METRO AUCKLAND DIABETES AND CVD INDICATORS AND DEFINITIONS

The below list of indicators have been agreed by the two Alliances across the three Auckland Metro DHBs and all the PHOs. This has also been agreed by Metro-Auckland Clinical Governance Forum (MACGF). A review of the indicators will be undertaken by MACGF as required.

No.	Clinical Indicators – Long Term Conditions Management - Diabetes	Target
1	**HbA1c Glycaemic control**[1]**:** Percentage of enrolled patients with diabetes (aged 15 to 74 years) who have good or acceptable glycaemic control (latest HbA1c less than or equal to 64mmol/mol) recorded in the last 15 months	**80%**
2	**Blood pressure control**[1]**:** Percentage of enrolled patients with diabetes (aged 15 to 74 years) whose latest systolic blood pressure recorded in the last 15 months is <140mmHg	**80%**
3	Management of Microalbuminuria and macroalbuminuria[1]: Percentage of enrolled patients with diabetes (aged 15 to 74 years) who have an elevated ACR recorded on two consecutive occasions at least 90 days apart and are on an ACE inhibitor or Angiotensin Receptor Blocker.	**90%**
4	**CVD Secondary Prevention**[2,4,5,10]**:** Percentage of enrolled patients with diabetes (aged 25 to 74 years) with known CVD who are on triple therapy (Statin + BP lowering agent + Antiplatelet/Anticoagulant) Exclusion: History of haemorrhagic stroke	**70%**
5	**CVD Primary Prevention**[2,3,4,5,10]**:** Percentage of enrolled patients with diabetes (aged 25 to 74 years), whose most recently recorded cardiovascular risk score is ≥20% (2003 methodology) OR ≥15% (2018 methodology) and who are on dual therapy (Statin + BP Lowering agent) Exclusions: History of prior CVD event and those identified as "clinically high"	**70%**
	Clinical Indicators – Long Term Conditions Management – CVD	
1	**CVD Secondary Prevention**[2,4,5,6,10]**:** Percentage of enrolled patients (aged 25 to 74 years) with known CVD who are on triple therapy (Statin + BP lowering agent + Antiplatelet/Anticoagulant) Exclusion: History of haemorrhagic stroke	**70%**
2	**CVD Primary Prevention**[2,3,4,5,6,10]**:** Percentage of enrolled patients (aged 25 to 74 years), whose most recently recorded cardiovascular risk score is≥20% (2003 methodology) OR ≥15% (2018 methodology) and who are on dual therapy (Statin + BP Lowering agent) Exclusions: History of prior CVD event and those identified as "clinically high"	**70%**

All indicators will be reported by Ethnicity (Maori, Pacific, Asian, Other), DHB, PHO, Locality, GP Practice.

NOTES:

