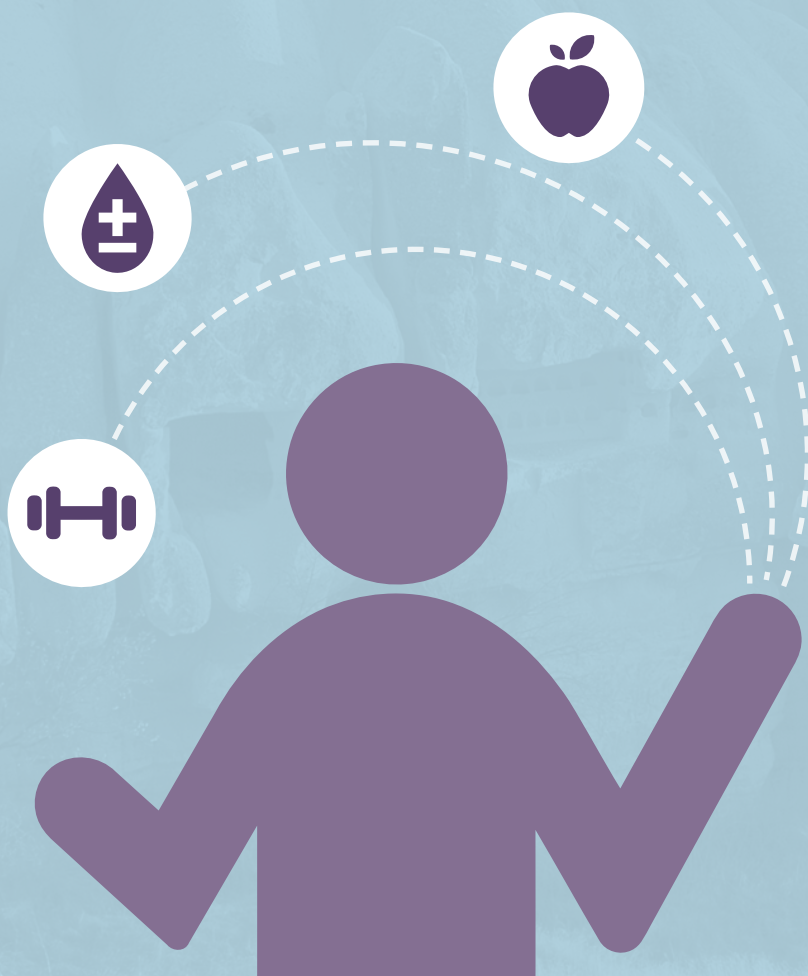


# 18%

of respondents said their vision impairment due to DR or DME made it **difficult to manage their diabetes**

# 44%

of all providers **did not have written protocols/guidelines** for detection and management of diabetes-related vision loss available



**DR:** Diabetic Retinopathy

**DME:** Diabetic Macular Edema

DRBarometer.com





82%

of patients with vision loss due to DR or DME said that their condition made everyday activities, **such as driving**, working and completing basic household tasks difficult and in some cases impossible



100%

of those with DME experienced days of **poor physical and mental health**



15%

of patients either **never discussed eye complications with their doctor** or did so only after the onset of symptoms



17%

of ophthalmologists **had not received specific training** in the treatment and diagnosis of DR and or DME



# Turkey

## DR Barometer Findings: Adults with Diabetes

### Key Demographic Characteristics

Four hundred and twenty-six adults with diabetes completed the patients' survey in Turkey: 61% were female and 39% were male. Ninety-three percent lived in an urban setting and 6.7% resided in a non-urban setting (see Appendix Table 4.2).

The education levels of all respondents were as follows: 5.8% did not complete primary school, 17% were educated to a primary school level, 37% to a secondary school level, 35% to a college or university level, and 5.5% to a graduate or post-graduate level. Forty-two percent of all respondents were in paid employment, 22% were retired, and 23% stated they were not working (see Appendix Table 4.3 and Table 4.4).

Most respondents (45%) were aged between 18 and 39 years (41% were 40-59 years and 14% were 60-79 years). Eighty-six percent were of traditional working age (18- 59 years) (see Table 1).

Of the respondents in Turkey, 49% had been diagnosed with type 1 diabetes and 36% with type 2 diabetes. A further 15% of respondents were either unsure of or did not know their type of diabetes (see Appendix Table 2.1). Twelve percent of respondents (n=49) had been diagnosed with DED and a further 2.6% (n=11) with DME.

Six percent of those surveyed were diagnosed with diabetes within the last year, 1 - 5 years ago (21%), 6 - 10 years ago (25%), 11 - 15 years ago (20%), 16 - 20 years ago (15%), and 21 years ago or more (14%) (see Appendix Table 2.2).

A younger population was more likely to be associated with type 1 diabetes, which was the opposite for those with type 2 diabetes, which tended to be an older population. Amongst 18 to 39-year-olds, 89% had type 1 and 7.9% had type 2 diabetes. In the 40-59 age group, 21% had type 1 and 59% had type 2 diabetes. Five percent of 60-79-year-olds had type 1 diabetes and 58% had type 2.

In the 18-39 year age group, 8.9% had DED and 2.6% had DME. This increased to 10% for DED in those aged 40-59 years and decreased to 1.7% for DME. For people aged 60-79 years, 23% had DED and 5% had DME.

A particularly important trend noted in the findings was that the longer the time since diabetes was diagnosed, the greater the likelihood for DED and DME to be detected. In those diagnosed with diabetes within the last year, 8% had DED and no one was diagnosed with DME. This increased to 20% with DED and 8.2% with DME in those diagnosed 16-20 years ago. Twenty-eight percent of respondents diagnosed more than 21 years ago had DED and 3.5% had DME.

While most (63%) respondents reported that their diabetes was well controlled, there was one in three who felt that this was not the case. For those who felt their diabetes was controlled, 13% had DED and 1.7% had DME and where their condition was not well-controlled, 12% had DED and 4.7% had DME.



**Table 1: Summary of key characteristics of adults with diabetes**

Group	Subgroup	All Respondents	Type 1 diabetes	Type 2 diabetes	With DED	With DME
<b>All respondents</b>		426 (100.0%)	209 (49.1%)	153 (35.9%)	49 (11.5%)	11 (2.6%)
<b>Gender</b>	Male	133 (38.8%)	56 (42.1%)	55 (41.4%)	21 (15.8%)	3 (2.3%)
	Female	210 (61.2%)	100 (47.6%)	75 (35.7%)	25 (11.9%)	7 (3.3%)
	Total Missing	83	53	23	3	1
<b>Age</b>	18-39 yrs.	190 (44.6%)	169 (88.9%)	15 (7.9%)	17 (8.9%)	5 (2.6%)
	40-59 yrs.	176 (41.3%)	37 (21.0%)	103 (58.5%)	18 (10.2%)	3 (1.7%)
	60-79 yrs.	60 (14.1%)	3 (5.0%)	35 (58.3%)	14 (23.3%)	3 (5.0%)
<b>Time since diagnosis</b>	Within the last year	25 (6.0%)	8 (32.0%)	10 (40.0%)	2 (8.0%)	0 (0.0%)
	1 - 5 yrs.	88 (21.0%)	27 (30.7%)	43 (48.9%)	2 (2.3%)	0 (0.0%)
	6 - 10 yrs.	103 (24.6%)	34 (33.0%)	50 (48.5%)	7 (6.8%)	1 (1.0%)
	11 - 15 yrs.	83 (19.8%)	53 (63.9%)	18 (21.7%)	10 (12.0%)	3 (3.6%)
	16 - 20 yrs.	61 (14.6%)	33 (54.1%)	21 (34.4%)	12 (19.7%)	5 (8.2%)
	21 yrs. plus	57 (13.6%)	50 (87.7%)	7 (12.3%)	16 (28.1%)	2 (3.5%)
	Don't know/ Not sure	2 (0.5%)	1 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	Total Missing	7	3	4	0	0
<b>Control of Diabetes</b>	Controlled	240 (62.7%)	91 (37.9%)	99 (41.3%)	32 (13.3%)	4 (1.7%)
	Not controlled	129 (33.7%)	86 (66.7%)	32 (24.8%)	15 (11.6%)	6 (4.7%)
	Don't know/ Not sure	14 (3.7%)	8 (57.1%)	5 (35.7%)	1 (7.1%)	0 (0.0%)
	Total Missing	43	24	17	1	1
	Total Missing	25	12	12	1	0

NB [1]: Percentages for All Respondents category are calculated based on their respective group. All categories are calculated as row percentages.

NB [2]: Diabetes control is based on the respondents' perception of their own control. Diabetes control terms were grouped as follows; Controlled includes patients who selected 'Very Well' and 'Well'. Not Controlled includes patients who selected 'Not very well' and 'Not well at all'.

NB [3]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [4]: DME = respondents with DME = "Yes".

NB [5]: This table is a summary of various questions. For a detailed breakdown for each question, please refer to the Appendices.

## Knowledge and Management of Diabetes

Ninety-six percent of those surveyed saw a health care professional for their diabetes, with 60% seeing a diabetes specialist (average number of visits was 3.8 times per year) and 32% seeing a general or family doctor (average number of visits was 3.7 times per year) (see Appendix Table 2.3.1 and 2.3.2).

People were informed about their condition through a variety of channels. Eighty-seven percent received information from a doctor or nurse, 40% from the internet and 35% from a nutritionist or dietician (see Table 2 and Appendix Table 2.4).

**Table 2: Source of information regarding diabetes**

Information Source	All Respondents (n=395)
Doctor or nurse	345 (87.3%)
Internet	159 (40.3%)
Nutritionist or dietician	140 (35.4%)
Diabetes organisation or other health organisation	100 (25.3%)
Social media (e.g. Facebook, Twitter, blogs)	97 (24.6%)
Family/Friends/Neighbours	84 (21.3%)
TV/Radio/Newspaper/Magazines	74 (18.7%)
Health educator	55 (13.9%)
Pharmacist	21 (5.3%)
None of the above	2 (0.5%)

A range of strategies was used by respondents to manage their diabetes. For those with type 1 diabetes, apart from insulin, 36% managed their diabetes with diet and 29% with exercise. Of the respondents with type 2 diabetes, 80% reported that they managed their condition with oral medicine, 41% with diet, 33% with insulin, and 27% with exercise.

Ten percent of respondents were enrolled in diabetes management programmes and of these 95% said the programme included information on education on the importance of screening for diabetic eye complications (see Appendix Table 2.6).

The nature and frequency of tests that people with diabetes experienced included blood glucose checks and eye checks. For those who had eye checks (88%), these occurred at the following intervals: less than 6 months (43%), 6 - 12 months (32%), and greater than 12 months (11%) (see Appendix Table 2.7).

The main challenges in controlling diabetes cited by respondents were: travel to their regular doctor, or specialist, was difficult (37%), it was too hard to eat the right things (36%), long wait times for an appointment (28%), the high cost of care (23%), and there were too many other things to do (21%) (see Appendix Table 2.9).

Free or low cost medicines or monitoring materials (53%), support from family or friends (50%), health education and information (36%), coordination of healthcare and services by a professional (25%), and support groups (18%) were identified as important to improving the management of their diabetes (see Appendix Table 2.10).

## Nature and Information about Complications

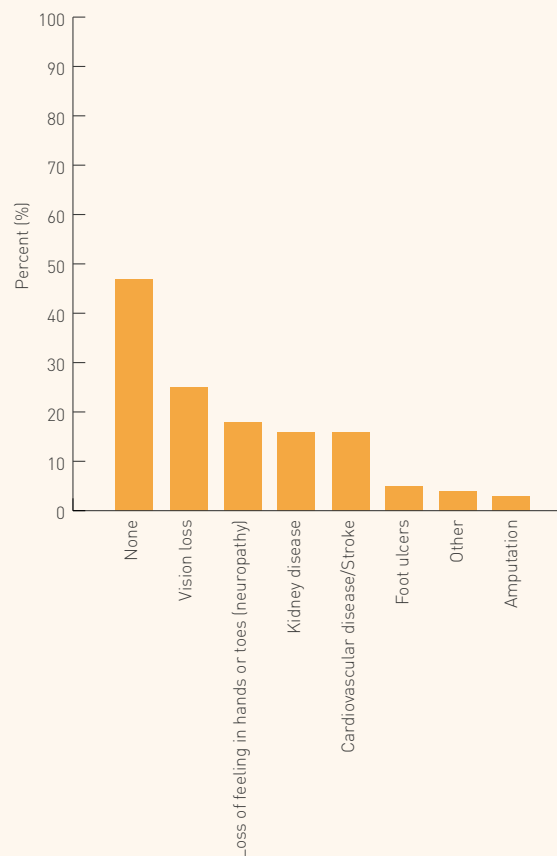
Eighty-nine percent of respondents were aware of kidney disease and other complications, such as: vision loss (88%), neuropathy (76%), amputation (72%), and cardiovascular disease or stroke (68%) were also associated with diabetes (see Appendix Table 2.11).

Respondents were most concerned about vision loss (28%), amputation (24%), kidney disease (23%), cardiovascular disease or stroke (15%), and neuropathy (2.2%) (see Appendix Table 2.12).

Forty-seven percent of respondents reported that they had no complications of diabetes. However, of those who did have complications 23% reported vision loss, neuropathy (19%), kidney disease (13%), cardiovascular disease or stroke (13%), and foot ulcers (3.1%) (see Figure 1 and Appendix Table 2.13).

Aside from vision loss, there was a considerable increase in the frequency of people with DED and DME experiencing additional complications compared to people without DED. The frequency of neuropathy increased from 15% in those without DED to 40% for both those with DED and with DME; as with the reporting of kidney disease increasing from 11% for those without DED to 21% with DED and to 40% in those with DME (see Table 3 and Appendix EXP 1).

**Figure 1: Presence of complications**



**Table 3: Presence of complications without DED, with DED or DME**

Complication	Without DED (n=303)	With DED (n=47)	With DME (n=10)
Any	138 (45.5%)	43 (91.5%)	9 (90%)
Vision loss	41 (13.5%)	33 (70.2%)	8 (80.0%)
Loss of feeling in hands or toes (neuropathy)	45 (14.9%)	19 (40.4%)	4 (40.0%)
Cardiovascular disease/Stroke	30 (9.9%)	16 (34.0%)	2 (20.0%)
Kidney disease	33 (10.9%)	10 (21.3%)	4 (40.0%)
Foot ulcers	6 (2.0%)	5 (10.6%)	0 (0.0%)
Amputation	6 (2.0%)	0 (0.0%)	0 (0.0%)
Other	8 (2.6%)	2 (4.3%)	0 (0.0%)
None	165 (54.5%)	4 (8.5%)	1 (10.0%)

NB [1]: Without DED = respondents who did not select "Yes" for both DED and DME.

NB [2]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [3]: DME = respondents with DME = "Yes".

NB [4]: Percentages within groups are calculated from non-missing data for that question.

NB [5]: Not all responses have been presented in this table, but have been included under "Any". Please see Appendix Table EXP1 for the full list of responses.

## Information about Diabetic Eye Disease and Diabetic Macular Edema

Eighty-three percent of respondents stated that eye complications were discussed with their health care professionals. Notwithstanding this, nearly one in six adults with diabetes (15%) either never discussed the potential of eye complications with their health provider (4.9%) or only did so once symptoms arose (10%). The frequency of regular discussions varied from every visit (27%), multiple times a year (25%) and once a year (21%) (see Appendix Table 2.14).

Nearly two-thirds of all patients (65%) reported that they did what they could to prevent vision problems (e.g. get routine screenings, visit specialists), yet myths and perceptions around vision changes and preventions were evident

with 26% making no special effort to prevent vision problems, and 14% thought that vision problems were a normal part of ageing (see Appendix Table 2.15).

Fifty-two percent of all respondents had received information about DR and DME, with their doctor or nurse being the most common source (38%). An important, and concerning, finding to note was almost half (48%) of those surveyed did not receive any information regarding potential eye complications from any of the sources listed, including their doctor or nurse (62%) (see Appendix Table 3.9).

**Table 4: Source of information about DR and DME**

Source	All respondents (n=331)
Doctor/Nurse	127 (38.4%)
Internet	72 (21.8%)
Diabetes organisation or other health organisation	33 (10.0%)
TV/Radio/Newspaper/Magazines	21 (6.3%)
Health educator	19 (5.7%)
Family/Friends/Neighbours	7 (2.1%)
None of the above	159 (48.0%)

NB [1]: Not all respondents answered all questions in the survey; percentages are calculated from non-missing responses to the survey question.

## Screening for Diabetic Eye Disease

One in three respondents reported to have never completed an eye exam for DED. Of those who did (67%) complete an exam, 82% had the exam within the last year and a further 13% between one and two years ago. One in ten respondents were aware of government sponsored screening programmes for DED (see Appendix Table 3.1 and 3.2)

While eighty-four percent of those surveyed thought they should have their eyes examined for DED once a year, twenty-one respondents said that testing should only happen every two years and a varied small number of respondents thought that testing should only happen when symptoms occur or less often than every two years (see Appendix Table 3.4).

The biggest barriers to eye exams were long wait times for an appointment (34%), eye exams were not available near respondent's homes (33%), and the high costs of exams (28%) (see Table 5 and Appendix Table 3.5).

