Data Set Specification

Diabetes (clinical)

National Health Data Dictionary, Version 12

The Australian Institute of Health and Welfare is Australia's national health and welfare statistics and information agency. The Institute's mission is to improve the health and wellbeing of Australians by informing community discussion and decision making through national leadership in developing and providing health and welfare statistics and information.

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National Health Data Committee
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Introduction

Data Set Specifications (DSS) are metadata sets that are not mandated for collection but are recommended as best practice. It is recommended that, if collecting data for the purposes of primary patient care, planning or analysis, the entire DSS be collected.

The following pages contain the Diabetes (clinical) DSS and its associated data elements and data element concepts.

International initiatives recognised the need for the collection of quality diabetes related epidemiological data. The National Diabetes Data Working Group (NDDWG), in collaboration with Australian Diabetes Society (ADS), has made a significant impact in promoting diabetes data collection in Australia.

The initiative commenced in September 1993, at the NSW Diabetes Outcomes Workshop (NDOW) in Sydney, with agreement reached on 59 health outcome data elements that become known as the NDOW data set. Work began to define suitable data elements, testing their practical use and linking them with the current clinical guidelines. That initial data set was subsequently modified consistent with the 1996 NSW Diabetes Clinical Management Guidelines, and a subset was defined for diabetes audit.

Between 1998 and 2002 four data collections have been conducted in specialist diabetes services (Diabetes Centres and by specialists in private practice), with benchmarked audit reports provided to individual participants. Each survey comprised one-month data collection, followed by collation, analysis and reporting in a quality audit format. The first collection was known as the "The National Clinical Diabetes Data Collection Project", while the further three were undertaken as "Australian National Diabetes Information Audit & Benchmarking" (ANDIAB). ANDIAB has been the subject of presentations at national and international forums on Diabetes.

A modified version of the initial data set has been incorporated in CARDIAB software and is used as a general practice subset for monitoring the quality of diabetes care in the general practice setting with two data audit collections undertaken in 1999/2000 and 2002/2003.

Based on the data collections undertaken by ANDIAB and CARDIAB we believe that the Diabetes (clinical) DSS provides a reliable source of data on individuals in different clinical settings.

Considering the magnitude of diabetes and diabetes related complications and their impact on public health, we believe that availability of the Diabetes (clinical) DSS on the Knowledgebase provides standard definitions and methodology for diabetes data collection with the potential to facilitate management of patients with diabetes within current clinical guidelines.

This metadata set is primarily concerned with the clinical use of diabetes data. While the use of this standard is voluntary, it could/should be used by health and health-related establishments that create, use or maintain, records on health care clients.

However, if data is to be collected the Diabetes (clinical) DSS aims to ensure national consistency in relation to defining, monitoring and recording information on patients diagnosed with diabetes.

The Diabetes (clinical) DSS relates to the clinical status of, the provision of services for, and the quality of care delivered to individuals with diabetes, across all health care settings including:

- general practitioners
- divisions of general practice
- diabetes centres
- specialists in private practice

- community health nurses and diabetes educators.

The Diabetes (clinical) DSS:

- provides concise, unambiguous definitions for items/conditions related to diabetes quality care.
- aims to ensure standardised methodology of data collection in Australia.

The expectation is that collection of this data set facilitates good quality of care, contributes to preventive care and has the potential to enhance self-management by patients with diabetes.

The underlying goal is improvement of the length and quality of life of patients with diabetes, and prevention or delay in the development of diabetes-related complications.

Contents

Diabetes (clinical) DSS

Admin. status: CURRENT 1/07/2002 Version number: 1

Metadata type: DATA SET SPECIFICATIONS

Start date: 1 July 2002

Scope:

The use of this standard is voluntary.

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The Diabetes (clinical) DSS:

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The expectation is that collection of this data set facilitates good quality of care, contributes to preventive care and has the potential to enhance self-management by patients with diabetes.

The underlying goal is improvement of the length and quality of life of patients with diabetes, and prevention or delay in the development of diabetes-related complications.

Collection methodology:

This metadata set is primarily concerned with the clinical use of diabetes data. It could/should be used by health and health-related establishments that create, use or maintain, records on health care clients.

Data are collected over a 1-month period of all diabetes patients presenting at sites participating in the collection. The information is de-identified to protect the privacy of individuals. The participation is voluntary. An individual benchmarking report is provided. The results provide a snapshot of care of people with diabetes.

Data elements included:

Blindness – diabetes complication, version 1♦

Blood pressure – diastolic measured, version 1♦

Blood pressure – systolic measured, version 1♦

Cardiovascular medication – current, version 1♦

Cataract – history, version 1♦

Cerebral stroke due to vascular disease – history, version 1♦

Cholesterol-HDL – measured, version 1♦

♦ new in NMDS this version ∇ modified this version

Data elements included (continued):

Cholesterol-total – measured, version 1♦

Coronary artery disease – history of intervention or procedure, version 1♦

Creatinine serum – measured, version 1♦

Date of birth, version 4♦

Diabetes status, version 1♦

Diabetes therapy type, version 1♦

Dyslipidaemia – treatment, version 1♦

Erectile dysfunction, version 1♦

Fasting status, version 1♦

Foot deformity, version 1♦

Foot lesion – active, version 1♦

Foot ulcer – current, version 1♦

Foot ulcer – history, version 1♦

Glycosylated Haemoglobin (HbA1c) – measured, version 1♦

Glycosylated Haemoglobin (HbA1c) – upper limit of normal range, version 1♦

Health professionals attended – diabetes mellitus, version 1♦

Height – measured, version 2♦

Hypertension – treatment, version 1♦

Hypoglycaemia – severe, version 1♦

Indigenous status, version 4♦

Initial visit – diabetes mellitus, version 1♦

Lower limb amputation due to vascular disease, version 1♦

Microalbumin – units, version 1♦

Microalbumin – upper limit of normal range, version 1♦

Microalbumin/protein – measured, version 1♦

Myocardial infarction – history, version 1♦

Ophthalmological assessment – outcome, version 1♦

Ophthalmoscopy – performed, version 1♦

Peripheral neuropathy – status, version 1♦

Peripheral vascular disease in feet – status, version 1♦

Pregnancy – current status, version 1♦

Referred to ophthalmologist – diabetes mellitus, version 1♦

Renal disease – end stage, diabetes complication, version 1♦

Service contact date, version 1♦

Sex, version 3♦

Tobacco smoking status – diabetes mellitus, version 1♦

Triglycerides – measured, version ♦

Visual acuity, version 1♦

Weight – measured, version 2♦

Year insulin started, version 1♦

Year of diagnosis of diabetes mellitus, version 1♦

Supporting data elements and data element concepts:	Blood pressure, version 1♦ Service contact, version 1♦
Scope links with other Metadata sets:	Cardiovascular disease (clinical) DSS
Source organisation:	National Diabetes Data Working Group
Comments:	

♦ new in NMDS this version ∇ modified this version

Data elements included

Blindness – diabetes complication

Identifying and Definitional Attributes

Knowledgebase ID: ***000808*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether the individual has become legally blind in either or both eyes. Legally, blindness is defined as less than 6/60 vision in the better eye with glasses.

Vision 6/60 is the ability to see only at 6 metres what the normal eye can see at 60 metres.

Context: Diabetes mellitus specific data element.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Blindness – (< 6/60) occurred in either or both eyes in the last 12 months
2	Blindness – (< 6/60) occurred in either or both eyes prior to the last 12 months
3	Blindness – (< 6/60) occurred in one eye within 12 months and in the other eye prior to the last 12 months
4	No blindness
9	Not stated/inadequately described

Guide for use: Blindness can be diagnosed in one eye within 12 months even though it has been previously diagnosed on the other eye (refers to code 3).

Verification rules:

Collection methods: Ask the individual if he/she has been diagnosed as legally blind (< 6/60) in both or either eye. If so record whether it has occurred within or prior to the last 12 months.

Alternatively determine blindness from appropriate documentation obtained from an ophthalmologist or optometrist.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Cataract – history vers 1

relates to the data element Ophthalmological assessment – outcome vers 1

relates to the data element Ophthalmoscopy – performed vers 1

relates to the data element Referred to ophthalmologist – diabetes mellitus vers 1

relates to the data element Visual acuity vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Patients with diabetes have an increased risk of developing several eye complications including retinopathy, cataract and glaucoma that lead to loss of vision.

Diabetic retinopathy is a leading cause of blindness. Retinopathy is characterised by proliferation of the retina's blood vessels, which may project into the vitreous, causing vitreous haemorrhage, proliferation of fibrous tissue and retinal detachment. It is often accompanied by microaneurysms and macular oedema, which can express as blurred vision. The prevalence of retinopathy increases with increasing duration of diabetes. In the early stage, retinopathy is asymptomatic. Up to 20% of people with diabetes Type 2 have retinopathy at the time of diagnosis of diabetes. The cumulative prevalence of proliferation diabetic retinopathy and macular oedema after 20 years of Type 1 diabetes is about 40%. The Diabetic Retinopathy Study Group showed that panretinal photocoagulation reduces the risk of severe loss of vision by 50%.

Although diabetes retinopathy cannot totally be prevented, better control of blood sugar level slows the onset and progression of retinopathy (The Diabetes Control and Complications Trial – DCCT). Cataract and glaucoma are also associated diabetic eye problems that could lead to blindness.

Regular eye checkups are important for patients suffering from diabetes mellitus. This helps to early detect abnormalities and to avoid or postpone vision-threatening complications.

According to the NSW Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus, a comprehensive ophthalmological examination should be carried out:

- At diagnosis and then every 1–2 years for patients whose diabetes onset was at age 30 years or more.
- Within five years of diagnosis and then every 1–2 years for patients whose diabetes onset was at age less than 30 years.

If retinopathy is detected, review diabetes control and improve if necessary.

References:

Vision Australia, No. 2, 1997–8; University of Melbourne.

The Diabetic Retinopathy Study Research Group. Photocoagulation treatment of proliferative diabetic retinopathy.

Clinical application of Diabetic Retinopathy Study (DRS) finding, DRS Report Number 8. Ophthalmology. 1981; 88:583–600).

Diabetes Control and Complications Trial: DCCT New England Journal of Medicine, 329(14), September 30, 1993.

Blood pressure – diastolic measured

Identifying and Definitional Attributes

Knowledgebase ID: ***000649*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The person's measured diastolic blood pressure.

Context: Public health, health care and clinical settings:

High blood pressure is a major risk factor for coronary heart disease, heart failure, stroke, and renal failure with the risk increasing along with the level of blood pressure.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NNN

Minimum size: 2

Maximum size: 3

Data domain: Measured pressure head in millimetres of mercury (mm Hg)

999 Not collected

Guide for use: The diastolic pressure is recorded as phase V Korotkoff (disappearance of sound) however phase IV Korotkoff (muffling of sound) is used if the sound continues towards zero but does not cease.

If Blood pressure – diastolic is not collected or not able to be collected, code 999.

Verification rules:

Collection methods: Measurement protocol for resting blood pressure:

The diastolic blood pressure is one component of a routine blood pressure measurement (i.e. systolic/diastolic) and reflects the minimum pressure to which the arteries are exposed.

- The patient should be relaxed and seated, preferably for several minutes, (at least 5 minutes). Ideally, patients should not take caffeine-containing beverages or smoke for two hours before blood pressure is measured.
- Ideally, patients should not exercise within half an hour of the measurement being taken (National Nutrition Survey User's Guide).
- Use a mercury sphygmomanometer. All other sphygmomanometers should be calibrated regularly against mercury sphygmomanometers to ensure accuracy.
- Bladder length should be at least 80%, and width at least 40% of the circumference of the mid-upper arm. If the velcro on the cuff is not totally attached, the cuff is probably too small.
- Wrap cuff snugly around upper arm, with the centre of the bladder of the cuff positioned over the brachial artery and the lower border of the cuff about 2 cm above the bend of the elbow.
- Ensure cuff is at heart level, whatever the position of the patient.

- Palpate the radial pulse of the arm in which the blood pressure is being measured.
- Inflate cuff to the pressure at which the radial pulse disappears and note this value. Deflate cuff, wait 30 seconds, and then inflate cuff to 30 mm Hg above the pressure at which the radial pulse disappeared.
- Deflate the cuff at a rate of 2–3 mm Hg/beat (2–3 mm Hg/sec) or less.
- Recording the diastolic pressure use phase V Korotkoff (disappearance of sound). Use phase IV Korotkoff (muffling of sound) only if sound continues towards zero but does not cease. Wait 30 seconds before repeating the procedure in the same arm. Average the readings.
- If the first two readings differ by more than 4 mmHg diastolic or if initial readings are high, take several readings after five minutes of quiet rest.

Related metadata: is used in conjunction with Blood pressure – systolic measured vers 1

is used in conjunction with Service contact date vers 1

Administrative Attributes

Source document: The National Heart Foundation Blood Pressure Advisory Committee's 'Guidelines for the Management of Hypertension – 1999' which are largely based on World Health Organization Recommendations. (Guidelines Subcommittee of the WHO-SH: 1999 WHO-ISH guidelines for management of hypertension. J Hypertension 1999; 17:151–83).

Australian Bureau of Statistics 1998. National Nutrition Survey User's Guide 1995. Cat. No. 4801.0. Canberra: ABS. (p. 20).

National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: CV-Data Working Group

National Diabetes Data Working Group

Information model link:

NHIM Service provision event

Data Set Specifications:	***Start date***	***End date***
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments: The pressure head is the height difference a pressure can raise a fluid's equilibrium level above the surface subjected to pressure. (Blood pressure is usually measured as a head of Mercury, and this is the unit of measure nominated for this data element.)

The current (2002) definition of hypertension is based on the level of blood pressure above which treatment is recommended, and this depends on the presence of other risk factors, e.g. age, diabetes etc. (NHF 1999 Guide to Management of Hypertension).

The United Kingdom Prospective Diabetes Study (1987 to 1998) showed major benefit from lowering blood pressure in preventing diabetes complications.

A target for blood pressure for people who suffer from diabetes is 130/85 mm Hg or less; recommended by the Australian Diabetes Society (if proteinuria is detected it is less than 125/75 mm Hg) Australian Medicines Handbook: last modified February, 2001).

Following the NSW Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus for patients who suffer from hypertension, if pharmacological intervention is required, ACE inhibitors are the preferred agents for treating hypertension in people with diabetes (unless

contraindicated).

References:

'Guidelines for the Management of Hypertension – 1999' largely based on World Health Organization Recommendations. (Guidelines Subcommittee of the WHO) J Hypertension 1999; 17: 151–83.).

Diabetes Control and Complications Trial: DCCT New England Journal of Medicine, 329(14), September 30, 1993.

UKPDS 38 Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UK Prospective Diabetes Study Group. British Medical Journal (1998); 317: 703–713.

Blood pressure – systolic measured

Identifying and Definitional Attributes

Knowledgebase ID: ***000650*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The person's measured systolic blood pressure.

Context: Public health, health care and clinical settings:

High blood pressure is a major risk factor for coronary heart disease, heart failure, stroke, and renal failure with the risk increasing along with the level of blood pressure

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NNN

Minimum size: 2

Maximum size: 3

Data domain: Measured pressure head in millimetres of mercury (mm Hg)

999 Not collected

Guide for use: For recording the systolic reading, use phase I Korotkoff (the first appearance of sound).

If Blood pressure – systolic is not collected or not able to be collected, code 999.

Verification rules:

Collection methods: Measurement protocol for resting blood pressure:

The systolic blood pressure is one component of a routine blood pressure measurement (i.e. systolic/diastolic) and reflects the maximum pressure to which the arteries are exposed.

- The patient should be relaxed and seated, preferably for several minutes, (at least 5 minutes). Ideally, patients should not take caffeine-containing beverages or smoke for two hours before blood pressure is measured.
- Ideally, patients should not exercise within half an hour of the measurement being taken (National Nutrition Survey User's Guide).
- Use a mercury sphygmomanometer. All other sphygmomanometers should be calibrated regularly against mercury sphygmomanometers to ensure accuracy.-Bladder length should be at least 80%, and width at least 40% of the circumference of the mid-upper arm. If the Velcro on the cuff is not totally attached, the cuff is probably too small.
- Wrap cuff snugly around upper arm, with the centre of the bladder of the cuff positioned over the brachial artery and the lower border of the cuff about 2 cm above the bend of the elbow.
- Ensure cuff is at heart level, whatever the position of the patient.
- Palpate the radial pulse of the arm in which the blood pressure is being

measured.

- Inflate cuff to the pressure at which the radial pulse disappears and note this value. Deflate cuff, wait 30 seconds, and then inflate cuff to 30 mm Hg above the pressure at which the radial pulse disappeared.
- Deflate the cuff at a rate of 2–3 mm Hg/beat (2–3 mm Hg/sec) or less.
- For recording the systolic reading, use phase I Korotkoff (the first appearance of sound). Wait 30 seconds before repeating the procedure in the same arm. Average the readings. If the first two readings differ by more than 6 mm Hg systolic or if initial readings are high, take several readings after five minutes of quiet rest.

Related metadata: is used in conjunction with Blood pressure – diastolic measured vers 1

is used in conjunction with Service contact date vers 1

Administrative Attributes

Source document: The National Heart Foundation Blood Pressure Advisory Committee's 'Guidelines for the Management of Hypertension – 1999' which are largely based on World Health Organization Recommendations. (Guidelines Subcommittee of the WHO-ISH: 1999 WHO-ISH guidelines for management of hypertension. J Hypertension 1999; 17:151–83).

