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(Plenary)

8:50 - 9:10 Serious Mental Illness and the Risk of Cardiovascular Disease

1869-2019



150
YEARS

Serious Mental Illness and the Risk of Cardiovascular Disease

Michael Williams
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Mr LC, age 65yrs

Risk factors

- Lifelong non smoker, body mass index 31, negative family history CAD
- Paranoid schizophrenia treated with Clozapine 450mg, Doxepin 100mg
- TC 5.3mmol/l, HDL 1.0mmol/l, LDL 3.3 mmol/l, Chol/HDL ratio 5.3

Presentation

- Acute onset chest pain at rest
- ST elevation in the anterior leads and lateral ST segment depression
- Delayed treatment with thrombolysis 5 hours post presentation to ED

Assessment

- Coronary angiography – triple vessel coronary artery disease, patent culprit vessel
- Echocardiography – Akinetic anterior wall and severe impairment of left ventricular systolic function, ejection fraction 25%

Mr LC, age 65yrs

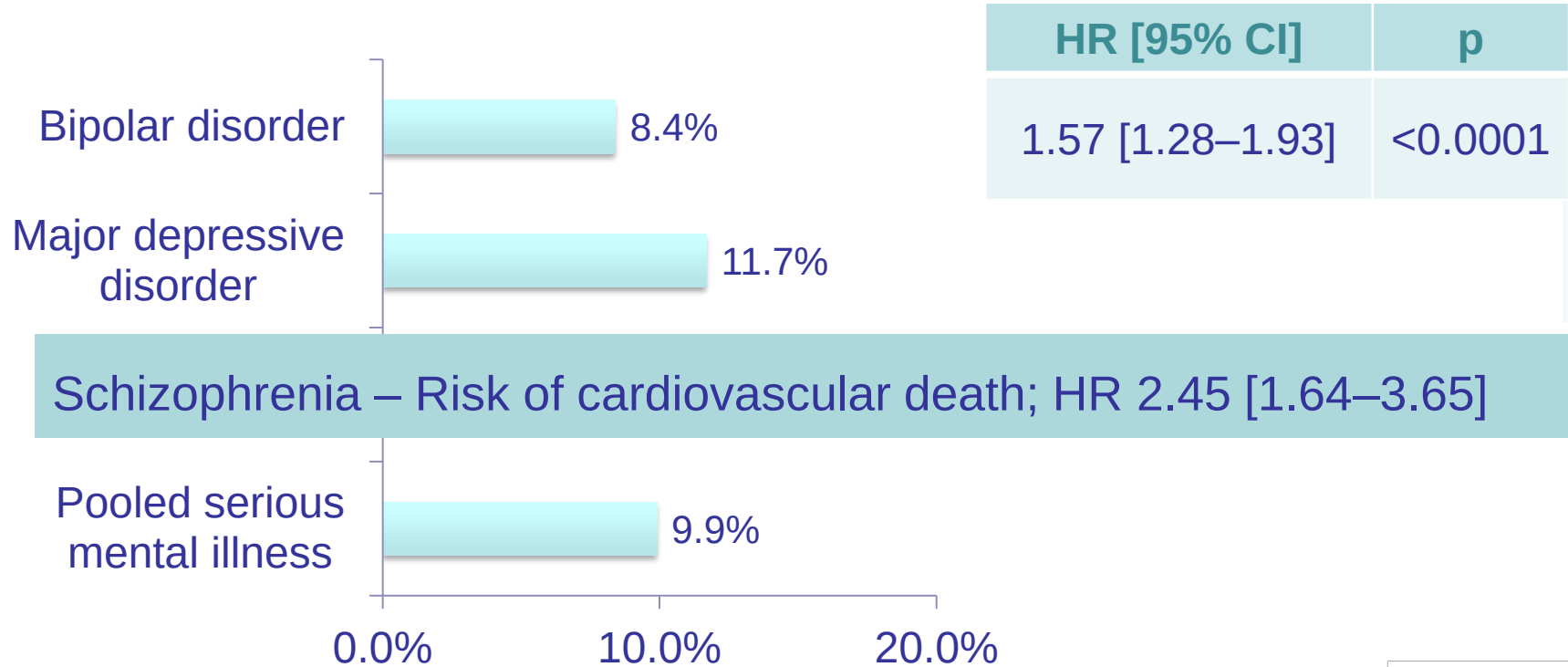
Progress

- Managed for acute heart failure
- Poor mobility requiring assistance with walking
- MRI head – multiple small areas of old subacute infarction
- 2 weeks Cardiology inpatient
- 8 weeks Rehabilitation ward, repeated falls, right humeral spiral comminuted closed fracture
- Failed two home leave trials