**Table 5: Barriers to eye examinations**

Identified Barriers	All Respondents (n=323)
Long wait time for appointment	109 (33.7%)
Eye exams are not available near my home	106 (32.8%)
They are expensive	90 (27.9%)
Long wait time on the day of the visit	82 (25.4%)
Limited access to diabetes specialists	78 (24.1%)
Fear of treatment/results	48 (14.9%)
Burden on my family/friends	36 (11.1%)
Too many other things to do or worry about	32 (9.9%)
Clinics are too small or lack necessary equipment/staff	20 (6.2%)
Recommended treatments for eye problems are not available	19 (5.9%)
Don't know much about my condition	19 (5.9%)
Referral process is complicated or takes too long	16 (5.0%)
I'm not likely to have eye complications	11 (3.4%)
Other	42 (13.0%)

## **Treatment of Diabetic Eye Disease and Diabetic Macular Edema**

Treatment was assessed separately in people with DED and in those with DME. For those with DED, 75% (n=35) had received treatment with the most common treatments being laser treatment (74%) and anti-VEGF therapy (35%) which was on-going for approximately a quarter of respondents (23%). Over two-thirds 69% (n=24) completed treatments and 91% felt that the treatment had been successful and either their vision had improved (66%) or had stayed the same (25%) (see Table 6).

For the eleven respondents (23%) with DED who had not received treatment, the most common reason reported was that their doctor did not recommend treatment.

Eighty-nine percent of patients with DME (n=8) had received treatment, and all received laser treatment with 57% also receiving anti-VEGF therapy. Over two-thirds (67%) felt that treatment had been successful and their vision improved. A third of those who received treatment were still waiting to know if treatment had been successful.

A majority (89%) of those with DME would prefer proactive treatment to prevent further vision loss rather than reactive treatment once further vision loss has occurred (see Appendix Table 3.8).

**Table 6: Treatment characteristics of patients with DED and DME**

Question	Response	With DED (n=47)	With DME (n=9)
Have you had any treatment for diabetic eye disease?	Yes	35 (74.5%)	8 (88.9%)
	No	11 (23.4%)	1 (11.1%)
	Don't know/Not sure	1 (2.1%)	0 (0.0%)
What treatment did you receive?	Laser	25 (73.5%)	7 (100.0%)
	Anti-VEGF	12 (35.3%)	4 (57.1%)
	Surgery	10 (29.4%)	4 (57.1%)
	Other	3 (8.8%)	0 (0.0%)
Did you complete the treatment?	Yes	24 (68.6%)	4 (50.0%)
	No	2 (5.7%)	1 (12.5%)
	Still receiving treatment	8 (22.9%)	3 (37.5%)
	Don't know/Not sure	1 (2.9%)	0 (0.0%)
Do you feel that the treatment worked?	Yes, and vision improved	21 (65.6%)	4 (66.7%)
	Yes, but vision stayed the same	8 (25.0%)	0 (0.0%)
	Still waiting to know	2 (6.3%)	2 (33.3%)
	Don't know/Not sure	1 (3.1%)	0 (0.0%)
What is/are the reason(s) that you did not complete the treatment?	Treatment was too expensive	1 (50.0%)	1 (100.0%)
	Eye doctor was located too far away	0 (0.0%)	1 (100.0%)
	Too much burden on my family/friends	1 (50.0%)	0 (0.0%)
	I was fearful (scared) of treatment	1 (50.0%)	0 (0.0%)
	Other	1 (50.0%)	0 (0.0%)
What are the reason(s) that you have not had treatment for diabetic eye disease?	My doctor did not recommend any treatment	10 (90.9%)	0 (0.0%)
	Other	1 (9.1%)	1 (100.0%)

NB [1]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [2]: DME = respondents with DME = "Yes".

NB [3]: Not all respondents answered all questions in the survey; percentages are calculated from non-missing responses to the survey question.

NB [4]: This table is a summary of various questions. For a detailed breakdown for each question, please refer to the Appendices.

## Impact of Diabetic Eye Disease and Diabetic Macular Edema

Eighty-seven percent of those diagnosed with DED or DME reported that their vision was affected (39% significantly, 48% slightly) (see Appendix Table 3.6).

Eighty-two percent of these respondents reported vision issues impacted their daily lives in various ways such as difficulty experienced in driving a vehicle (36%), working or keeping a job (33%), social interactions with family or friends (31%), household responsibilities, such as cooking or cleaning (29%), managing their underlying diabetes (18%), travelling (16%), and leisure activities or exercise (11%) (see Table 7).

**Table 7: Activities affected through vision impairment and loss**

	<b>All Respondents (n=45)</b>
Driving (a car/vehicle)	16 (35.6%)
Work or keeping a job	15 (33.3%)
Social interactions with family/friends	14 (31.1%)
Household responsibilities, such as cooking or cleaning	13 (28.9%)
Managing my diabetes	8 (17.8%)
Travelling	7 (15.6%)
Leisure activities/exercise	5 (11.1%)
Other	4 (8.9%)
None	8 (17.8%)

Thirty-six percent of those with DED and 60% with DME were in paid employment compared with 43% of respondents without DED (see Table 8 and EXP 5.1). Patients with vision complications reported difficulties with work or keeping a job (33%) and 36% of those with DED were not working.

Sixty percent of all those surveyed did not receive assistance from the government while 28% received medical assistance (see Appendix Table 4.5). A higher proportion of those with DED received medical assistance (42%) and pension assistance (20%) compared to those without DED, 27% and 12% respectively.

Sixty-six percent of respondents reported having no trouble paying for food at any time during the past year. Forty-two percent of those surveyed stated their access to health care was affected by certain factors, however, a third felt it was affected by one's income or where one lives (9.7%) (see Appendix Table 4.6 and Table 4.7).

Sixty-six percent of respondents said they worried about their health, family (16%), and money (19%) (see Appendix Table 4.8).



**Table 8: Socio-economic profile of patients without DED, with DED or DME**

<b>Question</b>	<b>Response</b>	<b>Without DED (n=288)</b>	<b>With DED (n=44)</b>	<b>With DME (n=10)</b>
Are you currently working?	Working for pay	123 (42.7%)	16 (36.4%)	6 (60.0%)
	Working without pay at home (e.g. housework, farming)	10 (3.5%)	0 (0.0%)	0 (0.0%)
	Volunteering	1 (0.3%)	0 (0.0%)	0 (0.0%)
	Retired	61 (21.2%)	11 (25.0%)	3 (30.0%)
	Student	32 (11.1%)	1 (2.3%)	0 (0.0%)
	Not working	61 (21.2%)	16 (36.4%)	1 (10.0%)
<b>Question</b>	<b>Response</b>	<b>Without DED (n=269)</b>	<b>With DED (n=41)</b>	<b>With DME (n=10)</b>
Do you receive assistance from the government?	Income assistance	14 (5.2%)	1 (2.4%)	0 (0.0%)
	Medical assistance	73 (27.1%)	17 (41.5%)	1 (10.0%)
	Food assistance	0 (0.0%)	0 (0.0%)	1 (10.0%)
	Pension assistance	32 (11.9%)	8 (19.5%)	1 (10.0%)
	None of the above	164 (61.0%)	21 (51.2%)	8 (80.0%)
<b>Question</b>	<b>Response</b>	<b>Without DED (n=283)</b>	<b>With DED (n=43)</b>	<b>With DME (n=10)</b>
Did you have trouble paying for food at any time during the past year?	Yes	98 (34.6%)	14 (32.6%)	3 (30.0%)
	No	185 (65.4%)	29 (67.4%)	7 (70.0%)

NB [1]: Without DED = respondents who did not select "Yes" for both DED and DME.

NB [2]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [3]: DME = respondents with DME = "Yes".

NB [4]: Not all respondents answered all questions in the survey; percentages are calculated from non-missing responses to the survey question

NB [5]: This table is a summary of various questions. For a detailed breakdown for each question, please refer to the Appendices.

## Self-reported Quality of Life

The CDC HRQOL-4 Core Modules of the “Healthy Days Measure” was used to capture information on self-reported quality of life, based on the number of unhealthy days within the last 30 days from when the survey was taken.

The reported health status varied depending on whether respondents had been diagnosed with DED or DME (see Table 9).

Seventy-five percent of people with DME, and 66% of those with DED, reported their health as poor compared with 51% of people without DED. Whether the respondent had DME or not, also had an impact on a person’s functional ability to undertake activities. There was a 21% increase in activity limitation days between those with DME compared to those without DED.

Respondents with DED and DME also experienced a greater impact on their physical and mental health. While around three-quarters of people with DED and DME reported a series of physically unhealthy days, 68% with DED and 100% with DME reported having a series of mentally unhealthy days, compared with 48% and 59% without DED, respectively.

Compared with 37% of those without DED, 55% of people with DED and 73% of people with DME experienced limitations to their daily activities as a result of poor health. Where health impacted daily activities, the primary limitations were diabetes, mental or emotional health, and back or neck problems.

People living with DED and DME had a higher proportion for some impairments. Of note was a marked increase in hypertension or high blood pressure (see Appendix Table EXP 2).

**Table 9: Self-reported healthy days of patients without DED, with DED or DME**

Health Status	Without DED	With DED	With DME
Self-rated health: Good	127 (49.0%)	15 (34.1%)	2 (25.0%)
Self-rated health: Poor	132 (51.0%)	29 (65.9%)	6 (75.0%)
Physically unhealthy days	102 (47.7%)	27 (73.0%)	6 (75.0%)
Mentally unhealthy days	126 (58.6%)	27 (67.5%)	7 (100.0%)
Unhealthy days	151 (68.3%)	32 (82.1%)	8 (100.0%)
Activity limitation days	76 (53.9%)	22 (66.7%)	3 (75.0%)

NB [1]: Without DED = respondents who did not select “Yes” for both DED and DME.

NB [2]: DED = respondents with DED = “Yes” minus respondents with DME = “Yes”.

NB [3]: DME = respondents with DME = “Yes”.

NB [4]: Not all respondents answered all questions in the survey; percentages are calculated from non-missing responses to the survey question.

NB [5]: This table is a summary of various questions. For a detailed breakdown for each question, please refer to the Appendices.

# Turkey

## DR Barometer Findings:

### Health Care Professionals

#### Key Demographic Characteristics

There were 175 health care professionals who answered at least one of the survey questions in Turkey. Of these, 64 were primary care providers (37%), 14 were diabetes specialist providers (8%) and 46 were ophthalmologists (26%). The remaining respondents were optometrists, nurses, health educators or other professionals (see Appendix PT 1.3).

In this section of the report, data from health care professionals as a whole and then the ophthalmologist subgroup will be reported.

Health care professionals as a group had been practicing for an average of 17 years, with the ophthalmologist group practicing for an average of 25 years (see Appendix PT 1.5).

Health care professionals were well-educated (85% with graduate or advanced degree); 55% were female and 45% male, and varied in age with 67% between 30 – 49 years (see Table 10 and Appendix PT 3.1).

**Table 10: Summary of key characteristics of health care professionals**

Group	Subgroup	All Respondents	Primary Care Provider	Diabetes Specialist	Ophthalmologist
<b>All respondents</b>		175 (100.0%)	64 (36.6%)	14 (8.0%)	46 (26.3%)
<b>Age group</b>	18 - 29 yrs.	9 (6.7%)	5 (11.4%)	0 (0.0%)	1 (2.5%)
	30 - 39 yrs.	46 (34.3%)	19 (43.2%)	4 (28.6%)	3 (7.5%)
	40 - 49 yrs.	44 (32.8%)	15 (34.1%)	8 (57.1%)	13 (32.5%)
	50 - 59 yrs.	28 (20.9%)	4 (9.1%)	1 (7.1%)	20 (50.0%)
	60 - 69 yrs.	7 (5.2%)	1 (2.3%)	1 (7.1%)	3 (7.5%)
<b>Gender</b>	Female	73 (54.9%)	26 (60.5%)	3 (21.4%)	20 (50.0%)
	Male	60 (45.1%)	17 (39.5%)	11 (78.6%)	20 (50.0%)
<b>Education</b>	College/University	20 (14.9%)	9 (20.5%)	2 (14.3%)	2 (5.0%)
	Graduate or advanced degree (e.g. PhD, MD, etc.)	114 (85.1%)	35 (79.5%)	12 (85.7%)	38 (95.0%)

NB [1]: This table is a summary of various questions. For a detailed breakdown for each question, please refer to the Appendices.

## Clinical Practice Characteristics

Fifty-three percent of all providers had their main practice setting in a hospital and for ophthalmologists only it was a hospital (57%), an eye clinic (41%), and a diabetes clinic (2.4%). Ninety-one percent of health care professionals worked in an urban setting (see Appendix PT 2.1 and 2.2).

Most health care professionals worked in the government sector (77%) and ophthalmologists worked mainly in the government (55%), private (31%), and combined or mixed (12%) sector (see Appendix PT 2.3).

Health care professionals reported that 41% of patients pay through insurance for services, 36% of patients do not pay for services, and 31% of patients pay for some while their insurance pays the remaining fees for services (see Appendix PT 2.7).

On average, all providers saw 170 patients per week, of which an estimated 31% of these patients had diabetes. Similarly, ophthalmologists saw an average 185 patients per week and 32% had diabetes (see Appendix PT 2.6).

For all health care professionals, the average waiting time for an appointment was most commonly less than one week (46%), or providers did not take appointments (29%) (see Appendix PT 2.5).

For an appointment with an ophthalmologist, it was usually less than one week in 53% of practices but for a further third of practices, the average wait time was between one week and a month.

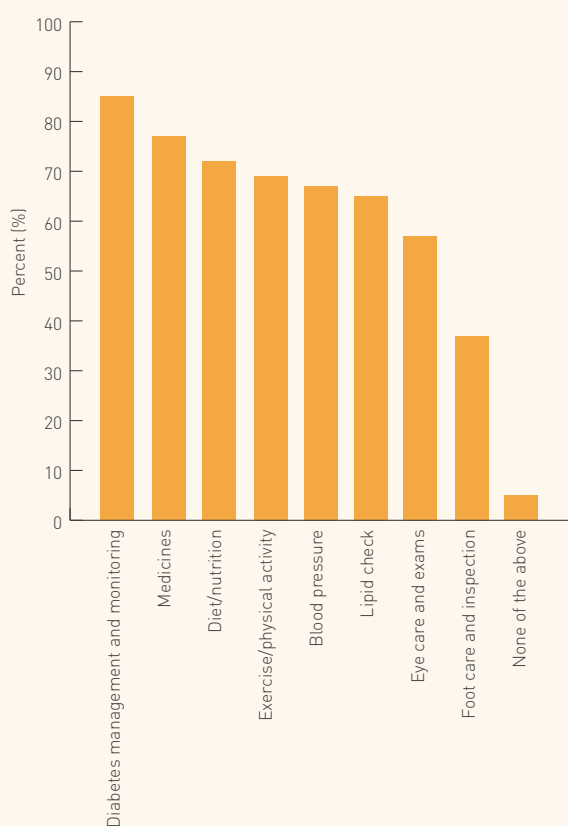
**Table 11: Average wait times to schedule an appointment**

Wait Time Intervals	All Respondents (n=150)	Ophthalmologist (n=40)
Less than 1 week	69 (46.0%)	21 (52.5%)
More than 1 week but less than 1 month	22 (14.7%)	13 (32.5%)
More than 1 month but less than 2 months	5 (3.3%)	3 (7.5%)
More than 2 months but less than 3 months	2 (1.3%)	0 (0.0%)
More than 3 months but less than 6 months	5 (3.3%)	1 (2.5%)
Six or more months	1 (0.7%)	0 (0.0%)
Do not take appointments	44 (29.3%)	1 (2.5%)
Other	1 (0.7%)	1 (2.5%)
Don't know/Not sure	1 (0.7%)	0 (0.0%)

## Patient Education Information

A wide range of topics related to diabetes and its management were addressed by the health care professionals in a routine visit (see Figure 2 and Appendix PT 2.10).

**Figure 2: Health care topics discussed with patients during a routine visit**



Health care professionals stated that written information about diabetes is available yet the adequacy of that related to eye complications varies.

Twenty-five percent of all providers reported that they had sufficient information about diabetes and eye complications although a further 19% said the information they had eye complications was insufficient. Overall, 38% of those surveyed had no written information on diabetes and potential eye complications available for their patients (see Table 12 and Appendix PT 2.11).

Some ophthalmologists (39%) reported to have written information about diabetes and potential eye complications, while 7.7% had information on diabetes that which was on potential eye complications was insufficient. Thirty-nine percent of ophthalmologists said there was no written information available at all.

## Guidelines and Protocols

Thirty-nine percent of providers, including 35% of ophthalmologists, stated that they had written protocols for the management of diabetes available, which were used by staff. However, 32% had no protocols (see Appendix PT 2.12).

With respect to the management of diabetes-related vision issues, 25% of health care professionals, including 38% of ophthalmologists, had written protocols, which were used by staff, but for some the protocols available were not used by staff (9.4%). Forty-four percent of providers, including 38% of ophthalmologists, did not have protocols on the management of diabetes-related vision issues available (see Table 12 and Appendix PT 2.13).

**Table 12: Availability and use of information and protocols**

Question	Response	All Respondents (n=139)	Ophthalmologist (n=39)
Is there written information about diabetes available for patients in your main practice?	Yes, and information on eye complications is sufficient	34 (24.5%)	15 (38.5%)
	Yes, but information on eye complications is not sufficient	27 (19.4%)	3 (7.7%)
	Yes, but no information on eye complications is included	8 (5.8%)	0 (0.0%)
	No written information is available for patients	53 (38.1%)	15 (38.5%)
	Don't know/Not sure	17 (12.2%)	6 (15.4%)
Question	Response	All Respondents (n=138)	Ophthalmologist (n=40)
Do you have written protocols/guidelines for detection and management of diabetes-related vision issue available in your main practice?	Yes, available and used by staff	34 (24.6%)	15 (37.5%)
	Yes, available but not used by staff	13 (9.4%)	5 (12.5%)
	Not available	61 (44.2%)	15 (37.5%)
	Don't know/Not sure	30 (21.7%)	5 (12.5%)

NB [1]: This table is a summary of various questions. For a detailed breakdown for each question, please refer to the Appendices.

