AF Summit Workshop Content Focus:
Improving Diabetes Care

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Workshop activity

- Introduction to ANDA

- How can we enhance, modify and optimise the design of this AF activity?

- How do we evaluate the effectiveness our new AF activity?

Australian National Diabetes Audit

Overview

1. Background and aims of ANDA

2. Methodology

3. Strengths and limitations

4. Results
   - Glycaemic control
   - Medications & monitoring
   - General health maintenance & self care practices
   - Health care utilisation
   - Self assessment of mental health / quality of life

5. Summary

Background

- ANDA is a voluntary annual benchmarking activity of diabetes outcomes

- Established in 1998

- Cross-sectional design

- Funded by Commonwealth Dept of Health

- Minimal dataset (alternating)
  - Australian Quality Clinical Audit, AQCA
    - Clinical indicators
  - Australian Quality Self-Management Audit, AQSMA
    - Process and Patient reported self-management/QOL indicators

Background (who)

The National Association of Diabetes Centres (NADC)

- National collective of diabetes centres
- Establishes and promotes effective health care practice
- Promotes improvement in the standard of diabetes care across Australia
- NADC champions ANDA collection as part of its quality improvement initiatives
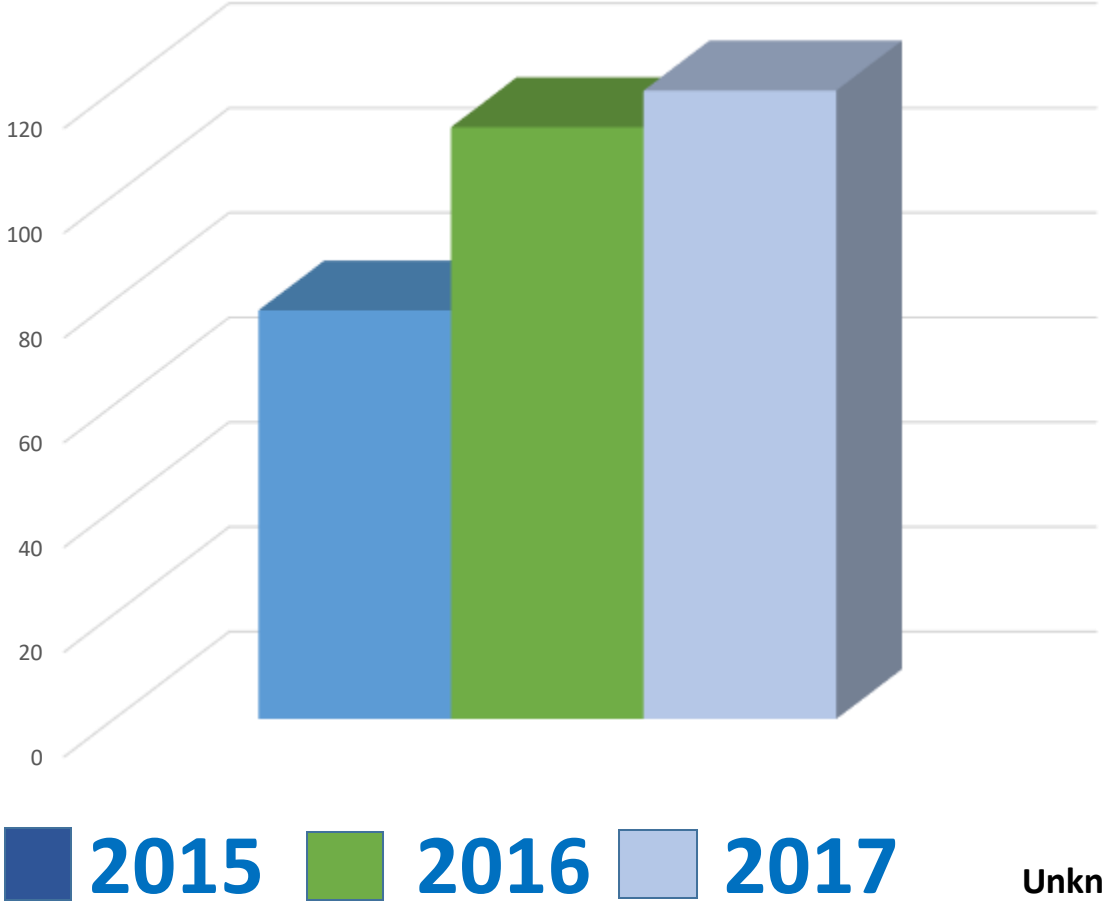
Key activities

- Accreditation and standards of care
- Information provision
- Training and support for health professionals in multidisciplinary settings
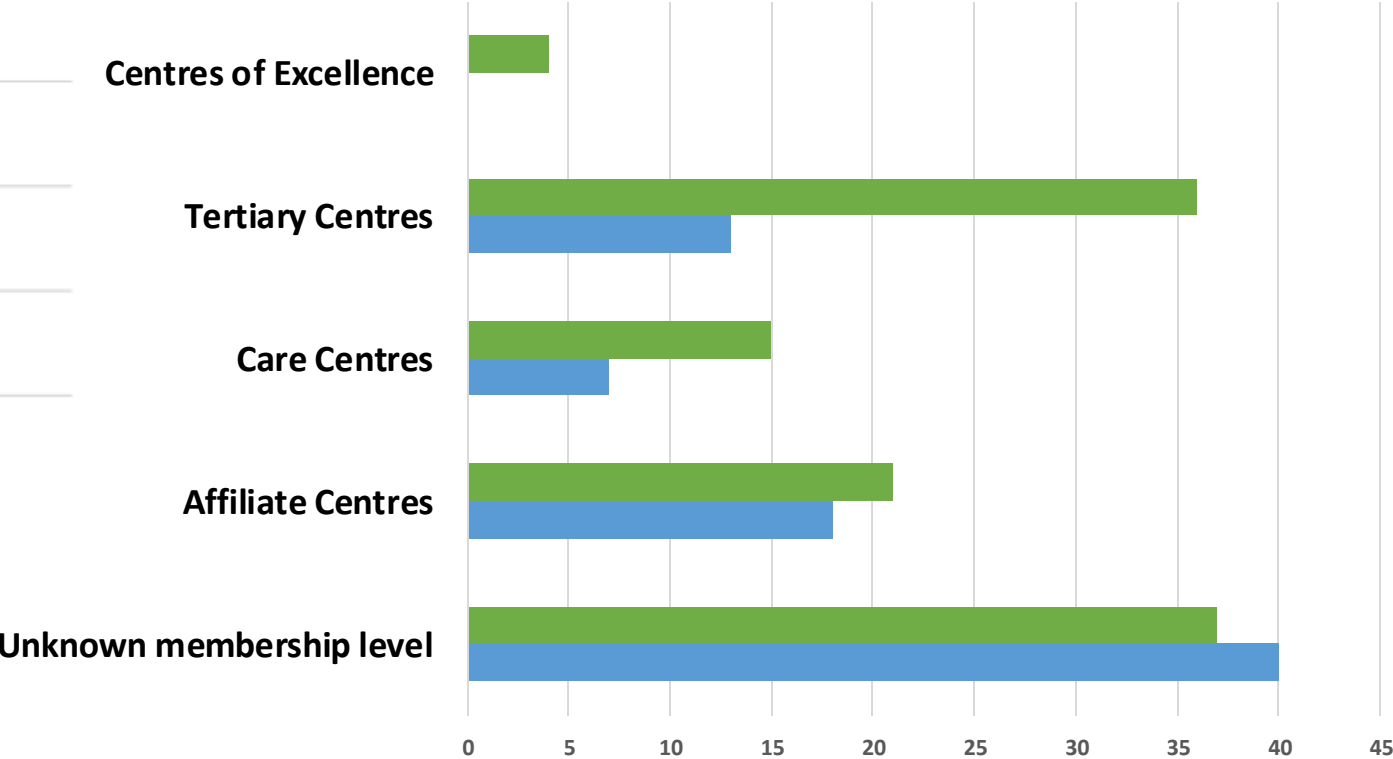
Diabetes Centres (providers and recipients)

Number of NADC Centres

NADC Member Centres

2015   2016   2017

Aims

Overview

Provide an overview of the clinical status of people with diabetes who attend diabetes centres across Australia

Comparison

Provide current data which enables comparisons to data from previous years

Benchmarking

Allow participating centres to evaluate their individual site data against peers

Outcomes

Enable centres to identify and implement mechanisms to improve outcomes for their patients