- The Diabetes indicators apply to total population with diabetes aged 15 to 74 years. The aim is to capture all patients coded with diabetes, not just those with Diabetes Annual Reviews, "Get Checked' or Diabetes Care Improvement Package claims.
- Ministry of Health. 2018. *Cardiovascular Disease Risk Assessment and Management for Primary Care*. Wellington: Ministry of Health. Within this document the above is referred to as 2018 methodology (and subsequent algorithm updates) to distinguish from the previous equation from 2003 CVD guideline, which is referred to as the 2003 methodology.
- The Ministry of Health (2018) *Cardiovascular Disease Risk Assessment and Management for Primary Care*[1] consensus statement has been released and are taken into account in this review. The new Primary Prevention Equations (2018 methodology) signal lower risks for many patients. Until the 2018 equations have been developed and applied, reporting of the primary prevention indicator will be based on the 2003 risk equations.
- **Upper Age Limits.** New Zealand, like many other developed countries is expecting numbers of older people over 75+ to double by 2035. While many suffer from chronic conditions, increasing numbers are fit, thriving and still in the workforce. People are also living longer. Life expectancy has increased by over 10 years in the last 50 years and will rise further.
  Benefits of CVD treatment are directly proportional to absolute 5 year CVD risk. Age is a major predictor of risk. Although there is not YET direct evidence (because this hasn't been studied) logic suggests that older people will have a greater benefit from treatment than their younger counterparts. However, the risk of adverse drug events increases with age and number of medications and so we need to balance two competing domains; the potential greater harms from under treating than over treating particularly for the 'healthy' elderly and the need to consider de-prescribing for those who are frail or have side-effects or complications/comorbidities to deal with.
  Therefore, according to the 2018 CVD risk assessment and management guidance, healthy people over 75 years with few co-morbidities and an estimated life expectancy of more than 5 years, are recommended to have their 5-year CVD risk assessed, using the NZ Primary Prevention equations, and treatment prescribed based on discussing the same management options as for people under 75 years of age.
- **Exceptions to prescribing recommended CVD medications.** CVD primary and secondary prevention targets have been set deliberately lower than ideal because it is recognised that many people have contraindications for, cannot tolerate, or choose to decline recommended medicines. A screening entry or task to record an exception or exemption to recommended prescribing has been developed (using the term CVDX). This allows review within a recommended time frame, ensuring the exception remains valid over time (eg a screening entry with associated recall). As at the beginning of October 2019, CVDX has been tested for implementation in most practice management systems. CVD primary and secondary prevention targets will continue to reflect the whole population but the use of CVDX will be monitored so that any target resetting can be informed by this.
- The CVD indicators support the System Level Framework 2016-2020 - Amenable Mortality – Cardiovascular disease.
- A data specification which further clarifies the parameters of PHO data is available from Metro Auckland Data Custodian Group.
- The associated list of standardised Read codes and drugs are available in Appendix 1 and 2 as well as the data specification. A SNOMED update will be implemented when available.
- Data Source: PHO data sourced from Practice Management Systems will be shared via HealthSafe database in accordance with the Metro Auckland Data Sharing Framework.

The 2019 Metro Auckland CVD Working Group has recommended

- Excluding patients with a history of haemorrhagic stroke from the triple therapy indicator as antiplatelet/anticoagulants are not indicated for this group.
- Changing the indicator notation greater than >20% or >15% to greater than or equal to (≥20%, ≥15%). While word documents have inconsistently noted this difference, risk stratification and impact of therapy in both 2003 and 2018 CVD guidelines has always been intended to be greater than or equal to (≥) for each treatment threshold.
- Change wording from *ever recorded* to *most recently recorded CVD risk.* The new algorithms should always trump the old scores. The 2018 primary prevention equations have identified that only 31% of those previously recorded with a CVD risk assessment ≥ 20% (using the 2003 risk equations) will remain ≥ 15%- the new primary prevention drug treatment threshold (using the 2018 risk equations). Therefore the 2003 CVD algorithm overestimates CVD event risk considerably and by retaining 'ever recorded' may result in over-medicalisation and possibly unnecessary drug treatment. Secondly feedback from our practices is that due to lifestyle management (eg physical activity, weight loss, smoking cessation, alcohol reduction) and/or change in medications, a person's CVD risk may be effectively reduced and therefore may not now require longterm dual medication therapy.
- Exclude those identified as "clinically high" (e.g. 99, -1, 101) in the dual therapy primary prevention indicator. Currently these are converted to a CVD risk score >20% score and picked up for inclusion in Dual Therapy denominator cohort. The concept of including 'clinically high' in the primary prevention denominator previously was to provide fuller lists for GPs to review. However this resulted in a mixed denominator with a proportion of patients who were NOT necessarily recommended for dual therapy. These numbers are not CVD risk scores but used in the PMS as a shorthand to denote exclusions to primary prevention risk algorithms (eg prior CVD, genetic lipid disorder and diabetes with nephropathy). Newly excluded 'high CVD risk' conditions in the 2018 CVD algorithms such as chronic kidney disease and heart failure will also be denoted in the same way. New CVD algorithms are likely to be developed for some of these high risk population groups in the short-medium term. Changes to this indicator offers opportunities for improving data quality and condition management. It would provide a much cleaner, easy to use accurate list for GPs to focus their energies and a much more targeted denominator population for performance targets.
    - **Prior CVD** – the majority of people with a "clinically high" code will have prior CVD and a separate list of 'clinically high' offers practices the opportunity to improve Read coding of CVD in the PMS AND offer triple therapy.
    - **Genetic Lipid Disorder** (GLD) There are two main issues with this classification and assignment to ≥20%. Firstly GLD has been overly mis-classified with the proportion of people with GLD in the PREDICT cohort being far more than would be expected from population prevalence estimates. This has occurred due to confusion in practices about the definition of familial dyslipidaemias. In addition, if people have a suspected diagnosis of GLD then cascade screening/family tracing is recommended with specialist follow-up and high dose statins +/- ezetimibe or PSK9 therapy are indicated. In summary, these people are not eligible for CVDRA using the current algorithms and need a different clinical pathway of care.
    - **Diabetes with nephropathy:** These people are at high CVD risk and at high risk of macro- and microvascular complications. Intensive therapy is recommended and they may be eligible for triple therapy. Our recommendation is to treat these people separately/appropriately rather than be included into a dual therapy indicator.