## **Screening Protocols and Barriers in the Care Pathway**

Recommendations for the timing of an initial eye exam for persons with diabetes varied depending upon the type of diabetes as reported by all providers.

Most providers, for those with type 1 diabetes (53%) or type 2 diabetes (69%), recommended an initial eye exam at the time diabetes is diagnosed. Although for some, it was unknown when initial screening should take place or it varied on a case-by-case basis, type 1 (13% and 14%), type 2 (10% and 14%) respectively (see Appendix PT 2.14).

Overall, 76% of health care professionals, including 88% of ophthalmologists, stated that follow-up eye examinations should be conducted every year. Most ophthalmologists (95%), and almost two-thirds of all health care providers (64%), screen patients for DR (see Appendix PT 2.15 and PT 2.16).

Across all health care professionals, only a third reported that they send their patients appointment reminders. Only half of all providers, including 39% of ophthalmologists, shared patient relevant information with other providers to optimise care management (see Appendix PT 2.19 and PT 2.20).

The most common patient characteristics influencing the referral process for eye complications for health professionals were: the duration of diabetes (92%), high glucose levels (86%), the presence of comorbidities such as hypertension (82%), a patient's age (65%), and a patient's ability to adhere to recommendations (46%). For a small number of providers a patient's inability to pay or the imposed insurance restrictions influenced their care recommendations (see Appendix PT 2.17).

As reported by all health care professionals, the major barriers to optimising eye health faced by patients with diabetes were primarily related to their perceptions of a patient.

Common responses included a lack of knowledge or awareness on behalf of the patients (70%), or they feel that eye exams are not important (39%) or that eye complications are unlikely (32%), and have a general fear of treatment or the results (33%). Barriers that were related to the healthcare system were primarily focused on the limited access to diabetes specialists (34%) or the cost, and proximity, of care (27%).

Ophthalmologists, like all health care professionals, reported similar such barriers (see Table 13 and Appendix PT 2.18).

**Table 13: Major barriers to optimising eye health**

<b>Response</b>	<b>All Respondents (n=131)</b>	<b>Ophthalmologists (n=39)</b>
Lack of knowledge and/or awareness	91 (69.5%)	26 (66.7%)
Patients fear of treatment/results	43 (32.8%)	18 (46.2%)
Cost of care	35 (26.7%)	14 (35.9%)
Limited access to diabetes specialists	45 (34.4%)	12 (30.8%)
Patients feel eye complications are unlikely	42 (32.1%)	12 (30.8%)
Proximity to care	35 (26.7%)	11 (28.2%)
Patients feel eye exams are not important	51 (38.9%)	11 (28.2%)
Patients feel they are a burden on family/friends	26 (19.8%)	9 (23.1%)
Patients have competing responsibilities and priorities	37 (28.2%)	8 (20.5%)
Long wait time for appointment	37 (28.2%)	7 (17.9%)
Referral process	26 (19.8%)	5 (12.8%)
Long wait time on the day of visit	20 (15.3%)	4 (10.3%)
Clinic too small or lack necessary equipment/staff	18 (13.7%)	2 (5.1%)
Limited access to eye specialists	27 (20.6%)	1 (2.6%)
Recommended treatments are not available	4 (3.1%)	0 (0.0%)
Other	4 (3.1%)	0 (0.0%)



# Turkey

## DR Barometer Findings: Ophthalmologists

### Screening

There were thirty-five ophthalmologists who answered at least one of the supplementary questions (see Appendix PT 4.1 to PT 4.14).

Ophthalmologists reported that an average of 32% of their patients had DR and 21% DME (see Appendix PT 4.1 and PT 4.2).

The most common waiting time for a screening appointment for DED was less than one week (58%) with 34% stating between one week and a month. Eighty-one percent of ophthalmologists reported that there was no wait from time of screening to diagnosis, 8.1% (n=3) reported a wait time of less than one week (see Appendix PT 4.3 and PT 4.4).

### Treatment and Challenges

Eighty-nine percent of ophthalmologists personally administer treatment for DR (See Appendix PT 4.6).

The most common factors influencing how ophthalmologists treat patients with DR or DME were: high glucose levels (78%), presence of comorbidities such as hypertension etc. (72%), and duration of diabetes (59%) (see Appendix PT 4.7).

The most common outreach venues for screening for DED were vision centres (74%), health fairs for all (5.7%), health fairs for people with diabetes (2.9%), and mobile screening centres (2.9%) (see Appendix PT 4.13).

Ninety-seven percent of ophthalmologists reported that they screen patients for DR based on fundoscopy through dilated pupils. Additionally 92% use optical coherence tomography, 72% use retinal photos, and 61% use fluorescein angiography. Eighty-nine percent reported to treat DR and DME based on both visual and anatomical outcomes (see Appendix PT 4.8 and PT 4.9).

Eighty-six percent of ophthalmologists said that most patients present when visual problems have already occurred, 11% (n=4) said that patients present in time for screening, and 2.9% (n=1) said that patients present too late for effective treatment (see Appendix PT 4.10).

Eighty-three percent of ophthalmologists had received specific training on the treatment and diagnosis of DR and or DME. Fifty-seven percent had training within the past year, 17% between one and five years ago, and 27% received training five years ago or more (see Appendix PT 4.11).

Eighty-six percent would be interested in online education and certification on DME, angiogenesis and anti-VEGF therapies (see Appendix PT 4.12).

Ophthalmologists reported that the greatest challenges for improving patient outcomes in DED were late diagnosis (86%), ineffective screening services (54%), and limited access to patient education on DR and DME (43%) (see Table 14 and Appendix 4.14).

**Table 14: Challenges for improving outcomes in DED**

<b>Question</b>	<b>Response</b>	<b>Ophthalmologist (n=35)</b>
What do you perceive to be the greatest challenges for improving patient outcomes in diabetic eye disease?	Late diagnosis	30 (85.7%)
	Ineffective screening services	19 (54.3%)
	Limited access to patient education on diabetic retinopathy and diabetic macular edema	15 (42.9%)
	Multi-disciplinary team integration is poor	15 (42.9%)
	Reimbursement/restrictions on approved therapy	8 (22.9%)
	Referral pathways	6 (17.1%)
	No universal guidelines on referral/screening	3 (8.6%)
	No universal guidelines on how to treat	1 (2.9%)
	Current available therapies not effective	1 (2.9%)
	No universal guideline on when to treat	0 (0.0%)

# Turkey

## DR Barometer Summary

In Turkey, 426 adults with diabetes and 175 health care professionals have provided insight about their experiences of living with, managing and treating diabetes, DR and DME. The results help to improve awareness, management, and services available in Turkey.

Turkey is currently in a demographic transition and will experience rapid population ageing shift within the next two decades. The nation's population is projected to reach over 85 million in 2023 and peak with ~93 million in 2050<sup>4</sup>. This demonstrates that with the current population at ~80 million, Turkey will see a ~22% increase in their total population by 2050<sup>2</sup>.

Demographically Turkey is ageing. In 2015, a high percentage (63.1%) of Turkey's population was aged between 15 to 59 years of age and only 12.6% were 60 years and older. By 2050, however, approximately 1 in 3 (~32%) will be 60 years of age or older<sup>5</sup>.

Turkey also has the highest age-adjusted comparative prevalence and the third-highest number of people with diabetes in the European region after Germany and the Russian Federation. There are over 6.3 million (5,680.4-7,547.5±) cases of people living with diabetes in Turkey, which accounts to ~11% of people living with diabetes in the region<sup>6</sup>.

The DR Barometer findings indicate that a younger population was more likely to be associated with type 1 diabetes, which was the opposite of those with type 2 diabetes, which tended to be an older population. This is an important, and well-known, finding in the context of Turkey's ageing population.

The study also showed that the longer the times since diabetes was diagnosed, the greater the likelihood for DED and DME to be detected. Of the adults with diabetes who responded to the survey in Turkey, 12% (n=49) reported to be diagnosed with DED and 2.6% (n=11) had been diagnosed with DME.

People were most often informed about their diabetes condition from their health care providers, such as a doctor, nurse, nutritionists or dietician although diabetes or other health organisations were also identified as important sources of information. A trend globally, and reflected in the Turkey study, was the increasing usage of the internet by 40% of the respondents.

Many of those surveyed struggled with the management of their diabetic condition with some issues that were beyond their personal control such as difficulty travelling to their regular doctor, or specialist, the long wait time to schedule an appointment, and the high cost of care. These three factors could play a role in the finding that only ten percent of respondents were currently enrolled in a diabetes management programme.

There was not only a relatively high awareness of the complications associated with diabetes but over half (53%) of respondents reported having some type of complication. Aside from vision loss, there was a considerable increase in the frequency of people with DED and DME experiencing additional complications compared to people without DED. The frequency of neuropathy, kidney disease, and cardiovascular or stroke had a marked increase in those with DED and DME compared to those without DED.

The relationship between the patient and their health care provider is critical to realistic and optimal patient outcomes. Indeed, health education and information was reported by patients as an important tool to improve the management of one's diabetes yet almost half (48%) did not receive any information on the possibility of eye complications from any of the traditional sources, including their doctor or nurse.

Likewise, the number one barrier to optimizing eye health, as reported by over two-thirds (70%) of health care professionals, was the lack of knowledge or awareness on behalf of the patient and yet over a third did not have patient information regarding eye complications available for their own patients. Knowledge and guidance was not only an issue for patients, as 44% of providers did not have written protocols or guidelines available in the management and detection of diabetes-related vision issues.

It is also important to note that nearly one in six (15%) adults with diabetes either never discussed the potential of eye complications with their health provider or only did so only once symptoms arose. Equally concerning is that myths and perceptions around vision changes and preventions were evident with more than one in four (26%) respondents making no special effort to prevent vision problems, and some believing that vision problems were a normal part of ageing

Eighty-two percent of those diagnosed with DED or DME said that their vision was either slightly or significantly affected which in turn impacted their health, lifestyle, and life choices. Over a third (36%) reported difficulty driving a vehicle and one in three reported that their vision impairment made it difficult to work or keep a job. Interacting with family and friends, travelling or enjoying other leisure activities were also reported as challenging due to their vision impairment. For some managing their underlying diabetes, exercising, and conducting regular household responsibilities such as cooking and cleaning were negatively impacted.

People with DED and DME also experienced a higher series of poor physical and mentally unhealthy days compared to those without DED. Seventy-five percent of people with DME, and 66% of those with DED, reported their overall health as poor compared with 51% of people without DED.

A proactive treatment approach to prevent further vision loss was preferred by a majority of those with DME rather than reactive treatment once further vision loss occurred. However, for a third of respondents, their access to healthcare was affected by their income and for some the place where one lived was a perceived factor. Health, family, and money were the top three 'worries' on the mind of the respondents surveyed.

Supporting this, ophthalmologists reported that the cost of care, reimbursement restrictions on approved therapies, and a limited access to diabetes specialists were limiting factors for optimizing eye health and improving patient outcomes for those with DED and DME. For a small number of providers a patient's inability to pay or the imposed insurance restrictions influenced their care recommendations.

Knowing that diabetes-related vision loss is preventable, addressing barriers to eye screening is an important policy issue. While two-thirds of respondents had received an eye exam, which is understandable considering the purposeful sample, there remained many barriers; primarily those associated with clinical capacities, such as long wait times to schedule an appointment or a patient's proximity to available care.

In addition, given that a majority of providers recommended an annual screening, it was a surprise finding that only a third sent reminders to their patients to schedule an appointment.

The top patient characteristics influencing the referral process for eye care across providers and ophthalmologists alike were a patient's duration of diabetes, high glucose levels, and the presence of comorbidities such as hypertension, a patient's age, and a patient's ability to adhere to recommendations.

Eighty-six percent of ophthalmologists reported that the majority of their patients present for screening when visual problems had already occurred rather than in time for the screening. Furthermore, late diagnosis was the greatest challenge for improving outcomes, followed by ineffective screening services and limited access to patient education on DR and DME.

In large part, the patients and providers who participated in the study were self-selected, and therefore this population group is more likely to be engaged and motivated in the management of their diabetes hence a possible explanation for the rates of awareness and screening.

Even though the sample is not representative of the broader population, and as such may not truly reflect that national situation, the findings illustrate important trends, and certainly highlight specific areas of concern and potential calls for action in Turkey.

# References and Acknowledgement

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# Appendices

# The Diabetic Retinopathy Barometer Survey: Appendices for Turkey

## APPENDIX 1 : National Results

**Table 1.1**

Survey Information	Number of Respondents (%)
All valid respondents [1]	478 (100.0%)
Respondents aged 18 or over	473 (99.0%)
Respondents with diabetes	427 (89.3%)

*NB [1]: valid respondents are those with country information*

**Table 1.2**

Survey Information	Number of Respondents (%)
All valid respondents	478 (100.0%)
Included in Diabetic Analysis Set	426 (89.1%)
Excluded from Diabetic Analysis Set	52 (10.9%)
Reasons for exclusion from diabetic analysis set	.
Under 18 years of age	5
Not diagnosed with diabetes	32
Missing information on diabetes diagnosis	14
Gestational diabetes only	1

**Table 1.3**

Survey Information	Number of Respondents (%)
Diabetic Analysis Set	426 (100.0%)
World Bank Income Group: Upper-middle income	426 (100.0%)
Persons with diabetic eye disease (DED)	49 (11.5%)
Persons with diabetic macular edema (DME)	11 (2.6%)
Persons with Type I diabetes	209 (49.1%)
Persons with Type II diabetes	153 (35.9%)
Persons not seeing health care professional for diabetes	15 (3.5%)
Persons seeing health care professional for diabetes	406 (95.3%)
Persons with eye disease & not received treatment	12 (2.8%)



Survey Information	Number of Respondents (%)
Persons with eye disease & received treatment	43 (10.1%)

**Table 2.1**

Question	Response	Number of Respondents (%)
With which type of diabetes have you been diagnosed?	Type I	209 (49.2)
	Type II	153 (36.0)
	Don't know/Not sure	63 (14.8)
	Total Valid Response	425 (100.0)
	Total missing	1

**Table 2.2**

Question	Response	Number of Respondents (%)
When was your diabetes diagnosed?	Within the last year	25 (6.0)
	1 - 5 years ago	88 (21.0)
	6 - 10 years ago	103 (24.6)
	11 - 15 years ago	83 (19.8)
	16 - 20 years ago	61 (14.6)
	21 years ago or longer	57 (13.6)
	Don't know/Not sure	2 (0.5)
	Total Valid Response	419 (100.0)
	Total missing	7

**Table 2.3.1**

Question	Response	Number of Respondents (%)
Do you see a health care professional for your diabetes?	Yes	406 (96.4)
	No	15 (3.6)
	Total Valid Response	421 (100.0)
	Total missing	5
What kind of health care professional?	General/Family Doctor	124 (31.8)

Question	Response	Number of Respondents (%)
	Nurse	2 (0.5)
	Diabetes Specialist	234 (60.0)
	Other	28 (7.2)
	Don't know/Not sure of kind	2 (0.5)
	Total Valid Response	390 (100.0)
	Total missing	36

**Table 2.3.2**

Type of health care professional	Times per year seen for diabetes	Value
General/Family Doctor	Total valid numeric response (n)	107
	Mean	3.7
	SD	1.6
	Median	4.0
	Min	1
	Max	12
	Don't know/Not sure	6
	Total missing	11
Nurse	Total valid numeric response (n)	1
	Mean	4.0
	SD	
	Median	4.0
	Min	4
	Max	4
	Don't know/Not sure	1
Diabetes Specialist	Total valid numeric response (n)	173
	Mean	3.8
	SD	2.2
	Median	4.0
	Min	1
	Max	15
	Don't know/Not sure	13
	Total missing	48

Type of health care professional	Times per year seen for diabetes	Value
Other	Total valid numeric response (n)	17
	Mean	3.0
	SD	1.2
	Median	4.0
	Min	1
	Max	4
	Don't know/Not sure	4
	Total missing	7
Don't know/Not sure of kind	Total valid numeric response (n)	1
	Mean	4.0
	SD	
	Median	4.0
	Min	4
	Max	4
	Total missing	1

**Table 2.4**

Question	Response	Number of Respondents (%)
How have you received information about diabetes?	Doctor or nurse	345 (87.3%)
	Health educator	55 (13.9%)
	Nutritionist or dietitian	140 (35.4%)
	Diabetes organization or other health organization	100 (25.3%)
	Family/Friends/Neighbors	84 (21.3%)
	TV/Radio/Newspaper/Magazines	74 (18.7%)
	Internet	159 (40.3%)
	Social media (e.g. Facebook, Twitter, blogs)	97 (24.6%)
	Pharmacist	21 (5.3%)
	None of the above	2 (0.5%)
	Total Valid Response	395 (100.0%)
	Total missing	31

**Table 2.5**

Question	Response	Number of Respondents (%)
How do you manage your diabetes?	Diet	133 (33.5%)
	Oral medicine	156 (39.3%)
	Exercise	97 (24.4%)
	Insulin	262 (66.0%)
	Natural/Herbal medicine	12 (3.0%)
	None of the above	2 (0.5%)
	Total Valid Response	397 (100.0%)
	Total missing	29

