Health Quality & Safety Commission New Zealand
Kupu Taurangi Hauora o Aotearoa

People with diabetes aged 25 and over regularly receiving either metformin or insulin in a year, percent

Technical information	
Indicator name (short)	Regularly receiving insulin or metformin.
Description	This measure details the percentage of people identified with diabetes in the Virtual Diabetes Register (VDR) and dispensed insulin or metformin in three or four quarters in a year.
Rationale	–
Numerator	The number of people with diabetes who were dispensed insulin or metformin in three or four quarters in a year.
Denominator	VDR population identified as having diabetes.
Inclusions	Medicines: • Insulin: 1192 Insulin lispro, 1648 Insulin neutral, 1649 Insulin isophane, 1655 Insulin zinc suspension, 3783 Insulin aspart, 3857 Insulin glargine, 3882 Insulin lispro with insulin lispro protamine, 3908 Insulin glulisine, 3982 Insulin aspart with insulin aspart protamine, 6300 Insulin isophane with insulin neutral. • Metformin: 1794 Metformin hydrochloride
Exclusions	People who died during the year were excluded from analysis.
Note for calculation	Unit of measure: Percentage Adjustment applied: None District health board (DHB) assignment: Domicile
Data sources	Pharmaceutical Collection; VDR, Ministry of Health.
Suppression rule	Data is not presented where the counts are less than 10.
Notes	*See appendix for more details.*

Appendix 1. Interpretation notes

Standard deviation
Data is presented as standard deviation from the mean. Standard deviation is a statistical measure of variation from a mean. Assuming that recorded instances are normally distributed (ie, they are in the usual 'bell-shaped curve'), 68 percent of all recorded instances would be expected to be within one standard deviation either side of the mean and 95 percent within two standard deviations.

Confidence intervals
Data for each DHB are presented as rate per 1,000 population. Upper and lower confidence intervals were calculated to 95 percent level of confidence.

Appendix 2. Virtual Diabetes Registry December 2017 Method

Detail of the VDR methodology has been included for your information. The VDR counts individuals who had the following.

1. Publicly funded hospital discharges from 2008 to 2017 with any of the following diagnosis codes (ICD-10-AM version 3)

- E10 – Type 1 diabetes mellitus
- E11 – Type 2 diabetes mellitus
- E12 – Malnutrition-related diabetes mellitus
- E13 – Other specified diabetes mellitus
- E14 – Unspecified diabetes mellitus
- O240 – Pre-existing diabetes mellitus, type 1, in pregnancy
- O241 – Pre-existing diabetes mellitus, type 2, in pregnancy
- O242 – Pre-existing diabetes mellitus, other specified type, in pregnancy
- O243 – Pre-existing diabetes mellitus, unspecified, in pregnancy

Note: Admissions with a code for gestational diabetes are not included.

2. Diabetes 'education and management' (purchase unit code of M20006) or diabetes retinal (fundus) screening (purchase unit code of M20007) within the outpatient collection (NNPAC) from 2015 to 2017.

3. Publicly funded pharmaceuticals dispensed within the community on two or more occasions between 2016 and 2017. Pharmaceuticals with the following chemical IDs are included:

- 1648 Insulin neutral
- 1649 Insulin isophane
- 1655 Insulin zinc suspension
- 1794 Metformin hydrochloride
- 2276 Tolazamide
- 2277 Tolbutamide
- 3739 Rosiglitazone
- 3783 Insulin aspart
- 3800 Pioglitazone
- 3857 Insulin glargine
- 3882 Insulin lispro with insulin lispro protamine
- 3908 Insulin glulisine
- 3982 Insulin aspart with insulin aspart protamine
- 6300 Insulin isophane with insulin neutral

Note: metformin is also used to treat polycystic ovary syndrome in women aged 12–45 years. Women within this age group, dispensed metformin, have not been included within the VDR. Likewise, insulin is also used to treat gestational diabetes and therefore women dispensed insulin around the time of birth have not been included.

6. Four or more HbA1c lab tests (lab test code BG2) and two or more urinary albumin: creatinine ratio (ACR) tests (lab test code BG2 and BP8, respectively) between 2015 and 2017.

Note: to prevent unintentional inclusion of people with gestational diabetes, women with lab tests around the time of birth have not been included.

For more information or if you would like the updated VDR data please email data-enquiries@moh.govt.nz.

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New Zealand Government