Microalbuminuria and Macroalbuminuria: The definition of microalbuminuria in the diabetes indicator list is incorrect as there is no upper limit specified. International and national guidelines indicate that an albumin creatinine ratio (ACR) above 30mg/mmol indicates macroalbuminuria (diabetes with overt nephropathy). The name should reflect this. The collection of diabetes data had gained maturity and therefore elevated ACR could be determined according to established clinical criteria. That is: that an elevated result should be repeated one to two times to confirm the result and therefore indicate medication management with an ACE inhibitor or Angiotensin receptor blocker. Communications with Sian Burgess (Ministry of Health) and the University of Auckland VIEW group confirmed that this can be operationalised as an indicator by a patient having two consecutive tests of elevated ACR taken at least 90 days apart.

Diabetes Indicator 1: HbA1c Glycaemic control: Percentage of enrolled patients with diabetes (aged 15 – 74 years) who have good or acceptable glycaemic control (latest HbA1c ≤64) recorded in the last 15 months

Rationale for Indicator

A high HbA1c is associated with a high risk of developing complications of diabetes and ultimately leads to increased morbidity and mortality resulting in additional burdens on the health system. Diabetes contributes a significant portion of the life expectancy gap particularly for Pacific peoples.

Eligible Population

Enrolled patients with diabetes (coded within C10) aged 15 – 74 years. The intention is to target patients with Type 2 diabetes but for ease of measurement we will not exclude patients with type 1 diabetes because many practices only code diabetes as C10 Read Code.
Those aged 14 years and under generally are managed by Hospital Services.

Goal

To improve the HbA1c of patients with diabetes who do not have acceptable glycaemic control.

Target

80% of patients with diabetes have good glycaemic control (latest HbA1c ≤64 mmol/mol). To be achieved by 30 June 2020.

Indicator Definition

Numerator: *Number of enrolled patients with diabetes aged 15 – 74 years with the most recent HbA1c ≤64 mmol/mol, recorded during the past 15 months (rolling).*
Denominator: *Number of enrolled patients with diabetes aged 15 – 74 years.*

Data Source

- PHO: Data sourced from PMS via CPI extracts from practices and also available via diabetes or other extract tools used by PHOs.

Diabetes Indicator 2: BP Control: Percentage of enrolled patients with diabetes (aged 15 – 74 years) whose latest systolic blood pressure recorded in the last 15 months is <140mmHg

Rationale for Indicator

Patients who have both diabetes and hypertension are more susceptible to complications such as renal disease, ischaemic heart disease and retinopathy. Hypertension is probably a greater

contributor to renal failure in people with diabetes than hyperglycaemia and certainly contributes significantly to cardiovascular risk and mortality.

Eligible Population

Enrolled people with diabetes aged 15 – 74 years.

Goal

To reduce the risk of renal impairment and retinopathy in patients with diabetes by maintaining a systolic blood pressure below 140mmHg.

Target

80% of patients with diabetes will have a systolic BP <140mmHg. To be achieved by 30 June 2020.