**Table 2.6**

Question	Response	Number of Respondents (%)
Are you currently enrolled in a diabetes patient management support programme?	Yes	41 (10.3)
	No	358 (89.7)
	Total Valid Response	399 (100.0)
	Total missing	27
Who sponsors the programme?	Hospital support program	17 (42.5)
	Pharmaceutical support program	3 (7.5)
	Patient organization support program	18 (45.0)
	Don't know/Not sure	2 (5.0)
	Total Valid Response	40 (100.0)
	Total missing	386
Does the programme include education on the importance of screening for diabetic eye complications?	Yes	38 (95.0)
	No	2 (5.0)
	Total Valid Response	40 (100.0)
	Total missing	386

**Table 2.7**

Test	Response	Number of Respondents (%)
Have you ever had the following tests in a doctors office of clinic? And if yes, how long ago		
Blood glucose test	Yes	388 (99.7%)
	Less than 6 months	334 (85.9%)
	6 - 12 months	37 (9.5%)
	Greater than 12 months	11 (2.8%)
	Total valid response	382 (98.2%)
	Total missing	44
	No	1 (0.3%)
	Total valid response	389 (100.0%)
	Total missing	37
Urine check	Yes	349 (93.8%)
	Less than 6 months	245 (65.9%)
	6 - 12 months	74 (19.9%)
	Greater than 12 months	19 (5.1%)
	Total valid response	338 (90.9%)
	Total missing	88
	No	21 (5.6%)
	Don't know/Not sure	2 (0.5%)
	Total valid response	372 (100.0%)
	Total missing	54
Weight check	Yes	288 (82.8%)
	Less than 6 months	229 (65.8%)
	6 - 12 months	35 (10.1%)
	Greater than 12 months	15 (4.3%)

Test	Response	Number of Respondents (%)
Have you ever had the following tests in a doctors office of clinic? And if yes, how long ago		
	Total valid response	279 (80.2%)
	Total missing	147
	No	57 (16.4%)
	Don't know/Not sure	3 (0.9%)
	Total valid response	348 (100.0%)
	Total missing	78
Blood pressure check	Yes	320 (89.6%)
	Less than 6 months	266 (74.5%)
	6 - 12 months	30 (8.4%)
	Greater than 12 months	12 (3.4%)
	Total valid response	308 (86.3%)
	Total missing	118
	No	29 (8.1%)
	Don't know/Not sure	8 (2.2%)
	Total valid response	357 (100.0%)
	Total missing	69
Foot check	Yes	155 (48.1%)
	Less than 6 months	95 (29.5%)
	6 - 12 months	32 (9.9%)
	Greater than 12 months	22 (6.8%)
	Total valid response	149 (46.3%)
	Total missing	277
	No	162 (50.3%)

Test	Response	Number of Respondents (%)
Have you ever had the following tests in a doctors office of clinic? And if yes, how long ago		
	Don't know/Not sure	5 (1.6%)
	Total valid response	322 (100.0%)
	Total missing	104
Eye check	Yes	326 (87.9%)
	Less than 6 months	158 (42.6%)
	6 - 12 months	119 (32.1%)
	Greater than 12 months	40 (10.8%)
	Total valid response	317 (85.4%)
	Total missing	109
	No	44 (11.9%)
	Don't know/Not sure	1 (0.3%)
	Total valid response	371 (100.0%)
	Total missing	55

**Table 2.8**

Question	Response	Number of Respondents (%)
How well do you think your diabetes is controlled?	Very well	43 (11.2%)
	Well	197 (51.4%)
	Not very well	97 (25.3%)
	Not well at all	32 (8.4%)
	Don't know/Not sure	14 (3.7%)
	Total Valid Response	383 (100.0%)
	Total missing	43

**Table 2.9**

Question	Response	Number of Respondents (%)
What are the main challenges you face in controlling your diabetes?	High cost of care	86 (22.8%)
	No insurance	9 (2.4%)
	Travel to my regular doctor or specialist is difficult	140 (37.1%)
	Long wait time for an appointment to see my doctor or specialist	104 (27.6%)
	Health services needed are not available	69 (18.3%)
	Don't know enough about diabetes	29 (7.7%)
	Too hard to eat the right things	134 (35.5%)
	Too many other things to do	80 (21.2%)
	Stigma or discrimination because of diabetes	21 (5.6%)
	Don't want to think about having diabetes	69 (18.3%)
	Other	51 (13.5%)
	Total Valid Response	377 (100.0%)
Total missing	49	

**Table 2.10**

Question	Response	Number of Respondents (%)
Which of the following services currently help you better manage your diabetes?	Free or low cost medicines or monitoring materials	194 (53.0%)
	Support groups	66 (18.0%)
	Support from family or friends	183 (50.0%)
	Health education and information	131 (35.8%)
	Mobile services (services that travel to or near your home)	18 (4.9%)
	Coordination of healthcare and services by a professional	93 (25.4%)
	Emergency helpline	23 (6.3%)



Question	Response	Number of Respondents (%)
	Other	17 (4.6%)
	None	31 (8.5%)
	Total Valid Response	366 (100.0%)
	Total missing	60

**Table 2.11**

Question	Response	Number of Respondents (%)
What complications (or problems), to your knowledge, arise from diabetes?	Amputation	266 (72.3%)
	Foot ulcers	218 (59.2%)
	Increased risk of broken bones or fractures	52 (14.1%)
	Loss of feeling in hands or toes (neuropathy)	281 (76.4%)
	Vision loss	325 (88.3%)
	Irritable bowel disease	63 (17.1%)
	Kidney disease	327 (88.9%)
	Cardiovascular disease/Stroke	250 (67.9%)
	Other	36 (9.8%)
	Don't know/Not sure	3 (0.8%)
	None	3 (0.8%)
	Total Valid Response	368 (100.0%)
	Total missing	58

**Table 2.12**

Question	Response	Number of Respondents (%)
Which complication of diabetes are you most concerned about?	Amputation	87 (23.6)
	Foot ulcers	2 (0.5)
	Loss of feeling in hands or toes (neuropathy)	8 (2.2)
	Vision loss	103 (28.0)

Question	Response	Number of Respondents (%)
	Irritable bowel disease	4 (1.1)
	Kidney disease	85 (23.1)
	Cardiovascular disease/Stroke	56 (15.2)
	Other	4 (1.1)
	Don't know/Not sure	11 (3.0)
	None	8 (2.2)
	Total Valid Response	368 (100.0)
	Total missing	58

**Table 2.13**

Question	Response	Number of Respondents (%)
Which of the following complications of diabetes do you have?	Amputation	6 (1.7%)
	Foot ulcers	11 (3.1%)
	Broken bones or fractures	6 (1.7%)
	Loss of feeling in hands or toes (neuropathy)	68 (18.9%)
	Vision loss	82 (22.8%)
	Irritable bowel disease	15 (4.2%)
	Kidney disease	47 (13.1%)
	Cardiovascular disease/Stroke	48 (13.3%)
	Other	10 (2.8%)
	Don't know/Not sure	23 (6.4%)
	None	170 (47.2%)
	Total Valid Response	360 (100.0%)
	Total missing	66

**Table 2.14**

Question	Response	Number of Respondents (%)
How often do you discuss the possibility of eye complications with your health care professional?	Every visit	98 (26.6%)
	Multiple times per year	93 (25.3%)

Question	Response	Number of Respondents (%)
	Once per year	76 (20.7%)
	Only when symptoms arise	38 (10.3%)
	Never	18 (4.9%)
	Don't know/Not sure	45 (12.2%)
	Total Valid Response	368 (100.0%)
	Total missing	58

**Table 2.15**

Question	Response	Number of Respondents (%)
Which of the following best describes your attitude to vision issues?	I think that vision problems are a normal part of ageing	51 (14.2%)
	I do what I can to prevent vision problems (e.g. get routine screenings, visit specialists)	235 (65.3%)
	I do not make any special effort to prevent vision problems	93 (25.8%)
	Total Valid Response	360 (100.0%)
	Total missing	66

**Table 2.16**

Question	Response	Number of Respondents (%)
What type of health insurance do you have?	Public	317 (85.7)
	Public - Private	37 (10.0)
	Private	7 (1.9)
	None	9 (2.4)
	Total Valid Response	370 (100.0)
	Total missing	56

**Table 2.17**

Question	Response	Number of Respondents (%)
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Most often, how do you pay for the following types of medical care and services?		
General doctor visits (e.g. primary care doctor)	Care is free	76 (22.9)
	Insurance pays total cost	126 (38.0)
	Insurance and out-of-pocket/cash (e.g. co-pays)	111 (33.4)
	Out-of-pocket only (pay cash for all care)	9 (2.7)
	Do not use service	3 (0.9)
	Don't know/Not Sure	7 (2.1)
	Total Valid Response	332 (100.0)
	Total missing	94
Specialist medical visits (e.g. eye doctor, gynecologist, urologist)	Care is free	52 (16.0)
	Insurance pays total cost	110 (33.8)
	Insurance and out-of-pocket/cash (e.g. co-pays)	127 (39.1)
	Out-of-pocket only (pay cash for all care)	25 (7.7)
	Do not use service	5 (1.5)
	Don't know/Not Sure	6 (1.8)
	Total Valid Response	325 (100.0)
	Total missing	101
Medicines	Care is free	24 (7.5)
	Insurance pays total cost	81 (25.2)
	Insurance and out-of-pocket/cash (e.g. co-pays)	202 (62.7)
	Out-of-pocket only (pay cash for all care)	12 (3.7)
	Don't know/Not Sure	3 (0.9)
	Total Valid Response	322 (100.0)
	Total missing	104
Medical supplies (e.g. blood glucose meter/strips)	Care is free	23 (7.0)
	Insurance pays total cost	66 (20.1)
	Insurance and out-of-pocket/cash (e.g. co-pays)	213 (64.7)
	Out-of-pocket only (pay	19 (5.8)

Question	Response	Number of Respondents (%)
Most often, how do you pay for the following types of medical care and services?		
	cash for all care)	
	Do not use service	5 (1.5)
	Don't know/Not Sure	3 (0.9)
	Total Valid Response	329 (100.0)
	Total missing	97
Procedures	Care is free	29 (9.9)
	Insurance pays total cost	87 (29.7)
	Insurance and out-of-pocket/cash (e.g. co-pays)	108 (36.9)
	Out-of-pocket only (pay cash for all care)	9 (3.1)
	Do not use service	24 (8.2)
	Don't know/Not Sure	36 (12.3)
	Total Valid Response	293 (100.0)
	Total missing	133
Tests/screenings	Care is free	44 (14.0)
	Insurance pays total cost	131 (41.7)
	Insurance and out-of-pocket/cash (e.g. co-pays)	114 (36.3)
	Out-of-pocket only (pay cash for all care)	14 (4.5)
	Don't know/Not Sure	11 (3.5)
	Total Valid Response	314 (100.0)
	Total missing	112
Health education	Care is free	48 (16.1)
	Insurance pays total cost	56 (18.8)
	Insurance and out-of-pocket/cash (e.g. co-pays)	40 (13.4)
	Out-of-pocket only (pay cash for all care)	6 (2.0)
	Do not use service	120 (40.3)
	Don't know/Not Sure	28 (9.4)
	Total Valid Response	298 (100.0)

Question	Response	Number of Respondents (%)
Most often, how do you pay for the following types of medical care and services?		
	Total missing	128
Counseling	Care is free	43 (14.8)
	Insurance pays total cost	38 (13.1)
	Insurance and out-of-pocket/cash (e.g. co-pays)	29 (10.0)
	Out-of-pocket only (pay cash for all care)	8 (2.8)
	Do not use service	143 (49.3)
	Don't know/Not Sure	29 (10.0)
	Total Valid Response	290 (100.0)
	Total missing	136

**Table 3.1**

Question	Response	Number of Respondents (%)
Are you aware of any government sponsored screening programs for diabetic eye disease (diabetic retinopathy)?	Yes	34 (9.7%)
	No	318 (90.3%)
	Total valid response	352 (100.0%)
	Total missing	74

**Table 3.2**

Question	Response	Number of Respondents (%)
Have you ever had an eye exam for diabetic eye disease?	Yes	244 (67.4%)
	No	118 (32.6%)
	Total valid response	362 (100.0%)
	Total missing	64
How long ago was your last eye exam?	Within the last year	196 (82.0%)
	More than 1 year ago but less than 2 years	32 (13.4%)
	More than 2 years ago but less	5 (2.1%)

Question	Response	Number of Respondents (%)
	than 3 years	
	More than 3 years ago but less than 5 years	3 (1.3%)
	Five or more years ago	1 (0.4%)
	Don't know/Not sure	2 (0.8%)
	Total valid response	239 (100.0%)
	Total missing	187
Who did the last exam?	General/Family practitioner	4 (1.7%)
	Eye doctor/Eye clinic	235 (97.9%)
	Other	1 (0.4%)
	Total valid response	240 (100.0%)
	Total missing	186

**Table 3.3**

Question	Response	Number of Respondents (%)
Have you ever had a dilated eye exam, where your eyes are examined after eye drops?	Yes	297 (83.7%)
	No	49 (13.8%)
	Don't know/Not sure	9 (2.5%)
	Total valid response	355 (100.0%)
	Total missing	71

**Table 3.4**

Question	Response	Number of Respondents (%)
Based on what you know, how often should you get your eyes examined for diabetic eye disease?	Once a year	299 (84.0%)
	Every two years	21 (5.9%)
	Less often than every two years	1 (0.3%)
	Only when symptoms occur	4 (1.1%)
	Never	1 (0.3%)

Question	Response	Number of Respondents (%)
	Don't know/Not sure	30 (8.4%)
	Total valid response	356 (100.0%)
	Total missing	70

**Table 3.5**

Question	Response	Number of Respondents (%)
For you, what are the biggest barriers to eye exams?	They are expensive	90 (27.9%)
	Eye exams are not available near my home	106 (32.8%)
	Long wait time for appointment	109 (33.7%)
	Long wait time on the day of the visit	82 (25.4%)
	Referral process is complicated or takes too long	16 (5.0%)
	Recommended treatments for eye problems are not available	19 (5.9%)
	Don't know much about my condition	19 (5.9%)
	Fear of treatment/results	48 (14.9%)
	Burden on my family/friends	36 (11.1%)
	Limited access to diabetes specialists	78 (24.1%)
	I'm not likely to have eye complications	11 (3.4%)
	Too many other things to do or worry about	32 (9.9%)
	Clinics are too small or lack necessary equipment/staff	20 (6.2%)
	Other	42 (13.0%)
	Total valid response	323 (100.0%)
	Total missing	103

**Table 3.6**

Question	Response	Number of Respondents (%)
Have you been diagnosed with diabetic eye disease?	Yes	58 (16.3%)
	No	297 (83.7%)



Question	Response	Number of Respondents (%)
	Total valid response	355 (100.0%)
	Total missing	71
Has your diabetic eye disease affected your vision?	Yes, slightly	27 (48.2%)
	Yes, significantly	22 (39.3%)
	No	7 (12.5%)
	Total valid response	56 (100.0%)
	Total missing	370
Have vision issues caused you to have difficulty with any of the following?	Traveling	7 (15.6%)
	Household responsibilities, such as cooking or cleaning	13 (28.9%)
	Social interactions with family/friends	14 (31.1%)
	Leisure activities/exercise	5 (11.1%)
	Work or keeping a job	15 (33.3%)
	Managing my diabetes	8 (17.8%)
	Other	4 (8.9%)
	None	8 (17.8%)
	Driving (a car/vehicle)	16 (35.6%)
	Total valid response	45 (100.0%)
	Total missing	381

**Table 3.7**

Question	Response	Number of Respondents (%)
Have you had any treatment for diabetic eye disease?	Yes	43 (76.8%)
	No	12 (21.4%)
	Don't know/Not sure	1 (1.8%)
	Total valid response	56 (100.0%)
	Total missing	370
What treatment did you receive?	Laser	32 (78.0%)
	Injection in the eye (Anti-VEGF)	16 (39.0%)

Question	Response	Number of Respondents (%)
	Surgery	14 (34.1%)
	Other	3 (7.3%)
	Total valid response	41 (100.0%)
	Total missing	385
Did you complete the treatment?	Yes	28 (65.1%)
	No	3 (7.0%)
	Still receiving treatment	11 (25.6%)
	Don't know/Not sure	1 (2.3%)
	Total valid response	43 (100.0%)
	Total missing	383
Do you feel that the treatment worked?	Yes, and vision improved	25 (65.8%)
	Yes, but vision stayed the same	8 (21.1%)
	Still waiting to know	4 (10.5%)
	Don't know/Not sure	1 (2.6%)
	Total valid response	38 (100.0%)
	Total missing	388
What is/are the reason(s) that you did not complete the treatment?	Treatment was too expensive	2 (66.7%)
	Eye doctor was located too far away	1 (33.3%)
	Too much burden on my family/friends	1 (33.3%)
	I was fearful (scared) of treatment	1 (33.3%)
	Other	1 (33.3%)
	Total valid response	3 (100.0%)
	Total missing	423
What are the reason(s) that you have not had treatment for diabetic eye disease?	My doctor did not recommend any treatment	10 (83.3%)
	Other	2 (16.7%)
	Total valid response	12 (100.0%)
	Total missing	414