Australian Bureau of Statistics 1998. National Nutrition Survey User's Guide 1995. Cat. No. 4801.0. Canberra: ABS. (p. 20).

National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: CV-Data Working Group

National Diabetes Data Working Group

Information model link:

NHIM Service provision event

Data Set Specifications:	***Start date***	***End date***
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DSS – Diabetes (clinical)	01/01/2003	

Comments: The pressure head is the height difference a pressure can raise a fluid's equilibrium level above the surface subjected to pressure. (Blood pressure is usually measured as a head of Mercury, and this is the unit of measure nominated for this data element.)The current (2002) definition of hypertension is based on the level of blood pressure above which treatment is recommended, and this depends on the presence of other risk factors, e.g. age, diabetes etc.(NHF 1999 Guide to Management of Hypertension).

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A target for blood pressure for people who suffer from diabetes is 130/85 mm Hg or less; recommended by the Australian Diabetes Society (if proteinuria is detected it is less than 125/75 mm Hg) Australian Medicines Handbook: last modified February, 2001).

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'Guidelines for the Management of Hypertension – 1999' largely based on

World Health Organization Recommendations. (Guidelines Subcommittee of the WHO) J Hypertension 1999; 17: 151–83.).

Diabetes Control and Complications Trial: DCCT New England Journal of Medicine, 329(14), September 30, 1993.

UKPDS 38 Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UK Prospective Diabetes Study Group. British Medical Journal (1998); 317: 703–713.

Cardiovascular medication – current

Identifying and Definitional Attributes

Knowledgebase ID: ***000810*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether the individual is taking some of the following cardiovascular medications:

- Angiotensin converting enzyme (ACE) inhibitors
- Angiotensin II (A2) antagonists
- Beta blockers
- Calcium antagonists

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 4

Data domain:

1	Angiotensin converting enzyme (ACE) inhibitors
2	Angiotensin II (A2) receptor blockers
3	Beta blockers
4	Calcium antagonists
8	None of the above
9	Not stated/Inadequately described

Guide for use: A person may be taking one or more of the following medications for a cardiovascular condition. Therefore more than one code may be recorded sequentially.

Code 1 ACE inhibitors (captopril, enalapril, fosinopril, lisinopril, perindopril, quinapril, ramipril and trandolapril).

Code 2 Angiotensin II receptor blockers (candesartan, eprosartan, irbesartan and telmisartan).

Code 3 Beta blockers (atenolol, carvedilol, labetalol, metoprolol, oxprenolol, pindolol, propranolol and sotalol).

Code 4 Calcium antagonists (amlodipine, diltiazem, felodipine, lercanidipine, nifedipine and verapamil).

Example 1: If a person takes one of the ACE inhibitors and a Beta blocker, the code recorded would be 13.

Example 2: If a person takes one of the ACE inhibitors, an Angiotensin II receptor blocker and a Beta blocker, the code recorded would be 123.

Code 8 is used when none of the listed medications is being taken by the person.

Code 9 should only be used in situations where it is not practicable to ask the questions.

Verification rules:

Collection methods: The person should be asked a series of questions about any current medication for a cardiovascular condition as follows:

Are you currently taking any medication for a cardiovascular condition?
___Yes ___No

If the person answers 'NO', then code 8 should be applied.

If the person answers 'YES', then ask which one(s) (from the list of drugs in the Guide for use).

Ace Inhibitors	___Yes ___No
Angiotensin II receptor blockers	___Yes ___No
Beta blockers	___Yes ___No
Calcium antagonists	___Yes ___No

The appropriate code should be recorded for each type of medication currently in use.

Related metadata: relates to the data element Blood pressure – diastolic measured vers 1

relates to the data element Blood pressure – systolic measured vers 1

relates to the data element Date of birth vers 4

relates to the data element Hypertension – treatment vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary. Australian Medicines Handbook: last modified by February 2001 Contents of Cardiovascular, Version 3, 1999 Therapeutic Guidelines Limited (05/042002).

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Request for/entry into service event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Cataract – history

Identifying and Definitional Attributes

Knowledgebase ID: ***000811*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether the individual has a cataract present in either or both eyes or has had a cataract previously removed from either or both eyes.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Cataract currently present or has been previously removed from the right eye
2	Cataract currently present or has been previously removed from the left eye
3	Cataract currently present or has been previously removed from both eyes
4	No cataract present or has not been previously removed from either eye
9	Not stated/inadequately described

Guide for use:

Verification rules:

Collection methods: Examination of the lens of the eye through a dilated pupil (visible through the pupil by the use of an ophthalmoscope) by an ophthalmologist or optometrist, as a part of the ophthalmological assessment.

Ask the individual if he/she has a cataract in either or both eyes or has had a Cataract removed from either or both eyes previously. Alternatively obtain information from an ophthalmologist or optometrist or from appropriate documentation.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Blindness – diabetes complication vers 1

relates to the data element Ophthalmological assessment – outcome vers 1

relates to the data element Ophthalmoscopy – performed vers 1

relates to the data element Referred to ophthalmologist – diabetes mellitus vers 1

relates to the data element Visual acuity vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Cataract is a clouding of the lens of the eye or its capsule sufficient to reduce vision. The formation of cataract occurs more rapidly in patients with a history of ocular trauma, uveitis, or diabetes mellitus. Cataract is an associated diabetic eye problem that could lead to blindness.

Regular eye checkups are important for patients suffering from diabetes mellitus. This helps to early detect abnormalities and to avoid or postpone vision-threatening complications. A comprehensive ophthalmological examination includes:

- check visual acuity with Snellen chart – correct with pinhole if indicated
- examine for cataract
- examine fundi with pupils dilated.

Cerebral stroke due to vascular disease – history

Identifying and Definitional Attributes

Knowledgebase ID: ***000812*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether the individual has had a cerebral stroke due to vascular disease.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Cerebral stroke – occurred in the last 12 months
2	Cerebral stroke – occurred prior to the last 12 months
3	Cerebral stroke – occurred both in and prior to the last 12 months
4	No history of cerebral stroke due to vascular disease
9	Not stated/inadequately described

Guide for use:

Verification rules:

Collection methods: Obtain this information from appropriate documentation or from the patient

Related metadata: relates to the data element Blood pressure – diastolic measured vers 1

relates to the data element Blood pressure – systolic measured vers 1

relates to the data element Hypertension – treatment vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: Cerebral stroke is a medical emergency condition with a high mortality rate, which is often recognised as a vascular complication of diabetes mellitus.

The risk of stroke in patients with diabetes is at least twice that in non-diabetic patients according to Meigs et al. (Intern Med. 1998). Diabetes may increase actual stroke risk up to fivefold by increasing atheromatous deposits. Patients with diabetes who have a first stroke have 5-year survival rate reduced to 50% in comparison to non-diabetic stroke patients. The duration of diabetes clearly influences the severity of vascular disease. Atherosclerosis is more common and more severe earlier in the course of diabetes. In large arteries, plaque occurs from direct endothelial membrane injury, adverse balance of lipoproteins, and hyperinsulinemia (JAMA 1997). Small vessels are also affected more frequently than they are in non-diabetic stroke, resulting in an increased risk of lacunar stroke.

References:

Meigs J, Nathan D, Wilson P et al. Metabolic risk factors worsen continuously across the spectrum of non-diabetic glucose tolerance. Ann Intern Med. 1998; 128:524–533.

Gorelick PB, Sacco RL, Smith DB, et al. Prevention of a first stroke: a review of guidelines and a multidisciplinary consensus statement from the National Stroke Association. JAMA 1999; 281:1112–1120.

Cholesterol-HDL – measured

Identifying and Definitional Attributes

Knowledgebase ID: ***000651*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: A person's measured high-density lipoprotein cholesterol (HDL-C).

Context: Public health, health care and clinical settings:

The evidence is strong that HDL-C has a direct protective effect against the development of arteriosclerosis.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: N.NN

Minimum size: 2

Maximum size: 3

Data domain: Measurement in mmol/L to 2 decimal places

9.99 Not measured/inadequately described

Guide for use: When reporting, record absolute result of the most recent HDL Cholesterol measurement in the last 12 months to the nearest 0.01 mmol/L.

When reporting, record whether or not the measurement of HDL Cholesterol was performed in a fasting specimen.

Verification rules:

Collection methods: Measurement of lipid levels should be carried out by laboratories, or practices, which have been accredited to perform these tests by the National Association of Testing Authorities.

- To be collected as a single venous blood sample, preferably following a 12-hour fast where only water and medications have been consumed.
- Prolonged tourniquet use can artefactually increase levels by up to 20%.

Related metadata: is used in the calculation of Cholesterol-LDL calculated vers 1

relates to the data element Cholesterol-total – measured vers 1

relates to the data element Dyslipidaemia – treatment vers 1

is used in conjunction with Fasting status vers 1

is used in conjunction with Service contact date vers 1

relates to the data element Triglycerides – measured vers 1

Administrative Attributes

Source document: National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand, Lipid Management Guidelines – 2001, MJA 2001; 175: S57–S88.

Source organisation: CV-Data Working Group

National Diabetes Data Working Group

Information model link:

NHIM Service provision event

Data Set Specifications:	***Start date***	***End date***
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments: Lowered HDL-C, with increased serum triglyceride and increased low-density lipoprotein cholesterol are important risk factors for vascular disease in type 2 diabetes.

In the NSW Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus, recommendations are that HDL, total cholesterol, triglycerides are to be measured:

- every 1–2 years (if normal)
- every 3–6 months (if abnormal or on treatment)

and the target is:

- to increase HDL Cholesterol to more than or equal to 1.0 mmol/L
- to reduce total Cholesterol to less than 5.5 mmol/L
- to reduce triglyceride levels to less than 2.0 mmol/L.

If pre-existing cardiovascular disease (bypass surgery or myocardial infarction) total cholesterol should be less than 4.5 mmol/L. A level below 1.0 mmol/L increases risk approximately 2-fold (Gordon et al. 1989; Assmann et al. 1998), (Draft NHF Lipid Guidelines Paper 2001). It has been concluded from prospective population studies that for every 0.025 mmol/L increase in HDL-C, the coronary risk is reduced by 2–5%.

In settings such as general practice where the monitoring of a person's health is ongoing and where a measure can change over time, the date of assessment should be recorded.

References:

National Heart Foundation of Australia – Lipid Management Guidelines 2001.

Cholesterol-total – measured

Identifying and Definitional Attributes

Knowledgebase ID: ***000653*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: A person's measured total cholesterol (TC).

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NN.N

Minimum size: 3

Maximum size: 4

Data domain: Measurement in mmol/L to one decimal place

99.9 Not stated/Inadequately described

Guide for use: When reporting, record absolute result of the most recent Cholesterol-total - measured in the last 12 months to the nearest 0.1 mmol/L.

Record the absolute result of the TC measurement.

When reporting, record whether or not the measurement of Cholesterol-total – measured was performed in a fasting specimen.

Verification rules:

Collection methods: Measurement of lipid levels should be carried out by laboratories, or practices, which have been accredited to perform these tests by the National Association of Testing Authorities.

- To be collected as a single venous blood sample, preferably following a 12-hour fast where only water and medications have been consumed.
- Prolonged tourniquet use can artefactually increase levels by up to 20%.

Related metadata: relates to the data element Cholesterol-HDL – measured vers 1

is used in the calculation of Cholesterol-LDL calculated vers 1

relates to the data element Dyslipidaemia – treatment vers 1

is used in conjunction with Fasting status vers 1

is used in conjunction with Service contact date vers 1

relates to the data element Triglycerides – measured vers 1

Administrative Attributes

Source document: National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand, Lipid Management Guidelines – 2001, MJA 2001; 175: S57–S88

National Health Priority Areas Report: Cardiovascular Health 1998. AIHW Cat. No. PHE 9. HEALTH and AIHW, Canberra.

The Royal College of Pathologists of Australasia web-based Manual of Use and Interpretation of Pathology Tests

Source organisation: CV-Data Working Group

Information model link:

NHIM Service provision event

Data Set Specifications:	***Start date***	***End date***
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments:

In settings where the monitoring of a person's health is ongoing and where a measure can change over time (such as general practice), the service contact date should be recorded.

High blood cholesterol is a key factor in heart, stroke and vascular disease, especially coronary heart disease.

Poor nutrition can be a contributing factor to heart, stroke and vascular disease as a population's level of saturated fat intake is the prime determinant of its level of blood cholesterol.

The risk of coronary and other macrovascular disorders is 2–5 times higher in people with diabetes than in non-diabetic subjects and increases in parallel with the degree of dyslipidaemia.

Following Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus, the targets for lipids management are:

- to reduce total cholesterols to less than 5.5 mmol/L
- to reduce triglyceride levels to less than 2.0 mmol/L
- to increase HDL-C to more than or equal to 1.0 mmol/L.

If pre-existing cardiovascular disease (bypass surgery or myocardial infarction), total cholesterol should be less than 4.5 mmol/L.

Large clinical trials have shown that people at highest risk of cardiovascular events (e.g. pre-existing ischaemic heart disease) will derive the greatest benefit from lipid lowering drugs. For this group of patients, the optimum threshold plasma lipid concentration for drug treatment is still a matter of research. In May 1999 the PBS threshold total cholesterol concentration, for subsidy of drug treatment, was reduced from 5.5 to 4.0 mmol/L. (Australian Medical Handbook).

Coronary artery disease – history of intervention or procedure

Identifying and Definitional Attributes

Knowledgebase ID: ***000813*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether the individual has undergone a coronary artery by-pass grafting (CABG), angioplasty or stent.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	CABG, angioplasty or stent – undertaken in last 12 months
2	CABG, angioplasty or stent – undertaken prior to the last 12 months
3	CABG, angioplasty or stent – both within and prior to the last 12 months
4	No CABG, angioplasty or stent undertaken
9	Not stated/inadequately described

Guide for use:

Verification rules:

Collection methods: Ask the individual if he/she has had a CABG, angioplasty or coronary stent. If so, determine when it was undertaken within or prior to the last 12 months or both.

Related metadata: relates to the data element Blood pressure – diastolic measured vers 1

relates to the data element Blood pressure – systolic measured vers 1

relates to the data element Cerebral stroke due to vascular disease – history vers 1

relates to the data element Hypertension – treatment vers 1

relates to the data element Myocardial infarction – history vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

CABG is known as 'bypass surgery,' when a piece of vein (taken from the leg) or of an artery (taken from the chest or wrist) is used to form a connection between the aorta and the coronary artery distal to the obstructive lesion, making a bypass around the blockage.

Angioplasty is an elective surgery technique of blood vessels reconstruction.

Stenting is a non-surgical treatment used with balloon angioplasty or after, to treat coronary artery disease to widen a coronary artery. A stent is a small, expandable wire mesh tube that is inserted. The purpose of the stent is to help hold the newly treated artery open, reducing the risk of the artery re-closing (re-stenosis) over time.

Angioplasty with stenting typically leaves less than 10% of the original blockage in the artery (Heart Center Online).

These three procedures are commonly used to improve blood flow to the heart muscle when the heart's arteries are narrowed or blocked.

The sooner procedures are done, the greater the chances of saving heart muscle.

Creatinine serum – measured

Identifying and Definitional Attributes

Knowledgebase ID: ***000655*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: A person's measured serum creatinine.

Context: Clinical settings and population survey:

Serum creatinine can be used to help determine renal function. Serum creatinine by itself is an insensitive measure of renal function because it does not reliably increase above the normal range until more than 50% of renal function has been lost.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NNNN

Minimum size: 2

Maximum size: 4

Data domain: Measured in µmol/L (micromoles per litre)

Guide for use: Record absolute result of the most recent serum creatinine measurement in the last 12 months to the nearest µmol/L (micromoles per litre)

Note: If the measurement is obtained in mmol/L it is to be multiplied by 1000.

Serum creatinine together with a patient's age, weight and sex can be used to calculate glomerular filtration rate (GFR), which is an indicator of renal status/function. The calculation uses the Cockcroft-Gault formula.

Verification rules:

Collection methods: Measurement of creatinine should be carried out by laboratories, or practices, which have been accredited to perform these tests by the National Association of Testing Authority.

- Single venous blood test taken at the time of other screening blood tests.
- Fasting not required.

Related metadata: is used in conjunction with Date of birth vers 4

relates to the data element Diabetes status vers 1

is used in conjunction with Renal disease – end stage, diabetes complication vers 1

is used in conjunction with Service contact date vers 1

is used in conjunction with Sex vers 3

is used in conjunction with Weight – measured vers 2

Administrative Attributes

Source document: Caring for Australians with Renal Impairment (CARI) Guidelines. Australian Kidney Foundation

Source organisation: CV-Data Working Group

National Diabetes Data Working Group

Information model link:

NHIM Service provision event

Data Set Specifications:	***Start date***	***End date***
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments:

In settings where the monitoring of a person's health is ongoing and where a measure can change over time (such as general practice), the service contact date should be recorded.

There is no agreed standard as to which units serum creatinine should be recorded in.

In combination with age, sex and body weight, it could be used for a more accurate assessment of renal function.