Indicator Definition

Numerator: *Number of enrolled patients with diabetes aged 15 – 74 years whose latest systolic BP recorded within the last 15 months (rolling) is below 140mmHg.*
Denominator: *Number of enrolled patients with diabetes aged 15 – 74 years.*

Data Source

- PHO: Data sourced from PMS via CPI extracts from practices and also available via diabetes or other extract tools used by PHOs.

Guidance Notes

- Note that guidelines suggest that the target for BP control in people with diabetes should be <130/80mmHg. There was a lot of debate where the cut-off should be and whether to include systolic and diastolic blood pressure or not. In the end MACGF decided to keep it simple and not encourage gaming by going for a realistic BP target that could then be lowered once we knew baseline performance and the treatment gap. When close to achieving this target the BP target level could be lowered further to ≤ 130/80mmHg. Some PHOs will still be reporting performance to their practices against the lower target as well.

Diabetes Indicator 3: Management of Microalbuminuria and Macroalbuminuria: Percentage of enrolled patients with diabetes (aged 15 to 74 years) who have an elevated ACR recorded on two consecutive occasions at least 90 days apart and are on an ACE inhibitor or Angiotensin Receptor Blocker.

Rationale for Indicator

Microalbuminuria is most often an early sign of kidney damage from diabetes. Microalbuminuria (or progression to macroalbuminuria - overt nephropathy) is confirmed if, in the absence of infection, by one or more repeated tests conducted over the next three months have an elevated Albumin Creatinine Ratio (ACR). This has been operationalised as having two consecutively elevated ACR results at least 90 days apart. If not treated, microalbuminuria can lead to end stage kidney failure. Recommended treatment is with an angiotensin converting enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB) as this slows the rate of progression to renal failure. Diabetes is the commonest cause of renal dialysis in metropolitan Auckland and the numbers requiring dialysis is increasing at an alarming rate which is placing a significant burden of disease and financial burden on the health system.

Eligible Population

Enrolled patients with diabetes aged 15 – 74 years and elevated ACR

Goal
To reduce the risk of renal damage through treatment with medication.

Aspirational Target
90% of people with diabetes aged 15 – 74 years with raised ACR will be on an ACEI or ARB. To be achieved by 30 June 2020.

Indicator Definition
Microalbuminuria = albumin/creatinine ratio (ACR) of ≥2.5 mg/mmol (Male) or ≥3.5 mg/mmol (Female) up to and including 30mg/mmol.
Macroalbuminuria = albumin/creatinine ratio (ACR) of >30 mg/mmol

Numerator: *Number of enrolled patients with diabetes aged 15 – 74 years with raised ACR (≥2.5 mg/mmol (Male) or ≥3.5 mg/mmol (Female)) with two consecutive measurements; the most recent measurement and an ACR taken at least 90 days prior to the most recent, who have been prescribed an ACE inhibitor or an ARB within the last 6 months.*

Denominator: *Number of enrolled people with diabetes aged 15 – 74 years with raised ACR (≥2.5 mg/mmol (Male) or ≥3.5 mg/mmol (Female)) with two consecutive measurements; the most recent measurement and an ACR taken at least 90 days prior to the most recent.*

Data Source
- PHO: Data sourced from PMS via CPI extracts from practices and also available via diabetes or other extract tools used by PHOs.

Diabetes Indicator 4: CVD Secondary Prevention: Percentage of enrolled patients with diabetes (aged 25 to 74 years) with known cardiovascular disease who are on triple therapy (Statin + BP lowering agent + Antiplatelet/Anticoagulant).

Exclusion: History of haemorrhagic stroke

Rationale for Indicator
Triple therapy is recommended for people with existing ischaemic CVD event to prevent hospitalisation and reduce cardiovascular disease mortality. We know that there is a greater return on investment for this intervention than for treating those with high risk for primary prevention.

Eligible Population
Enrolled patients aged 25 -74 years with diabetes and known cardiovascular disease (angina, previous MI, CVA, confirmed TIA, peripheral vascular disease, coronary or peripheral artery procedures) excluding people with a coded history of haemorrhagic stroke.

Goal
To maximise the use of triple therapy to minimise the risk of further cardiac events for patients with known cardio-vascular disease.