**Table 3.8**

Question	Response	Number of Respondents (%)
Have you been diagnosed with diabetic macular edema?	Yes	11 (3.2%)
	No	248 (71.3%)
	Don't know/Not sure	89 (25.6%)
	Total valid response	348 (100.0%)
	Total missing	78
If Yes, which of the following would you prefer	Treatment to prevent further vision loss	8 (88.9%)
	Don't know/Not sure	1 (11.1%)
	Total valid response	9 (100.0%)
	Total missing	417

**Table 3.9**

Question	Response	Number of Respondents (%)
Have you received information about diabetic retinopathy or diabetic macular edema from any of the following sources?	Doctor/Nurse	127 (38.4%)
	Health educator	19 (5.7%)
	Diabetes organization or other health organization	33 (10.0%)
	Family/Friends/Neighbors	7 (2.1%)
	TV/Radio/Newspaper/Magazines	21 (6.3%)
	Internet	72 (21.8%)
	None of the above	159 (48.0%)
	Total valid response	331 (100.0%)
	Total missing	95

**Table 4.1**

Question	Response	Number of Respondents (%)
What is your gender?	Female	210 (61.2)
	Male	133 (38.8)
	Total Valid Response	343 (100.0)
	Total missing	83

Question	Response	Number of Respondents (%)
Please indicate your age	18 - 29	112 (26.3)
	30 - 39	78 (18.3)
	40 - 49	79 (18.5)
	50 - 59	97 (22.8)
	60 - 69	47 (11.0)
	70 - 79	13 (3.1)
	Total Valid Response	426 (100.0)

**Table 4.2**

Question	Response	Number of Respondents (%)
Where do you live?	Urban setting	319 (93.3)
	Non-urban setting	23 (6.7)
	Total Valid Response	342 (100.0)
	Total missing	84

**Table 4.3**

Question	Response	Number of Respondents (%)
What is the highest level of education you completed?	Did not complete primary school	20 (5.8)
	Primary school	57 (16.6)
	Secondary school	127 (37.0)
	College/University	120 (35.0)
	Graduate or post-graduate	19 (5.5)
	Total valid response	343 (100.0)
	Total missing	83

**Table 4.4**

Question	Response	Number of Respondents (%)
Are you currently working?	Working for pay	145 (42.4)
	Working without pay at home (e.g. housework, farming)	10 (2.9)
	Volunteering	1 (0.3)

Question	Response	Number of Respondents (%)
	Retired	75 (21.9)
	Student	33 (9.6)
	Not working	78 (22.8)
	Total Valid Response	342 (100.0)
	Total missing	84

**Table 4.5**

Question	Response	Number of Respondents (%)
Do you receive assistance from the government?	Income assistance	15 (4.7%)
	Medical assistance	91 (28.4%)
	Food assistance	1 (0.3%)
	Pension assistance	41 (12.8%)
	None of the above	193 (60.3%)
	Total valid response	320 (100.0%)
	Total missing	106

**Table 4.6**

Question	Response	Number of Respondents (%)
Did you have trouble paying for food at anytime during the past year?	Yes	115 (34.2)
	No	221 (65.8)
	Total Valid Response	336 (100.0)
	Total missing	90

**Table 4.7**

Question	Response	Number of Respondents (%)
Do you feel that your access to health care is negatively affected by any of the following?	Age	17 (5.3)
	Education	9 (2.8)

Question	Response	Number of Respondents (%)
	Gender	3 (0.9)
	Income	105 (32.7)
	Place of birth	1 (0.3)
	Place where you live	31 (9.7)
	Sexual orientation	1 (0.3)
	None of the above	185 (57.6)
	Total valid response	321 (100.0)
	Total missing	105

**Table 4.8**

Question	Response	Number of Respondents (%)
Which of the following do you worry about most?	Food	5 (1.5)
	Housing	1 (0.3)
	Money	34 (10.1)
	Health	222 (65.9)
	Family	53 (15.7)
	None of the above	22 (6.5)
	Total Valid Response	337 (100.0)
	Total missing	89

**Table 5.1**

Question	Response	Number of Respondents (%)
In general, would you say your health is:	Excellent	3 (1.0%)
	Very good	17 (5.5%)
	Good	124 (39.9%)
	Total good health	144 (46.3%)
	Fair	136 (43.7%)
	Poor	31 (10.0%)

Question	Response	Number of Respondents (%)
	Fair or poor health	167 (53.7%)
	Total valid response	311 (100.0%)
	Total missing	115

**Table 5.2**

Question	Response	Number of Respondents (%)
How many days during last 30 days was your physical health not good	Any unhealthy days	135 (52.1%)
	1-5 unhealthy days	53 (20.5%)
	6-10 unhealthy days	51 (19.7%)
	11-20 unhealthy days	27 (10.4%)
	21-30 unhealthy days	4 (1.5%)
	No unhealthy days	124 (47.9%)
	Total valid response	259 (100.0%)
	Total missing	167

**Table 5.3.1**

Question	Response	Number of Respondents (%)
How many days during last 30 days was your mental health not good	Any unhealthy days	160 (61.1%)
	1-5 unhealthy days	46 (17.6%)
	6-10 unhealthy days	49 (18.7%)
	11-20 unhealthy days	40 (15.3%)
	21-30 unhealthy days	25 (9.5%)
	No unhealthy days	102 (38.9%)

Question	Response	Number of Respondents (%)
	Total valid response	262 (100.0%)
	Total missing	164

**Table 5.3.2**

Question	Response	Number of Respondents (%)
Unhealthy days (physically or mentally unhealthy, max 30)	Any unhealthy days	191 (71.3%)
	1-5 unhealthy days	38 (14.2%)
	6-10 unhealthy days	41 (15.3%)
	11-20 unhealthy days	61 (22.8%)
	21-30 unhealthy days	51 (19.0%)
	No unhealthy days	77 (28.7%)
	Total valid response	268 (100.0%)

**Table 5.4**

Question	Response	Number of Respondents (%)
How many days during last 30 days did poor health limit your usual activities	Any unhealthy days	101 (56.7%)
	1-5 unhealthy days	40 (22.5%)
	6-10 unhealthy days	38 (21.3%)
	11-20 unhealthy days	16 (9.0%)
	21-30 unhealthy days	7 (3.9%)
	No unhealthy days	77 (43.3%)
	Total valid response	178 (100.0%)



Question	Response	Number of Respondents (%)
	Total missing	248

**Table 5.5**

Question	Response	Number of Respondents (%)
Are you limited in any way in any activities because of any impairment or health problem?	Yes	135 (45.0%)
	No	165 (55.0%)
	Total valid response	300 (100.0%)
	Total missing	126
Which impairment or health problem, if any, limits your activities?		
a) Arthritis/rheumatism	Yes	46 (62.2%)
	No	27 (36.5%)
	Don't know/Not sure	1 (1.4%)
	Total valid response	74 (100.0%)
	Total missing	352
b) Back or neck problem	Yes	62 (67.4%)
	No	26 (28.3%)
	Don't know/Not sure	4 (4.3%)
	Total valid response	92 (100.0%)
	Total missing	334
c) Fractures, bone/joint injury	Yes	20 (29.9%)
	No	43 (64.2%)
	Don't know/Not sure	4 (6.0%)
	Total valid response	67 (100.0%)
	Total missing	359
d) Walking problem	Yes	45 (60.0%)
	No	30 (40.0%)

Question	Response	Number of Respondents (%)
	Total valid response	75 (100.0%)
	Total missing	351
e) Lung/breathing problem	Yes	28 (40.0%)
	No	41 (58.6%)
	Don't know/Not sure	1 (1.4%)
	Total valid response	70 (100.0%)
	Total missing	356
f) Hearing problem	Yes	13 (21.3%)
	No	45 (73.8%)
	Don't know/Not sure	3 (4.9%)
	Total valid response	61 (100.0%)
	Total missing	365
g) Eye/vision problem	Yes	48 (63.2%)
	No	27 (35.5%)
	Don't know/Not sure	1 (1.3%)
	Total valid response	76 (100.0%)
	Total missing	350
h) Heart problem	Yes	37 (53.6%)
	No	28 (40.6%)
	Don't know/Not sure	4 (5.8%)
	Total valid response	69 (100.0%)
	Total missing	357
i) Stroke problem	Yes	1 (1.8%)
	No	55 (96.5%)
	Don't know/Not sure	1 (1.8%)
	Total valid	57 (100.0%)

Question	Response	Number of Respondents (%)
	response	
	Total missing	369
j) Hypertension/high blood pressure	Yes	57 (70.4%)
	No	23 (28.4%)
	Don't know/Not sure	1 (1.2%)
	Total valid response	81 (100.0%)
	Total missing	345
k) Diabetes	Yes	122 (91.7%)
	No	6 (4.5%)
	Don't know/Not sure	5 (3.8%)
	Total valid response	133 (100.0%)
	Total missing	293
l) Cancer	Yes	3 (5.0%)
	No	54 (90.0%)
	Don't know/Not sure	2 (3.3%)
	Refused	1 (1.7%)
	Total valid response	60 (100.0%)
	Total missing	366
m) Mental or emotional health	Yes	67 (70.5%)
	No	24 (25.3%)
	Don't know/Not sure	4 (4.2%)
	Total valid response	95 (100.0%)
	Total missing	331

**PT 1.2**

Analysis Sets	Number of Respondents (%)
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Analysis Sets	Number of Respondents (%)
All valid respondents	175 (100.0%)
Included in Provider Analysis Set (PAS)	175 (100.0%)
Excluded in Provider Analysis Set (PAS)	0 (0.0%)
Reasons for exclusion from Provider Analysis Set:	
No other valid survey data	0
Provider Analysis Set	175
Included in the Eye Care Professional Set (Eye Specialist)	47 (26.9%)
Excluded in the Eye Care Professional Set (Eye Specialist)	128 (73.1%)
Reasons for exclusion from Eye Care Professional Set:	
Missing required speciality	128
No valid (non-missing) response for the supplemental eye questionnaire	0

### PT 1.3

Subgroups	Number of Respondents (%)
Provider Analysis Set	175 (100.0%)
Primary Care Provider	64 (36.6%)
Diabetes Specialist Provider	14 (8.0%)
Eye Care Professional	47 (26.9%)
Ophthalmologist	46 (26.3%)

NB [1]: Primary Care Provider = General Practitioner/Family practitioner (but not diabetes specialist or eye care professional)

NB [2]: Diabetes specialist provider = Diabetes specialist (but not eye care professional)

NB [4]: Ophthalmologist = General ophthalmologist or retinal specialist

NB [5]: Note that providers may have selected more than one speciality

### PT 1.4

Item	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
What is your speciality?	General primary care/Family practitioner	64 (100.0%)	0 (0.0%)	0 (0.0%)	65 (37.1%)
	Diabetes specialist	0 (0.0%)	14 (100.0%)	0 (0.0%)	14 (8.0%)
	General ophthalmologist	0 (0.0%)	0 (0.0%)	26 (56.5%)	26 (14.9%)
	Optometrist	0 (0.0%)	0 (0.0%)	1 (2.2%)	2 (1.1%)
	Retinal specialist	0 (0.0%)	0 (0.0%)	34 (73.9%)	34

Item	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
					(19.4%)
	Nurse	1 (1.6%)	2 (14.3%)	0 (0.0%)	15 (8.6%)
	Health educator	0 (0.0%)	1 (7.1%)	3 (6.5%)	10 (5.7%)
	None of the above	0 (0.0%)	0 (0.0%)	0 (0.0%)	33 (18.9%)
	Total valid response	64 (100.0%)	14 (100.0%)	46 (100.0%)	175 (100.0%)
	Total missing	0	0	0	0

#### PT 1.5

Item	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
How long have you been practicing in this profession?	Total valid response (n)	64	14	46	175
	Mean	12.6	16.3	24.7	16.6
	SD	8.9	6.2	11.5	11.0
	Median	12.5	15.5	25.0	16.0
	Min.	0	5	2	0
	Max.	30	25	80	80
	Total missing	0	0	0	0

#### PT 2.1

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
What is your main practice setting?	Diabetes clinic/practice	3 (5.2%)	2 (14.3%)	1 (2.4%)	8 (5.0%)
	Eye clinic/practice	0 (0.0%)	0 (0.0%)	17 (40.5%)	17 (10.6%)
	General medical clinic/practice	40 (69.0%)	0 (0.0%)	0 (0.0%)	42 (26.1%)
	Hospital	12 (20.7%)	12 (85.7%)	24 (57.1%)	85 (52.8%)

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	Other	3 (5.2%)	0 (0.0%)	0 (0.0%)	9 (5.6%)
	Total Valid Response	58 (100.0%)	14 (100.0%)	42 (100.0%)	161 (100.0%)
	Total missing	6	0	4	14

### PT 2.2

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
Where is your main practice located?	Urban setting	50 (86.2%)	14 (100.0%)	41 (100.0%)	147 (91.3%)
	Non-urban setting	8 (13.8%)	0 (0.0%)	0 (0.0%)	14 (8.7%)
	Total Valid Response	58 (100.0%)	14 (100.0%)	41 (100.0%)	161 (100.0%)
	Total missing	6	0	5	14

### PT 2.3

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
In which sector is your main practice?	Government	51 (87.9%)	10 (71.4%)	23 (54.8%)	125 (77.2%)
	Private	1 (1.7%)	4 (28.6%)	13 (31.0%)	23 (14.2%)
	Non profit	2 (3.4%)	0 (0.0%)	1 (2.4%)	4 (2.5%)
	Combined/mixed	4 (6.9%)	0 (0.0%)	5 (11.9%)	10 (6.2%)
	Total Valid Response	58 (100.0%)	14 (100.0%)	42 (100.0%)	162 (100.0%)
	Total missing	6	0	4	13

### PT 2.4

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
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Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
Is your main practice limited to certain populations?	No	55 (94.8%)	6 (42.9%)	40 (95.2%)	136 (84.0%)
	Yes, limited by age	2 (3.4%)	5 (35.7%)	0 (0.0%)	14 (8.6%)
	Yes, limited to persons with health insurance	0 (0.0%)	1 (7.1%)	1 (2.4%)	5 (3.1%)
	Yes, limited to persons who pay out-of-pocket	1 (1.7%)	2 (14.3%)	2 (4.8%)	6 (3.7%)
	Yes, other	0 (0.0%)	1 (7.1%)	0 (0.0%)	3 (1.9%)
	Total valid response	58 (100.0%)	14 (100.0%)	42 (100.0%)	162 (100.0%)
	Total missing	6	0	4	13

#### PT 2.5

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
What is the average wait time for an appointment in your main practice?	Less than 1 week	17 (32.1%)	5 (35.7%)	21 (52.5%)	69 (46.0%)
	More than 1 week but less than 1 month	2 (3.8%)	3 (21.4%)	13 (32.5%)	22 (14.7%)
	More than 1 month but less than 2 months	1 (1.9%)	0 (0.0%)	3 (7.5%)	5 (3.3%)
	More than 2 months but less than 3 months	1 (1.9%)	1 (7.1%)	0 (0.0%)	2 (1.3%)
	More than 3 months but less than 6 months	0 (0.0%)	1 (7.1%)	1 (2.5%)	5 (3.3%)
	Six or more months	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.7%)

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	Do not take appointments	31 (58.5%)	4 (28.6%)	1 (2.5%)	44 (29.3%)
	Other	0 (0.0%)	0 (0.0%)	1 (2.5%)	1 (0.7%)
	Don't know/Not sure	1 (1.9%)	0 (0.0%)	0 (0.0%)	1 (0.7%)
	Total Valid Response	53 (100.0%)	14 (100.0%)	40 (100.0%)	150 (100.0%)
	Total missing	11	0	6	25

#### PT 2.6

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
On average, how many patients do you see per week in your main practice [n patients]	Total valid response (n)	53	14	39	144
	Mean	192.3	203.6	185	169.8
	SD	106.7	152.6	163	132.1
	Median	200	200	150	150
	Min.	0	20	30	0
	Max.	500	500	700	700
	Total missing	11	0	7	31
What percentage of the patients in your main practice have diabetes [% patients]	Total valid response (n)	52	14	39	144
	Mean	18.9	48.2	32.3	30.7
	SD	17.3	33.6	22.3	26.3
	Median	15	30	30	20
	Min.	0	15	5	0
	Max.	100	100	90	100
	Total missing	12	0	7	31

#### PT 2.7



Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
In your main practice, how do patients pay for the care and services that you provide?	Don't pay	27 (50.9%)	4 (28.6%)	10 (25.0%)	54 (36.0%)
	Pay a reduced/subsidized rate	2 (3.8%)	0 (0.0%)	0 (0.0%)	4 (2.7%)
	Pay out-of-pocket (full fees)	1 (1.9%)	1 (7.1%)	6 (15.0%)	10 (6.7%)
	Pay through insurance	15 (28.3%)	7 (50.0%)	16 (40.0%)	62 (41.3%)
	Patient pays some, insurance pays some	13 (24.5%)	5 (35.7%)	17 (42.5%)	46 (30.7%)
	Other	1 (1.9%)	0 (0.0%)	2 (5.0%)	4 (2.7%)
	Total valid response	53 (100.0%)	14 (100.0%)	40 (100.0%)	150 (100.0%)
	Total missing	11	0	6	25

### PT 2.8

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
In addition to your main practice, do you work in another practice setting?	Yes	4 (7.5%)	1 (7.1%)	7 (17.5%)	16 (10.6%)
	No	49 (92.5%)	13 (92.9%)	33 (82.5%)	135 (89.4%)
	Total valid response	53 (100.0%)	14 (100.0%)	40 (100.0%)	151 (100.0%)
	Total missing	11		6	24
In which other practice setting(s) do you work?	Hospital	1 (33.3%)		2 (28.6%)	4 (26.7%)
	General medical clinic/practice	1 (33.3%)	1 (100.0%)		2 (13.3%)
	Eye clinic/practice			5 (71.4%)	5