Methodology - Timeline

Feb-April

- Expressions of interest
- Site codes allocated
- Distribution of forms

May-June

- Data collection by participating centres
- Post collection questionnaire

July-Sept

- Data received
- Data entry
- Data validation

Oct-Dec

- Data analysis
- Pooled report
- Site reports
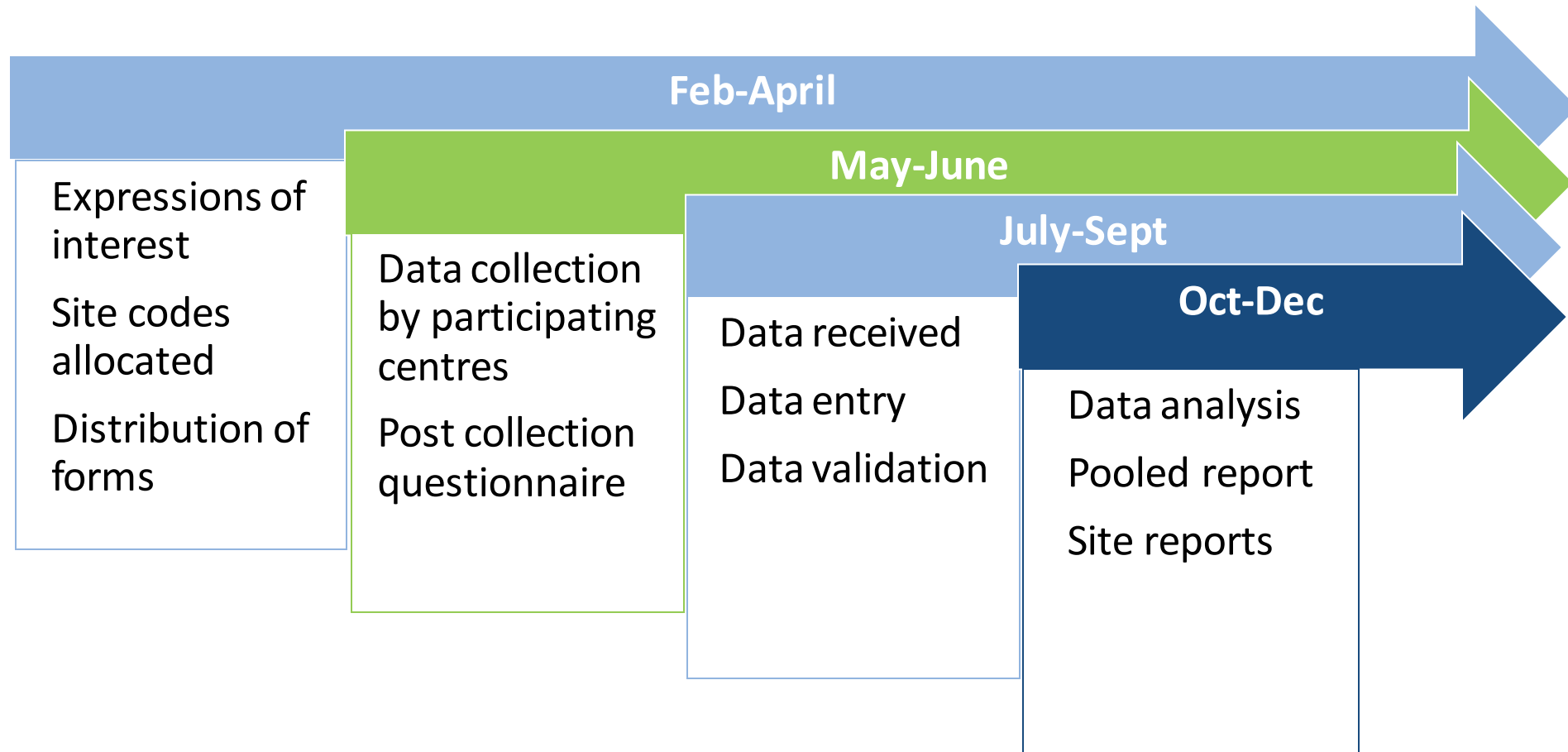
Dataset - Indicators

Derivation:

- National Diabetes Outcomes Quality Review Initiative (NDOQRIN) dataset

- Outcome data items have standardised definitions

- Promulgated for collection in all clinical practice settings

ANDA-AQCA 2015
Australian National Diabetes Audit - Australian Quality Clinical

18146

nadc — National Association of Diabetes Centres

Section 1. Patient Demographics

Medical Record No. [   ]   Centre ID [   ]   Site Staff Identifier [   ]

1.1 Date of birth [dd] / [mm] / [yyyy]   1.2 Sex ☐ Male ☐ Female *If FEMALE* → 1.2.1 Currently pregnant ☐ No ☐ Yes

1.3 Date of visit [dd] / [mm] / [2015]   1.4 Initial visit ☐ No ☐ Yes   1.5 Aboriginal/Torres Strait Islander ☐ No ☐ Yes

1.6 Country of birth [   ]   1.7 NDSS member ☐ No ☐ Yes

1.8 DVA patient ☐ No ☐ Yes

Section 2. Diabetes Type & Management

2.1 Date of diagnosis [mm] / [yyyy]   2.2 Type of diabetes ☐ Type 1 ☐ Type 2 ☐ GDM ☐ Don't know ☐ Other

2.3 Management method ☐ Diet only ☐ Acarbose ☐ GLP1 Agonist ☐ Sulphonylurea ☐ Insulin *If INSULIN* → 2.3.1 Number of years [   ]
☐ Glitazone ☐ Metformin ☐ DPP4 Inhibitor ☐ SGLT2 ☐ Nil   2.3.2 Mode ☐ Basal ☐ MDI ☐ Pump

Section 3. Height, Weight & Smoking Status

3.1 Weight [   ] . [ ] kg

3.2 Height [ ] . [ ] m

3.3 Smoking status ☐ Current ☐ Past ☐ Never

Section 4. Blood Pressure

4.1 Blood pressure (most recent, measured after 5 mins sitting) [   ] / [   ] mmHg

4.2 Anti-hypertensive treatment ☐ No ☐ Yes
If YES → 4.2.1 Select from below:
☐ ACE Inhibitor ☐ A2 Antagonist ☐ Beta Blocker
☐ Calcium Antagonist ☐ Thiazides ☐ Other

Section 5. Diabetic Eye Disease - last 12 months

	No	Yes
5.1 Attended optometrist	☐	☐
5.2 Referred to ophthalmologist	☐	☐
5.3 Attended ophthalmologist	☐	☐
5.4 Fundus examination	☐	☐
5.5 Retinopathy	☐	☐
5.6 Laser treatment	☐	☐
5.7 Right cataract	☐	☐
5.8 Left cataract	☐	☐

Section 6. Diabetic Foot Problems

	No	Yes
6.1 Seen by podiatrist in the last 12 months	☐	☐
6.2 Peripheral neuropathy	☐	☐
6.3 Past history of ulceration	☐	☐
6.4 Foot deformity	☐	☐
6.5 Peripheral vascular disease	☐	☐
6.6 Current foot ulcer	☐	☐

Section 7. Medications & Lipids (most recent results from the last 12 months)

	No	Yes	Contraindicated
7.1 Aspirin	☐	☐	☐
7.2 Other anti-platelets	☐	☐	☐
7.3 Anti-coagulants	☐	☐	☐
7.4 Lipid lowering Rx	☐	☐	
If YES → 7.4.1 Statin	☐	☐	☐
7.4.2 Fibrate	☐	☐	
7.4.3 Ezetrol	☐	☐	
7.4.4 Fish oil	☐	☐	

7.5 Lipids measured ☐ No ☐ Yes
If YES → ☐ Not available
OR
Complete below:

7.5.1 Cholesterol [ ] . [ ] mmol/L

7.5.2 LDL [ ] . [ ] mmol/L

7.5.3 HDL [ ] . [ ] mmol/L

7.5.4 Triglycerides [ ] . [ ] mmol/L

7.5.5 Were the above fasting lipids? ☐ No ☐ Yes

Section 8. Complications/Events/Comorbidities

	Last 12 months No	Last 12 months Yes	Previous No	Previous Yes
8.1 Cerebral stroke	☐	☐	☐	☐
8.2 Myocardial infarction	☐	☐	☐	☐
8.3 CABG/Angioplasty	☐	☐	☐	☐
8.4 Congestive cardiac failure	☐	☐	☐	☐
8.5 Lower limb amputation	☐	☐	☐	☐
8.6 End stage kidney disease	☐	☐	☐	☐
8.7 Blindness	☐	☐	☐	☐
8.8 Severe hypoglycaemia	☐	☐	NA	
8.9 Erectile dysfunction	☐	☐	☐	☐
8.10 Dementia	☐	☐	☐	☐

8.11 Malignancy (exclude non-melanotic skin cancers) ☐ Metastatic solid tumour ☐ Leukaemia ☐ Non-metastatic solid tumour ☐ Lymphoma ☐ Not Applicable