Aspirational Target
70% of enrolled patients with diabetes and known ischaemic cardiovascular disease have been prescribed triple therapy in the last six months. To be achieved by 30 June 2020.

Exceptions to recommended prescribing

CVD primary and secondary prevention targets have been set deliberately lower than ideal because it is recognised that many people have contraindications for, cannot tolerate, or choose to decline recommended medicines. A screening entry or task to record an exception or exemption to recommended prescribing has been developed (using the term CVDX). This allows review within a recommended time frame, ensuring the exception remains valid over time (eg a screening entry with associated recall). As at the beginning of October 2019, CVDX has been tested for implementation in most practice management systems. CVD primary and secondary prevention targets will continue to reflect the whole population but the use of CVDX will be monitored so that any target resetting can be informed by this.

Excluding patients with a history of haemorrhagic stroke is a more appropriate and clear implementation of CVD guidelines. Many GPs have historically recorded a Read code at a high level, often using G6* Cerebrovascular Disease that does NOT distinguish the type or cause of cerebrovascular accident (CVA). An additional field will identify where more specific Read coding exists that identifies a history of haemorrhagic stroke to enable exclusion of these patients.

Indicator Definition

Ischaemic CVD events eligible for triple therapy include:

- Angina
- Myocardial Infarct (MI)
- Percutaneous coronary intervention (PCI)
- Coronary artery bypass graft (CABG)
- Transient Ischaemic Attack (TIA)
- Ischaemic CVA/stroke (non-haemorrhagic stroke)
- Peripheral vascular disease or peripheral artery procedures

CVD events **not** eligible for triple therapy include:

- haemorrhagic stroke [1]

[1] **M**etro Auckland HealthSafe data set will include all patients with a CVD event history and have a separate field that identifies patient with Read coding of a history of haemorrhagic stroke.

A detailed list of Read codes that describe CVD events to identify is included in Appendix 1.

Triple therapy =

1. antiplatelet (e.g. aspirin, clopidogrel, ticagrelor) or anticoagulant (e.g. warfarin,, dabigatran)
2. statin
3. an antihypertensive medication

A detailed list of medications is contained in Appendix 2

Numerator: *Number of enrolled patients (aged 25 -74 years) with diabetes who have had a CVD event, who have had triple therapy prescribed in the last 6 months (rolling).*

Denominator: *Number of enrolled patients (aged 25 -74 years) with diabetes who have had a CVD event.*

Exclusion: *History of haemorrhagic stroke*

Data Source

- PHO: Data sourced from PMS via CPI extracts from practices and also available via diabetes or other extract tools used by PHOs.

Diabetes Indicator 5: CVD Primary Prevention: Percentage of enrolled patients with diabetes (aged 25 to 74 years), most recently recorded cardiovascular risk score is ≥20% (2003 methodology) OR ≥15% (2018 methodology) and who are on dual therapy (Statin + BP Lowering agent)

Exclusions: History of prior CVD and those identified as "clinically high"

Rationale for Indicator

While secondary prevention has lower Numbers Needed Treat, to impact the overall number of new CVD events it is necessary to target primary prevention and this is also shown to be cost effective for 'high risk' people. There is conflicting evidence about the role of aspirin in this group. The 2018 CVD update recommends that the benefits of the use of aspirin need to be carefully weighed up against the risks of bleeding and, in general, should only be considered for primary CVD prevention in high-risk individuals (≥15% 2018 methodology) under the age of 70 years. However, there is no debate regarding 'dual therapy' which is recommended as a primary preventative measure in those patients who have not had a CVD event but who have a CVD risk score of ≥15% using the 2018 methodology or ≥20% using the 2003 methodology.

Eligible Population

Eligible enrolled patients (aged 25 to 74) with diabetes whose latest CVD risk score recorded ≥20% (2003 methodology) OR ≥15% (2018 methodology[1]).
Exclusions: patients with a prior CVD event identified in indicator 4 above and patients whose most recently recorded CVD risk score is noted as clinically high (e.g. 101, 99,-1).