Creatinine is normally produced in fairly constant amounts in the muscles, as a result the breakdown of phosphocreatine. It passes into the blood and is excreted in the urine. Serum creatinine can be used to help determine renal function. The elevation in the creatinine level in the blood indicates disturbance in kidney function.

GFR decreases with age, but serum creatinine remains relatively stable. When serum creatinine is measured, renal function in the elderly tends to be overestimated, and GFR should be used to assess renal function, according to the Cockcroft-Gault formula:

$$\text{GFR (ml/min)} = \frac{(140 - \text{age [yrs]}) \times \text{body wt (kg)}}{814 \times \text{serum creatinine (mmol/l)}} \left[\times 0.85 \text{ (for women)} \right]$$

To determine chronic renal impairment

GFR > 90 ml/min: normal

GFR > 60 – 90 ml/min: mild renal impairment

GFR > 30 – 60 ml/min: moderate renal impairment

GFR 0 – 30 ml/min: severe renal impairment

Note: The above GFR measurement should be for a period greater than 3 months. GFR may also be assessed by 24-hour creatinine clearance adjusted for body surface area.

In general, patients with GFR < 30 ml/min are at high risk of progressive deterioration in renal function and should be referred to a nephrology service for specialist management of renal failure.

Patients should be assessed for the complications of chronic renal impairment including anaemia, hyperparathyroidism and be referred for specialist management if required.

Patients with rapidly declining renal function or clinical features to suggest that residual renal function may decline rapidly (ie. hypertensive, proteinuric (> 1 g/24 hours), significant comorbid illness) should be considered for referral to a nephrologist well before function declines to less than 30 ml/min. (CARI Guidelines 2002. Australian Kidney Foundation). Patients in whom the cause of renal impairment is uncertain should be referred to a nephrologist for assessment.

Date of birth

Identifying and Definitional Attributes

Knowledgebase ID: ***000036*** ***Version No: 4***

Metadata type: Data Element

Admin. status: Current

01/07/03

Definition: The date of birth of the person.

Context: Required to derive age at a point of time for clinical or administrative use.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Date

Representational layout: DDMMYYYY

Minimum size: 8

Maximum size: 8

Data domain: Valid date

Guide for use: If date of birth is not known, provision should be made to collect age (in years) and a date of birth derived from age.

Verification rules: This field must not be null.

National Minimum Data Sets:

For the provision of State and Territory hospital data to Commonwealth agencies this field must:

- be less than or equal to Admission date, Date patient presents or Service contact date
- be consistent with diagnoses and procedure codes, for records to be grouped.

Collection methods: It is recommended that in cases where all components of the date of birth are not known or where an estimate is arrived at from age, a valid date be used together with a flag to indicate that it is an estimate.

Related metadata: supersedes previous data element Date of birth vers 3

is used in the derivation of Diagnosis related group vers 1

is qualified by Estimated date flag vers 1

is used in the calculation of Length of stay (antenatal) vers 1

is used in the calculation of Length of stay (postnatal) vers 1

Administrative Attributes

Source document:

Source organisation: National Health Data Committee

Information model link:

NHIM Demographic characteristic

Data Set Specifications:	*Start date*	*End date*
NMDS – Admitted patient care	01/07/2003	
NMDS – Admitted patient mental health care	01/07/2003	
NMDS – Admitted patient palliative care	01/07/2003	
NMDS – Alcohol and other drug treatment services	01/07/2003	
NMDS – Community mental health care	01/07/2003	
NMDS – Health labour force	01/07/2003	
NMDS – Non-admitted patient emergency department care	01/07/2003	
NMDS – Perinatal	01/07/2003	
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	
DSS – Health care client identification	01/01/2003	

Comments:

Any new information collections should allow for 0000YYYY. (Refer Standards Australia, AS5017 Health care client identification).

Do not use punctuation (slashes or hyphens) or spaces.

In cases where all components of the date of birth are not known or where an estimate is arrived at from age, use 00 for day and 00 for month and estimate year of birth according to the person's approximate age. As soon as known or on re-presentation, always update the Date of Birth (DOB) field. The use of the Estimated date flag is also to be used to signify that an estimate is being made.

Age over 45 is one of the predisposing factors for developing Type 2 diabetes and age over 35 in individuals of Aboriginal and Torres Strait Islander and certain other ethnic origins. The prevalence of diabetes increases with age, approaching 25% among those over 75.

References:

National Institute of Aging U. S. Department of Health and Human Services

NHMRC Evidence Based Guidelines for Case Detection and Diagnosis of Type 2 Diabetes

Diabetes status

Identifying and Definitional Attributes

Knowledgebase ID: ***000654*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Identifies a person with or at risk of diabetes.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: NN

Minimum size: 2

Maximum size: 2

Data domain:

01	Type 1 diabetes
02	Type 2 diabetes
03	Gestational diabetes mellitus (GDM)
04	Other (secondary diabetes)
05	Previous gestational diabetes mellitus (GDM)
06	Impaired fasting glucose (IFG)
07	Impaired glucose tolerance (IGT)
08	Not diagnosed with diabetes
09	Not assessed
99	Not stated/inadequately described

Guide for use: Note that where there is a GDM or Previous GDM (i.e. data domains 3 & 5) and a current history of Type 2 diabetes then record 'Code 2' Type 2 diabetes.

This same principle applies where a history of either IFG (impaired fasting glycaemia) or IGT (impaired glucose tolerance) and a current history and Type 2 diabetes, then record 'Code 2' Type 2 diabetes.

Code 01 Type 1 diabetes:

Beta-cell destruction, usually leading to absolute insulin deficiency. Includes those cases attributed to an autoimmune process, as well as those with beta-cell destruction and who are prone to ketoacidosis for which neither an aetiology nor pathogenesis is known (idiopathic). It does not include those forms of beta-cell destruction or failure to which specific causes can be assigned (e.g. cystic fibrosis, mitochondrial defects). Some subjects with this Type can be identified at earlier clinical stages than 'diabetes mellitus'.

Code 02 Type 2 diabetes:

Type 2 includes the common major form of diabetes, which results from defect(s) in insulin secretion, almost always with a major contribution from insulin resistance.

Code 03 Gestational diabetes mellitus (GDM):

GDM is a carbohydrate intolerance resulting in hyperglycaemia of variable severity with onset or first recognition during pregnancy. The definition

applies irrespective of whether or not insulin is used for treatment or the condition persists after pregnancy. Diagnosis is to be based on the Australian Diabetes in Pregnancy Society (ADIPS) Guidelines.

Code 04 Other (Secondary diabetes):

This categorisation include less common causes of diabetes mellitus, but are those in which the underlying defect or disease process can be identified in a relatively specific manner. They include, for example, genetic defects of beta-cell function, genetic defects in insulin action, diseases of the exocrine pancreas, endocrinopathies, drug or chemical-induced, infections, uncommon forms of immune-mediated diabetes, other genetic syndromes sometimes associated with diabetes.

Code 05 Previous GDM:

Where the person has a history of GDM.

Code 06 Impaired fasting glycaemia (IFG):

IFG or 'non-diabetic fasting hyperglycaemia' refers to fasting glucose concentrations, which are lower than those required to diagnose diabetes mellitus but higher than the normal reference range. An individual is considered to have IFG if they have a fasting plasma glucose of 6.1 or greater and less than 7.0 mmol/L if challenged with an oral glucose load, they have a fasting plasma glucose concentration of 6.1 mmol/L or greater, but less than 7.0 mmol/L, AND the 2 hour value in the Oral Glucose Tolerance Test (OGTT) is less than 7.8 mmol/L.

Code 07 Impaired glucose tolerance (IGT):

IGT is categorised as a stage in the natural history of disordered carbohydrate metabolism; subjects with IGT have an increased risk of progressing to diabetes. IGT refers to a metabolic state intermediate between normal glucose homeostasis and diabetes. Those individuals with IGT manifest glucose intolerance only when challenged with an oral glucose load. IGT is diagnosed if the 2 hour value in the OGTT is greater than 7.8 mmol/L. and less than 11.1 mmol/L AND the fasting plasma glucose concentration is less than 7.0 mmol/L.

Code 08 Not diagnosed with diabetes:

The subject has no known diagnosis of Type 1, Type 2, GDM, Previous GDM, IFG, IGT or Other (secondary diabetes).

Code 09 Not assessed:

The subject has not had their diabetes status assessed.

Code 99 is for unknown or information unavailable.

Verification rules:

Collection methods: The diagnosis is derived from and must be substantiated by clinical documentation.

DSS – Diabetes (clinical):

A type of diabetes should be recorded and coded for each episode of patient care.

Related metadata: relates to the data element Date of diagnosis vers 1

relates to the data element Diabetes therapy type vers 1

is used in conjunction with Service contact date vers 1

Administrative Attributes

Source document: Developed based on Definition, Diagnosis and Classification of Diabetes Mellitus and its Complications Part 1: Diagnosis and Classifications of Diabetes Mellitus Provisional Report of a WHO Consultation (Alberti & Zimmet 1998).

Source organisation: CV-Data Working Group

National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Uncontrolled diabetes leads to a variety of complications, often resulting in limitation of activity, disability, illness and premature mortality. Therefore ongoing assessment is required to identify people at risk of developing complications so that early preventive strategies can be applied. Although there is no cure for diabetes, with modern treatment most people can lead a full and active life and avoid long-term complications.

Aetiological classifications contained in the scientific paper 'Definition, Diagnosis and Classification of Diabetes Mellitus and its Complications Part 1: Diagnosis and Classifications of Diabetes Mellitus Provisional Report of a WHO Consultation' (Alberti & Zimmet 1998).

Diabetes therapy type

Identifying and Definitional Attributes

Knowledgebase ID: ***000668*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The type of diabetes therapy the person is currently receiving.

Context: Public health, health care and clinical setting:

Its main use is to enable categorisation of management regimes against best practice for diabetes.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: NN

Minimum size: 2

Maximum size: 2

Data domain:

01	Diet and exercise only
02	Oral hypoglycaemic – sulphonylurea only
03	Oral hypoglycaemic – biguanide (e.g. metformin) only
04	Oral hypoglycaemic – alpha-glucosidase inhibitor only
05	Oral hypoglycaemic – thiazolidinedione only
06	Oral hypoglycaemic – meglitinide only
07	Oral hypoglycaemic – combination (e.g. biguanide and sulphonylurea)
08	Oral hypoglycaemic – other
09	Insulin only
10	Insulin plus oral hypoglycaemic
98	Nil – not currently receiving diabetes treatment
99	Not stated/inadequately described

Guide for use:

Code 01 includes the options of generalised prescribed diet; avoid added sugar/simple carbohydrates; low joule diet; portion exchange diet and uses glycaemic index and a recommendation for increased exercise.

Code 98 no current diet, tablets or insulin therapy(ies)

Code 99 missing information

Verification rules:

Collection methods: To be collected at the commencement of treatment and at each review.

Related metadata: relates to the data element Diabetes status vers 1

relates to the data element Renal disease therapy vers 1

is used in conjunction with Service contact date vers 1

relates to the data element Vascular history vers 1

relates to the data element Year insulin started vers 1

Administrative Attributes

Source document:

Source organisation: National Diabetes Data Working Group
CV-Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments:

In settings where the monitoring of a person's health is ongoing and where management can change over time (such as general practice), the service contact date should be recorded.

The objectives and priorities of treatment must be tailored to the individual considering age, sex, weight and individual health status.

An individual management plan for each patient should include the following:

- establishment of targets of treatment
- healthy eating plan
- education in self-monitoring
- adjustment of treatment and in approaches to coping with emergencies
- exercise program
- risk factor reduction, e.g. smoking cessation
- use of oral hypoglycaemic agents, if required
- use of insulin, if required
- screening for and treatment of complications of diabetes.

In addition to glycaemic control, management of diabetes of either type requires close attention to other risk factors for the development of complications, and the impact of lifestyle changes on blood glucose levels should be monitored. In patients with Type 2 diabetes, an increase in physical activity is essential in management of lipids and glucose level. Increased physical activity has been recognised as perhaps the most feasible way of modifying glucose intolerance, a risk factor for developing diabetes and macrovascular disease (Guest & O'Dea 1992).

References:

Berkow R, editor. The Merck Manual. 16th ed. Rahway (New Jersey, USA): Merck Research Laboratories; 1992.

Dyslipidaemia – treatment

Identifying and Definitional Attributes

Knowledgebase ID: ***000814*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether an individual is currently treated for dyslipidaemia (abnormal lipid levels) using anti-lipid medication.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Yes – currently treated for dyslipidaemia using anti-lipid medication
2	No – not currently treated for dyslipidaemia using anti-lipid medication
9	Not stated/inadequately described

Guide for use: Record as code 1 if on drug treatment for dyslipidaemia.

Verification rules:

Collection methods: Ask the individual if he/she is currently treated with anti-lipid medication. Alternatively obtain the relevant information from appropriate documentation.

Related metadata: relates to the data element Cholesterol-HDL – measured vers 1

relates to the data element Cholesterol-total – measured vers 1

relates to the data element Fasting status vers 1

relates to the data element Triglycerides – measured vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Request for/entry into service event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: Dyslipidaemia is an excessive accumulation of one or more of the major lipids transported in plasma. Plasma lipid levels may be reduced by a variety of agents having different mechanisms of action. They also have different effects on the plasma lipid profile.

Dyslipidaemia is associated with many health problems including diabetes and hypertension. It is often related to overweight and obesity. Usually caused by inappropriate diet and sedentary lifestyle, dyslipidaemia has been reaching epidemic proportions. Active lifestyle and low calorie diets are the best way of prevention, however sometimes for the treatment of dyslipidaemia the use of pharmacotherapy is required. Abnormal levels of blood lipids are associated with increased risk of developing coronary health disease especially in diabetic patients.

The risk of coronary and other macrovascular disorders is 2–5 times higher in people with diabetes than in non-diabetic subjects and increases in parallel with the degree of dyslipidaemia. Diabetes mellitus greatly modifies the significance of lipoprotein levels, particularly when associated with smoking, hypertension and family history of cardiovascular disease. Poor metabolic control of diabetes seems to have impact on abnormal lipoprotein level.

Primary dyslipidaemia, due to genetic and environmental (especially dietary) factors, is diagnosed if secondary causes have been excluded (hypothyroidism, nephrotic syndrome, cholestasis, anorexia nervosa, diabetes mellitus Type 2, renal impairment).

Erectile dysfunction

Identifying and Definitional Attributes

Knowledgebase ID: ***000817*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether a male individual has a history of erection failure or has received treatment to achieve erection sufficient for penetration in the last 12 months and prior.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Erectile dysfunction – developed in the last 12 months
2	Erectile dysfunction – developed prior to the last 12 months
3	No erectile dysfunction
9	Not stated/inadequately described

Guide for use: Record for male patients only.

Verification rules:

Collection methods: Ask the individual if he has a history of treatment or failure to achieve or maintain erection sufficient for penetration. Determine whether this developed within or prior to the last 12 months.

Related metadata: relates to the data element Peripheral neuropathy – status vers 1

relates to the data element Peripheral vascular disease in feet – status vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Erectile dysfunction or impotence is defined as inability to achieve or maintain an erection of sufficient rigidity to perform sexual intercourse successfully. It may be due to psychological causes, macrovascular disease or pelvic autonomic neuropathy. An organic cause is more likely in the presence of other macro or micro vascular complications.

Erectile problems occur in up to 50% of men with diabetes who are over 40 years old.

Fasting status

Identifying and Definitional Attributes

Knowledgebase ID: ***000665*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The fasting status of the patient at the time of an examination, test, investigation or procedure.

Context: Public health, health care and clinical setting.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Fasting
2	Non-fasting
9	Not stated/inadequately described

Guide for use:

Verification rules:

Collection methods:

Related metadata: is used in conjunction with Cholesterol-HDL – measured vers 1

is used in conjunction with Cholesterol-total – measured vers 1

relates to the data element Dyslipidaemia – treatment vers 1

is used in conjunction with Triglycerides – measured vers 1

Administrative Attributes

Source document:

Source organisation: National Diabetes Data Working Group

CV-Data Working Group

Information model link:

NHIM Service provision event

Data Set Specifications:	***Start date***	***End date***
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments: In settings where the monitoring of a person's health is ongoing and where management can change over time (such as general practice), the service contact date should be recorded.

Foot deformity

Identifying and Definitional Attributes

Knowledgebase ID: ***000819*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Presence of foot deformity on either foot. Common deformities include claw toes, pes cavus, hallux valgus, hallux rigidus, hammer toe, Charcot foot and nail deformity.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Yes, foot deformity present
2	No, foot deformity not present
9	Not stated/inadequately described

Guide for use: Record whether or not a foot deformity is present in the person.

Verification rules:

Collection methods: Both feet to be examined for the presence of foot deformity.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Foot lesion – active vers 1

relates to the data element Foot ulcer – history vers 1

relates to the data element Lower limb amputation due to vascular disease vers 1

relates to the data element Peripheral neuropathy – status vers 1

relates to the data element Peripheral vascular disease in feet – status vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	*Start date*	*End date*
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Foot deformities are associated with high mechanical pressure on the overlying skin that lead to ulceration in the absence of protective pain sensation and when shoes are unsuitable. Limited joint mobility is often present, with displaced plantar fat pad and more prominent metatarsal heads. Foot deformities are frequently the result of diabetic motor neuropathy and diabetic foot disease is the most common cause of hospitalisation in people with diabetes.