Outcome

- Discharged to rest home level care

Prevalence of CVD and adjusted risks of CVD in patients with serious mental illness

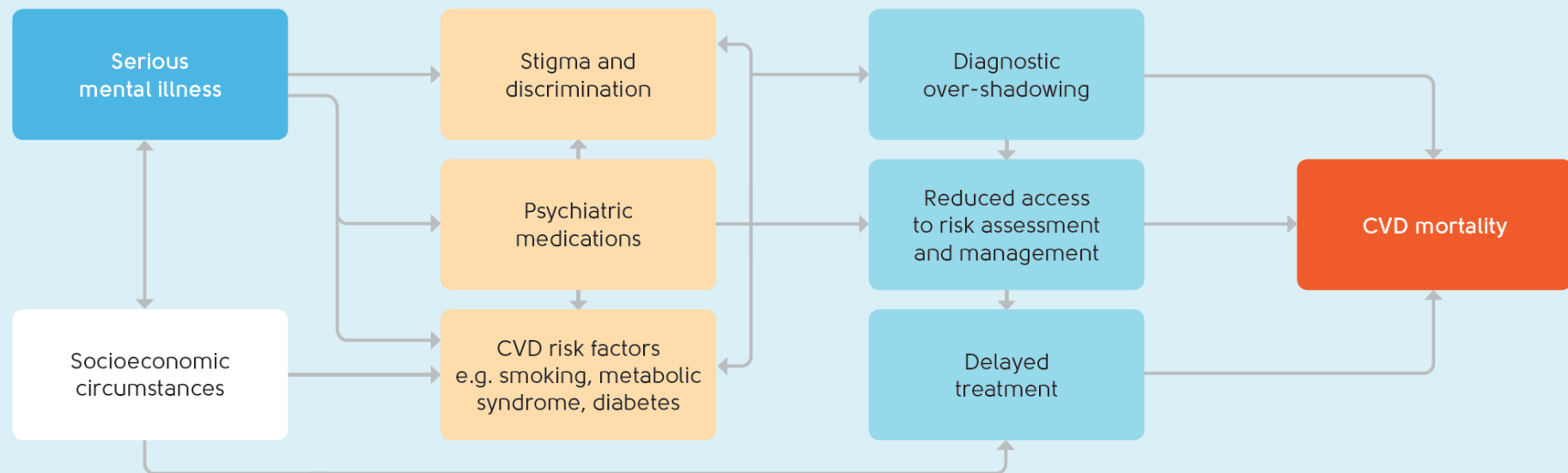


Premature mortality in adults using New Zealand psychiatric services

Cause of death	Combined SMR	95% CI
All natural causes	1.83	1.78–1.88

40 to 50% of excess mortality relates to CVD

Figure 1: Potential causal pathways to increased CVD mortality for people with serious mental illness.



Exposure to risk factors in serious mental illness

Cigarette smoking

- Any mental illness 32% prevalence vs 21% general population
- Schizophrenia – up to 75% prevalence
- Consumption higher number of cigarettes