Exceptions to recommended prescribing

Primary and secondary prevention targets have been set deliberately lower than ideal because it is recognised that many people have contraindications for, cannot tolerate, or choose to decline recommended medicines. A screening entry or task to record an exception or exemption to recommended prescribing has been developed (using the term CVDX). This allows review within a recommended time frame, ensuring the exception remains valid over time (eg a screening entry with associated recall). As at the beginning of October 2019, CVDX has been tested for implementation in most practice management systems. CVD primary and secondary prevention targets will continue to reflect the whole population but the use of CVDX will be monitored so that any target resetting can be informed by this.

Patients whose latest recorded CVD risk score identifies them as "clinically high" are excluded from this population as these are not necessarily recommended for Dual therapy (see guidance notes below).

Goal

To reduce the number of patients having a CVD event by reducing risk through primary prevention with dual therapy in those who have high CVD risk (≥20% 2003 methodology OR ≥15% 2018 methodology).

Aspirational Target

Until the 2018 CVD risk equations are implemented this target is an aspirational target that will continue to be reported against but will not be actively progressed towards achievement.
When the 2018 methodology is implemented the target is to achieve 70% of patients with diabetes and a CVD risk ≥15% (2018 methodology) will be prescribed dual therapy).

Indicator Definition

Dual therapy = a statin + an antihypertensive medication.

Numerator: *Number of enrolled patients with diabetes aged 25 - 74 years whose latest CVD Risk score recorded ≥20% (2003 methodology)* ***OR*** *≥15% (2018 methodology), who have had dual therapy prescribed in the last 6 months (rolling)*

Denominator:

Number of enrolled patients with diabetes aged 25 - 74 years with whose latest CVD Risk score recorded ≥20% (2003 methodology) ***OR*** *≥15% (2018 methodology).*

Exclusions: *patients with a prior CVD event identified in indicator 4 above and patients whose most recently recorded CVD risk score is noted as clinically high (e.g. 101, 99,-1).*

Data Source

- PHO: Data sourced from PMS via CPI extracts from practices and also available via diabetes or other extract tools used by PHOs.

Guidance Notes

- Note that data for this indicator excludes those with a previous ischaemic CVD event to avoid double counting patients with a known CVD event as these will be classified as "clinically high risk" and CVD event rates equivalent to or higher than 20% 5-year risk (2003 methodology) OR 15% 5- year risk(2018 methodology).
- There has been extensive debate regarding whether we should record 'ever recorded high risk' or the latest measure of CVD Risk score**. The 2019 Metro Auckland CVD Working Group has recommended the focus on the most recent latest measurement** given the following:
    - The previous used CVD algorithm (Adjusted Framingham equation) overestimates CVD event risk and therefore may result in over-medicalisation and overtreatment. Hence the new 2018 algorithms should always trump the old scores.
    - Feedback from practices is that due to lifestyle management (e.g. physical activity, weight loss, smoking cessation, alcohol reduction etc.) and/or change in medications, a person's CVD risk can be effectively reduced and therefore may not now require dual long-term medication therapy.
    - There are frequent reports of 'mistakes' with data entry that then cause the patient to always appear on dual therapy lists.
- Exclude those identified as "clinically high" (e.g. 99, -1, 101) in the dual therapy primary prevention indicator. Currently these are converted to a CVD risk score >20% score and picked up for inclusion in Dual Therapy denominator cohort. The concept of including 'clinically high' in the primary prevention denominator previously was to provide fuller lists for GPs to review. However this resulted in a mixed denominator with a proportion of patients who were NOT necessarily recommended for dual therapy. These numbers are not CVD risk scores but used in the PMS as a shorthand to denote exclusions to primary prevention risk algorithms (eg prior CVD, genetic lipid disorder and diabetes with nephropathy). Newly excluded 'high CVD risk' conditions in the 2018 CVD algorithms such as chronic kidney disease and heart failure will also be denoted in the same way. New CVD algorithms are likely to be developed for these high risk population groups in the short-medium term. Changes to this indicator offers opportunities for improving data quality and condition management. It would provide a much cleaner, easy to use accurate list for GPs to focus their energies and a much more targeted denominator population for performance targets.
    - **Prior CVD** – the majority of people with a "clinically high" code will have prior CVD and a separate list of 'clinically high' offers practices the opportunity to improve Read coding of CVD in the PMS AND offer triple therapy.