Diabetic foot complications are common in the elderly, and amputation rates increase with age: by threefold in those aged 45–74 years and sevenfold over 75 years. In people with diabetes, amputations are 15 times more common than in people without diabetes and 50% of all amputations occur in people with diabetes (Epidemiology of the diabetic foot; Report of the Diabetic Foot and Amputation Group). All patients with diabetes mellitus should be instructed about proper foot care in an attempt to prevent ulcers. Feet should be kept clean and dry at all times. Patients with neuropathy should not walk barefoot, even in the home. Properly fitted shoes are essential.

Specialised foot clinics appear to decrease further episodes of foot ulceration and decrease hospital admissions for amputations.

Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus recommendations include:

- feet should be examined every 6 months or at every visit if high-risk foot or active foot problem
- refer to specialists experienced in the care of the diabetic foot if infection or ulceration is present
- ensure that patients with 'high-risk foot' or an active foot problem receive appropriate care from specialists and podiatrists expert in the treatment of diabetic foot problems
- to identify the 'high-risk foot' as indicated by a past history of foot problems, especially ulceration, and/or the presence of Peripheral neuropathy
- assessment outcome, peripheral vascular disease, or foot deformity or history of previous ulceration.

References:

Lesley V Campbell, Antony R Graham, Rosalind M Kidd, Hugh F Molloy, Sharon R O'Rourke and Stephen Colagiuri: The Lower Limb in People With Diabetes; Content 1997/98 Australian Diabetes Society.

Edmonds M, Boulton A, Buckenham T, et al. Report of the Diabetic Foot and Amputation Group. Diabet Med 1996; 13: S27–42.

Reiber GE. Epidemiology of the diabetic foot. In: Levin ME, O'Neal LW, Bowker JH, editors. The diabetic foot. 5th ed. St Louis: Mosby Year Book, 1993; 1–5.

Most RS, Sinnock P. The epidemiology of lower limb extremity amputations in diabetic individuals. Diabetes Care 1983; 6: 87–91.

Therapeutic Guidelines Limited (05.04.2002) Management plan for diabetes.

Foot lesion – active

Identifying and Definitional Attributes

Knowledgebase ID: ***000820*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether an individual has an active foot lesion other than an ulcer on either foot. The following entities would be included: fissures, infections, inter-digital maceration, corns, calluses and nail dystrophy.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1 Yes, foot lesion present

2 No, foot lesion not present

9 Not stated/inadequately described

Guide for use: Record whether or not a current active foot lesion other than ulceration is present on either foot in the person.

Verification rules:

Collection methods: Assess whether the individual has an active foot lesion on either foot.

Related metadata: relates to the data element Foot deformity vers 1

relates to the data element Foot ulcer – current vers 1

relates to the data element Foot ulcer – history vers 1

relates to the data element Lower limb amputation due to vascular disease vers 1

relates to the data element Peripheral neuropathy – status vers 1

relates to the data element Peripheral vascular disease in feet – status vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	*Start date*	*End date*
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Early detection and appropriate management of the 'high-risk foot' and active foot problems can reduce morbidity, hospitalisation and amputation in people with diabetes.

All patients with diabetes mellitus should be instructed about proper foot care in an attempt to prevent ulcers or other problems that may result in the need for amputation. Feet should be kept clean and dry at all times. Patients with neuropathy should not walk barefoot, even in the home. Properly fitted shoes are essential.

Following the Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus foot examination:

- Inspect the feet (whole foot, nails, between the toes) to identify active foot problems and the 'high-risk foot'.
- Assess footwear.
- Check peripheral pulses.
- Examine for neuropathy by testing reflexes and sensation preferably using tuning fork, 10 g monofilament and/or biothesiometer
- Ask the patient about current foot problems, neuropathic symptoms, rest pain and intermittent claudication.

Foot ulcer – current

Identifying and Definitional Attributes

Knowledgebase ID: ***000821*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether an individual has a current foot ulcer on either foot.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1 Yes, foot ulcer present

2 No, foot ulcer not present

9 Not stated/inadequately described

Guide for use: Record whether or not a foot ulcer is present on either foot in the person.

Verification rules:

Collection methods: Assess whether the individual has a current foot ulcer on either foot.

Related metadata:

relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Foot deformity vers 1

relates to the data element Foot lesion – active vers 1

relates to the data element Foot ulcer – history vers 1

relates to the data element Lower limb amputation due to vascular disease vers 1

relates to the data element Peripheral neuropathy – status vers 1

relates to the data element Peripheral vascular disease in feet – status vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Foot ulcer is usually situated on the edge of the foot or toes because blood supply is the poorest at these sites. In a purely vascular ulcer, nerve function is normal and sensation is intact, hence vascular ulcers are usually painful.

Foot ulcers require urgent care from an interdisciplinary team, which may include a general practitioner, podiatrist, endocrinologist physician, nurse or surgeon.

Assessment

- Ask the patient about previous or current foot problems, neuropathic symptoms, rest pain and intermittent claudication.
- Inspect the feet (whole foot, nails, between the toes) to identify active foot problems and the 'high-risk foot'.
- Assess footwear.
- Check peripheral pulses.
- Examine for neuropathy by testing reflexes and sensation preferably using tuning fork, 10 g monofilament and/or biothesiometer.

The development of ulcers of the feet and lower extremities is a special problem in the diabetic patient, and appears to be due primarily to abnormal pressure distribution secondary to diabetic neuropathy.

Diabetic foot ulceration is a serious problem and the lack of pain does not mean that the ulcer can be ignored or neglected. The absence of pain is very common in people with diabetes due to peripheral neuropathy.

All patients with diabetes mellitus should be instructed about proper foot care in an attempt to prevent ulcers. Feet should be kept clean and dry at all times. Patients with neuropathy should not walk barefoot, even in the home. Properly fitted shoes are essential.

Early detection and appropriate management of the 'high-risk foot' and current foot ulceration can reduce morbidity, hospitalisation and amputation in people with diabetes.

References:

The Diabetic Foot Vol. 3 No. 4 Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus

Foot ulcer – history

Identifying and Definitional Attributes

Knowledgebase ID: ***000822*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether or not person has a previous history of foot ulceration on either foot.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Yes, history of foot ulceration
2	No, no history of foot ulceration
9	Not stated/inadequately described

Guide for use: Record whether or not the person has a history of foot ulceration.

Verification rules:

Collection methods: Ask the individual if he/she a previous history of foot ulceration. Alternatively obtain this information from appropriate documentation.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Foot deformity vers 1

relates to the data element Foot lesion – active vers 1

relates to the data element Foot ulcer – current vers 1

relates to the data element Lower limb amputation due to vascular disease vers 1

relates to the data element Peripheral neuropathy – status vers 1

relates to the data element Peripheral vascular disease in feet – status vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Request for/entry into service event

Data Set Specifications:	*Start date*	*End date*
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Past history of foot ulceration, peripheral neuropathy and foot deformities have been associated with increased risk of foot ulceration and lower limb amputation for patients who suffer from diabetes. The aim is to identify the 'high-risk foot' as indicated by a past history of foot problems, especially ulceration.

Following the Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus, individuals with a 'high-risk foot' or a significant active foot problem should be examined every six months or at every visit.

Assessment

- Ask patient about previous foot problems, neuropathic symptoms, rest pain and intermittent claudication.
- Inspect the feet (whole foot, nails, between the toes) to identify active foot problems and the 'high-risk foot'.
- Assess footwear.
- Check peripheral pulses.
- Examine for neuropathy by testing reflexes and sensation preferably using tuning fork, 10 g monofilament and/or biothesiometer.

Glycosylated haemoglobin (HbA1c) – measured

Identifying and Definitional Attributes

Knowledgebase ID: ***000824*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: A person's measured glycosylated haemoglobin (HbA1c) level.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NN.N

Minimum size: 3

Maximum size: 4

Data domain: Measured in % to 1 decimal point

99.9 Not stated/inadequately described

Guide for use: Record the absolute result of the test (%).

Verification rules:

Collection methods: Test is performed in accredited laboratories.

- A single blood sample is sufficient and no preparation of the patient is required.
- Measure HbA1c ideally using High Performance Liquid Chromatography (HPLC)

Related metadata: relates to the data element Glycosylated haemoglobin (HbA1c) – upper limit of normal range vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Service provision event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: The HbAlc along with regular blood glucose monitoring is the best way to see the overall picture of blood glucose levels.

HbA1c is a measurement of long-term blood glucose control and is used to assess the effectiveness of treatment. The level of HbA1c is proportional to the level of glucose in the blood over a period of approximately two months, because glucose attaches to the haemoglobin (red blood cells) and remains there for the life of the red blood cell, approximately 120 days. The HbA1c gives an average of the blood glucose level over the past 6– 8 weeks and therefore haemoglobin A1c is accepted as an indicator of the mean daily blood glucose concentration over the preceding two months.

HbA1c is formed by the non-enzymatic glycation of the N-terminus of the B-chain of haemoglobin Ao. It is a convenient way to obtain an integrated assessment of antecedent glycaemia over an extended period under real life conditions used as a standard for assessing overall blood glucose control.

HbA1c results vary between laboratories; use the same laboratory for repeated testing

When reporting, record absolute result of the most recent HbA1c level in the last 12 months.

Research studies in the United States have found that for every 1% reduction in results of HbA1c blood tests, the risk of developing micro vascular diabetic complications (eye, kidney, and nerve disease) is reduced by 40%.

The maintenance of good glycaemic control (in diabetes Type 1 and Type 20, significantly reduces progression of diabetes-related complications such as retinopathy, nephropathy and neuropathy, as indicated in the 'Diabetes Control and Complications Trial' (DCCT 1993) and the 'United Kingdom Prospective Diabetes Study' (UKPDS 1997).

The target proposed by the Australian Diabetes Society for glycosylated haemoglobin (HbA1c) is 7.0% or less and a doctor may order this test about every 3–6 months.

References:

Koening, R. J. Peterson, CM and Kilo, C et al. Hemoglobin A1c as an indicator of the degree of glucose intolerance in diabetes. Diabetes 259 (1976): 230–232.

Nathan, D.M., Singer, D.E, Hurxthal, K, and Goodson, J.D. The clinical information value of the glycosylated hemoglobin assay. N. Eng. J. Med. 310 (1984): 341–346.

Glycosylated haemoglobin (HbA1c) – upper limit of normal range

Identifying and Definitional Attributes

Knowledgebase ID: ***000825*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Laboratory standard for the value of glycosylated haemoglobin (HbA1c) that is the upper boundary of the normal reference range.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NN.N

Minimum size: 3

Maximum size: 4

Data domain: Measured in %

99.9 Not stated/inadequately described

Guide for use: Record the upper limit of the HbA1c normal reference range from the laboratory result.

Verification rules:

Collection methods: This value is usually notified in patient laboratory results and may vary for different laboratories.

Related metadata: relates to the data element Glycosylated haemoglobin (HbA1c) – measured vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Service provision event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: The upper limit of normal range is the laboratory standard for the maximum level of HbA1c, which is still in normal range.

These figures vary between laboratories.

HbA1c results vary between laboratories; use the same laboratory for repeated testing.

HbA1c is a measurement of long-term blood glucose control and is used to assess the effectiveness of treatment. It is a convenient way to obtain an integrated assessment of antecedent glycaemia over an extended period under real life conditions and is used as a standard for assessing overall blood glucose control. The target is to achieve an HbA1c within 1% of the upper limit of normal or achieve control as near to this target as possible without producing unacceptable hypoglycaemia as recommended from the Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus.

If HbA1c is 2% above the upper limit of normal, explore reasons for unsatisfactory control such as diet, intercurrent illness, appropriateness of medication, concurrent medication, stress, and exercise and review management:

- review and adjust treatment
- consider referral to diabetes educator
- consider referral to dietitian
- consider referral to endocrinologist or physician or diabetes centre.

Health professionals attended – diabetes mellitus

Identifying and Definitional Attributes

Knowledgebase ID: ***000804*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The health professionals that a person has attended in the last 12 months in relation to issues arising from diabetes mellitus.

Context: Diabetes (clinical) specific data element.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N(NNNN)

Minimum size: 1

Maximum size: 5

Data domain:

1	Diabetes educator
2	Dietitian
3	Ophthalmologist
4	Optometrist
5	Podiatrist
8	None of the above
9	Not stated/inadequately described

Guide for use: Record a code sequentially for each health professional attended.

A person may have attended several health professionals in the last 12 months, therefore, more than one code can be recorded sequentially.

Example 1: If a person has attended a diabetes educator and a podiatrist in the last twelve months, the code recorded would be 15.

Example 2: If all have been seen, the code recorded would be 12345.

Verification rules:

Collection methods: The person should be asked about each type of health professional in successive questions, as follows:

Have you attended any of the following health professionals in relation to diabetes mellitus in the last 12 months?

Diabetes educator	___Yes ___ No
Dietitian	___Yes ___ No
Ophthalmologist	___Yes ___ No
Optometrist	___Yes ___ No
Podiatrist	___Yes ___No

The appropriate code should be recorded for each health professional attended.

If the person answers 'NO' to all the health professionals specified, then code 8 should be applied.

Code 9 should only be used in situations where it is not practicable to ask the questions.

Related metadata: relates to the data element Occupation of person vers 2

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Request for/entry into service event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: The health professional occupations are assigned the following codes at the occupation level of the Australian Standard Classification of Occupations, Second Edition, Australian Bureau of Statistics, 1997, Catalogue No. 1220.0

Diabetic educator 2512-13

Dietitian 2393-11

Ophthalmologist 2312-19

Optometrist 2384-11

Podiatrist 2388-11

Management of diabetes requires a team approach, comprising selected health professionals, to provide services specific to the individual with diabetes.

All patients with diabetes require diet therapy in conjunction with exercise and/or medication to achieve optimal control of blood glucose, body weight and blood lipids. In insulin treated diabetics, diet management aims to restrict variations in the timing, size or composition of meals that could result in hypoglycaemia or postprandial hyperglycaemia. Based on the Healthy Eating Pyramid, meals should be low in saturated fat, and rich in high-fibre carbohydrates with low glycaemic index (GI). Saturated fats have to be replaced with monounsaturated and polyunsaturated fats.

According to the Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus, a comprehensive ophthalmological examination should be carried out:

- at diagnosis and then every 1–2 years for patients whose diabetes onset was at age 30 years or more
- within five years of diagnosis and then every 1–2 years for patients whose diabetes onset was at age less than 30 years.

Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus recommendations include:

- foot examination to be performed every 6 months or at every visit if high-risk foot or active foot problem
- refer to specialists experienced in the care of the diabetic foot if infection or ulceration is present
- to identify the 'high-risk foot' as indicated by a past history of foot problems, especially ulceration, and/or the presence of peripheral neuropathy, peripheral vascular disease, or foot deformity and history of previous ulceration
- ensure that patients with 'high-risk foot' or an active foot problem receive appropriate care from specialists and podiatrists expert in the treatment of diabetic foot problems.

Height – measured

Identifying and Definitional Attributes

Knowledgebase ID: ***000362*** ***Version No:*** ***2***

Metadata type: Data Element

Admin. status: Current

01/07/03

Definition: A person's measured height.

In order to ensure consistency in measurement, the measurement protocol described under Collection methods should be used.

Context: Public health, health care and clinical settings:

Stature is a major indicator of general body size and of bone length and of nutritional and health status of the individual and the community at large. It is important in screening for disease or malnutrition, and in the interpretation of weight (Lohman et al. 1988). Shortness is known to be a predictor of all-cause mortality, coronary heart disease mortality in middle-aged men, and of less favourable gestational outcomes in women (Marmot et al. 1984, Kramer 1988).

Measurements of height should be assessed in relation to children and adolescents' age and pubertal status.

Disease, nutritional, genetic and environmental factors all exert an influence on the height of an individual, hence this variable, together with its related variable weight, is of unique value in health surveillance. It enables the calculation of body mass index which requires the measurement of height and weight (body mass) for adults as well as sex and date of birth for children and adolescents.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NNN.N

Minimum size: 3

Maximum size: 4

Data domain: Measurement in centimetres to one decimal place

999.9 Not able to be measured

Guide for use:

Verification rules:

Collection methods: Measurement protocol:

Height measurements can be based on recumbent length or standing height. In general, length measurements are recommended for children under 2 years of age and height measurements for others.

The measurement of height requires a vertical metric rule, a horizontal headboard, and a non-compressible flat even surface on which the subject stands. The equipment may be fixed or portable, and should be described and reported.

The graduations on the metric rule should be at 0.1 cm intervals, and the metric rule should have the capacity to measure up to at least 210 cm.

Measurement intervals and labels should be clearly readable under all conditions of use of the instrument.

Apparatus that allows height to be measured while the subject stands on a platform scale is not recommended.

Adults and children who can stand:

The subject should be measured without shoes (i.e. is barefoot or wears thin socks) and wears little clothing so that the positioning of the body can be seen. Anything that may affect or interfere with the measurement should be noted on the data collection form (e.g. hairstyles and accessories, or physical problems). The subject stands with weight distributed evenly on both feet, heels together, and the head positioned so that the line of vision is at right angles to the body. The correct position for the head is in the Frankfort horizontal plan (Norton et al. 1996). The arms hang freely by the sides. The head, back, buttocks and heels are positioned vertically so that the buttocks and the heels are in contact with the vertical board. To obtain a consistent measure, the subject is asked to inhale deeply and stretch to their fullest height. The measurer applies gentle upward pressure through the mastoid processes to maintain a fully erect position when the measurement is taken. Ensure that the head remains positioned so that the line of vision is at right angles to the body, and the heels remain in contact with the base-board.