8.12 Liver disease ☐ Mild ☐ Moderate/Severe ☐ Not Applicable

Section 9. Renal Function & Blood Glucose Control

9.1 Microalbumin/Proteinuria collected ☐ No ☐ Yes
If YES → 9.1.1 Result [   ] . [ ]

9.1.2 Units ☐ mg/L ☐ µg/min ☐ mg/24 hr ☐ ratio

9.2 Serum creatinine [   ] µmol/L

9.3.1 HbA1c Result [ ] . [ ] % OR 9.3.2 [   ] mmol/mol
(most recent in last 12 months)

ANDA-AQCA 2015 Data Collection Form Version 1.0

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Patient demographics

BMI, BP, smoking status

Diabetes Type & Management

Diabetic eye disease

Diabetic foot problems
Medications
Lipid measurements

Complications
Renal function
Glucose control

ANDA-AQSMA 2016
Australian National Diabetes Audit - Australian Quality Self Management Audit

nadc — National Association of Diabetes Centres

17780

Section 1. Patient Demographics

Medical Record No. | Centre ID | Site Staff Identifier

1.1 Date of birth [dd / mm / yyyy]
1.2 Sex ☐ Male ☐ Female *If FEMALE* → 1.2.1 Currently pregnant ☐ No ☐ Yes

1.3 Date of visit [dd / mm / 2016]
1.4 Initial visit ☐ No ☐ Yes
1.5 Aboriginal/Torres Strait Islander ☐ No ☐ Yes

1.6 Interpreter required ☐ No ☐ Yes
1.7 DVA patient ☐ No ☐ Yes
1.8 NDSS member ☐ No ☐ Yes

1.9 Country of birth

Section 2. Diabetes Type & Management & Lifestyle Issues

2.1 Year of diagnosis [yyyy]
2.2 Type of diabetes ☐ Type 1 ☐ Type 2 ☐ GDM ☐ Don't Know ☐ Other

2.3 Management method ☐ Diet Only ☐ Injectables ☐ Insulin+Tablets+Injectables ☐ Insulin *If INSULIN* → 2.3.1 How long ago was insulin started? ☐ <1yr
☐ Tablets ☐ Injectables+Tablets ☐ Insulin+Tablets ☐ Nil ☐ 1-5yrs ☐ >5yrs

2.4 Physical activity sufficiency ☐ Sufficient ☐ Insufficient ☐ Sedentary

2.5 Have you had a flu vaccination in the last 12 months? ☐ No ☐ Yes

2.6 Have you had a pneumococcal vaccination in the last 12 months? ☐ No ☐ Yes

2.7 Smoking status ☐ Current smoker *If CURRENT* → 2.7.1 Have you tried to stop smoking? ☐ No ☐ Yes
☐ Past smoker *If PAST* → 2.7.2 Which of the following methods did you use?
☐ Never smoked ☐ Just stopped – no intervention ☐ Nicotine replacement ☐ Acupuncture
☐ Medication ☐ Hypnosis ☐ Other

2.8 Glycated Hb result [ ] . [ ] % AND [ ] mmol/mol

Section 3. Medication Use — No / Yes

3.1 Do you ever forget to take your medications? ☐ ☐
If YES → 3.1.1 How many times per week? [ ]

3.2 Do you usually take all your medications? ☐ ☐
3.3 Do you sometimes stop taking your medications when you feel better? ☐ ☐
3.4 Do you sometimes stop taking your medications when you feel worse? ☐ ☐
3.5 Are you using a complementary therapy or dietary supplement or over the counter (OTC) Rx? ☐ ☐
If YES → 3.5.1 Have you told your doctor or educator about using complementary, dietary supplement or OTC Rx? ☐ ☐

Section 5. Patient Self Care Practices — No / Yes

5.1 Do you have difficulties following your recommended diet? ☐ ☐
If YES → Do the following apply?
5.1.1 I don't have enough time to prepare healthy meals ☐ ☐
5.1.2 It costs too much to eat well ☐ ☐
5.1.3 I don't know what foods are best to eat ☐ ☐
5.1.4 I eat out a lot and find it hard to eat well ☐ ☐
5.1.5 If Type 1 - it is too hard to count carbs/weigh food ☐ ☐
5.2 Do you check your blood glucose level as often as recommended? ☐ No ☐ Yes ☐ Unsure of recommended testing
5.3 If you are on injectables or insulin, do you rotate your injection site? ☐ No ☐ Yes

Section 4. Health Professional Attendances

Has the patient attended any of the following in the last 12 months? — No / Yes

	No	Yes		No	Yes
4.1 Podiatrist	☐	☐	4.6 Diabetes Specialist	☐	☐
4.2 Diabetes Educator	☐	☐	4.7 Ophthalmologist	☐	☐
4.3 Dietitian	☐	☐	4.8 Optometrist	☐	☐
4.4 Psychologist	☐	☐	4.9 Dentist	☐	☐
4.5 Social Worker	☐	☐	4.10 Exercise Physiologist	☐	☐

Section 6A. BCD

Over the last couple of weeks has the patient been: — No / Yes
6A.1 Having restless or disturbed nights ☐ ☐
6A.2 Feeling unhappy or depressed ☐ ☐
6A.3 Feeling unable to overcome difficulties ☐ ☐
6A.4 Dissatisfied with their way of doing things ☐ ☐

Section 6B. Treatment — No / Yes
6B.1 Is the patient taking antidepressants ☐ ☐
6B.2 Psych. treatment/counselling - past ☐ ☐
6B.3 Psych. treatment/counselling - now ☐ ☐

Section 7. Quality of Life Assessment

Part A: Self-assessment of health status
7.1 Own health state rating (0-100) [ ]
7.2 Screening Scale Q1 [ ] } If Q1 or Q2 is > 3, complete Part B
7.3 Screening Scale Q2 [ ]

→ Part B: Diabetes Distress Scale 17
7.4 DDS 17 Questionnaire done ☐ No ☐ Yes
If YES → complete 7.4.1 - 7.4.5 below:
7.4.1 Total DDS 17 Score [.]
7.4.2 Emotional Burden (A) [.]
7.4.3 Physician-related distress (B) [.]
7.4.4 Regimen-related distress (C) [.]
7.4.5 Interpersonal distress (D) [.]

ANDA-AQSMA 2016 Data Collection Form Version 1.1

ads — Australian Diabetes Society
MONASH University
nadc — National Association of Diabetes Centres

- Patient demographics, NDSS member
- Diabetes Type & Management
- Physical activity, Vaccination, Smoking
- Medication use, Health professional attendances
- Self-management, Depression
- QOL, DDS 17

Handling of Data

- Data collection over 4 week period for all patients attending the diabetes centre

- All contact with centres made via the secretariat

- Unique codes allocated

- Central ethics approval as a quality assurance activity

- Local site ethics approval is the responsibility of the participating centre

Reporting (mode and delivery)

- Report and Post activity survey emailed to lead contact at centre
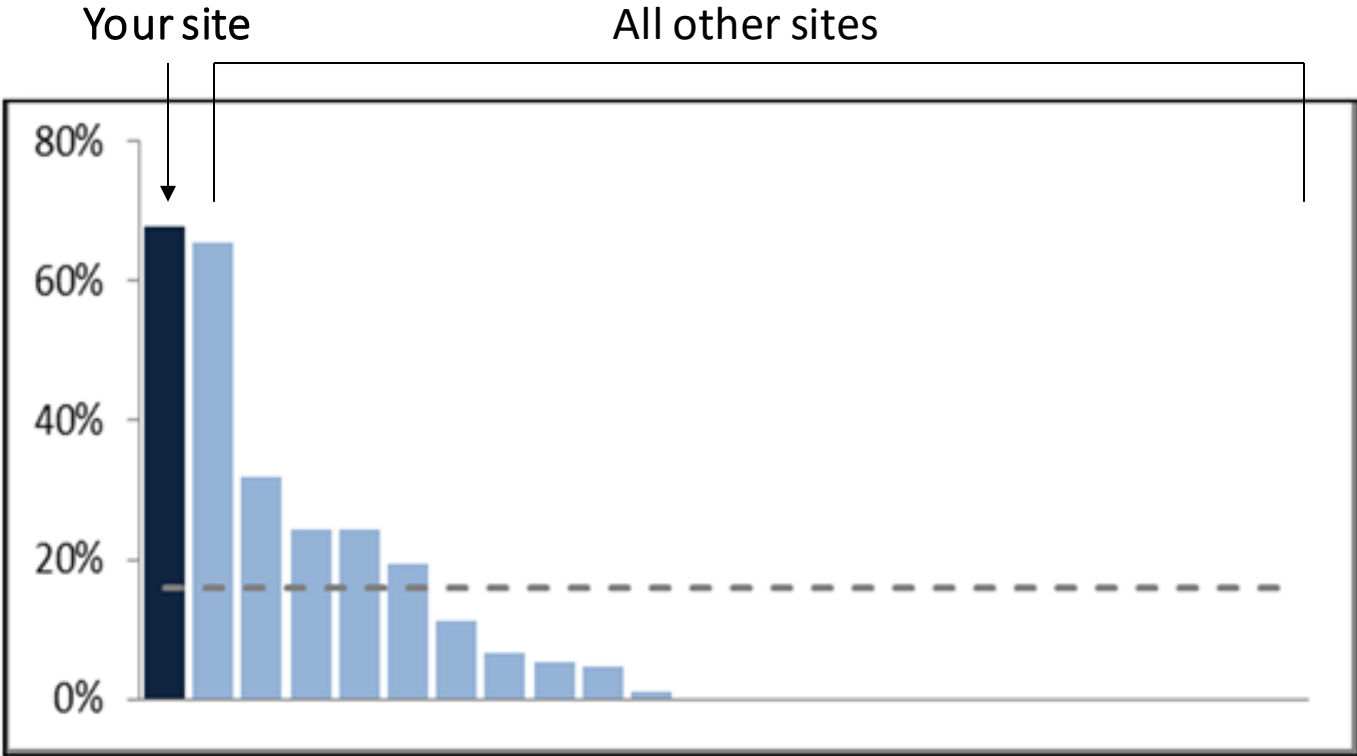
Demographics Report