- **Genetic Lipid Disorder** (GLD) There are two main issues with this classification and then assignment to ≥20%. Firstly we have found that it has been overly misclassified with the proportion of people in the PREDICT cohort being far more than would be expected from population prevalence estimates. When investigated by the VIEW team, only a small proportion classified as having GLD actually had a risk ≥20% (2003 methodology). This has occurred due to confusion in practices about the definition of familial dyslipidaemias. In addition, if they have a suspected diagnosis of GLD then cascade screening/family tracing is recommended with specialist follow-up and high dose statins +/- ezetimibe or PSK9 therapy are indicated. In summary, these people are not eligible for CVDRA using the current algorithms and need a different clinical pathway of care.
- **Diabetes with nephropathy: T**hese people are at high CVD risk and at high risk of macro- and microvascular complications. Intensive therapy is recommended and they may be eligible for triple therapy. Our recommendation is to treat these people separately/appropriately rather than be included into a dual therapy indicator.

Resource

- The NRA (Northern Regional DHB Alliance) produce six-monthly reports which use Test-Safe data to compare rates of dispensed medication which is one step closer to measuring adherence than using PMS prescribed data. These reports identify practices that are statistical outliers in their rate of uptake of medications for primary and secondary prevention, however are currently unable to be used to identify patients who are not receiving the desired interventions.

Clinical Indicators – Long Term Conditions Management – CVD

CVD Indicator 1: CVD Secondary Prevention: Percentage of enrolled patients (aged 25 to 74 years) with known cardiovascular disease who are on triple therapy (Statin + BP lowering agent + Antiplatelet/Anticoagulant).

Exclusion: History of haemorrhagic stroke

Rationale, eligible population and other notes follow those of Diabetes Indicator 4 above but pertain to **all** patients with known CVD (as opposed to indicator 4 above that includes only patients with diabetes).

CVD Indicator 2: CVD Primary Prevention: Percentage of enrolled patients (aged 25 to 74 years), whose most recently recorded cardiovascular risk score is ≥20% (2003 methodology) OR ≥15% (2018 methodology) and who are on dual therapy (Statin + BP Lowering agent).

Exclusions: History of prior CVD and those identified as “clinically high”

Rationale, eligible population and other notes follow those of Diabetes Indicator 5 above but pertain to **all** those with established CVDRA as noted above (as opposed to indicator 5 above that includes only patients with diabetes).

APPENDIX 1: CVD EVENTS – Triple therapy patient identification logic

Logic overview

- Code and logic below describes which codes to use to identify patients with a CVD event history and those that have Haemorrhagic Stroke / CVA

Note a code with asterisk (*) beside it denotes that it includes all codes starting with those characters (e.g. G60* means all codes starting with G60)

- There are four main coding groups with specific logic and selected codes for each group
    - G3 - Ischaemic heart disease (77+ codes staring with G3)
    - G6 - Cerebrovascular Disease (108+ codes)
    - G7 - Arterial, arteriole and capillary disease (170+ codes)
    - 792 codes - Coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI)
- A person may have multiple historic codes that flag them as potentially eligible for triple therapy.
- Triple therapy is contraindicated for patients with haemorrhagic stroke. Any patient with any haemorrhagic event coding history need to be excluded from the eligible patient list. Exclusion codes are in a subgroup of G6 (G60*, G61*, G62*, G680*, G681*, G682)*

CVD CODES

1. Ischaemic heart disease including myocardial infarction - G3 codes

   Include G3* i.e. any Read codes that start with G3 (77+ codes)
   Exclude
   - *G340* - Coronary atherosclerosis – G340. + 2 sub codes*
   - *G341* - Aneurysm of heart G341. + 5 sub codes*
   - *G342* - Atherosclerotic cardiovascular disease G342. No sub codes*