The movable headboard is brought onto the top of the head with sufficient pressure to compress the hair.

The measurement is recorded to the nearest 0.1 cm. Take a repeat measurement. If the two measurements disagree by more than 0.5 cm, then take a third measurement. All raw measurements should be recorded on the data collection form. If practical, it is preferable to enter the raw data into the database as this enables intra-observer and, where relevant, inter-observer errors to be assessed. The subject's measured height is subsequently calculated as the mean of the two observations, or the mean of the two closest measurements if a third is taken, and recorded on the form. If only a mean value is entered into the database then the data collection forms should be retained.

It may be necessary to round the mean value to the nearest 0.1 cm. If so, rounding should be to the nearest even digit to reduce systematic over-reporting (Armitage & Berry 1994). For example, a mean value of 172.25 cm would be rounded to 172.2 cm, while a mean value of 172.35 cm would be rounded to 172.4 cm.

Infants:

For the measurement of supine length of children up to and including 2 years of age, two observers are required. One observer positions the head correctly while the other ensures the remaining position is correct and brings the measuring board in contact with the feet. The subject lies in a supine position on a recumbent length table or measuring board. The crown of the head must touch the stationary, vertical headboard. The subject's head is held with the line of vision aligned perpendicular to the plane of the measuring surface. The shoulders and buttocks must be flat against the table top, with the shoulders and hips aligned at right angles to the long axis of the body. The legs must be extended at the hips and knees and lie flat against the table top and the arms rest against the sides of the trunk. The measurer must ensure that the legs remain flat on the table and must shift the movable board against the heels. In infants care has to be taken to extend the legs gently. In some older children two observers may also be required.

In general, length or height is measured and reported to the nearest 0.1 cm. For any child, the length measurement is approximately 0.5–1.5 cm greater than the height measurement. It is therefore recommended that when a length measurement is applied to a height-based reference for children over 24 months of age (or over 85 cm if age is not known), 1.0 cm be subtracted before the length measurement is compared with the reference. It is also recommended that as a matter of procedure and data recording accuracy, the

date be recorded when the change is made from supine to standing height measure.

Validation and quality control measures:

All equipment, whether fixed or portable should be checked prior to each measurement session to ensure that both the headboard and floor (or footboard) are at 90 degrees to the vertical rule. With some types of portable anthropometer it is necessary to check the correct alignment of the headboard, during each measurement, by means of a spirit level. Within- and, if relevant, between-observer variability should be reported. They can be assessed by the same (within-) or different (between-) observers repeating the measurement of height, on the same subjects, under standard conditions after a short time interval. The standard deviation of replicate measurements (technical error of measurement (Pederson & Gore 1996)) between observers should not exceed 5 mm and be less than 5 mm within observers.

Extreme values at the lower and upper end of the distribution of measured height should be checked both during data collection and after data entry. Individuals should not be excluded on the basis of true biological difference. Last digit preference, and preference or avoidance of certain values, should be analysed in the total sample and (if relevant) by observer, survey site and over time if the survey period is long.

Related metadata: supersedes previous data element Adult height – measured vers 1

is used in the calculation of Body mass index vers 2

Administrative Attributes

Source document: The measurement protocol described below are those recommended by the International Society for the Advancement of Kinanthropometry as described by Norton et al. (1996), and the World Health Organization (WHO Expert Committee 1995), which was adapted from Lohman et al. (1988).

Source organisation: International Society for the Advancement of Kinanthropometry

World Health Organization

The consortium to develop standard methods for the collection and collation of anthropometric data in children as part of the National Food and Nutrition Monitoring and Surveillance Project, funded by the Commonwealth Department of Health and Ageing.

Information model link:

NHIM Physical characteristic

Data Set Specifications:	***Start date***	***End date***
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments: This data element applies to persons of all ages. It is recommended for use in population surveys and health care settings.

It is recommended that in population surveys, sociodemographic data including ethnicity should be collected, as well as other risk factors including physiological status (e.g. pregnancy), physical activity, smoking and alcohol consumption. Summary statistics may need to be adjusted for these variables.

National health data elements currently exist for Sex, Date of birth, Country of birth, Indigenous status and smoking. Data elements are being developed for physical activity.

Presentation of data:

Means, 95% confidence intervals, medians and centiles should be reported to one decimal place. Where the sample permits, population estimates should be

presented by sex and 5-year age groups. However 5-year age groups are not generally suitable for children and adolescents. Estimates based on sample surveys may need to take into account sampling weights.

For consistency with conventional practice, and for current comparability with international data sets, recommended centiles are 5, 10, 15, 25, 50, 75, 85, 90 and 95. To estimate the 5th and 95th centiles, a sample size of at least 200 is recommended for each group for which the centiles are being specified.

For some reporting purposes, it may be desirable to present height data in categories. It is recommended that 5 cm groupings are used for this purpose. Height data should not be rounded before categorisation. The following categories may be appropriate for describing the heights of Australian men, women, children and adolescents although the range will depend on the population.

Ht < 70 cm

70 cm = Ht < 75 cm

75 cm = Ht < 80 cm

... in 5 cm categories

185 cm = Ht < 190 cm

Ht => 190 cm

Hypertension – treatment

Identifying and Definitional Attributes

Knowledgebase ID: ***000826*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether an individual is currently treated for hypertension (high blood pressure) using antihypertensive medication.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Yes, currently being treated for hypertension using antihypertensive medication
2	No, not currently being treated for hypertension using antihypertensive medication
9	Not stated/inadequately described

Guide for use: Record whether or not on treatment for hypertension.

Only record yes if on an antihypertensive medication for their blood pressure.

Verification rules:

Collection methods: Ask the individual if he/she is currently treated with anti-hypertensive medications. Alternatively obtain the relevant information from appropriate documentation.

Related metadata: relates to the data element Blood pressure – diastolic measured vers 1

relates to the data element Blood pressure – systolic measured vers 1

relates to the data element Cardiovascular medication – current vers 1

relates to the data element Date of birth vers 4

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	*Start date*	*End date*
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Hypertension is probably the most important public health problem in developed countries. It is common, asymptomatic, readily detectable, usually easily treatable, and often leads to lethal complications if left untreated.

Elevated blood pressure (Hypertension) is a recognised risk for microvascular and macro vascular complications of diabetes (coronary, cerebral and peripheral).

Hypertension is elevated arterial blood pressure above the normal range (130 to 139/85 to 89 mm Hg) and values above these are defined as hypertension. Lower levels of target blood pressure should be aimed for in specific groups, e.g. in diabetics aim for blood pressure less than 135/80 mm Hg.

Many diabetics fail to control high blood pressure. Among all the diabetics with high blood pressure, 29% were unaware that they had high blood pressure and only slightly more than half were receiving hypertensive medications as treatment. Numbers of studies have shown that good management of blood pressure is at least as important as good control of blood glucose and the reduction of cholesterol in preventing the complications of diabetes.

Antihypertensives – Australian Medicines Handbook: February, 2001. Tight blood control in diabetes usually requires combination therapy as stated by (Australian Diabetes society) Therapeutic Guidelines Limited (05/04/2002).

People taking antihypertensives are also encouraged to make healthy lifestyle changes, such as quit smoking, lose weight and have regular physical activity. The level of blood pressure should generally be established on at least two to four occasions prior to initiating antihypertensive medication.

Systematic reviews of studies that have reported outcomes in patients with diabetes and hypertension indicate that combination therapy is frequently required and may be more beneficial than monotherapy. In the past multi-drug therapy to control hypertension has not been advocated much, but according to the special report published in the American Journal of Kidney Diseases, if ACE inhibitor therapy alone doesn't achieve good blood pressure control, multi-drug therapy should be implemented. (Heart Center Online)

References:

Pahor M, Psaty BM, Furberg CD. Treatment of hypertensive patients with diabetes. Lancet 1998; 351:689–90.

Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38. UK Prospective Diabetes Study Group (erratum appears in Br Med J 1999; 318:29).

Br Med J 1998; 317:703–13. Grossman E, Messerli FH, Goldbourt U, Curb JD, Pressel SL, Cutler JA, Savage PJ, Applegate WB, Black H, et al. Effect of diuretic-based antihypertensive treatment on cardiovascular disease risk in older diabetic patients with isolated systolic hypertension.

Systolic Hypertension in the Elderly Program Cooperative Research Group. JAMA 1996; 276:1886–92. Hypertension in diabetes(Australian Prescriber Feb 2002).

American Journal of Preventive Medicine 2002;21.

Hypoglycaemia – severe

Identifying and Definitional Attributes

Knowledgebase ID: ***000827*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether the individual has had severe hypoglycaemia, which is defined as hypoglycaemia requiring assistance from another party.

Context: Public health, health care and clinical settings:

Hypoglycaemia is defined as an abnormally low level of glucose in the blood, which occurs when the blood glucose level falls to values low enough to cause symptoms and signs.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Yes, has had severe hypoglycaemia requiring assistance from another party
2	No, has not had severe hypoglycaemia requiring assistance from another party
9	Not stated/inadequately described

Guide for use: Record whether or not the person has a history of severe hypoglycaemia requiring assistance.

Verification rules:

Collection methods: Ask the individual if he/she has had a severe hypoglycaemia requiring assistance. Alternatively obtain the relevant information from appropriate documentation.

Related metadata: relates to the data element Glycosylated haemoglobin (HbA1c) – measured vers 1

relates to the data element Glycosylated haemoglobin (HbA1c) – upper limit of normal range vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

When reporting:

- Record whether the individual has had severe hypoglycaemia requiring assistance from another party in the last 12 months. The medications used in the treatment of diabetes may cause the blood glucose value to fall below the normal range and this is called hypoglycaemia.

Most hypoglycaemic reactions, however, do not cause long term problems, but the risks of permanent injury to the brain are greater in children under the age of 5 years, the elderly with associated cerebrovascular disease and patients with other medical conditions such as cirrhosis and coeliac disease. The serious consequences of hypoglycaemia relate to its effects on the brain. Rarely hypoglycaemia may cause death.

It is important to know how to recognise and react when someone is unconscious from hypoglycaemia. These people should be placed on their side and the airway checked so that breathing is unhampered and nothing should be given by mouth as food may enter the breathing passages. Treatment needs to be given by injection – either glucagon (a hormone which raises the blood glucose by mobilising liver stores) or glucose itself. Glucagon should be given by injection (usually intramuscular) at a dose of 0.5 units (or mg) in children under the age of 5 years and 1.0 units (or mg) for all older age groups.

All diabetic patients at risk of developing hypoglycaemia should have glucagon at home. Their families need to be shown how to administer it in times of severe hypoglycaemia.

Reference:

Definition corresponds with the Diabetes Control and Complications Trial: DCCT New England Journal of Medicine, 329(14), September 30, 1993.

Report of the Health Care Committee Expert Panel on Diabetes; Commonwealth of Australia 1991; ISBN 0644143207.

Indigenous status

Identifying and Definitional Attributes

Knowledgebase ID: ***000001*** ***Version No: 4***

Metadata type: Data Element

Admin. status: Current

01/07/03

Definition: Indigenous status is a measure of whether a person identifies as being of Aboriginal or Torres Strait Islander origin. This is in accord with the first two of three components of the Commonwealth definition. See Comments for the Commonwealth definition.

Context: Australia's Aboriginal and Torres Strait Islander peoples occupy a unique place in Australian society and culture. In the current climate of reconciliation, accurate and consistent statistics about Aboriginal and Torres Strait Islander peoples are needed in order to plan, promote and deliver essential services, to monitor changes in wellbeing and to account for government expenditure in this area.

The purpose of this data element is to provide information about people who identify as being of Aboriginal or Torres Strait Islander origin. Agencies wishing to determine the eligibility of individuals for particular benefits, services or rights will need to make their own judgements about the suitability of the standard measure for these purposes, having regard to the specific eligibility criteria for the program concerned.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Aboriginal but not Torres Strait Islander origin
2	Torres Strait Islander but not Aboriginal origin
3	Both Aboriginal and Torres Strait Islander origin
4	Neither Aboriginal nor Torres Strait Islander origin
9	Not stated/inadequately described

Guide for use: This data element is based on the Australian Bureau of Statistics' (ABS) standard for Indigenous status. For detailed advice on its use and application please refer to the ABS web site as indicated below in the Source document section.

The classification for 'Indigenous status' has a hierarchical structure comprising two levels. There are four categories at the detailed level of the classification which are grouped into two categories at the broad level. There is one supplementary category for 'not stated' responses. The classification is as follows:

Indigenous:

- Aboriginal but not Torres Strait Islander origin
- Torres Strait Islander but not Aboriginal origin

- both Aboriginal and Torres Strait Islander origin

Non-indigenous:

- neither Aboriginal nor Torres Strait Islander origin

Not stated/inadequately described:

This category is not to be available as a valid answer to the questions but is intended for use:

- primarily when importing data from other data collections that do not contain mappable data
- where an answer was refused
- where the question was not able to be asked prior to completion of assistance because the client was unable to communicate or a person who knows the client was not available.

Only in the last two situations may the tick boxes on the questionnaire be left blank.

Verification rules:

Collection methods:

The standard question for Indigenous status is as follows:

[Are you] [Is the person] [Is (name)] of Aboriginal or Torres Strait Islander origin?

(For persons of both Aboriginal and Torres Strait Islander origin, mark both 'Yes' boxes.)

No.....☐

Yes, Aboriginal.....☐

Yes, Torres Strait Islander.....☐

This question is recommended for self-enumerated or interview-based collections. It can also be used in circumstances where a close relative, friend, or another member of the household is answering on behalf of the subject.

When someone is not present, the person answering for them should be in a position to do so, i.e. this person must know the person about whom the question is being asked well and feel confident to provide accurate information about them. However, it is strongly recommended that this question be asked directly wherever possible.

This question must always be asked regardless of data collectors' perceptions based on appearance or other factors.

The Indigenous status question allows for more than one response. The procedure for coding multiple responses is as follows:

If the respondent marks 'No' and either 'Aboriginal' or 'Torres Strait Islander', then the response should be coded to either Aboriginal or Torres Strait Islander as indicated (i.e. disregard the 'No' response).

If the respondent marks both the 'Aboriginal' and 'Torres Strait Islander' boxes, then their response should be coded to 'Both Aboriginal and Torres Strait Islander origin'.

If the respondent marks all three boxes ('No', 'Aboriginal' and 'Torres Strait Islander'), then the response should be coded to 'Both Aboriginal and Torres Strait Islander origin' (i.e. disregard the 'No' response).

This approach may be problematical in some data collections, for example when data are collected by interview or using screen-based data capture systems. An additional response category:

Yes, both Aboriginal and Torres Strait Islander…….☐

may be included if this better suits the data collection practices of the agency concerned.

Related metadata: supersedes previous data element Indigenous status vers 3

Administrative Attributes

Source document: Available on the ABS web site. From the ABS Home page (www.abs.gov.au) select: About Statistics/About Statistical Collections (Concepts & Classifications) /Other ABS Statistical Standards/Standards for Social Labour and Demographic Variables/Cultural Diversity Variables/Indigenous Status.

Source organisation: Australian Bureau of Statistics

Information model link:

NHIM Social characteristic

Data Set Specifications:	*Start date*	*End date*
NMDS – Admitted patient care	01/07/2003	
NMDS – Admitted patient mental health care	01/07/2003	
NMDS – Perinatal	01/07/2003	
NMDS – Community mental health care	01/07/2003	
NMDS – Admitted patient palliative care	01/07/2003	
NMDS – Alcohol and other drug treatment services	01/07/2003	
NMDS – Non-admitted patient emergency department care	01/07/2003	
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	
DSS – Health care client identification	01/01/2003	

Comments: The following definition, commonly known as 'The Commonwealth Definition' was given in a High Court judgement in the case of Commonwealth v Tasmania (1983) 46 ALR 625.

'**An Aboriginal or Torres Strait Islander is a person of Aboriginal or Torres Strait Islander descent who identifies as an Aboriginal or Torres Strait Islander and is accepted as such by the community in which he or she lives'.**

There are three components to the Commonwealth Definition:

- descent
- self-identification
- community acceptance.

In practice, it is not feasible to collect information on the community acceptance part of this definition in general purpose statistical and administrative collections and therefore standard questions on Indigenous status relate to descent and self-identification only.

Initial visit – diabetes mellitus

Identifying and Definitional Attributes

Knowledgebase ID: ***000828*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether this is the initial visit of the patient to a health professional for diabetes or a related condition after diagnosis has been established.

Context: Public health, health care and clinical settings.

Diabetes mellitus specific data element.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Yes, this is the initial visit of the patient for diabetes or a related condition after diagnosis
2	No, this is not the initial visit of the patient for diabetes or a related condition after diagnosis
9	Not stated/inadequately described

Guide for use: Record whether or not this is the first visit of the patient to this health professional.

Verification rules:

Collection methods:

Related metadata: relates to the data element Glycosylated haemoglobin (HbA1c) – measured vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Request for/entry into service event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: Used to compare findings or parameters (e.g. blood glucose control) of newly referred individuals with that of those previously seen.