Outcomes Summary Report

Outcomes Summary Report by Diabetes Type

Outcomes Comparison Summary Report - benchmarking

Summary of Continuous Variables

- Guide to Quality Improvement (and link to a repository of tools)

Site Report at a Glance

Descriptive Report

Tables and graphs of demographic and outcome data including frequency and missing data
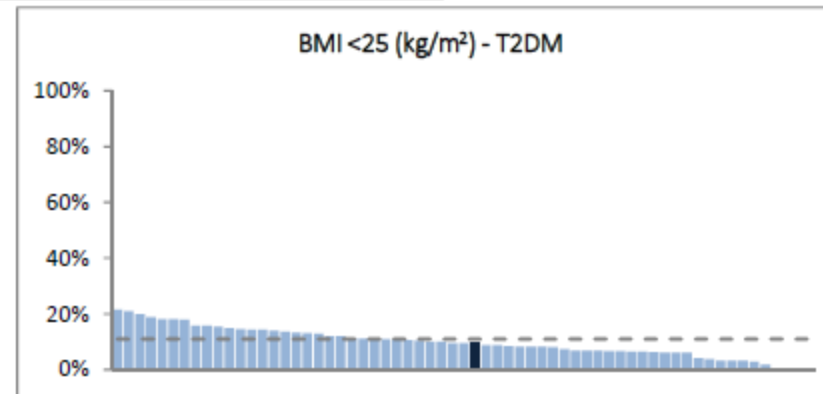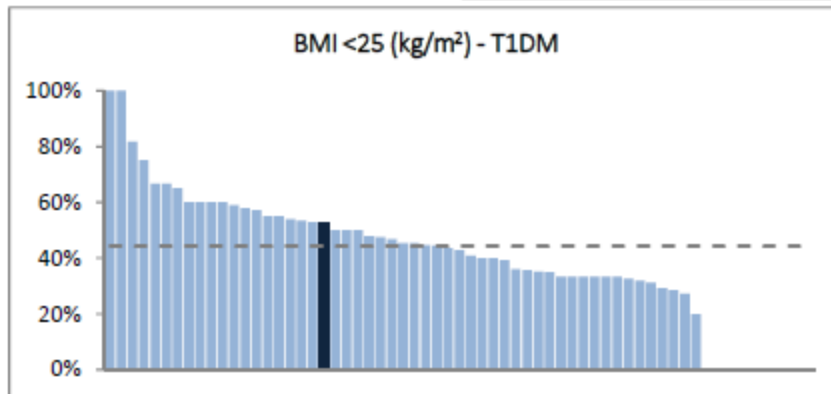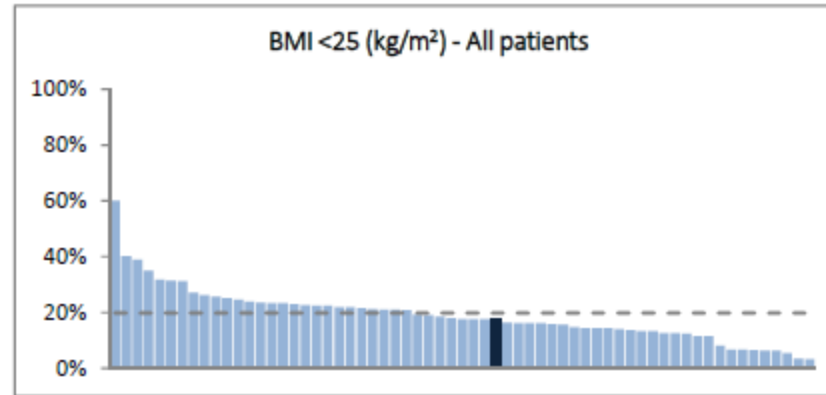
Outcomes Summary Report by Diabetes Type

		2015			2017		
Number of patients		**125**			**105**		
Outcome	Category	%/x̄	n	pop'n	%/x̄	n	pop'n
Blood glucose control							
HbA1c (%) ≤7.0	T1DM	36.0%	9	25	36.8%	7	19
	T2DM	34.5%	30	87	33.7%	29	86
	All types	35.2%	43	122	34.3%	36	105
HbA1c (%) ≤8.0	T1DM	60.0%	15	25	73.7%	14	19
	T2DM	64.4%	56	87	60.5%	52	86
	All types	63.9%	78	122	62.9%	66	105
Diabetes related eye disease							
% with retinopathy	T1DM	32.0%	8	25	15.8%	3	19
	T2DM	18.2%	16	88	17.4%	15	86
	All types	20.3%	25	123	17.1%	18	105
% who had laser treatment	T1DM	8.0%	2	25	5.3%	1	19
	T2DM	5.7%	5	88	4.7%	4	86
	All types	6.5%	8	123	4.8%	5	105
% with cataract (either eye)	T1DM	4.0%	1	25	0.0%	0	19
	T2DM	14.8%	13	88	23.3%	20	86
	All types	13.0%	16	123	19.0%	20	105
BMI (kg/m^2)							
Mean BMI	T1DM	27.2	25		26.8	19	
	T2DM	30.0	86		31.7	85	
	All types	29.3	121		30.8	104	
% of males with BMI <25	T1DM	50.0%	4	8	50.0%	4	8
	T2DM	25.0%	13	52	9.4%	5	53
	All types	29.7%	19	64	14.8%	9	61
% of females with BMI <25	T1DM	47.1%	8	17	54.5%	6	11
	T2DM	14.7%	5	34	9.4%	3	32
	All types	22.8%	13	57	20.9%	9	43

Outcomes Comparison Summary Report -Benchmarking

Blood glucose control

Guidelines

🕐 *Measure every 3-6 months for patients who are newly diagnosed, undergoing therapeutic changes or outside of recommended ranges*

🕐 *Measure every 6-12 months for stable patients at agreed targets*

🎯 *Target less than or equal to 7%*

		2017				All other sites		
Number of patients		105				5614		
Data Item	Category	%	n	pop'n	Signifi-cance	%	n	pop'n
HbA1c (%) ≤7.0	T1DM	36.8%	7	19	*^	18.8%	250	1333
	T2DM	33.7%	29	86	ns	29.0%	994	3425
	All types	34.3%	36	105	ns	27.3%	1354	4951
HbA1c (%) ≤8.0	T1DM	73.7%	14	19	*^	46.4%	618	1333
	T2DM	60.5%	52	86	ns	56.9%	1950	3425
	All types	62.9%	66	105	ns	54.6%	2705	4951

Reporting (Funder)

- DOH
- National Pooled Report
- Resource for policy development

Benchmarking to targets

Characteristic	Target	ANDA 2017 (mean)
HbA1c Overall	< 7%	8.1%
HbA1c Type 1	< 7%	8.5%
HbA1c Type 2	< 7%	8.1%
Total cholesterol (mmol/L)	< 4.0 mmol/L	4.4
HDL-C (mmol/L)	≥ 1.0 mmol/L	1.3
LDL-C (mmol/L)	< 2.0 mmol/L	2.3
Triglycerides (mmol/L)	< 2.0 mmol/L	2.1
Blood pressure (mmHg)	< 130 / 80	130/75
BMI (kg/m2)	< 25kg/m²	31.4

Strengths and Limitations

Strengths:

- National participation

- Increasing numbers of individual participants from each centre

- Same time each year

- A range of indicators

Limitations:

- Missing data **

- Lag between Audit and Feedback

- Data collection is not continuous

Future Steps

- Review dataset

- Continue to reduce missing data

- Encouraging use of electronic data collection system as capabilities develop

Workshop activity 1

How can we enhance, modify and optimise the design of this AF activity?

- Levers:
  - Increase engagement
  - show impact on multiple clinical outcomes

- What changes and why?