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
					(33.3%)
	Other	1 (33.3%)		2 (28.6%)	6 (40.0%)
	Total valid response	3 (100.0%)	1 (100.0%)	7 (100.0%)	15 (100.0%)
	Total missing	61	13	39	160
In which sector(s) is(are) the practice(s)?	Government	2 (66.7%)		1 (14.3%)	5 (33.3%)
	Private	1 (33.3%)	1 (100.0%)	4 (57.1%)	8 (53.3%)
	Combined/mixed			2 (28.6%)	2 (13.3%)
	Total valid response	3 (100.0%)	1 (100.0%)	7 (100.0%)	15 (100.0%)
	Total missing	61	13	39	160
Is there a major difference between your practices with respect to how diabetic eye disease is screened and managed?	Yes	1 (33.3%)		2 (28.6%)	5 (35.7%)
	No	2 (66.7%)	1 (100.0%)	5 (71.4%)	9 (64.3%)
	Total valid response	3 (100.0%)	1 (100.0%)	7 (100.0%)	14 (100.0%)
	Total missing	61	13	39	161

#### PT 2.9

Type of Test	Yes/No	How often/year	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
Blood glucose	Yes		48 (98.0%)	13 (100.0%)	29 (82.9%)	132 (95.0%)
		Total valid numeric response (n)	47 (95.9%)	13 (100.0%)	28 (80.0%)	125 (89.9%)
		Mean	5.8	47.8	6.4	15.8

Type of Test	Yes/No	How often/year	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS	
		SD	4.7	103.6	4.3	56.7	
		Median	4.0	6.0	5.0	4.0	
		Min	0	1	0	0	
		Max	24	365	12	365	
		Total missing	17	1	18	50	
	No		1 (2.0%)		6 (17.1%)	7 (5.0%)	
	Total valid response		49 (100.0%)	13 (100.0%)	35 (100.0%)	139 (100.0%)	
	Total missing		15	1	11	36	
	HbA1c	Yes		44 (89.8%)	13 (100.0%)	27 (75.0%)	125 (89.3%)
			Total valid numeric response (n)	43 (87.8%)	13 (100.0%)	26 (72.2%)	119 (85.0%)
Mean			3.2	3.7	3.0	3.2	
SD			1.1	1.0	1.3	1.2	
Median			4.0	4.0	4.0	4.0	
Min			0	1	0	0	
Max			5	5	4	6	
Total missing			21	1	20	56	
No			5 (10.2%)		9 (25.0%)	15 (10.7%)	
Total valid response			49 (100.0%)	13 (100.0%)	36 (100.0%)	140 (100.0%)	
Total missing			15	1	10	35	
Urine check	Yes		41 (87.2%)	13 (100.0%)	22 (61.1%)	114 (83.2%)	
		Total valid numeric response (n)	40 (85.1%)	13 (100.0%)	21 (58.3%)	109 (79.6%)	
		Mean	3.5	3.8	3.6	3.9	

Type of Test	Yes/No	How often/year	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS	
		SD	2.5	2.7	3.1	4.6	
		Median	3.0	4.0	3.0	3.0	
		Min	0	1	0	0	
		Max	12	12	12	42	
		Total missing	24	1	25	66	
	No	Total valid response		6 (12.8%)		14 (38.9%)	23 (16.8%)
				47 (100.0%)	13 (100.0%)	36 (100.0%)	137 (100.0%)
				17	1	10	38
	Weight check	Yes		43 (89.6%)	13 (100.0%)	22 (61.1%)	115 (83.3%)
				Total valid numeric response (n)	42 (87.5%)	13 (100.0%)	21 (58.3%)
		Mean	6.0	3.9	3.8	4.6	
		SD	5.2	2.3	2.8	3.8	
		Median	4.0	4.0	4.0	4.0	
		Min	0	1	0	0	
		Max	30	10	12	30	
		Total missing	22	1	25	65	
		No	Total valid response		5 (10.4%)		14 (38.9%)
	48 (100.0%)				13 (100.0%)	36 (100.0%)	138 (100.0%)
	16				1	10	37
	Blood pressure check	Yes		48 (96.0%)	13 (100.0%)	25 (69.4%)	124 (89.2%)
Total valid numeric response (n)				47 (94.0%)	13 (100.0%)	24 (66.7%)	119 (85.6%)

Type of Test	Yes/No	How often/year	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS	
		Mean	9.8	6.3	7.9	8.9	
		SD	15.8	3.9	6.4	16.9	
		Median	5.0	5.0	6.0	4.0	
		Min	0	1	0	0	
		Max	100	12	24	150	
		Total missing	17	1	22	56	
	No			2 (4.0%)		11 (30.6%)	15 (10.8%)
		Total valid response		50 (100.0%)	13 (100.0%)	36 (100.0%)	139 (100.0%)
		Total missing		14	1	10	36
	Foot check	Yes		36 (75.0%)	12 (92.3%)	15 (42.9%)	97 (72.4%)
			Total valid numeric response (n)	35 (72.9%)	12 (92.3%)	14 (40.0%)	92 (68.7%)
			Mean	4.6	3.8	1.7	3.3
SD			8.8	3.7	1.1	5.7	
Median			2.0	3.0	2.0	2.0	
Min			1	0	0	0	
Max			52	12	4	52	
No				12 (25.0%)	1 (7.7%)	20 (57.1%)	37 (27.6%)
		Total valid response		48 (100.0%)	13 (100.0%)	35 (100.0%)	134 (100.0%)
		Total missing		16	1	11	41
Eye examination - Un-dilated		Yes		19 (41.3%)	11 (84.6%)	35 (94.6%)	97 (72.9%)
			Total valid numeric	19	11 (84.6%)	34 (91.9%)	94

Type of Test	Yes/No	How often/year	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
		response (n)	(41.3%)			(70.7%)
		Mean	1.1	1.6	2.6	1.8
		SD	1.1	0.7	2.3	1.6
		Median	1.0	2.0	2.0	2.0
		Min	0	0	0	0
		Max	4	2	12	12
		Total missing	45	3	12	81
	No		27 (58.7%)	2 (15.4%)	2 (5.4%)	36 (27.1%)
	Total valid response		46 (100.0%)	13 (100.0%)	37 (100.0%)	133 (100.0%)
	Total missing		18	1	9	42
Eye examination - Optical Coherence Tomography	Yes		7 (15.6%)	6 (54.5%)	40 (100.0%)	76 (58.5%)
		Total valid numeric response (n)	7 (15.6%)	5 (45.5%)	39 (97.5%)	73 (56.2%)
		Mean	0.7	1.0	2.3	1.7
		SD	0.5	0.0	2.1	1.7
		Median	1.0	1.0	2.0	1.0
		Min	0	1	0	0
		Max	1	1	12	12
		Total missing	57	9	7	102
	No		38 (84.4%)	5 (45.5%)		54 (41.5%)
	Total valid response		45 (100.0%)	11 (100.0%)	40 (100.0%)	130 (100.0%)
	Total missing		19	3	6	45

Type of Test	Yes/No	How often/year	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
Eye examination - Fundoscopy	Yes		10 (22.2%)	12 (92.3%)	40 (100.0%)	93 (68.9%)
		Total valid numeric response (n)	10 (22.2%)	12 (92.3%)	39 (97.5%)	91 (67.4%)
		Mean	1.4	1.9	2.7	2.0
		SD	1.5	1.2	2.1	1.7
		Median	1.0	2.0	2.0	2.0
		Min	0	0	0	0
		Max	5	5	12	12
		Total missing	54	2	7	84
	No		35 (77.8%)	1 (7.7%)		42 (31.1%)
	Total valid response		45 (100.0%)	13 (100.0%)	40 (100.0%)	135 (100.0%)
	Total missing		19	1	6	40
Eye examination - Fluorescein Angiography	Yes		5 (11.4%)	8 (72.7%)	38 (97.4%)	77 (59.7%)
		Total valid numeric response (n)	5 (11.4%)	8 (72.7%)	37 (94.9%)	75 (58.1%)
		Mean	1.6	0.8	1.2	1.1
		SD	1.9	0.5	0.9	0.9
		Median	1.0	1.0	1.0	1.0
		Min	0	0	0	0
		Max	5	1	5	5
		Total missing	59	6	9	100
	No		39 (88.6%)	3 (27.3%)	1 (2.6%)	52 (40.3%)
	Total valid		44 (100.0%)	11 (100.0%)	39 (100.0%)	129 (100.0%)

Type of Test	Yes/No	How often/year	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	response					
	Total missing		20	3	7	46
Eye examination - Lipid check	Yes		17 (38.6%)	10 (76.9%)	26 (72.2%)	77 (60.2%)
		Total valid numeric response (n)	17 (38.6%)	10 (76.9%)	25 (69.4%)	74 (57.8%)
		Mean	1.4	1.5	2.3	1.7
		SD	1.2	1.3	2.3	1.6
		Median	1.0	1.0	2.0	1.0
		Min	0	0	0	0
		Max	4	4	12	12
		Total missing	47	4	21	101
		No	27 (61.4%)	3 (23.1%)	10 (27.8%)	51 (39.8%)
		Total valid response	44 (100.0%)	13 (100.0%)	36 (100.0%)	128 (100.0%)
		Total missing	20	1	10	47

**PT 2.10**

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
In your main practice, what topics do you cover during a routine visit with a patient who has diabetes?	Diabetes management and monitoring	47 (97.9%)	14 (100.0%)	22 (56.4%)	119 (85.0%)
	Diet/nutrition	44 (91.7%)	11 (78.6%)	12 (30.8%)	99 (70.7%)
	Exercise/physical activity	44 (91.7%)	9 (64.3%)	9 (23.1%)	94 (67.1%)



Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	Medicines	47 (97.9%)	14 (100.0%)	14 (35.9%)	108 (77.1%)
	Foot care and inspection	24 (50.0%)	8 (57.1%)	2 (5.1%)	53 (37.9%)
	Blood pressure	42 (87.5%)	13 (92.9%)	11 (28.2%)	93 (66.4%)
	Eye care and exams	14 (29.2%)	9 (64.3%)	38 (97.4%)	76 (54.3%)
	Lipid check	43 (89.6%)	13 (92.9%)	9 (23.1%)	87 (62.1%)
	None of the above	1 (2.1%)	0 (0.0%)	0 (0.0%)	2 (1.4%)
	Total valid response	48 (100.0%)	14 (100.0%)	39 (100.0%)	140 (100.0%)
	Total missing	16	0	7	35

**PT 2.11**

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
Is there written information about diabetes available for patients in your main practice?	Yes, and information on eye complications is sufficient	7 (14.6%)	4 (28.6%)	15 (38.5%)	34 (24.5%)
	Yes, but information on eye complications is not sufficient	7 (14.6%)	4 (28.6%)	3 (7.7%)	27 (19.4%)
	Yes, but no information on eye complications is included	3 (6.3%)	1 (7.1%)	0 (0.0%)	8 (5.8%)
	No written information is available for patients	28 (58.3%)	3 (21.4%)	15 (38.5%)	53 (38.1%)
	Don't know/Not sure	3 (6.3%)	2 (14.3%)	6 (15.4%)	17 (12.2%)
	Total Valid Response	48 (100.0%)	14 (100.0%)	39 (100.0%)	139 (100.0%)

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	Total missing	16	0	7	36

**PT 2.12**

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
Do you have written protocols/guidelines available in your main practice for the management of diabetes?	Yes, available and used by staff	11 (23.4%)	9 (64.3%)	14 (35.0%)	55 (39.3%)
	Yes, available but not used by staff	8 (17.0%)	1 (7.1%)	4 (10.0%)	19 (13.6%)
	Not available	21 (44.7%)	2 (14.3%)	16 (40.0%)	45 (32.1%)
	Don't know/Not sure	7 (14.9%)	2 (14.3%)	6 (15.0%)	21 (15.0%)
	Total Valid Response	47 (100.0%)	14 (100.0%)	40 (100.0%)	140 (100.0%)
	Total missing	17	0	6	35

**PT 2.13**

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
Do you have written protocols/guidelines for detection and management of diabetes-related vision issue available in your main practice?	Yes, available and used by staff	5 (10.9%)	6 (42.9%)	15 (37.5%)	34 (24.6%)
	Yes, available but not used by staff	4 (8.7%)	0 (0.0%)	5 (12.5%)	13 (9.4%)

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	Not available	30 (65.2%)	6 (42.9%)	15 (37.5%)	61 (44.2%)
	Don't know/Not sure	7 (15.2%)	2 (14.3%)	5 (12.5%)	30 (21.7%)
	Total Valid Response	46 (100.0%)	14 (100.0%)	40 (100.0%)	138 (100.0%)
	Total missing	18	0	6	37

**PT 2.14**

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
What is the protocol in your main practice for timing of initial eye exams for persons with diabetes - Type I?	After a predetermined number of years (numeric response) (n)	7 (15.6%)	3 (23.1%)	7 (17.9%)	23 (17.0%)
	Mean	5.1	5.0	4.9	4.7
	SD	2.6	0.0	0.4	1.6
	Median	5.0	5.0	5.0	5.0
	Min	1	5	4	1
	Max	10	5	5	10
	After a predetermined age (numeric response) (n)	0 (0.0%)	0 (0.0%)	1 (2.6%)	2 (1.5%)
	Mean			14.0	16.0
	SD				2.8
	Median			14.0	16.0
	Min			14	14
	Max			14	18
	As soon as they are diagnosed	21 (46.7%)	9 (69.2%)	20 (51.3%)	72 (53.3%)
	When a patient	1 (2.2%)			2 (1.5%)

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	reports eye/vision problems				
	No standard practice, timing varies case by case	10 (22.2%)	1 (7.7%)	4 (10.3%)	19 (14.1%)
	Don't know/Not sure	6 (13.3%)		7 (17.9%)	17 (12.6%)
	Total valid response	45 (100.0%)	13 (100.0%)	39 (100.0%)	135 (100.0%)
	Total missing	19	1	7	40
What is the protocol in your main practice for timing of initial eye exams for persons with diabetes - Type II?	After a predetermined number of years (numeric response) (n)	3 (6.5%)	0 (0.0%)	2 (5.0%)	7 (5.0%)
	Mean	2.3		5.0	3.0
	SD	2.3		0.0	1.9
	Median	1.0		5.0	2.0
	Min	1		5	1
	Max	5		5	5
	After a predetermined age (numeric response) (n)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	Mean				
	SD				
	Median				
	Min				
	Max				
	As soon as they are diagnosed	28 (60.9%)	13 (92.9%)	28 (70.0%)	96 (69.1%)
	When a patient reports eye/vision problems	1 (2.2%)			2 (1.4%)
	No standard practice, timing	10 (21.7%)	1 (7.1%)	4 (10.0%)	20 (14.4%)

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	varies case by case				
	Don't know/Not sure	4 (8.7%)		6 (15.0%)	14 (10.1%)
	Total valid response	46 (100.0%)	14 (100.0%)	40 (100.0%)	139 (100.0%)
	Total missing	18		6	36

#### PT 2.15

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
What is the protocol in your main practice for timing of follow-up eye examinations for persons with diabetes?	Once a year	31 (67.4%)	13 (92.9%)	35 (87.5%)	105 (76.1%)
	Every two years	2 (4.3%)	0 (0.0%)	0 (0.0%)	3 (2.2%)
	More than every two years	1 (2.2%)	0 (0.0%)	0 (0.0%)	2 (1.4%)
	Only when symptoms are present	3 (6.5%)	0 (0.0%)	0 (0.0%)	5 (3.6%)
	Other	1 (2.2%)	1 (7.1%)	4 (10.0%)	8 (5.8%)
	Don't know/Not sure	8 (17.4%)	0 (0.0%)	1 (2.5%)	15 (10.9%)
	Total Valid Response	46 (100.0%)	14 (100.0%)	40 (100.0%)	138 (100.0%)
	Total missing	18	0	6	37

#### PT 2.16

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
Do you screen patients for DR?	Yes	19 (40.4%)	12 (85.7%)	38 (95.0%)	89 (63.6%)

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	No	28 (59.6%)	2 (14.3%)	2 (5.0%)	51 (36.4%)
	Total valid response	47 (100.0%)	14 (100.0%)	40 (100.0%)	140 (100.0%)
	Total missing	17		6	35
Where do you screen patients?	In clinic	5 (26.3%)	10 (83.3%)	38 (100.0%)	67 (75.3%)
	Outreach	9 (47.4%)	1 (8.3%)		16 (18.0%)
	Other	5 (26.3%)	1 (8.3%)		7 (7.9%)
	Total valid response	19 (100.0%)	12 (100.0%)	38 (100.0%)	89 (100.0%)
	Total missing	45	2	8	86

**PT 2.17**

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
What patient characteristics influence your vision care and/or vision referrals?	Diabetes duration	39 (88.6%)	13 (92.9%)	38 (97.4%)	122 (91.7%)
	Patient's age	28 (63.6%)	9 (64.3%)	22 (56.4%)	86 (64.7%)
	Patient's gender	6 (13.6%)	1 (7.1%)	1 (2.6%)	10 (7.5%)
	Presence of comorbidities such as hypertension, etc.	34 (77.3%)	12 (85.7%)	32 (82.1%)	109 (82.0%)
	High glucose levels	34 (77.3%)	13 (92.9%)	36 (92.3%)	114 (85.7%)
	Ability or inability to pay	4 (9.1%)	2 (14.3%)	5 (12.8%)	12 (9.0%)
	Insurance restrictions	5 (11.4%)	0 (0.0%)	2 (5.1%)	8 (6.0%)
	Patient educational level	15 (34.1%)	3 (21.4%)	11 (28.2%)	43 (32.3%)