Lower limb amputation due to vascular disease

Identifying and Definitional Attributes

Knowledgebase ID: ***000830*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Amputation of toe, forefoot or leg (above or below knee), due to vascular disease.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Lower limb amputation – occurred in the last 12 months
2	Lower limb amputation – occurred prior to the last 12 months
3	Lower limb amputation – occurred both in and prior to the last 12 months
4	No history of lower limb amputation due to vascular disease
9	Not stated/inadequately described

Guide for use:

Verification rules:

Collection methods: Ask the individual if he/she has had an amputated toe or forefoot or leg (above or below knee), not due to trauma or causes other than vascular disease. If so determine when it was undertaken; within or prior to the last 12 months (or both). Alternatively obtain this information from appropriate documentation.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Foot deformity vers 1

relates to the data element Foot lesion – active vers 1

relates to the data element Foot ulcer – current vers 1

relates to the data element Foot ulcer – history vers 1

relates to the data element Peripheral neuropathy – status vers 1

relates to the data element Peripheral vascular disease in feet – status vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

In people with diabetes, amputations are 15 times more common than in people without diabetes, and 50% of all amputations occur in people with diabetes (The Lower Limb in People With Diabetes; 1997/98 Australian Diabetes Society).

Diabetic foot disease is the most common cause of hospitalisation in people with diabetes. Diabetic foot complications are common in the elderly, and amputation rates increase with age: by threefold in those aged 45–74 years and sevenfold in population aged over 75 years. As stated by Duffy and authors the rate of lower extremity amputations can be reduced by 50% by the institution of monofilament testing in a preventive care program.

References:

Duffy MD, John C and Patout MD, Charles A. 1990. 'Management of the Insensitive Foot in Diabetes: Lessons from Hansen's Disease'. Military Medicine, 155: 575–579.

Edmonds M, Boulton A, Buckenham T et al. Report of the Diabetic Foot and Amputation Group. Diabet Med 1996; 13: S27–42.

Sharon R O'Rourke and Stephen Colagiuri: The Lower Limb in People With Diabetes; Content 1997/98 Australian Diabetes Society.

Colagiuri S, Colagiuri R, Ward J. National Diabetes Strategy and Implementation Plan. Canberra: Diabetes Australia, 1998.

Microalbumin – units

Identifying and Definitional Attributes

Knowledgebase ID: ***000832*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The units used for measuring microalbumin dependent upon laboratory methodology.

Context: Public health, health care and clinical settings:

A small amount of protein (albumin) in the urine (Microalbuminuria) is an early sign of kidney damage. Microalbuminuria is a strong predictor of macrovascular disease and diabetic nephropathy. Incipient diabetic nephropathy can be detected by urine testing for microalbumin.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	mg/L (milligrams per litre)
2	µg/min (micrograms per minute)
3	mg/24hr (milligrams per 24-hour period)
4	albumin/creatinine ratio
9	Not stated/inadequately described

Guide for use: Record the units used for the microalbumin normal reference range.

Verification rules:

Collection methods: Microalbumin is not detected by reagent strips for urinary proteins, and requires immunoassay.

Measurement of microalbumin levels should be carried out by laboratories, or practices, which have been accredited to perform these tests by the National Association of Testing Authority.

Report the methodology used by the laboratory.

As urinary albumin varies with posture and exercise it is important to collect the urine under very standard conditions; short-term (2 hours) during rest, overnight (approximately 8 hours) or early morning sample. For screening purposes an early morning urine specimen is adequate and if the albumin/creatinine ratio is found to be greater than 3.5 mg/mmol then a timed overnight sample should be obtained for estimation of the albumin excretion rate.

Related metadata: relates to the data element Microalbumin – upper limit of normal range vers 1

relates to the data element Microalbumin/protein – measured vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Surveillance/monitoring event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: Diagnosis of microalbuminuria is established if 2 of the 3 measurements are abnormal.

Incipient diabetic nephropathy is suspected when microalbuminuria is detected in two of three samples collected over a 6-month period in patients in whom other causes of an increased urinary albumin excretion have been excluded.

Microalbumin – upper limit of normal range

Identifying and Definitional Attributes

Knowledgebase ID: ***000833*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Laboratory standard for the value of Microalbumin that is the upper boundary of the normal reference range.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NNN.N

Minimum size: 3

Maximum size: 5

Data domain: Measured value or

999.9 Not stated/inadequately described

Guide for use: Record the upper limit of the microalbumin normal reference range for the Laboratory

Verification rules:

Collection methods: Microalbumin is not detected by reagent strips for urinary proteins, and requires immunoassay.

Measurement of microalbumin levels should be carried out by laboratories, or practices, which have been accredited to perform these tests by the National Association of Testing Authority.

Related metadata: is qualified by Microalbumin – units vers 1

relates to the data element concept Microalbumin/protein – measured vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Surveillance/monitoring event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Microalbuminuria is a strong predictor of macrovascular disease and diabetic nephropathy. Incipient diabetic nephropathy can be detected by urine testing for microalbumin. Incipient diabetic nephropathy is suspected when microalbuminuria is detected in two of three samples collected over a 6-month period in patients in whom other causes of an increased urinary albumin excretion have been excluded.

Diagnosis of microalbuminuria is established if 2 of the 3 measurements are abnormal. A small amount of protein (albumin) in the urine (microalbuminuria) is an early sign of kidney damage.

If microalbuminuria is present:

- review diabetes control and improve if necessary
- consider treatment with ACE inhibitor
- consider referral to a physician experienced in the care of diabetic renal disease

If macroalbuminuria is present:

- quantitate albuminuria by measuring 24-hour urinary protein.
- refer to a physician experienced in the care of diabetic renal disease.

Microalbumin/protein – measured

Identifying and Definitional Attributes

Knowledgebase ID: ***000831*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: A person's measured total microalbumin in a spot test, 24 hour or timed collection.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NNNN.N

Minimum size: 3

Maximum size: 6

Data domain: Measured in different units dependant upon laboratory methodology

9999.9 Not stated/inadequately described

Guide for use: Record the result expressed as the absolute amount of albumin (mg/L) or as albumin excretion rate (AER: µg/min or mg/24hr) or albumin/creatinine ratio.

Verification rules:

Collection methods: Measurement of microalbumin levels should be carried out by laboratories, or practices, which have been accredited to perform these tests by the National Association of Testing Authority.

Microalbumin is not detected by reagent strips for urinary proteins, and requires immunoassay.

As urinary albumin varies with posture and exercise it is important to collect the urine under very standard conditions; short-term (2 hours) during rest, overnight (approximately 8 hours) or an early morning sample. For screening purposes an early morning urine specimen is adequate.

Test for albuminuria by measuring microalbumin in timed or first morning urine sample.

The results considered elevated are:

- spot urine 30 to 300mg/L
- timed urine (24 hr collection) 20 to 200 µg /min.

Related metadata: relates to the data element Microalbumin – units vers 1

relates to the data element Microalbumin – upper limit of normal range vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Assessment event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

A small amount of protein (albumin) in the urine (microalbuminuria) is an early sign of kidney damage. Microalbuminuria is a strong predictor of macrovascular disease and diabetic nephropathy. Incipient diabetic nephropathy can be detected by urine testing for microalbumin. Incipient diabetic nephropathy is suspected when microalbuminuria is detected in two of three samples collected over a 6-month period in patients in whom other causes of an increased urinary album excretion have been excluded.

According to the Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus a test for microalbuminuria is to be performed:

- at diagnosis and then every 12 months for patients with Type 2 diabetes
- 5 years post diagnosis and then every 12 months for patients with Type 1 diabetes.
- if microalbuminuria is present, perform up to two additional measurements in the next 6 weeks.

Myocardial infarction – history

Identifying and Definitional Attributes

Knowledgebase ID: ***000834*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether the individual has had a myocardial infarction.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Myocardial infarction – occurred in the last 12 months
2	Myocardial infarction – occurred prior to the last 12 months
3	Myocardial infarction – occurred both in and prior to the last 12 months
4	No history of myocardial infarction
9	Not stated/inadequately described

Guide for use:

Verification rules:

Collection methods: Ask the individual if he/she has had a myocardial infarction. If so determine whether it was within or prior to the last 12 months (or both). Record if evidenced by ECG changes or plasma enzyme changes.

Alternatively obtain this information from appropriate documentation.

Related metadata: relates to the data element Blood pressure – diastolic measured vers 1

relates to the data element Blood pressure – systolic measured vers 1

relates to the data element Cholesterol-HDL – measured vers 1

relates to the data element Cholesterol-total – measured vers 1

relates to the data element Tobacco smoking status – diabetes mellitus vers 1

relates to the data element Triglycerides – measured vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	*Start date*	*End date*
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Myocardial infarction (MI) generally occurs as a result of a critical imbalance between coronary blood supply and myocardial demand. Decrease in coronary blood flow is usually due to a thrombotic occlusion of a coronary artery previously narrowed by atherosclerosis. MI is one of the most common diagnoses in hospitalised patients in industrialised countries.

The most widely used in the detection of MI are creatinine kinase (CK) and (CK-MB), aspartate aminotransferase (AST) and lactate dehydrogenase (LD). Characteristic ECG changes include ST elevation, diminution of the R wave and a Q wave development. A recent study on Diabetes and Insulin-Glucose Infusion in Acute Myocardial Infarction (DIGAMI study) indicated that in diabetic patients with AMI, mortality is predicted by age, previous heart failure, and severity of the glycometabolic state at admission, but not by conventional risk factors or sex (American Heart Association 1999).

Reference:

Long-Term Results From the Diabetes and Insulin-Glucose Infusion in Acute Myocardial Infarction (DIGAMI) Study Circulation. 1999;99: 2626–2632.

Ophthalmological assessment – outcome

Identifying and Definitional Attributes

Knowledgebase ID: ***000837*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The result of an ophthalmological assessment done during the last 12 months.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Normal
2	Diabetes abnormality
3	Non-diabetes abnormality
4	Not visualised
9	Not stated/inadequately described

Guide for use: This is a repeating record of both eyes.

1st field – Right retina

2nd field – Left retina

Record the result of the fundus examination for each eye as: Normal/ Diabetes abnormality/ Non-diabetes abnormality/or Not visualised.

Examples:

- code 12 for right retina Normal and left retina Diabetes abnormality.
- code 32 for right retina Non-diabetes abnormality and left retina Diabetes abnormality.

Only the result of an assessment carried out in the last 12 months should be recorded.

Verification rules:

Collection methods: Ophthalmological assessment should be performed by an ophthalmologist or a suitably trained clinician.

A comprehensive ophthalmological examination includes:

- Checking visual acuity with Snellen chart – correct with pinhole if indicated
- Examination for cataract
- Examination of fundi with pupils dilated.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Blindness – diabetes complication vers 1

relates to the data element Cataract – history vers 1

relates to the data element Ophthalmoscopy – performed vers 1

relates to the data element Referred to ophthalmologist – diabetes mellitus vers 1

relates to the data element Visual acuity vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Assessment event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: Patients with diabetes have increased risk of developing several eye complications including retinopathy, cataract and glaucoma that lead to loss of vision.

Many diabetes eye-related problems are asymptomatic and require appropriate eye assessment to be detected. Regular eye checkup is important for patients suffering from diabetes mellitus. This helps to early detect abnormalities and to avoid or postpone complications and prevent blindness in people with diabetes.

According to Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus a comprehensive ophthalmological examination should be carried out:

- at diagnosis and then every 1–2 years for patients whose diabetes onset was at age 30 years or more
- within five years of diagnosis and then every 1–2 years for patients whose diabetes onset was at age less than 30 years.

Assessment by an ophthalmologist is essential:

- at initial examination if the corrected visual acuity is less than 6/6 in either eye
- at subsequent examinations if declining visual acuity is detected
- if any retinal abnormality is detected
- if clear view of retina is not obtained.

References:

Vision Australia, No 2, 1997/8; University of Melbourne.

Diabetes Control and Complications Trial: DCCT New England Journal of Medicine, 329(14), September 30, 1993.

US National Eye Institute.

Ophthalmoscopy – performed

Identifying and Definitional Attributes

Knowledgebase ID: ***000838*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether or not an examination of the fundus of the eye by an ophthalmologist or optometrist as a part of the ophthalmological assessment has been undertaken.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form:

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Yes, ophthalmoscopy performed
2	No, ophthalmoscopy not performed
9	Not stated/inadequately described

Guide for use: Record whether or not a fundus examination of the eye has occurred.

Verification rules:

Collection methods: Ask the individual if he/she has undertaken an eye check, including examination of fundi with pupils dilated. Pupil dilatation and an adequate magnified view of the fundus is essential, using either detailed direct or indirect ophthalmoscopy or fundus camera. This will usually necessitate referral to an ophthalmologist.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Blindness – diabetes complication vers 1

relates to the data element Cataract – history vers 1

relates to the data element Ophthalmological assessment – outcome vers 1

relates to the data element Referred to ophthalmologist – diabetes mellitus vers 1

relates to the data element Visual acuity vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Request for/entry into service event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

When reporting:

- Record whether or not an examination of the fundus of the eye by an ophthalmologist or optometrist as a part of the ophthalmological assessment has been undertaken in the last 12 months.

Patients with diabetes have an increased risk of developing several eye complications including retinopathy, cataract and glaucoma that lead to loss of vision.

Eye examinations should be commenced at the time diabetes is diagnosed. If no retinopathy is present, repeat the eye examination at least every 2 years. Once retinopathy is identified more frequent observation is required.

Diabetic retinopathy is a leading cause of blindness. Retinopathy is characterised by proliferation of the retina's blood vessels, which may project into the vitreous, causing vitreous haemorrhage, proliferation of fibrous tissue and retinal detachment. It is often accompanied by microaneurysms and macular oedema, which can express as a blurred vision. The prevalence of retinopathy increases with increasing duration of diabetes. In the early stage, retinopathy is asymptomatic, however up to 20% of people with diabetes Type 2 have retinopathy at the time of diagnosis of diabetes. Cataract and glaucoma are also associated diabetic eye problems that could lead to blindness.

Regular eye checkups are important for patients suffering from diabetes mellitus. This helps to detect and treat abnormalities early and to avoid or postpone vision-threatening complications.

References:

Vision Australia, No. 2 – 1997/8; University of Melbourne.

Diabetes: complications: Therapeutic Guidelines Limited (05.04.2002).

Peripheral neuropathy – status

Identifying and Definitional Attributes

Knowledgebase ID: ***000839*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The outcome of assessment for the presence of peripheral neuropathy.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1 Yes, peripheral neuropathy is present

2 No, peripheral neuropathy is not present

9 Not stated/inadequately described

Guide for use: Record whether or not peripheral neuropathy is present determined by clinical judgement following assessment using pinprick and vibration (using perhaps a biothesiometer or monofilament).

Verification rules:

Collection methods: The preferred assessment methods are monofilament and biothesiometer. These two non-invasive tests provide more objective and repeatable results than testing sensation with pinprick or a tuning fork, which are very difficult to standardise.

Monofilament method

The 'Touch-Test' Sensory Evaluation (Semmens-Weinstein Monofilaments) application guidelines:

- Occlude the patient's vision by using a shield or by having the patient look away or close his or her eyes.
- Instruct the patient to respond when a stimulus is felt by saying 'touch' or 'yes'.
- Prepare to administer the stimulus to the foot (dorsal or plantar surface)
- Press the filament of the Touch.
- Test at a 90 degree angle against the skin until it bows. Hold in place for approximately 1.5 seconds and then remove.

To assure the validity of the sensory test findings:

- The patient must not be able to view the administration of the stimuli so that false indications are avoided.
- The nylon filament must be applied at a 90 degree angle against the skin until it bows for approximately 1.5 second before removing.
- If the patient does not feel the filament, then protective pain sensation has been lost.

Biosthesiometer method

Testing vibration sensation with a biothesiometer – application guidelines:

- The biothesiometer has readings from 0 to 50 volts. It can be made to vibrate at increasing intensity by turning a dial.
- A probe is applied to part of the foot, usually on the big toe.
- The person being tested indicates as soon as he/she can feel the vibration and the reading on the dial at that point is recorded.

The reading is low in young normal individuals (i.e. they are very sensitive to vibration). In older individuals, the biothesiometer reading becomes progressively higher. From experience, it is known that the risk of developing a neuropathic ulcer is much higher if a person has a biothesiometer reading greater than 30–40 volts.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Foot deformity vers 1

relates to the data element Foot lesion – active vers 1

relates to the data element Foot ulcer – current vers 1

relates to the data element Foot ulcer – history vers 1

relates to the data element Lower limb amputation due to vascular disease vers 1

relates to the data element Peripheral vascular disease in feet – status vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Assessment event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: Peripheral neuropathy is a general term indicating peripheral nerve disorders of any cause. The most important aspect of grading diabetic neuropathy from a foot ulceration point of view is to assess the degree of loss of sensation in the feet.

Examine for neuropathy by testing reflexes and sensation preferably using tuning fork (standard vibration fork 128 hz), pinprick, 10 g monofilament and/or biothesiometer.

Diabetic neuropathy tends to occur in the setting of long-standing hyperglycaemia.