2. Cerebrovascular Disease G6 codes

   Include G6* i.e. any Read codes that start with G6 (106+ codes)
   Exclude
   - *G655. - Transient global amnesia 1 code*

3. Peripheral vascular disease (PVD) – G7 codes

   Include specific codes only (single codes not group codes)
   - G73y0 - Diabetic peripheral angiopathy
   - G73y1 - Peripheral angiopathic disease EC NOS
   - G73yz - Other specified peripheral vascular disease NOS
   - G73z0 - Intermittent claudication
   - G73zz - Peripheral vascular disease NOS

4. Coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI)

   (792*) All codes for coronary artery operations

5. OTHER CODES

   Include

- All Gyu3* - [X]Ischaemic heart diseases (8 codes)
- Gyu63* - [X]Cerebrl infarctn due/unspcf occlusn or sten/cerebrl artrs (1
- Gyu64* - [X]Other cerebral infarction
- Gyu6G* - [X]Cereb infarct due unsp occlus/stenos precerebr arteries

CONTRAINDICATED / EXCLUSION

Exclude any patient identified from the above eligible list with any coding history in the following code groups:

G60* = starting with G60 - Subarachnoid haemorrhage (10 codes)

G61* = starting with G61 - Intracerebral haemorrhage (14 codes)

G62* = starting with G62 - Other and unspecified intracranial haemorrhage (4 codes)

G680* = starting with G680 - Sequelae of subarachnoid haemorrhage (1 code)

G681* = starting with G681- Sequelae of intracerebral haemorrhage (1 code)

G682* staring with G682 - Sequelae of other non-traumatic intracranial haemorrhage (1 code)

NOTES. G3, G6 and G7 are high level Read codes. Coding should completed at a greater level of definition than these individual codes. However, G3 (i.e. G3*) remains included as many GPs most codes in this root are appropriate for triple therapy. G7 is excluded as most codes in this root are not appropriate. G6 should also be excluded as an indicator for prescribing triple therapy, however it is commonly used and hence is included. Note that the exclusion codes above will identify excluded G6 haemorrhagic CVA patients where granular coding exists and the Metro PHOs are undertaking a number of Read code quality improvement initiatives to increase coding and thus indicator eligibility accuracy.

Appendix 2 Medications

Anti-platelet / anti-coagulants

- Warfarin sodium
- Apixaban
- Aspirin
- Rivaroxaban
- Dabigatran
- Clopidogrel
- Prasugrel
- Ticagrelor
- Dipyridamole

Statins

- Atorvastatin
- Simvastatin
- Pravastatin
- Rosuvastatin
- Ezetimibe with simvastatin

Blood pressure lowering agents – ACE inhibitors

- Captopril
- Captopril with hydrochlorothiazide
- Cilazapril
- Cilazapril with hydrochlorothiazide
- Enalapril
- Enalapril with hydrochlorothiazide
- Lisinopril
- Lisinopril with hydrochlorothiazide
- Perindopril
- Quinapril
- Quinapril with hydrochlorothiazide
- Trandolapril

Blood pressure lowering agents – angiotensin receptor blocker

- Losartan
- Losartan with hydrochlorothiazide
- Candesartan

Blood pressure lowering agents – calcium channel blockers

- Amlodipine
- Diltiazem hydrochloride
- Felodipine
- Isradipine
- Nifedipine
- Verapamil hydrochloride

Blood pressure lowering agents – beta blockers

- Atenolol
- Bisoprolol
- Carvedilol
- Celiprolol
- Labetalol
- Metoprolol succinate
- Metoprolol tartrate
- Nadolol
- Pindolol
- Pindolol with clopamide
- Propranolol
- Sotalol
- Timolol maleate

Blood pressure lowering agents – diuretics

- Amiloride
- Amiloride with hydrochlorothiazide
- Bendrofluazide
- Chlorothalidone
- Indapamide
- Frusemide with amiloride
- Bendroflumethiazide

Blood pressure lowering agents – other

- Clonidine
- Clonidine hydrochloride
- Hydralazine
- Methyldopa

Note: previous MACGF decision not to include alpha blockers as primary indication was not usually to reduce blood pressure.