Design of AF

- Who? Characteristics of providers and recipients
- What? Characteristics of the content, including indicators (processes of care/patient outcomes), group/individual performance, comparisons, graphical display, size of discrepancy, complexity of behaviour change, direction of behaviour change)
- How, how much, when? Characteristics of delivery of A&F (e.g. mode of delivery, frequency, time lag)
- Where? Characteristics of the setting in which A&F is delivered
- Co-interventions? Other quality improvement interventions delivered alongside A&F

Study Sites

ANDA - AQSMA

Patients (n) / Year of survey

24 sites — 2012
38 sites — 2014
50 sites — 2016

ANDA - AQCA

42 sites — 2011
30 sites — 2013
49 sites — 2015
63 sites — 2017

Year of survey

State Breakdown

Number of participating sites by state

Number of participating sites (n)

State	AQSM - 2016	AQCA - 2017
ACT	1	1
NSW	10	16
QLD	10	10
SA	2	2
TAS	3	2
VIC	22	27
WA	2	3

■ AQSM - 2016   ■ AQCA - 2017
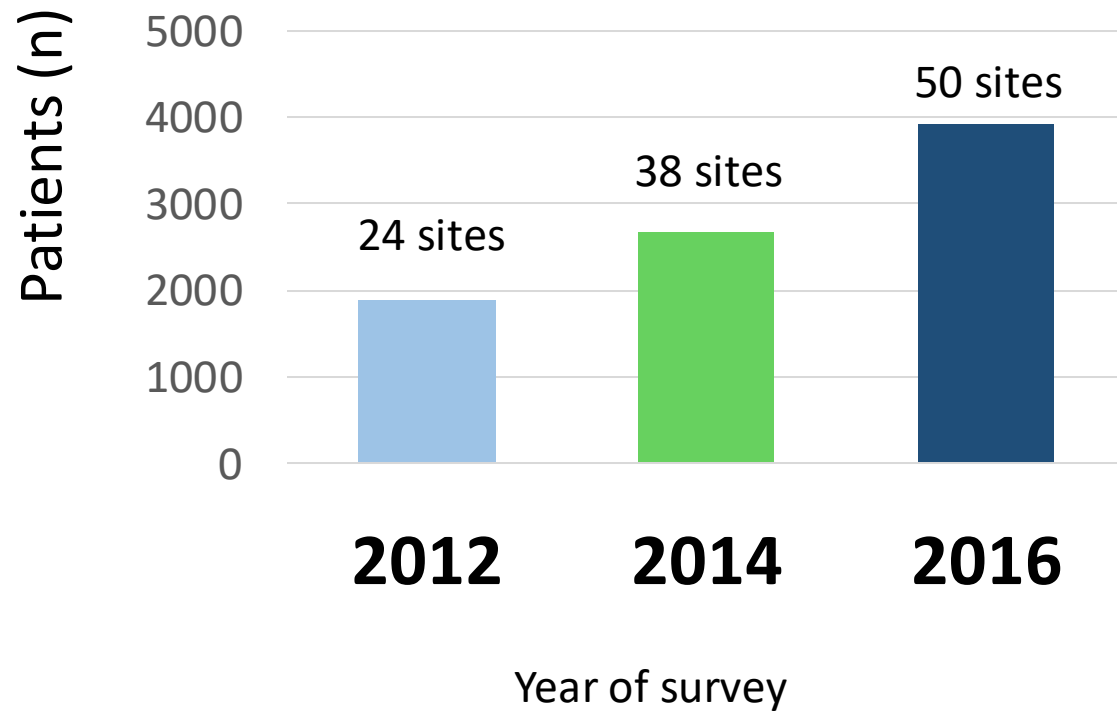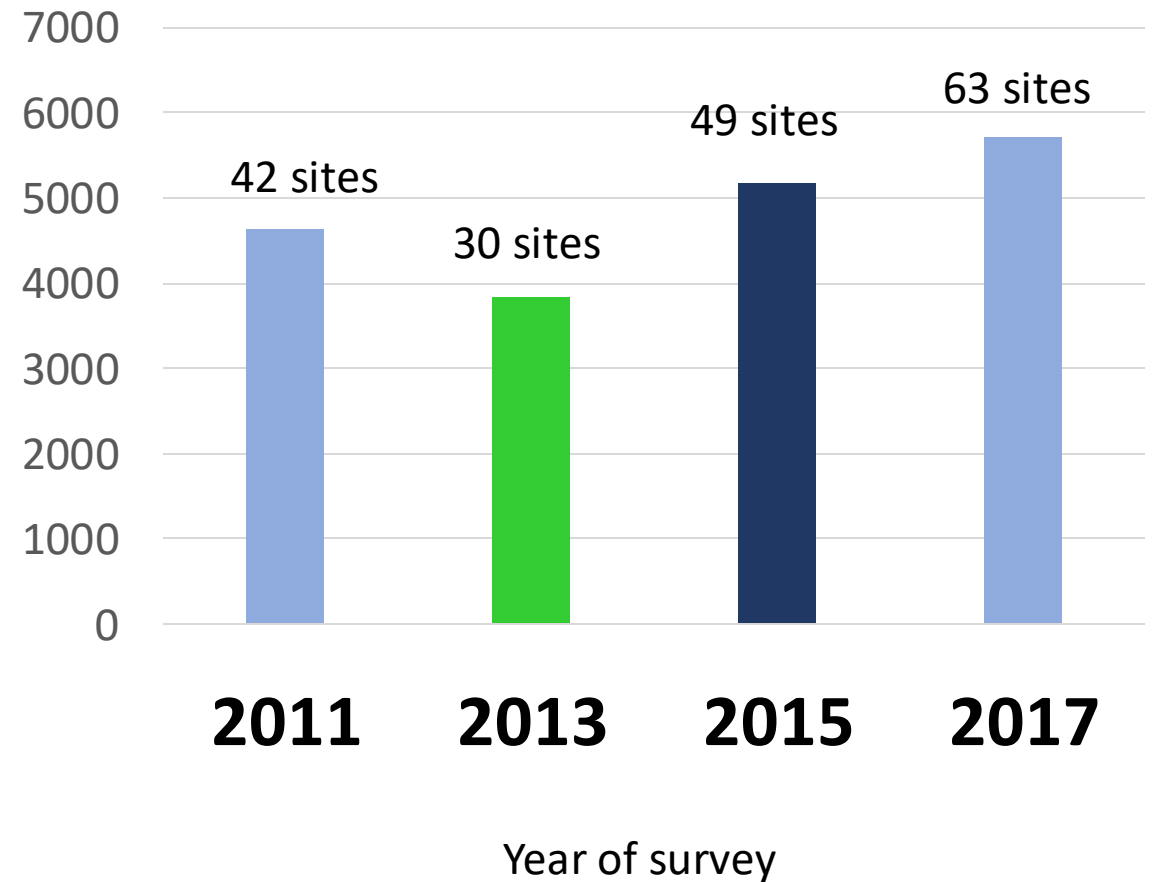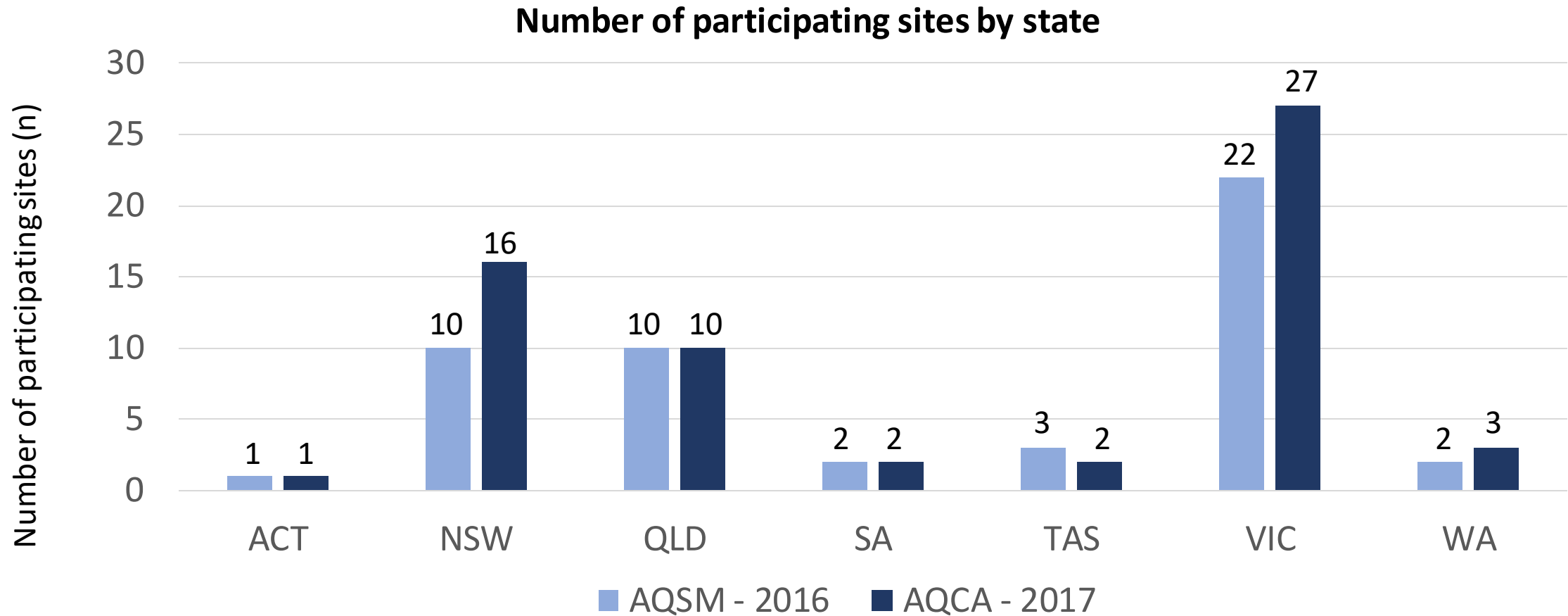
Demographics: AQSMA/AQCA