Peripheral neuropathy, which affects about 30% of people with either type 1 or type 2 diabetes, is the major predisposing disorder for diabetic foot disease. Peripheral neuropathy in feet results in loss of sensation and autonomic dysfunction. Neuropathy can occur either alone (neuropathic feet) or in combination with peripheral vascular disease causing ischaemia (neuro-ischaemic feet). Purely ischaemic feet are unusual, but are managed in the same way as neuro-ischaemic feet (see Australian Diabetes Society: Position Statement: The Lower Limb in People With Diabetes).

As stated by Duffy and others, the rate of lower extremity amputations can be reduced by 50% by the institution of monofilament testing in a preventive care

program.

Diabetes polyneuropathy is frequently asymptomatic but may be associated with numbness, tingling and paraesthesia in the extremities, and less often with hyperesthesias. The most common form is a distal, symmetric, predominantly sensory polyneuropathy, which begins and is usually most marked in the feet and legs.

If symptomatic neuropathy is present consult with endocrinologist or physician specialising in diabetes care since options are available for the relief of symptoms.

Peripheral nerve function should be checked at least yearly in the patient with diabetes.

References:

1997 North Coast Medical, INC. San Jose, CA 95125; 800 821–9319.

Duffy MD, John C and Patout MD, Charles A. 1990. 'Management of the Insensitive Foot in Diabetes: Lessons from Hansen's Disease'. Military Medicine, 155: 575–579.

Bell-Krotovski OTR, FAOT, FAOTA, Judith and Elizabeth Tomancik LOTR. 1987. The Repeatability of testing with Semmens-Weinstein Monofilaments. 'The Journal of Hand Surgery,' 12A: 155 – 161.

Edmonds M, Boulton A, Buckenham T, et al. Report of the Diabetic Foot and Amputation Group. Diabet Med 1996; 13: S27–42.

Foot Examination – an interactive guide; Aust Prescr 2002; 25: 8–10.

Peripheral vascular disease in feet – status

Identifying and Definitional Attributes

Knowledgebase ID: ***000840*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The outcome of assessment for the presence of peripheral vascular disease in either foot.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Yes, peripheral vascular disease is present in the feet
2	No, peripheral vascular disease is not present in the feet
9	Not stated/inadequately described

Guide for use: Record whether or not there is an absence of both dorsalis pedis and posterior tibial pulses in either foot.

Verification rules:

Collection methods: If it is mild, peripheral vascular disease can be completely without symptoms. However, compromised blood supply in the long term could cause claudication (pain in the calf after walking for a distance or up an incline or stairs), rest pain or vascular ulceration.

Physical examination is necessary to assess the peripheral vascular circulation. Purplish colour and cold temperature of feet are indications to suspect that the circulation may be impaired.

Palpate pulses:

The simplest method to estimate blood flow and to detect ischaemia to the lower extremities is palpation of the foot pulses (posterior tibial and dorsalis pedis arteries) in both feet. Note whether pulses are present or absent. If pulses in the foot can be clearly felt, the risk of foot ulceration due to vascular disease is small.

Test capillary return:

A helpful confirmation sign of arterial insufficiency is pallor of the involved feet after 1–2 min of elevation if venous filling time is delayed beyond the normal limit of 15 sec.

Doppler probe:

If pulses cannot be palpated, apply a small hand-held Doppler, placed over the dorsalis pedis or posterior tibial arteries to detect pulses, quantify the vascular supply and listen to the quality of the signal.

When the foot pulses are very weak or not palpable, the risk assessment could be completed by measuring the ankle brachial index (ankle pressure/brachial pressure). Normal ankle brachial index is 0.9–1.2. An ankle brachial index less than 0.6 indicates compromised peripheral circulation.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Foot deformity vers 1

relates to the data element Foot lesion – active vers 1

relates to the data element Foot ulcer – current vers 1

relates to the data element Foot ulcer – history vers 1

relates to the data element Lower limb amputation due to vascular disease vers 1

relates to the data element Peripheral neuropathy – status vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: Peripheral vascular disease is the leading cause of occlusion of blood vessels of the extremities with increasing prevalence in individuals with hypertension, hypercholesterolemia and diabetes mellitus, and in cigarette smokers. Peripheral vascular disease is estimated to occur 11 times more frequently and develop about 10 years earlier in people with diabetes.

Presence of symptomatic peripheral vascular disease requires an interdisciplinary approach including a vascular surgeon, an endocrinologist or physician specialising in diabetes care.

References:

Foot Examination – an interactive guide; Australian Prescriber

Pregnancy – current status

Identifying and Definitional Attributes

Knowledgebase ID: ***000842*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether a female person is currently pregnant.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Yes, currently pregnant
2	No, not currently pregnant
9	Not stated/inadequately described

Guide for use: Record whether or not the female individual is currently pregnant

Verification rules:

Collection methods: Ask the individual if she is currently pregnant.

Related metadata: relates to the data element Diabetes status vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: Pregnancy in women with pre-existing diabetes is a potentially serious problem for both the mother and foetus. Good metabolic control and appropriate medical and obstetric management will improve maternal and foetal outcomes. The diagnosis or discovery of diabetes in pregnancy (gestational diabetes), identifies an at risk pregnancy from the foetal perspective, and identifies the mother as at risk for the development of type 2 diabetes later in life.

Following Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus diabetes management during pregnancy includes:

- routine medical review every 2–3 weeks during the first 30 weeks and then every 1–2 weeks until delivery
- monitor HbA1c every 4-6 weeks or more frequently if indicated to ensure optimal metabolic control during pregnancy
- advise patients to monitor blood glucose frequently and urinary ketones
- initial assessment and on going monitoring for signs or progression of diabetes complications
- regular routine obstetric review based on the usual indicators.

Management targets:

- blood glucose levels:
  - Fasting < 5.5 mmol/L
  - Post-prandial < 8.0 mmol/L at 1 hour, < 7mmol/L at 2 hours
- HbA1c levels within normal range for pregnancy. (The reference range for HbA1c will be lower during pregnancy)
- the absence of any serious or sustained ketonuria.

Normal indices for foetal and maternal welfare. Oral hypoglycaemic agents are contra-indicated during pregnancy and therefore women with pre-existing diabetes who are treated with oral agents should ideally be converted to insulin prior to conception.

What to do if unsatisfactory metabolic control:

- Explore reasons for unsatisfactory control such as diet, intercurrent illness, appropriateness of medication, concurrent medication, stress, and exercise, and review management.
- Review and adjust treatment.
- Consider referral to diabetes educator, dietitian, endocrinologist or physician experienced in diabetes care, or diabetes centre.

Referred to ophthalmologist – diabetes mellitus

Identifying and Definitional Attributes

Knowledgebase ID: ***000843*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether the individual was referred to an ophthalmologist within the last 12 months.

Context: Public health, health care and clinical settings:

Diabetes mellitus specific data element.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1 Yes, referred to an ophthalmologist

2 No, not referred to an ophthalmologist

9 Not stated/inadequately described

Guide for use: Record whether or not the individual was referred to an ophthalmologist during the last 12 months.

Verification rules:

Collection methods: Ask the individual if he/she was referred to an ophthalmologist during the last 12 months. Alternatively, obtain this information from appropriate documentation.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Blindness – diabetes complication vers 1

relates to the data element Cataract – history vers 1

relates to the data element Ophthalmological assessment – outcome vers 1

relates to the data element Ophthalmoscopy – performed vers 1

relates to the data element Visual acuity vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Request for/entry into service event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

An ophthalmologist is a physician specialising in diagnosing and prescribing treatment for defects, injuries and diseases of the eye, and who is skilled at delicate eye surgery.

Patients with diabetes have increased risk of developing several eye complications including retinopathy, cataract and glaucoma that may lead to loss of vision.

Regular eye checkup is important for patients suffering from diabetes mellitus. This helps to detect abnormalities early and to avoid or postpone complications.

References:

Diabetes Control and Complications Trial: DCCT New England Journal of Medicine, 329(14), September 30, 1993.

Renal disease – end-stage, diabetes complication

Identifying and Definitional Attributes

Knowledgebase ID: ***000844*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether an individual has end-stage renal disease as a complication of diabetes, and has required dialysis or has undergone a kidney transplant.

Context: Public health, health care and clinical settings:

Diabetes mellitus specific data element.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	End-stage renal disease – developed in the last 12 months
2	End-stage renal disease – developed prior to the last 12 months
3	No end-stage of renal disease
9	Not stated/inadequately described

Guide for use:

Verification rules:

Collection methods: Ask the individual if he/she has required dialysis or has undergone a kidney (renal) transplant (due to diabetic nephropathy). Alternatively obtain the relevant information from appropriate documentation.

Related metadata: relates to the data element Blood pressure – diastolic measured vers 1

relates to the data element Blood pressure – systolic measured vers 1

relates to the data element Creatinine serum – measured vers 1

relates to the data element Microalbumin/protein – measured vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	*Start date*	*End date*
DSS – Diabetes (clinical)	01/01/2003	

Comments:

To determine chronic renal impairment: -

Glomerular filtration rate (GFR)

GFR > 90 ml/min normal

GFR > 60–90 ml/min: mild renal impairment

GFR > 30–60 ml/min: moderate renal impairment

GFR 0–30 ml/min: severe renal impairment

For greater than 3 months.

In general, patients with GFR < 30 ml/min/1.73 m^2 are at high risk of progressive deterioration in renal function and should be referred to a nephrology service for specialist management of renal failure. Patients should be assessed for the complications of chronic renal impairment including anaemia, hyperparathyroidism and be referred for specialist management if required. Patients with rapidly declining renal function or clinical features to suggest that residual renal function may decline rapidly (i.e. hypertensive, proteinuric (>1 g/24 hours), significant co-morbid illness) should be considered for referral to a nephrologist well before function declines to less than 30ml/min. (Draft CARI Guidelines 2002. Australian Kidney Foundation)

Patients in whom the cause of renal impairment is uncertain should be referred to a nephrologist for assessment.

End-stage renal disease is a recognised complication of Type 1 and Type 2 diabetes mellitus. Diabetes is the commonest cause for renal dialysis in Australia.

The term end-stage renal disease has become synonymous with the late stages of chronic renal failure. Diabetic nephropathy may be effectively prevented and treated by controlling glycemia and administering angiotensin-converting enzyme (ACE) inhibitors. J Am Soc Nephrol 2002 Jun; 13(6): 1615–1625].

Service contact date

Identifying and Definitional Attributes

Knowledgebase ID: ***000402*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/07/99

Definition: The date of each service contact between a health service provider and patient/client.

Context: Community-based mental health care and clinical settings:

The service contact is required for clinical audit and other quality assurance purposes.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Date

Representational layout: DDMMYYYY

Minimum size: 8

Maximum size: 8

Data domain: Valid date

Guide for use: Requires services to record the date of each service contact, including the same date where multiple visits are made on one day (except where the visits may be regarded as a continuation of the one service contact). Where an individual patient/client participates in a group activity, a service contact date is recorded if the person's participation in the group activity results in a dated entry being made in the patient's/client's record.

Verification rules:

Collection methods: For collection from community-based (ambulatory and non-residential) agencies.

Related metadata: is used in the derivation of Number of service contact dates vers 2

relates to the data element concept Service contact vers 1

Administrative Attributes

Source document:

Source organisation:

Information model link:

NHIM Service provision event

Data Set Specifications:	***Start date***	***End date***
NMDS – Community mental health care	01/07/2000	
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Sex

Identifying and Definitional Attributes

Knowledgebase ID:	***000149***	***Version No: 3***
Metadata type:	Data Element	
Admin. status:	Current	
	01/07/03	
Definition:	The sex of the person.	
Context:	Required for analyses of service utilisation, needs for services and epidemiological studies.	

Relational and Representational Attributes

Datatype:	Numeric
Representational form:	Code
Representational layout:	N
Minimum size:	1
Maximum size:	1

Data domain:

1	Male
2	Female
3	Indeterminate
9	Not stated/inadequately described

Guide for use:

An indeterminate sex category may be necessary for situations such as the classification of perinatal statistics when it is not possible for the sex to be determined.

Verification rules:

Code 3 Indeterminate should be queried for people aged 90 days (3 months) or greater.

For the provision of State and Territory hospital data to Commonwealth agencies this field must be consistent with diagnosis and procedure codes, for records grouped in Major diagnostic categories 12, 13 and 14, for valid grouping. For other Major diagnostic categories, sex conflicts should be queried.

Collection methods:

Code 9 is not to be an allowable option when data is being collected ie it is not to be a tick box on any collection forms or computer screens. Systems are to take account of any null values that may occur on the primary collection form. It is suggested that the following format be used for data collection:

What is your (the person's) sex?

___ Male ___ Female

The term 'sex' refers to the biological differences between males and females, while the term 'gender' refers to the socially expected/perceived dimensions of behaviour associated with males and females – masculinity and femininity.

The Australian Bureau of Statistics advises that the correct terminology for this data element is sex.

Information collection for transsexuals and people with transgender issues should be treated in the same manner.

To avoid problems with edits, transsexuals undergoing a sex change operation should have their sex at time of hospital admission recorded.

Related metadata: is used in the derivation of Diagnosis related group vers 1

supersedes previous data element Sex vers 2

Administrative Attributes

Source document:

Source organisation: National Health Data Committee

Information model link:

NHIM Demographic characteristic

Data Set Specifications:	***Start date***	***End date***
NMDS – Admitted patient care	01/07/2003	
NMDS – Admitted patient mental health care	01/07/2003	
NMDS – Perinatal	01/07/2003	
NMDS – Community mental health care	01/07/2003	
NMDS – Admitted patient palliative care	01/07/2003	
NMDS – Alcohol and other drug treatment services	01/07/2003	
NMDS – Non-admitted patient emergency department care	01/07/2003	
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	
DSS – Health care client identification	01/01/2003	

Comments: This item enables standardisation of the collection of information relating to sex (to include indeterminate), gender, people with transgender issues and transsexuals.

In collection systems (ie on forms and computer screens) Male and Female may be mapped to M and F respectively for collection purposes; however, they should be stored within information systems as the codes 1 and 2 respectively.

Referring to the National Diabetes Register Statistical profile (December 2000), the sex ratio varied with age. For ages less than 25 years, numbers of males and females were similar. At ages 25–44 years, females strongly outnumbered males, reflecting the effect of gestational diabetes in women from this group. For older age groups (45–74 years), males strongly outnumber females and in the group of 75 and over, the ratio of males to females was reversed, with a substantially lower proportion of males in the population in this age group due to the higher female life expectancy. (AIHW National Mortality Database 1997/98; National Diabetes Register; Statistical Profile, December 2000)

Tobacco smoking status – diabetes mellitus

Identifying and Definitional Attributes

Knowledgebase ID: ***000846*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: Whether an individual has been a regular smoker (daily or weekly) of any tobacco material over the previous 3 months.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: N

Minimum size: 1

Maximum size: 1

Data domain:

1	Yes, has smoked daily or weekly over the previous 3 months
2	No, has not smoked daily or weekly over the previous 3 months
9	Not stated/inadequately described

Guide for use: Record whether or not regular smoking (daily or weekly) of any tobacco material has occurred over the past 3 months. Record as no if the person has not smoked at all over the past 3 months or has been an irregular smoker (i.e. not daily or weekly).

Verification rules:

Collection methods: Ask the individual if he/she has regularly smoked (daily or weekly) any tobacco material over the past 3 months.

Related metadata: relates to the data element Tobacco smoking – consumption/quantity (cigarettes) vers 1

relates to the data element Tobacco smoking – duration (daily smoking) vers 1

relates to the data element Tobacco smoking – ever daily use vers 1

relates to the data element Tobacco smoking – frequency vers 1

relates to the data element Tobacco smoking – product vers 1

relates to the data element Tobacco smoking – quit age (daily smoking) vers 1

relates to the data element Tobacco smoking – start age (daily smoking) vers 1

relates to the data element Tobacco smoking – time since quitting (daily smoking) vers 1

relates to the data element Tobacco smoking status vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Lifestyle characteristic

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Smoking is the act of drawing into the mouth and puffing out the smoke of tobacco contained in a cigarette, cigar or pipe. Tobacco smoke contains a number of harmful substances including poisons, various irritant and carcinogenic compounds. For people with diabetes smoking is one of the most powerful treatable risk factors.

Associated with hypertension, diabetes and hypercholesterolemia, smoking is a definite health hazard for coronary heart disease.

Triglycerides – measured

Identifying and Definitional Attributes

Knowledgebase ID: ***000658*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: A person's measured triglycerides.

Context: Public health, health care and clinical setting.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NN.N

Minimum size: 3

Maximum size: 4

Data domain: Measurement in mmol/L to 1 decimal place

99.9 Not stated/inadequately described

Guide for use: Record the absolute result of the total triglyceride measurement.

Verification rules:

Collection methods: Measurement of lipid levels should be carried out by laboratories, or practices, which have been accredited to perform these tests by the National Association of Testing Authorities.

- To be collected as a single venous blood sample, preferably following a 12-hour fast where only water and medications have been consumed.

Note that to calculate the low-density lipoprotein – cholesterol (LDL-C) from the Friedwald Equation (Friedwald et al. 1972):

- a fasting level of plasma triglyceride and knowledge of the levels of plasma total cholesterol and high-density lipoprotein – cholesterol (HDL-C) is required
- the Friedwald equation becomes unreliable when the plasma triglyceride exceeds 4.5 mmol/L and
- that while levels are reliable for the first 24 hours after the onset of acute coronary syndromes, they may be unreliable for the subsequent 6 weeks after an event.