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	Patient adherence to recommendations	21 (47.7%)	5 (35.7%)	16 (41.0%)	61 (45.9%)
	None of the above	2 (4.5%)	1 (7.1%)	0 (0.0%)	3 (2.3%)
	Not applicable	2 (4.5%)	0 (0.0%)	1 (2.6%)	5 (3.8%)
	Total valid response	44 (100.0%)	14 (100.0%)	39 (100.0%)	133 (100.0%)
	Total missing	20	0	7	42

**PT 2.18**

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
What are the major barriers to optimizing eye health faced by patients with diabetes in your main practice?	Cost of care	9 (20.5%)	4 (28.6%)	14 (35.9%)	35 (26.7%)
	Proximity to care	14 (31.8%)	1 (7.1%)	11 (28.2%)	35 (26.7%)
	Long wait time for appointment	18 (40.9%)	4 (28.6%)	7 (17.9%)	37 (28.2%)
	Long wait time on the day of visit	7 (15.9%)	2 (14.3%)	4 (10.3%)	20 (15.3%)
	Referral process	15 (34.1%)	3 (21.4%)	5 (12.8%)	26 (19.8%)
	Recommended treatments are not available	3 (6.8%)	0 (0.0%)	0 (0.0%)	4 (3.1%)
	Lack of knowledge and/or awareness	36 (81.8%)	8 (57.1%)	26 (66.7%)	91 (69.5%)
	Patients fear of treatment/results	15 (34.1%)	2 (14.3%)	18 (46.2%)	43 (32.8%)
	Patients they are a burden on family/friends	7 (15.9%)	1 (7.1%)	9 (23.1%)	26 (19.8%)
	Limited access to diabetes specialists	15 (34.1%)	1 (7.1%)	12 (30.8%)	45 (34.4%)

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
	Limited access to eye specialists	15 (34.1%)	3 (21.4%)	1 (2.6%)	27 (20.6%)
	Patients feel eye complications are unlikely	14 (31.8%)	3 (21.4%)	12 (30.8%)	42 (32.1%)
	Patients feel eye exams are not important	20 (45.5%)	4 (28.6%)	11 (28.2%)	51 (38.9%)
	Patients have competing responsibilities and priorities	16 (36.4%)	4 (28.6%)	8 (20.5%)	37 (28.2%)
	Clinic too small or lack necessary equipment/staff	9 (20.5%)	1 (7.1%)	2 (5.1%)	18 (13.7%)
	Other	2 (4.5%)	1 (7.1%)	0 (0.0%)	4 (3.1%)
	Total valid response	44 (100.0%)	14 (100.0%)	39 (100.0%)	131 (100.0%)
	Total missing	20	0	7	44

**PT 2.19**

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
In your main practice, are patients contacted with reminders for general follow-up appointments?	Yes	11 (25.0%)	5 (35.7%)	18 (46.2%)	44 (32.8%)
	No	29 (65.9%)	8 (57.1%)	19 (48.7%)	73 (54.5%)
	Don't know/Not sure	4 (9.1%)	1 (7.1%)	2 (5.1%)	17 (12.7%)
	Total Valid Response	44 (100.0%)	14 (100.0%)	39 (100.0%)	134 (100.0%)
	Total missing	20	0	7	41

**PT 2.20**



Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
Do you share relevant patient information with other health care professionals involved in the patients care e.g. his or her general practitioner, ophthalmologist, podiatrist?	Yes	22 (50.0%)	8 (57.1%)	22 (56.4%)	68 (51.1%)
	No	19 (43.2%)	4 (28.6%)	12 (30.8%)	52 (39.1%)
	Don't know/Not sure	3 (6.8%)	2 (14.3%)	5 (12.8%)	13 (9.8%)
	Total Valid Response	44 (100.0%)	14 (100.0%)	39 (100.0%)	133 (100.0%)
	Total missing	20	0	7	42

### PT 3.1

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
Please indicate your age:	18 - 29	5 (11.4%)		1 (2.5%)	9 (6.7%)
	30 - 39	19 (43.2%)	4 (28.6%)	3 (7.5%)	46 (34.3%)
	40 - 49	15 (34.1%)	8 (57.1%)	13 (32.5%)	44 (32.8%)
	50 - 59	4 (9.1%)	1 (7.1%)	20 (50.0%)	28 (20.9%)
	60 - 69	1 (2.3%)	1 (7.1%)	3 (7.5%)	7 (5.2%)
	Total valid response	44 (100.0%)	14 (100.0%)	40 (100.0%)	134 (100.0%)
	Total missing	20		6	41
What is your gender?	Female	26 (60.5%)	3 (21.4%)	20 (50.0%)	73 (54.9%)
	Male	17 (39.5%)	11 (78.6%)	20 (50.0%)	60 (45.1%)
	Total valid response	43 (100.0%)	14 (100.0%)	40 (100.0%)	133 (100.0%)
	Total missing	21		6	42

Question	Response	Primary Care Provider	Diabetes Specialist Provider	Ophthalmologist	PAS
What is your highest level of education completed?	College/University	9 (20.5%)	2 (14.3%)	2 (5.0%)	20 (14.9%)
	Graduate or advanced degree (e.g. PhD, MD, etc)	35 (79.5%)	12 (85.7%)	38 (95.0%)	114 (85.1%)
	Total valid response	44 (100.0%)	14 (100.0%)	40 (100.0%)	134 (100.0%)
	Total missing	20		6	41

#### PT 4.1

Question	Response	Ophthalmologist
What percentage of your patients have diabetic retinopathy	Total valid numeric response (n)	38
	Mean	31.8
	SD	21.6
	Median	30.0
	Min	0
	Max	85
	Total missing	8

#### PT 4.2

Question	Response	Ophthalmologist
What percentage of your patients have diabetic macular edema?	Total valid numeric response (n)	38
	Mean	21.4
	SD	19.0
	Median	13.0
	Min	0
	Max	80
	Total missing	8

#### PT 4.3

Question	Response	Ophthalmologist
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Question	Response	Ophthalmologist
What is the average amount of time your patients wait for an appointment to be screened for diabetic eye disease in your practice?	Less than 1 week	22 (57.9%)
	More than 1 week but less than 1 month	13 (34.2%)
	More than 1 month but less than 2 months	2 (5.3%)
	Other	1 (2.6%)
	Total Valid Response	38 (100.0%)
	Total missing	8

#### PT 4.4

Question	Response	Ophthalmologist
From the time a patient is screened, what is the average length of time he/she waits for diagnosis?	Less than 1 week	3 (8.1%)
	More than 1 week but less than 1 month	3 (8.1%)
	Other	1 (2.7%)
	Don't know/Not sure	0 (0.0%)
	There is not wait, diagnosis is given when screened	30 (81.1%)
	Total Valid Response	37 (100.0%)
	Total missing	9

#### PT 4.5

Type of Treatment	Question	Response/time	Ophthalmologist
Laser photocoagulation	Is the treatment available?	Available within country	22 (59.5%)
		Available locally	21 (56.8%)
		Available in practice	36 (97.3%)
		Not available	
		Total valid response	37 (100.0%)
	Total missing	9	

Type of Treatment	Question	Response/time	Ophthalmologist
	What is the average amount of time your patients wait for a consultation appointment? (weeks)	Total valid numeric response (n)	21 (84.0%)
		Mean	1.2
		SD	0.7
		Median	1.0
		Min	0
		Max	3
		Not applicable	4 (16.0%)
		Total valid response	25 (100.0%)
	Total missing	21	
	What is the average amount of time your patients wait for a first treatment?(weeks)	Total valid numeric response (n)	25 (86.2%)
		Mean	1.2
		SD	0.9
		Median	1.0
		Min	0
		Max	4
		Not applicable	4 (13.8%)
		Total valid response	29 (100.0%)
	Total missing	17	
	What is the average amount of time your patients wait for a second treatment?(weeks)	Total valid numeric response (n)	23 (79.3%)
		Mean	2.0
		SD	2.5
		Median	1.0
		Min	0
		Max	12
		Don't know/not sure	1 (3.4%)
Not applicable		5 (17.2%)	
Total valid response	29 (100.0%)		

Type of Treatment	Question	Response/time	Ophthalmologist
		Total missing	17
Anti-VEGF therapies	Is the treatment available?	Available within country	21 (55.3%)
		Available locally	20 (52.6%)
		Available in practice	37 (97.4%)
		Not available	
		Total valid response	38 (100.0%)
		Total missing	8
	What is the average amount of time your patients wait for a consultation appointment? (weeks)	Total valid numeric response (n)	23 (85.2%)
		Mean	1.2
		SD	0.8
		Median	1.0
		Min	0
		Max	4
		Not applicable	4 (14.8%)
		Total valid response	27 (100.0%)
		Total missing	19
	What is the average amount of time your patients wait for a first treatment?(weeks)	Total valid numeric response (n)	26 (86.7%)
		Mean	1.5
		SD	2.1
		Median	1.0
		Min	0
		Max	11
		Not applicable	4 (13.3%)
		Total valid response	30 (100.0%)
		Total missing	16
	What is the average amount of time your patients wait for a second treatment?(weeks)	Total valid numeric response (n)	25 (83.3%)

Type of Treatment	Question	Response/time	Ophthalmologist
		Mean	2.3
		SD	1.9
		Median	1.0
		Min	0
		Max	8
		Don't know/not sure	1 (3.3%)
		Not applicable	4 (13.3%)
		Total valid response	30 (100.0%)
		Total missing	16
Intravitreal steroid	Is the treatment available?	Available within country	22 (57.9%)
		Available locally	20 (52.6%)
		Available in practice	37 (97.4%)
		Not available	
		Total valid response	38 (100.0%)
		Total missing	8
	What is the average amount of time your patients wait for a consultation appointment? (weeks)	Total valid numeric response (n)	22 (84.6%)
		Mean	1.1
		SD	0.6
		Median	1.0
		Min	0
		Max	3
		Not applicable	4 (15.4%)
		Total valid response	26 (100.0%)
		Total missing	20
		What is the average amount of time your patients wait for a first treatment?(weeks)	Total valid numeric response (n)
Mean	1.6		
SD	2.2		

Type of Treatment	Question	Response/time	Ophthalmologist
	What is the average amount of time your patients wait for a second treatment?(weeks)	Median	1.0
		Min	0
		Max	12
		Not applicable	4 (13.8%)
		Total valid response	29 (100.0%)
		Total missing	17
		Total valid numeric response (n)	24 (80.0%)
		Mean	3.4
		SD	5.2
		Median	1.0
		Min	0
		Max	24
		Don't know/not sure	1 (3.3%)
		Not applicable	5 (16.7%)
		Total valid response	30 (100.0%)
Total missing	16		
Uncomplicated vitrectomy	Is the treatment available?	Available within country	23 (62.2%)
	What is the average amount of time your patients wait for a consultation appointment? (weeks)	Available locally	19 (51.4%)
		Available in practice	34 (91.9%)
		Not available	
		Total valid response	37 (100.0%)
		Total missing	9
		Total valid numeric response (n)	20 (76.9%)
		Mean	2.9
		SD	2.4
		Median	2.0
		Min	1

Type of Treatment	Question	Response/time	Ophthalmologist	
		Max	10	
		Don't know/not sure	1 (3.8%)	
		Not applicable	5 (19.2%)	
		Total valid response	26 (100.0%)	
		Total missing	20	
	What is the average amount of time your patients wait for a first treatment?(weeks)	Total valid numeric response (n)	21 (77.8%)	
			Mean	3.0
			SD	3.3
			Median	2.0
			Min	1
			Max	15
			Don't know/not sure	2 (7.4%)
			Not applicable	4 (14.8%)
			Total valid response	27 (100.0%)
			Total missing	19
			What is the average amount of time your patients wait for a second treatment?(weeks)	Total valid numeric response (n)
			Mean	3.9
			SD	5.3
			Median	2.0
			Min	1
			Max	24
Don't know/not sure			3 (10.0%)	
Not applicable			6 (20.0%)	
Total valid response			30 (100.0%)	
Total missing			16	
Complex vitreo-retinal surgery			Is the treatment available?	Available within country



Type of Treatment	Question	Response/time	Ophthalmologist	
		Available locally	17 (45.9%)	
		Available in practice	34 (91.9%)	
		Not available		
		Total valid response	37 (100.0%)	
		Total missing	9	
		What is the average amount of time your patients wait for a consultation appointment? (weeks)	Total valid numeric response (n)	20 (74.1%)
			Mean	3.0
			SD	2.1
			Median	2.5
			Min	1
			Max	8
			Don't know/not sure	2 (7.4%)
			Not applicable	5 (18.5%)
			Total valid response	27 (100.0%)
			Total missing	19
		What is the average amount of time your patients wait for a first treatment?(weeks)	Total valid numeric response (n)	21 (77.8%)
			Mean	2.9
			SD	2.1
			Median	2.0
			Min	1
			Max	8
		Don't know/not sure	2 (7.4%)	
		Not applicable	4 (14.8%)	
		Total valid response	27 (100.0%)	
		Total missing	19	
	What is the average amount of time your patients wait for a second	Total valid numeric response (n)	21 (70.0%)	

Type of Treatment	Question	Response/time	Ophthalmologist
	treatment?(weeks)		
		Mean	4.3
		SD	5.4
		Median	2.0
		Min	1
		Max	24
		Don't know/not sure	3 (10.0%)
		Not applicable	6 (20.0%)
		Total valid response	30 (100.0%)
		Total missing	16

#### PT 4.6

Question	Response	Ophthalmologist
Do you personally administer treatment for diabetic retinopathy?	Yes	32 (88.9%)
	No	4 (11.1%)
	Total valid response	36 (100.0%)
	Total missing	10
Who administer it?	Another provider in your practice	3 (100.0%)
	Refer to a provider at another facility	
	Total valid response	3 (100.0%)
	Total missing	43

#### PT 4.7

Question	Response	Ophthalmologist
Do any of the following influence how you treat diabetic retinopathy or diabetic macular edema?	Diabetes duration	19 (59.4%)
	Patient's age	15 (46.9%)
	Presence of comorbidities such as hypertension, etc.	23 (71.9%)
	High glucose levels	25 (78.1%)

Question	Response	Ophthalmologist
	Ability or inability to pay	7 (21.9%)
	Insurance restrictions	9 (28.1%)
	Patient educational level	10 (31.3%)
	Patient adherence to recommendations	17 (53.1%)
	None of the above	2 (6.3%)
	Not applicable	2 (6.3%)
	Total valid response	32 (100.0%)
	Total missing	14

#### PT 4.8

Question	Response	Ophthalmologist
Do you treat diabetic retinopathy and diabetic macular edema based on:	Visual outcome	1 (2.8%)
	Anatomical outcomes	3 (8.3%)
	Both	32 (88.9%)
	Other	0 (0.0%)
	Total Valid Response	36 (100.0%)
	Total missing	10

#### PT 4.9

Question	Response	Ophthalmologist
How are your patients with diabetes screened for diabetic eye disease?	Fundoscopy undilated	2 (5.6%)
	Fundoscopy dilated	35 (97.2%)
	Retinal photo	26 (72.2%)
	Optical Coherence Tomography	33 (91.7%)
	Fluorescein Angiography	22 (61.1%)
	Total valid response	36 (100.0%)
	Total missing	10

#### PT 4.10

Question	Response	Ophthalmologist
In your opinion, do the majority of your patients present:	In time for screening	4 (11.4%)
	When visual problems have already occurred	30 (85.7%)
	Too late for effective treatment	1 (2.9%)
	Total Valid Response	35 (100.0%)
	Total missing	11

#### PT 4.11

Question	Response	Ophthalmologist
Have you received training specifically on treatment and diagnosis of diabetic retinopathy and/or clinically significant diabetic macular edema?	Yes	30 (83.3%)
	No	6 (16.7%)
	Total valid response	36 (100.0%)
	Total missing	10
If yes, When was your last training?	Five or more years ago	8 (26.7%)
	Greater than 1 year ago but less than 5 years	5 (16.7%)
	Within the past year	17 (56.7%)
	Total valid response	30 (100.0%)
	Total missing	16

#### PT 4.12

Question	Response	Ophthalmologist
Would you be interested in online education and certification on DME, Angiogenesis and Anti-VEGF therapies?	Yes	31 (86.1%)
	No	5 (13.9%)
	Total Valid Response	36 (100.0%)
	Total missing	10

#### PT 4.13

Question	Response	Ophthalmologist
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Question	Response	Ophthalmologist
How is outreach for screening for diabetic eye disease done in your main practice?	Health fairs for all	2 (5.7%)
	Health fairs for people with diabetes	1 (2.9%)
	Mobile screening centers	1 (2.9%)
	At vision centers	26 (74.3%)
	Not done	2 (5.7%)
	Don't know/Not sure	4 (11.4%)
	Total valid response	35 (100.0%)
	Total missing	11

#### PT 4.14

Question	Response	Ophthalmologist
What do you perceive to be the greatest challenges for improving patient outcomes in diabetic eye disease?	Reimbursement/restrictions on approved therapy	8 (22.9%)
	Late diagnosis	30 (85.7%)
	Referral pathways	6 (17.1%)
	Limited access to patient education on diabetic retinopathy and diabetic macular edema	15 (42.9%)
	No universal guidelines on referral/screening	3 (8.6%)
	No universal guidelines on how to treat	1 (2.9%)
	No universal guideline on when to treat	0 (0.0%)
	Current available therapies not effective	1 (2.9%)
	Multi-disciplinary team integration is poor	15 (42.9%)
	Ineffective screening services	19 (54.3%)
	Total valid response	35 (100.0%)
	Total missing	11

#### EXP 1

Question	Response	Without DED (%)	With DED (%)	With DME (%)
Which of the following complications of diabetes do	Cardiovascular disease/Stroke	30 (9.9%)	16 (34.0%)	2 (20.0%)

Question	Response	Without DED (%)	With DED (%)	With DME (%)
you have?				
	Irritable bowel disease	9 (3.0%)	5 (10.6%)	1 (10.0%)
	Kidney disease	33 (10.9%)	10 (21.3%)	4 (40.0%)
	Loss of feeling in hands or toes (neuropathy)	45 (14.9%)	19 (40.4%)	4 (40.0%)
	Vision loss	41 (13.5%)	33 (70.2%)	8 (80.0%)
	Broken bones or fractures	5 (1.7%)	0 (0.0%)	1 (10.0%)
	Foot ulcers	6 (2.0%)	5 (10.6%)	0 (0.0%)
	Amputation	6 (2.0%)	0 (0.0%)	0 (0.0%)
	Other	8 (2.6%)	2 (4.3%)	0 (0.0%)
	None	165 (54.5%)	4 (8.5%)	1 (10.0%)
	Don't know/Not sure	21 (6.9%)	2 (4.3%)	0 (0.0%)
	Total Valid Response	303 (100.0%)	47 (100.0%)	10 (100.0%)
	Total missing	63	2	1

NB [1]: Without DED = respondents who did not select "Yes" for both DED and DME.