Patient Characteristics	2012	2013	2014	2015	2016	2017
N	1892	3843	2681	5183	3930	5719
Age mean ± SD (yrs)	54.0±16.8	57.1±17.1	55.0 ± 17.5	55.9±17.4	55.3 ± 17.4	55.4±17.8
Gender (% male)	47.1	52.3	50.7	50.3	49.7	51.2
Duration of diabetes mean ± SD (yrs)	10.1 ±10.4	14.2±11.0	12.3 ±11.3	14.1±11.3	13.0 ±11.7	14.6±11.8
ATSI (%)	9.7	6.1	4	4.7	4.5	4.2
Interpreter required (%)	3.5		4.4		3.9	
Pregnant (%)	34.1	19.2	28.1	25.1	29.6	26.3
Initial visit (%)	27.3	19.6	17	16.5	19.8	15.5

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Diabetes Type – AQSMA 2016

GDM 5.3%

Other 1.7%

Type 1 28.0%

Type 2 65.0%
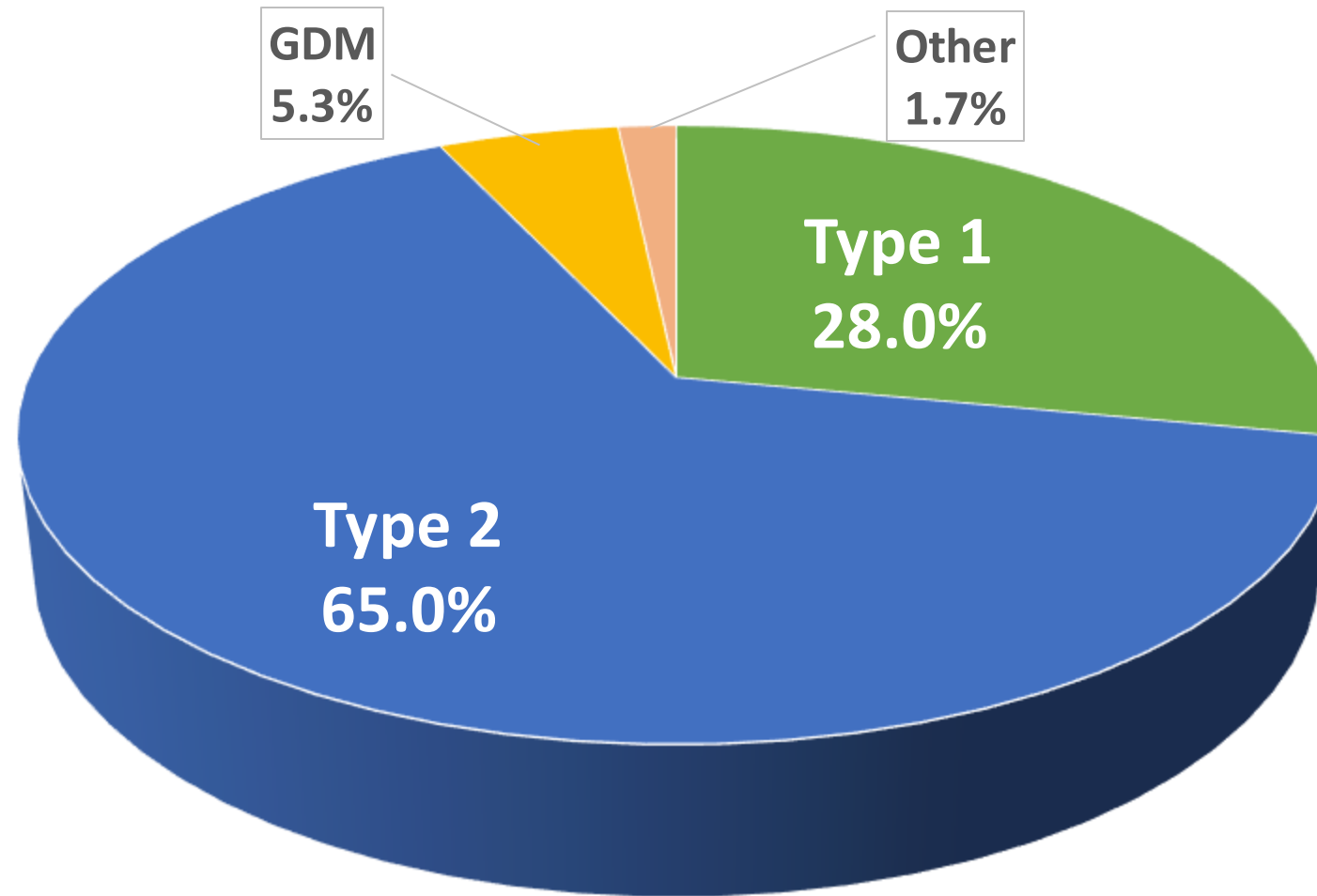
Glycaemic Control: HbA1c (AQCA – 2017)