(Lipid Management Guidelines – 2001, MJA 2001; 175: S57–S88. National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand.)

Related metadata: relates to the data element Cholesterol-total – measured vers 1

relates to the data element Cholesterol-HDL – measured vers 1

is used in the calculation of Cholesterol-LDL calculated vers 1

relates to the data element Dyslipidaemia – treatment vers 1

is used in conjunction with Fasting status vers 1

is used in conjunction with Service contact date vers 1

relates to the data element Waist circumference – measured vers 2

Administrative Attributes

Source document:

Source organisation: CV-Data Working Group

Information model link:

NHIM Assessment event

Data Set Specifications:	***Start date***	***End date***
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments:

Following Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus, the targets for lipids management is :

- to reduce total cholesterol to less than 5.5 mmol/L
- to reduce triglyceride level to less than 2.0 mmol/L
- to increase HDL-C to more than or equal to 1.0 mmol/L.

Alterations in fat transport, often resulting in hyper-triglyceridaemia, are well-recognised concomitants of diabetes mellitus.

Elevated plasma triglyceride levels are present in about one third of diabetic patients. It seems that triglycerides are related to the critical role of insulin in the production and removal from plasma of triglyceride-rich lipoproteins.

Lifestyle modifications, including weight loss and reduction of excess alcohol intake, are particularly effective for reducing triglyceride and increasing HDL-C.

References:

National Heart Foundation of Australia – Lipid Management Guidelines 2001.

Hypertriglyceridaemia; Australian Medicines Handbook.

Visual acuity

Identifying and Definitional Attributes

Knowledgebase ID: ***000847*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The visual acuity test measures the smallest letters that a person can read on a standardised chart at a distance of 6 metres (20 feet) wearing glasses if needed.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Code

Representational layout: NN

Minimum size: 2

Maximum size: 2

Data domain:

01	6/5
02	6/6
03	6/9
04	6/12
05	6/18
06	6/24
07	6/36
08	6/60
09	CF (count fingers)
10	HM (hand movement)
11	PL (perceive light)
12	BL (blind)
13	6/7.5
99	Not stated/inadequately described

Guide for use: Test wearing distance glasses if prescribed. Use pinhole if vision less than 6/6. Record actual result for both right and left eyes (this is a repeating field):

- 1st field: right eye
- 2nd field: left eye.

Verification rules:

Collection methods: One of the most often utilised tests for visual acuity uses the Snellen chart.

- At a distance of 6 metres all subjects should be able to read the 6/6 line with each eye using the proper refractive correction.
- Both eyes are to be opened and then cover one eye with the ocular occluder.

- The observer has to read out the smallest line of letters that he/she can see from the chart.
- This is to be repeated with the other eye.

Eye examination should be performed by an ophthalmologist or a suitably trained clinician:

- within five years of diagnosis and then every 1–2 years for patients whose diabetes onset was at age under 30 years
- at diagnosis and then every 1–2 years for patients whose diabetes onset was at age 30 years or more.

Related metadata: relates to the data element Health professionals attended – diabetes mellitus vers 1

relates to the data element Blindness – diabetes complication vers 1

relates to the data element Cataract – history vers 1

relates to the data element Ophthalmological assessment – outcome vers 1

relates to the data element Ophthalmoscopy – performed vers 1

relates to the data element Referred to ophthalmologist – diabetes mellitus vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Physical wellbeing

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: Patients with diabetes have an increased risk of developing several eye complications including retinopathy, cataract and glaucoma that can lead to loss of vision. Regular eye checkups are important for patients suffering from diabetes mellitus. This helps to detect and treat abnormalities early and to avoid or postpone vision-threatening complications. Assessment by an ophthalmologist is essential:

- at initial examination if the corrected visual acuity is less than 6/6 in either eye
- if at subsequent examinations declining visual acuity is detected
- if any retinal abnormality is detected
- if clear view of retina is not obtained.

References:

Vision Australia, No 2, 1997/8; University of Melbourne

World Health Organization

US National Library of Medicine

Diabetes Control and Complications Trial: DCCT New England Journal of Medicine, 329(14), September 30, 1993

Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus

Weight – measured

Identifying and Definitional Attributes

Knowledgebase ID: ***000365*** ***Version No: 2***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: A person's measured weight (body mass).

In order to ensure consistency in measurement, the measurement protocol described under Collection methods should be used.

Context: Public health, health care and clinical settings:

Weight is an overall measure of body size that does not distinguish between fat and muscle. Weight is an indicator of nutritional and health status. Low pre-pregnancy weight is an indicator of poorer gestational outcome in women (Kramer 1988). Low weight is also associated with osteoporosis. In general, change in weight in adults is of interest because it is an indicator of changing health status, and in children as it indicates changing health status and growth and development. It enables the calculation of body mass index (BMI) which requires the measurement of height and weight for adults as well as sex and date of birth for children and adolescents.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Quantitative value

Representational layout: NNN.N

Minimum size: 4

Maximum size: 5

Data domain: Measurement of weight in kilograms to one decimal place

999.9 Not able to be collected

Guide for use:

Verification rules:

Collection methods: The collection of anthropometric measurements, particularly in those who are overweight or obese or who are concerned about their weight, should be performed with great sensitivity and without drawing attention to an individual's weight.

Measurement protocol:

Weight – measured is a continuous variable measured to the nearest 0.1 kg.

Equipment used should be described and reported. Scales should have a resolution of at least 0.1 kg and should have the capacity to weigh up to at least 200 kg. Measurement intervals and labels should be clearly readable under all conditions of use of the instrument. Scales should be capable of being calibrated across the entire range of measurements. Precision error should be no more than 0.1 kg. Scales should be calibrated on each day of use. Manufacturers' guidelines should be followed with regard to the transportation of the scales.

Adults and children who can stand:

The subject stands over the centre of the weighing instrument, with the body weight evenly distributed between both feet.

Heavy jewellery should be removed and pockets emptied. Light indoor clothing can be worn, excluding shoes, belts, and sweater. Any variations from light indoor clothing (e.g. heavy clothing, such as kaftans or coats worn because of cultural practices) should be noted on the data collection form. Adjustments for non-standard clothing (i.e. other than light indoor clothing) should only be made in the data checking/cleaning stage prior to data analysis.

If the subject has had one or more limbs amputated, record this on the data collection form and weigh them as they are. If they are wearing an artificial limb, record this on the data collection form but do not ask them to remove it. Similarly, if they are not wearing the limb, record this but do not ask them to put it on.

The measurement is recorded to the nearest 0.1 kg. If the scales do not have a digital readout, take a repeat measurement. If the two measurements disagree by more than 0.5 kg, then take a third measurement. All raw measurements should be recorded on the data collection form. If practical, it is preferable to enter the raw data into the database as this enables intra-observer and, where relevant, inter-observer errors to be assessed. The subject's measured weight is subsequently calculated as the mean of the two observations, or the mean of the two closest measurements if a third is taken, and recorded on the form. If only a mean value is entered into the database then the data collection forms should be retained.

It may be necessary to round the mean value to the nearest 0.1 kg. If so, rounding should be to the nearest even digit to reduce systematic over reporting (Armitage & Berry 1994). For example, a mean value of 72.25 kg would be rounded to 72.2 kg, while a mean value of 72.35 kg would be rounded to 72.4 kg.

Infants:

Birth weight and gender should be recorded with gestational age. During infancy a levelled pan scale with a bean and movable weights or digital scales capable of measuring to two decimal places of a kilogram are acceptable. Birth weight should be determined within 12 hours of birth. The infant, with or without a nappy or diaper is placed on the scales so that the weight is distributed equally about the centre of the pan. When the infant is lying or suspended quietly, weight is recorded to the nearest 10 grams. If the nappy or diaper is worn, its weight is subtracted from the observed weight, i.e. reference data for infants are based on nude weights.

Validation and quality control measures:

If practical, equipment should be checked daily using one or more objects of known weight in the range to be measured. It is recommended that the scale be calibrated at the extremes and in the mid range of the expected weight of the population being studied.

Within- and, if relevant, between-observer variability should be reported. They can be assessed by the same (within -) or different (between-) observers repeating the measurement of weight, on the same subjects, under standard conditions after a short time interval. The standard deviation of replicate measurements (technical error of measurement) between observers should not exceed 0.5 kg and be less than 0.5 kg within observers.

Extreme values at the lower and upper end of the distribution of measured height should be checked both during data collection and after data entry. Individuals should not be excluded on the basis of true biological difference.

Last digit preference, and preference or avoidance of certain values, should be analysed in the total sample and (if relevant) by observer, survey site and over time if the survey period is long.

Related metadata: supersedes previous data element Adult weight – measured vers 1
is used in the calculation of Body mass index vers 2
is used in conjunction with Creatinine serum – measured vers 1

Administrative Attributes

Source document: The measurement protocol described below is that recommended by the World Health Organization (WHO Expert Committee 1995).

Source organisation: World Health Organization

Information model link:

NHIM Physical characteristic

Data Set Specifications:	***Start date***	***End date***
DSS – Cardiovascular disease (clinical)	01/01/2003	
DSS – Diabetes (clinical)	01/01/2003	

Comments: This data element applies to persons of all ages. It is recommended for use in population surveys and health care settings.

It is recommended that in population surveys, sociodemographic data including ethnicity should be collected, as well as other risk factors including physiological status (e.g. pregnancy), physical activity, smoking and alcohol consumption. Summary statistics may need to be adjusted for these variables.

National health data elements currently exist for Sex, Date of birth, Country of birth, Indigenous status and smoking. Data elements are being developed for physical activity.

Presentation of data:

Means and 95% confidence intervals, medians and centiles should be reported to one decimal place. Where the sample permits, population estimates should be presented by sex and 5-year age groups. However 5-year age groups are not generally suitable for children and adolescents. Estimates based on sample surveys may need to take into account sampling weights.

For consistency with conventional practice, and for current comparability with international data sets, recommended centiles are 5, 10, 15, 25, 50, 75, 85, 90 and 95. To estimate the 5th and 95th centiles, a sample size of at least 200 is recommended for each group for which the centiles are being specified.

For some reporting purposes, it may be desirable to present weight data in categories. It is recommended that 5 kg groupings are used for this purpose. Weight data should not be rounded before categorisation. The following categories may be appropriate for describing the weights of Australian men, women, children and adolescents, although the range will depend on the population.

Wt< 10 kg

10 kg = Wt <15 kg

15 kg = Wt < 20 kg

... in 5 kg categories

135 kg = Wt < 140 kg

Wt => 140 kg

Source organisation:

WHO and the consortium to develop standard methods for the collection and collation of anthropometric data in children as part of the National Food and Nutrition Monitoring and Surveillance Project, funded by the Commonwealth Department of Health and Ageing.

Following Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus, BMI should be below 27 kg/m^2 for men and women. For adults who suffer from diabetes, the recommendation is to measure weight and calculate BMI on the initial visit and then measure weight every 3 months. If the patient is on a weight reduction program, weight is to be measured more frequently.

Strong evidence exists that weight loss reduces blood pressure in both overweight hypertensive and non-hypertensive individuals; reduces serum triglycerides and increases high-density lipoprotein (HDL)-cholesterol; and generally produces some reduction in total serum cholesterol and low-density lipoprotein (LDL)-cholesterol.

The risk of developing diabetes rises continuously with increasing obesity (DHAC & AIHW 1999:13). An increased central distribution of body fat (when fatness is concentrated in the abdomen) also appears to be associated more often with Type 2 diabetes (Bishop et al. 1998:430-1).

Weight loss reduces blood glucose levels in overweight and obese persons with and without diabetes; and weight loss also reduces blood glucose levels and HbAlc in some patients with type 2 diabetes. Although there have been no prospective trials to show changes in mortality with weight loss in obese patients, reductions in risk factors would suggest that development of type 2 diabetes and CVD would be reduced with weight loss.

References:

Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults (US National Heart, Lung and Blood Institute (NHLBI) in cooperation with the National Institute of Diabetes and Digestive and Kidney Diseases).

Chronic Diseases and Associated Risk Factors in Australia 2001 (AIHW).

Year insulin started

Identifying and Definitional Attributes

Knowledgebase ID: ***000848*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The year the patient started insulin injections.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Date

Representational layout: YYYY

Minimum size: 4

Maximum size: 4

Data domain: Actual year insulin was started.

9999 Not stated/inadequately described

Guide for use: Record the year that insulin injections were started.

This data element has to be completed for all patients who use insulin. It is used to cross check diabetes type assignment.

Verification rules:

Collection methods: Ask the individual the year when he/she started to use insulin. Alternatively obtain this information from appropriate documentation, if available.

Related metadata: relates to the data element Date of birth vers 4

relates to the data element Diabetes status vers 1

relates to the data element Diabetes therapy type vers 1

relates to the data element Year of diagnosis of diabetes mellitus vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Request for/entry into service event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: This data element provides information about the duration of diabetes in individual patients.

Insulin is a regulating hormone secreted into the blood in response to a rise in concentration of blood glucose or amino acids. It is a double-chain protein hormone formed from proinsulin in the beta cells of the pancreatic islets of Langerhans. Insulin promotes the storage of glucose and the uptake of amino acids, increases protein and lipid synthesis, and inhibits lipolysis and gluconeogenesis.

Commercially prepared insulin is available in various types, which differ in the speed they act and in the duration of their effectiveness.

Year of diagnosis of diabetes mellitus

Identifying and Definitional Attributes

Knowledgebase ID: ***000849*** ***Version No: 1***

Metadata type: Data Element

Admin. status: Current

01/01/03

Definition: The year a patient was first diagnosed as having diabetes.

Context: Public health, health care and clinical settings.

Relational and Representational Attributes

Datatype: Numeric

Representational form: Date

Representational layout: YYYY

Minimum size: 4

Maximum size: 4

Data domain: Actual year of diagnosis of diabetes mellitus

9999 Not stated/inadequately described

Guide for use: Record the year that the patient was first diagnosed as having diabetes.

Verification rules:

Collection methods: Ask the individual the year when he/she was diagnosed with diabetes. Alternatively obtain this information from appropriate documentation, if available.

Related metadata: relates to the data element Date of birth vers 4

relates to the data element Year insulin started vers 1

Administrative Attributes

Source document: National Diabetes Outcomes Quality Review Initiative (NDOQRIN) data dictionary.

Source organisation: National Diabetes Data Working Group

Information model link:

NHIM Request for/entry into service event

Data Set Specifications:	***Start date***	***End date***
DSS – Diabetes (clinical)	01/01/2003	

Comments: Long-term complications of diabetes mellitus affect the eyes, kidneys, nerves, and blood vessels.

Supporting data elements and data element concepts

Blood pressure – concept

Identifying and Definitional Attributes

Knowledgebase ID: ***000809*** ***Version No: 1***

Metadata type: Data Element Concept

Admin. status: Current

01/01/03

Definition: The pressure exerted by blood against the walls of the blood vessels i.e. arteries, capillaries or veins.

Context:

Relational and Representational Attributes

Datatype:

Representational form:

Representational layout:

Minimum size:

Maximum size:

Data domain:

Guide for use:

Verification rules:

Collection methods:

Related metadata: relates to the data element Blood pressure – diastolic measured vers 1

relates to the data element Blood pressure – systolic measured vers 1

Administrative Attributes

Source document: Australian Institute of Health and Welfare (AIHW) 2001. Heart, stroke and vascular diseases – Australian facts 2001. Canberra: AIHW, National Heart Foundation of Australia, National Stroke Foundation of Australia.

Source organisation: CV-Data Working Group

Information model link:

NHIM Service provision event

Data Set Specifications: ***Start date*** ***End date***

Comments:

Service contact

Identifying and Definitional Attributes

Knowledgebase ID: ***000401*** ***Version No: 1***

Metadata type: Data Element Concept

Admin. status: Current

01/07/99

Definition: A contact between a patient/client and an ambulatory care health unit (including outpatient and community health units) which results in a dated entry being made in the patient/client record.

Context: Identifies service delivery at the patient level for mental health services (including consultation/liaison, mobile and outreach services).

A service contact can include either face-to-face, telephone or video link service delivery modes. Service contacts would either be with a client, carer or family member or another professional or mental health worker involved in providing care and do not include contacts of an administrative nature (e.g. telephone contact to schedule an appointment) except where a matter would need to be noted on a patient's record.

Service contacts may be differentiated from administrative and other types of contacts by the need to record data in the client record. However, there may be instances where notes are made in the client record that have not been prompted by a service contact with a patient/client (e.g. noting receipt of test results that require no further action). These instances would not be regarded as a service contact.

Relational and Representational Attributes

Datatype:

Representational form:

Representational layout:

Minimum size:

Maximum size:

Data domain:

Guide for use:

Verification rules:

Collection methods:

Related metadata: relates to the data element Number of service contact dates vers 2

relates to the data element Service contact date vers 1

Administrative Attributes

Source document:

Source organisation:

Information model link:

NHIM Service provision event

Data Set Specifications: ***Start date*** ***End date***

Comments: The proposed definition is not able to measure case complexity or level of resource usage with each service contact alone. This limitation also applies to the concept of occasions of service (in admitted patient care) and hospital separations. The National Health Data Committee also acknowledges that information about group sessions or activities that do not result in a dated entry

being made in each individual participant's patient/client record is not currently covered by this data element concept.