NB [2]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [3]: DME = respondents with DME = "Yes".

NB [4]: Percentages within groups are calculated from non-missing data for that question.

## EXP 2

Limitations	Without DED n (%)	With DED n (%)	With DME n (%)
Limited in any way in any activities because of impairment or health problem	103 (37.1%)	24 (54.5%)	8 (72.7%)
Impairment or health problem			
Diabetes	92 (89.3%)	23 (100.0%)	7 (100.0%)
Mental or emotional health	51 (73.9%)	13 (61.9%)	3 (60.0%)
Back or neck problem	45 (70.3%)	13 (59.1%)	4 (66.7%)
Hypertension/high blood pressure	37 (66.1%)	16 (80.0%)	4 (80.0%)
Arthritis/rheumatism	30 (60.0%)	14 (70.0%)	2 (50.0%)
Walking problem	30 (58.8%)	13 (65.0%)	2 (50.0%)
Eye/vision problem	26 (54.2%)	15 (75.0%)	7 (87.5%)
Heart problem	23 (52.3%)	12 (60.0%)	2 (40.0%)
Lung/breathing problem	22 (47.8%)	4 (21.1%)	2 (40.0%)

Limitations	Without DED n (%)	With DED n (%)	With DME n (%)
Fractures, bone/joint injury	15 (34.9%)	4 (20.0%)	1 (25.0%)
Hearing problem	8 (20.5%)	3 (15.8%)	2 (66.7%)
Cancer	3 (8.1%)	0 (0.0%)	0 (0.0%)
Stroke problem	0 (0.0%)	0 (0.0%)	1 (33.3%)

NB [1]: Without DED = respondents who did not select "Yes" for both DED and DME.

NB [2]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [3]: DME = respondents with DME = "Yes".

NB [4]: Percentages within groups are calculated from non-missing data for that question.

### EXP 3

Health Status	Without DED (%)	With DED (%)	With DME (%)
Self-rated health: Good	127 (49.0%)	15 (34.1%)	2 (25.0%)
Self-rated health: Poor	132 (51.0%)	29 (65.9%)	6 (75.0%)
Physically unhealthy days	102 (47.7%)	27 (73.0%)	6 (75.0%)
Mentally unhealthy days	126 (58.6%)	27 (67.5%)	7 (100.0%)
Unhealthy days	151 (68.3%)	32 (82.1%)	8 (100.0%)
Activity limitation days	76 (53.9%)	22 (66.7%)	3 (75.0%)

NB [1]: Without DED = respondents who did not select "Yes" for both DED and DME.

NB [2]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [3]: DME = respondents with DME = "Yes".

### EXP 4

Item	Response	All respondents	Respondents with Type I diabetes	Respondents with Type II diabetes
How do you manage your diabetes?	Diet	133 (33.5%)	70 (36.1%)	57 (40.7%)
	Oral medicine	156 (39.3%)	8 (4.1%)	112 (80.0%)
	Exercise	97 (24.4%)	56 (28.9%)	38 (27.1%)
	Insulin	262 (66.0%)	190 (97.9%)	46 (32.9%)
	Natural/Herbal medicine	12 (3.0%)	2 (1.0%)	9 (6.4%)
	None of the above	2 (0.5%)		

NB [1]: Percentages within groups are calculated from non-missing data for that question.

### EXP 5.1

Item	Response	Without DED (%)	With DED (%)	With DME (%)
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Item	Response	Without DED (%)	With DED (%)	With DME (%)
Are you currently working?	Working for pay	123 (42.7%)	16 (36.4%)	6 (60.0%)
	Working without pay at home (e.g. housework, farming)	10 (3.5%)	0 (0.0%)	0 (0.0%)
	Volunteering	1 (0.3%)	0 (0.0%)	0 (0.0%)
	Retired	61 (21.2%)	11 (25.0%)	3 (30.0%)
	Student	32 (11.1%)	1 (2.3%)	0 (0.0%)
	Not working	61 (21.2%)	16 (36.4%)	1 (10.0%)
	Total Valid Response	288 (100.0%)	44 (100.0%)	10 (100.0%)
	Total missing	78	5	1
Do you receive assistance from the government?	Income assistance	14 (5.2%)	1 (2.4%)	0 (0.0%)
	Medical assistance	73 (27.1%)	17 (41.5%)	1 (10.0%)
	Food assistance	0 (0.0%)	0 (0.0%)	1 (10.0%)
	Pension assistance	32 (11.9%)	8 (19.5%)	1 (10.0%)
	None of the above	164 (61.0%)	21 (51.2%)	8 (80.0%)
	Total valid response	269 (100.0%)	41 (100.0%)	10 (100.0%)
	Total missing	97	8	1
Did you have trouble paying for food at anytime during the past year?	Yes	98 (34.6%)	14 (32.6%)	3 (30.0%)
	No	185 (65.4%)	29 (67.4%)	7 (70.0%)
	Total Valid Response	283 (100.0%)	43 (100.0%)	10 (100.0%)
	Total missing	83	6	1

NB [1]: Without DED = respondents who did not select "Yes" for both DED and DME.

NB [2]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [3]: DME = respondents with DME = "Yes".

NB [4]: Percentages within groups are calculated from non-missing data for that question.

## EXP 5.2: Age group 18-39 years



Item	Response	Without DED (%)	With DED (%)	With DME (%)
Are you currently working?	Working for pay	59 (49.6%)	11 (73.3%)	5 (100.0%)
	Working without pay at home (e.g. housework, farming)	2 (1.7%)	0 (0.0%)	0 (0.0%)
	Student	32 (26.9%)	1 (6.7%)	0 (0.0%)
	Not working	26 (21.8%)	3 (20.0%)	0 (0.0%)
	Total Valid Response	119 (100.0%)	15 (100.0%)	5 (100.0%)
	Total missing	49	2	0
Do you receive assistance from the government?	Income assistance	5 (4.6%)	0 (0.0%)	0 (0.0%)
	Medical assistance	10 (9.3%)	1 (7.1%)	0 (0.0%)
	Pension assistance	3 (2.8%)	0 (0.0%)	0 (0.0%)
	None of the above	94 (87.0%)	13 (92.9%)	5 (100.0%)
	Total valid response	108 (100.0%)	14 (100.0%)	5 (100.0%)
	Total missing	60	3	0
Did you have trouble paying for food at anytime during the past year?	Yes	45 (39.1%)	8 (53.3%)	1 (20.0%)
	No	70 (60.9%)	7 (46.7%)	4 (80.0%)
	Total Valid Response	115 (100.0%)	15 (100.0%)	5 (100.0%)
	Total missing	53	2	0

NB [1]: Without DED = respondents who did not select "Yes" for both DED and DME.

NB [2]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [3]: DME = respondents with DME = "Yes".

### EXP 5.3: Age group 40-59 years

Item	Response	Without DED (%)	With DED (%)	With DME (%)
Are you currently working?	Working for pay	60 (44.8%)	5 (33.3%)	1 (33.3%)
	Working without pay at home (e.g. housework, farming)	8 (6.0%)	0 (0.0%)	0 (0.0%)
	Volunteering	1 (0.7%)	0 (0.0%)	0 (0.0%)
	Retired	41 (30.6%)	5 (33.3%)	2 (66.7%)

Item	Response	Without DED (%)	With DED (%)	With DME (%)
	Not working	24 (17.9%)	5 (33.3%)	0 (0.0%)
	Total Valid Response	134 (100.0%)	15 (100.0%)	3 (100.0%)
	Total missing	21	3	0
Do you receive assistance from the government?	Income assistance	7 (5.6%)	0 (0.0%)	0 (0.0%)
	Medical assistance	47 (37.3%)	3 (21.4%)	0 (0.0%)
	Food assistance	0 (0.0%)	0 (0.0%)	1 (33.3%)
	Pension assistance	17 (13.5%)	4 (28.6%)	1 (33.3%)
	None of the above	62 (49.2%)	8 (57.1%)	2 (66.7%)
	Total valid response	126 (100.0%)	14 (100.0%)	3 (100.0%)
	Total missing	29	4	0
Did you have trouble paying for food at anytime during the past year?	Yes	43 (32.3%)	3 (21.4%)	1 (33.3%)
	No	90 (67.7%)	11 (78.6%)	2 (66.7%)
	Total Valid Response	133 (100.0%)	14 (100.0%)	3 (100.0%)
	Total missing	22	4	0

NB [1]: Without DED = respondents who did not select "Yes" for both DED and DME.

NB [2]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [3]: DME = respondents with DME = "Yes".

#### EXP 5.4: Age group 60-79 years

Item	Response	Without DED (%)	With DED (%)	With DME (%)
Are you currently working?	Working for pay	4 (11.4%)	0 (0.0%)	0 (0.0%)
	Retired	20 (57.1%)	6 (42.9%)	1 (50.0%)
	Not working	11 (31.4%)	8 (57.1%)	1 (50.0%)
	Total Valid Response	35 (100.0%)	14 (100.0%)	2 (100.0%)
	Total missing	8	0	1
Do you receive assistance from the government?	Income assistance	2 (5.7%)	1 (7.7%)	0 (0.0%)
	Medical	16 (45.7%)	13	1 (50.0%)

Item	Response	Without DED (%)	With DED (%)	With DME (%)
	assistance		(100.0%)	
	Pension assistance	12 (34.3%)	4 (30.8%)	0 (0.0%)
	None of the above	8 (22.9%)	0 (0.0%)	1 (50.0%)
	Total valid response	35 (100.0%)	13 (100.0%)	2 (100.0%)
	Total missing	8	1	1
Did you have trouble paying for food at anytime during the past year?	Yes	10 (28.6%)	3 (21.4%)	1 (50.0%)
	No	25 (71.4%)	11 (78.6%)	1 (50.0%)
	Total Valid Response	35 (100.0%)	14 (100.0%)	2 (100.0%)
	Total missing	8	0	1

NB [1]: Without DED = respondents who did not select "Yes" for both DED and DME.

NB [2]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [3]: DME = respondents with DME = "Yes".

#### EXP 5.5: Age group 80+ years

Item	Response	Without DED (%)	With DED (%)	With DME (%)
Are you currently working?		0 (0.0%)	0 (0.0%)	0 (0.0%)
Do you receive assistance from the government?	Total valid response	0	0	0
	Total missing	0	0	0
Did you have trouble paying for food at anytime during the past year?		0 (0.0%)	0 (0.0%)	0 (0.0%)

NB [1]: Without DED = respondents who did not select "Yes" for both DED and DME.

NB [2]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [3]: DME = respondents with DME = "Yes".

#### EXP 6

Group	Subgroup	All respondents	Type 1 diabetes	Type 2 diabetes	With DED (%)	With DME (%)
All respondents		426 (100%)	209 (49.1%)	153 (35.9%)	49 (11.5%)	11 (2.6%)
Gender	Male	133 (38.8%)	56 (42.1%)	55 (41.4%)	21 (15.8%)	3 (2.3%)
	Female	210 (61.2%)	100 (47.6%)	75 (35.7%)	25 (11.9%)	7 (3.3%)

Group	Subgroup	All respondents	Type 1 diabetes	Type 2 diabetes	With DED (%)	With DME (%)
	Total Missing	83	53	23	3	1
Age	18-39 yrs	190 (44.6%)	169 (88.9%)	15 (7.9%)	17 (8.9%)	5 (2.6%)
	40-59 yrs	176 (41.3%)	37 (21.0%)	103 (58.5%)	18 (10.2%)	3 (1.7%)
	60-79 yrs	60 (14.1%)	3 (5.0%)	35 (58.3%)	14 (23.3%)	3 (5.0%)
Time since diagnosis	Within the last year	25 (6.0%)	8 (32.0%)	10 (40.0%)	2 (8.0%)	0 (0.0%)
	1 - 5 years ago	88 (21.0%)	27 (30.7%)	43 (48.9%)	2 (2.3%)	0 (0.0%)
	6 - 10 years ago	103 (24.6%)	34 (33.0%)	50 (48.5%)	7 (6.8%)	1 (1.0%)
	11 - 15 years ago	83 (19.8%)	53 (63.9%)	18 (21.7%)	10 (12.0%)	3 (3.6%)
	16 - 20 years ago	61 (14.6%)	33 (54.1%)	21 (34.4%)	12 (19.7%)	5 (8.2%)
	21 years ago or longer	57 (13.6%)	50 (87.7%)	7 (12.3%)	16 (28.1%)	2 (3.5%)
	Don't know/Not sure	2 (0.5%)	1 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	Total Missing	7	3	4	0	0
Control of Diabetes	Controlled	240 (62.7%)	91 (37.9%)	99 (41.3%)	32 (13.3%)	4 (1.7%)
	Not controlled	129 (33.7%)	86 (66.7%)	32 (24.8%)	15 (11.6%)	6 (4.7%)
	Don't know/Not sure	14 (3.7%)	8 (57.1%)	5 (35.7%)	1 (7.1%)	0 (0.0%)
	Total Missing	43	24	17	1	1

NB [1]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [2]: DME = respondents with DME = "Yes".

NB [3]: Percentages within groups are calculated from non-missing data for that question.

## EXP 7

Question	Response	With DED n (%)	With DME n (%)
Have you had any treatment for diabetic eye disease?	Yes	35 (74.5%)	8 (88.9%)
	No	11 (23.4%)	1 (11.1%)

Question	Response	With DED n (%)	With DME n (%)
	Don't know/Not sure	1 (2.1%)	0 (0.0%)
	Total valid response	47 (100.0%)	9 (100.0%)
	Total missing	2	2
What treatment did you receive?	Laser	25 (73.5%)	7 (100.0%)
	Anti-VEGF	12 (35.3%)	4 (57.1%)
	Surgery	10 (29.4%)	4 (57.1%)
	Other	3 (8.8%)	0 (0.0%)
	Total valid response	34 (100.0%)	7 (100.0%)
	Total missing	15	4
Did you complete the treatment?	Yes	24 (68.6%)	4 (50.0%)
	No	2 (5.7%)	1 (12.5%)
	Still receiving treatment	8 (22.9%)	3 (37.5%)
	Don't know/Not sure	1 (2.9%)	0 (0.0%)
	Total valid response	35 (100.0%)	8 (100.0%)
	Total missing	14	3
Do you feel that the treatment worked?	Yes, and vision improved	21 (65.6%)	4 (66.7%)
	Yes, but vision stayed the same	8 (25.0%)	0 (0.0%)
	Still waiting to know	2 (6.3%)	2 (33.3%)
	Don't know/Not sure	1 (3.1%)	0 (0.0%)
	Total valid response	32 (100.0%)	6 (100.0%)
	Total missing	17	5
What is/are the reason(s) that you did not complete the treatment?	Treatment was too expensive	1 (50.0%)	1 (100.0%)
	Eye doctor was located too far away	0 (0.0%)	1 (100.0%)
	Too much burden on my family/friends	1 (50.0%)	0 (0.0%)
	I was fearful (scared) of treatment	1 (50.0%)	0 (0.0%)
	Other	1 (50.0%)	0 (0.0%)

Question	Response	With DED n (%)	With DME n (%)
What are the reason(s) that you have not had treatment for diabetic eye disease?	Total valid response	2 (100.0%)	1 (100.0%)
	Total missing	47	10
	My doctor did not recommend any treatment	10 (90.9%)	0 (0.0%)
	Other	1 (9.1%)	1 (100.0%)
	Total valid response	11 (100.0%)	1 (100.0%)
	Total missing	38	10

NB [1]: DED = respondents with DED = "Yes" minus respondents with DME = "Yes".

NB [2]: DME = respondents with DME = "Yes".

NB [3]: Percentages within groups are calculated from non-missing data for that question.



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