- Type 1 Diabetes → HbA1c 8.5% ± 1.8

- Type 2 Diabetes → HbA1c 8.1% ± 1.7

- All types → HbA1c 8.1% ± 1.8

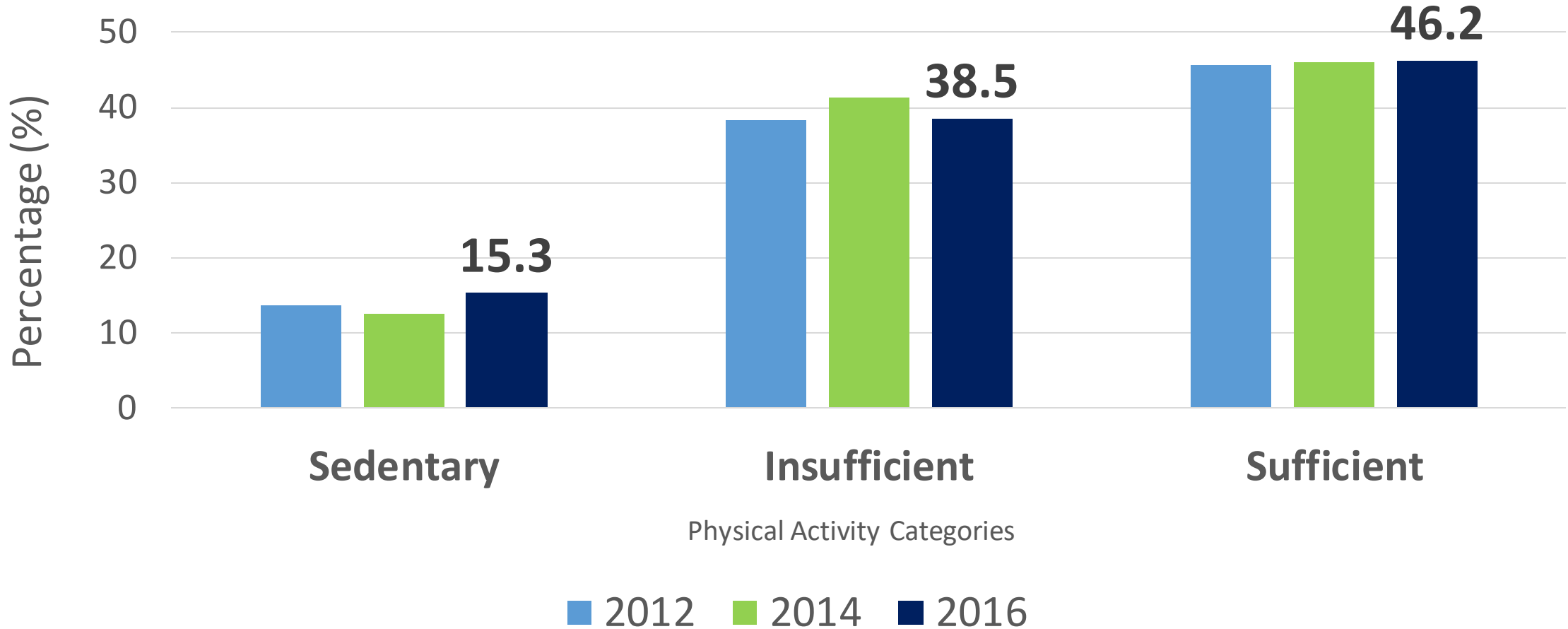**Stable** over time:
8.1% in 2010
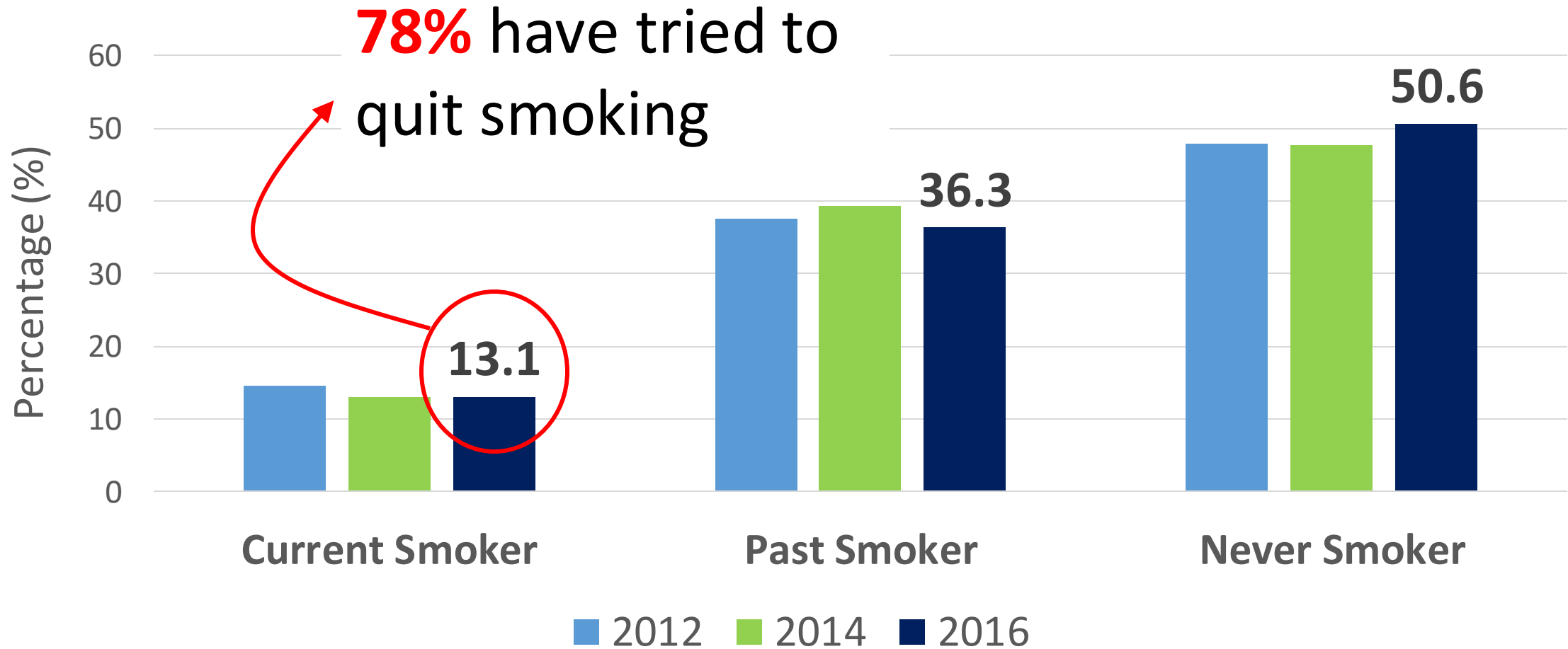8.3% in 2012
8.2% in 2014
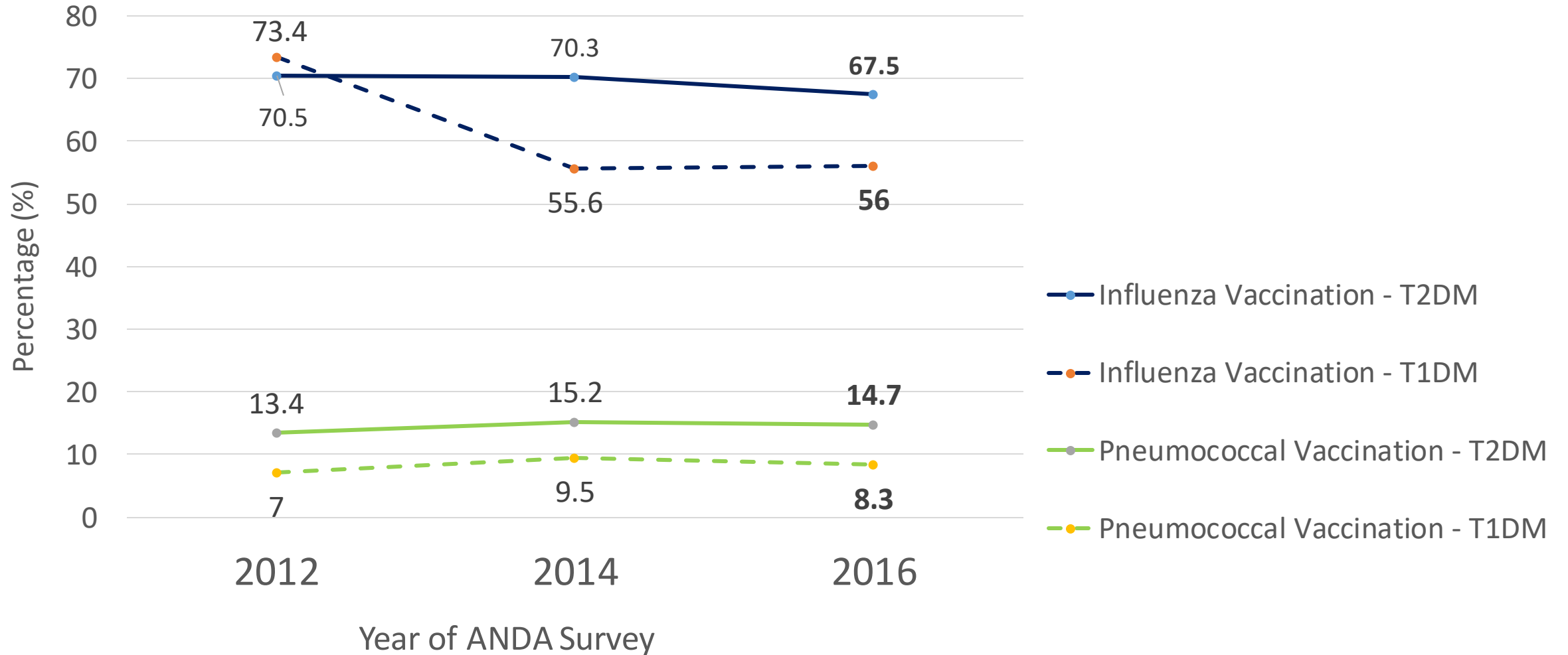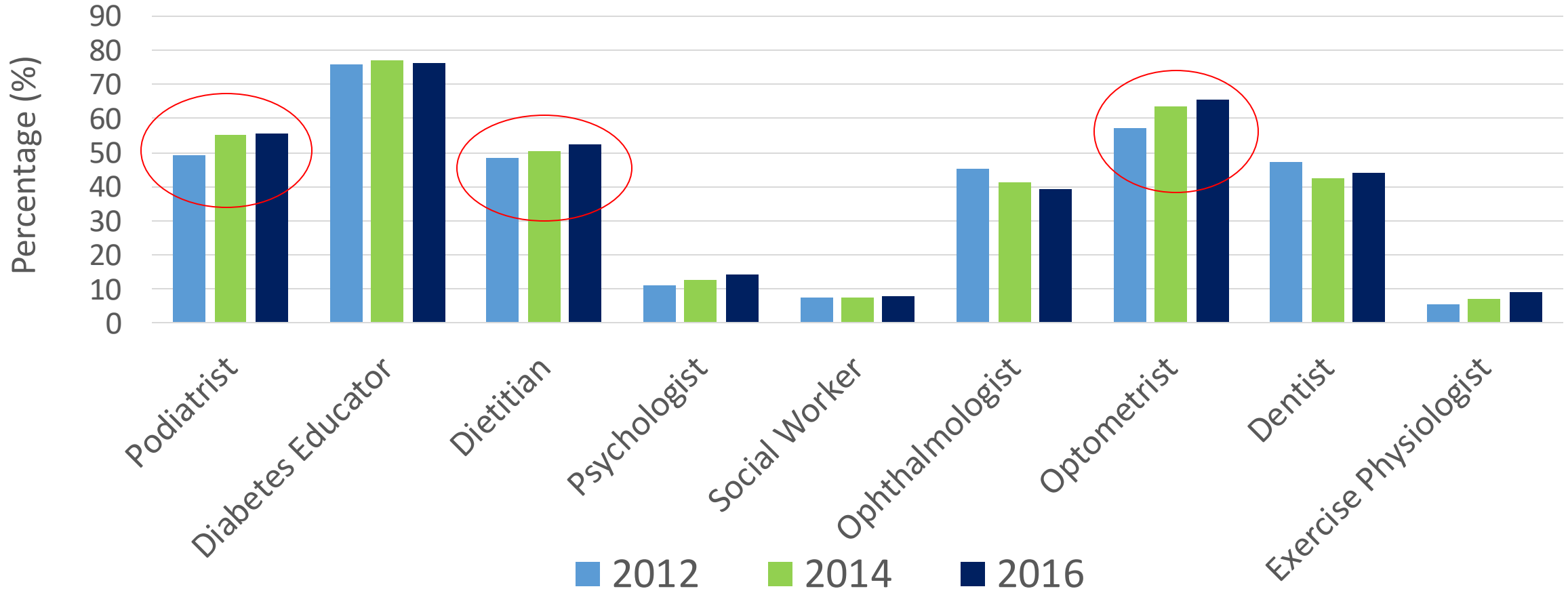8.3% in 2016

Treatment Modalities (T2DM):
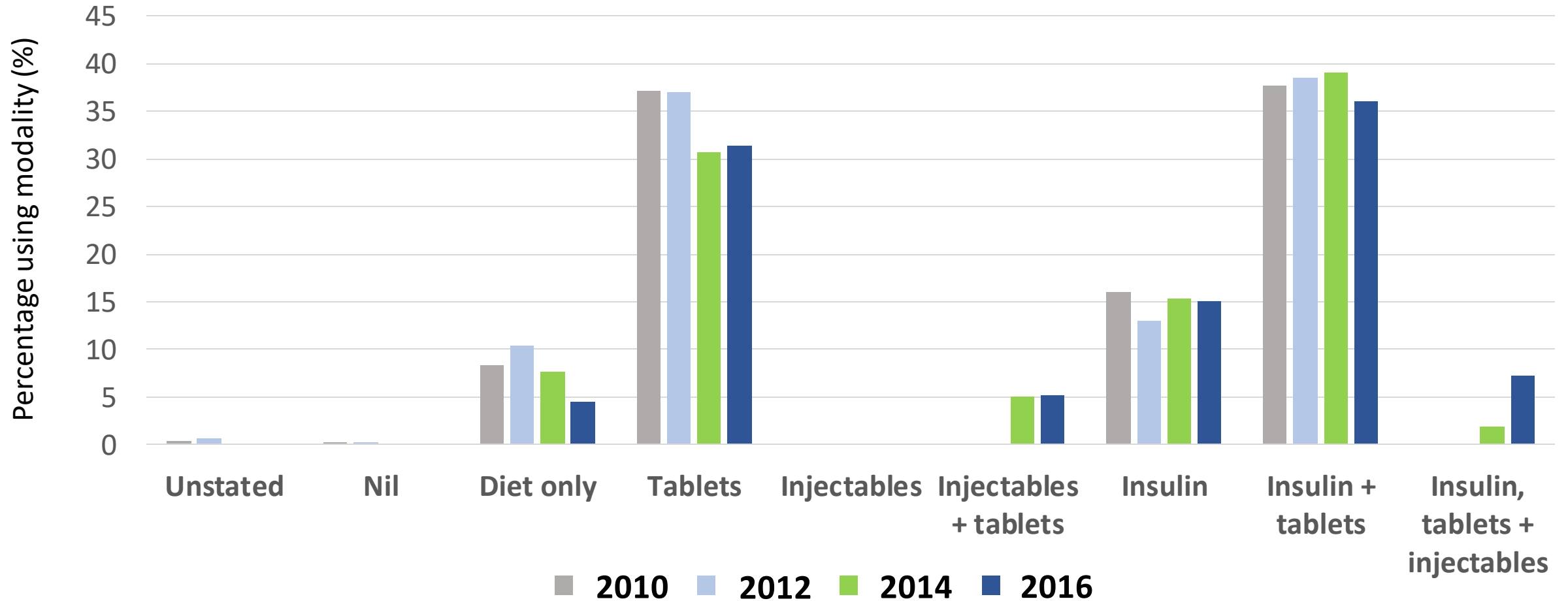
Smoking Status

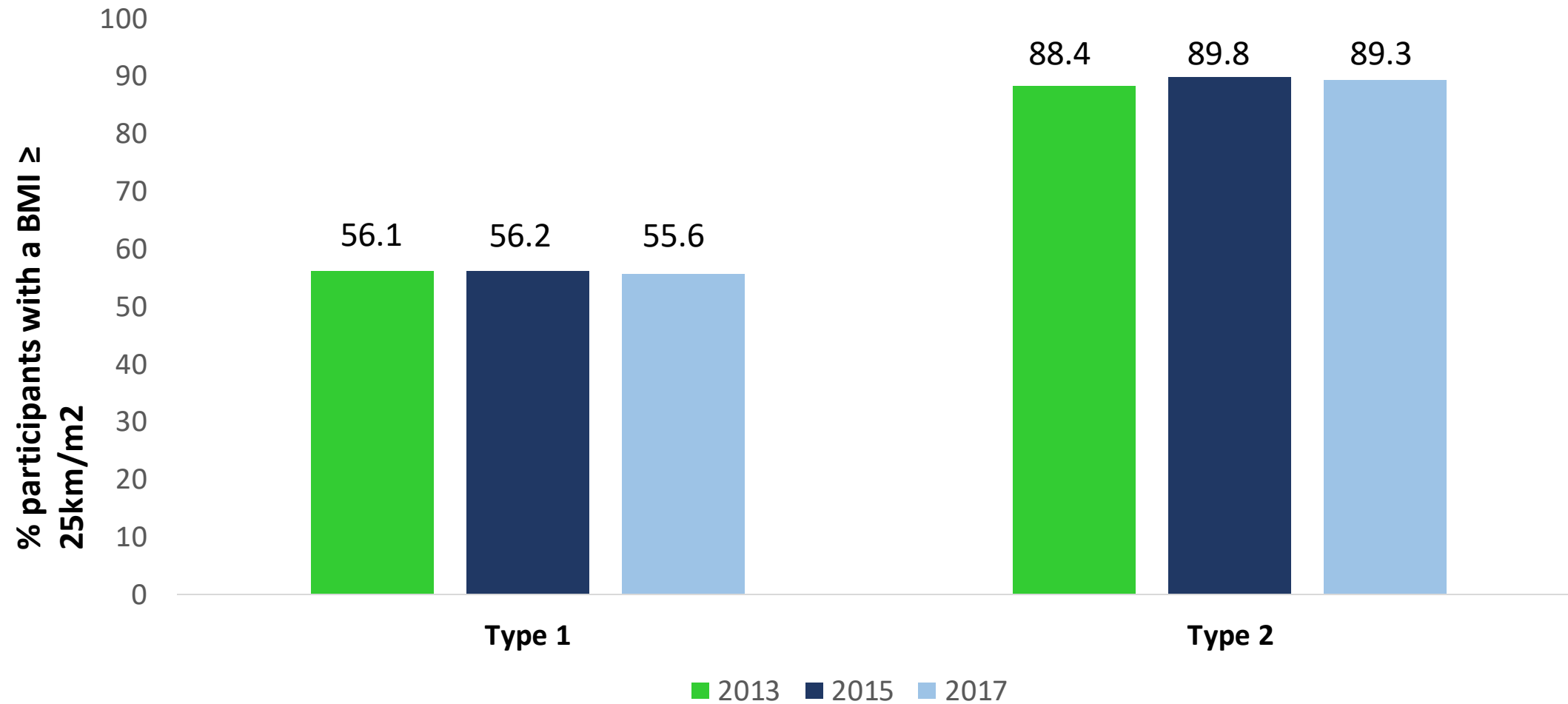# Health Professional Attendance

BMI

CVD Risk Treatment

	2013	2015	2017
Anti-hypertensive therapy (%)	61.1	52.4	58.6
Anti-lipid therapy (%)	63.2	63.9	59.0
Antiplatelet therapy (%)	39.7	32.8	32.4

Workshop activity 2

How do we evaluate the effectiveness our new AF activity?

- Purpose/Goal
- Design
- Outcomes

Acknowledgments

- Participating Centres

- National Association of Diabetes Centres

- Department of Health

- Monash University

  - Centre for Informatics and Data Management Unit

    - Monash Centre for Health Research and Implementation

- Prof Sophia Zoungas

- Sanjeeva Ranasinha – Biostatistician

- Trieu-Anh Truong – Data Management Officer

- Elspeth Lilburn – ANDA Secretariat

- Natalie Wischer – NADC Project Manager