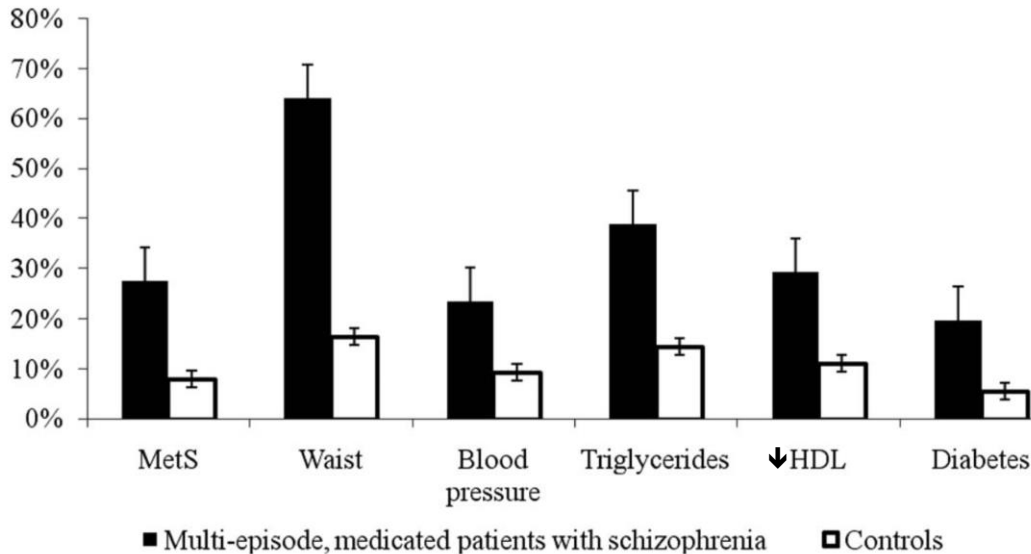
Nutrition

- One to two meals per day
- High-fat low-fibre foods
- Lower consumption fruit and vegetables

Physical activity

- 30% of patients with SMI – no physical activity
- 75% less likely to undertake vigorous physical activity
- Barriers – sedation from medications, impaired motivation, financial

Psychotropic medication and CVD risk in patients with schizophrenia



	OR [95% CI]
Hypertension	1.36 [1.21-1.53]

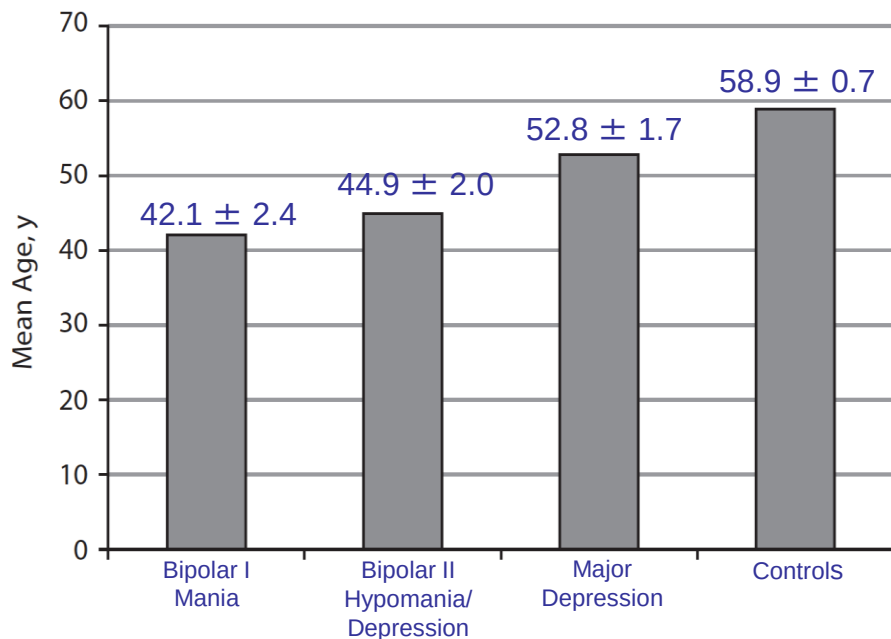
Effects of drug therapy on CVD risk in patients with serious mental illness

	Antipsychotics	Antidepressants	Mood stabilisers
Obesity	clozapine, olanzapine +++ haloperidol, lurasidone 0/+	mirtazipine, paroxetine, TCAs +	valproate, lithium ++ lamotrigine 0
Dyslipidaemia	+ to ++	0 to + (weight gain)	- to +
Diabetes	clozapine, olanzapine +++ haloperidol, lurasidone 0/+	0 to +	0 to ++ (valproate)



Cardiovascular disease occurs at a younger age in persons with SMI

Bipolar disease and major depression



Schizophrenia - prevalence CVD

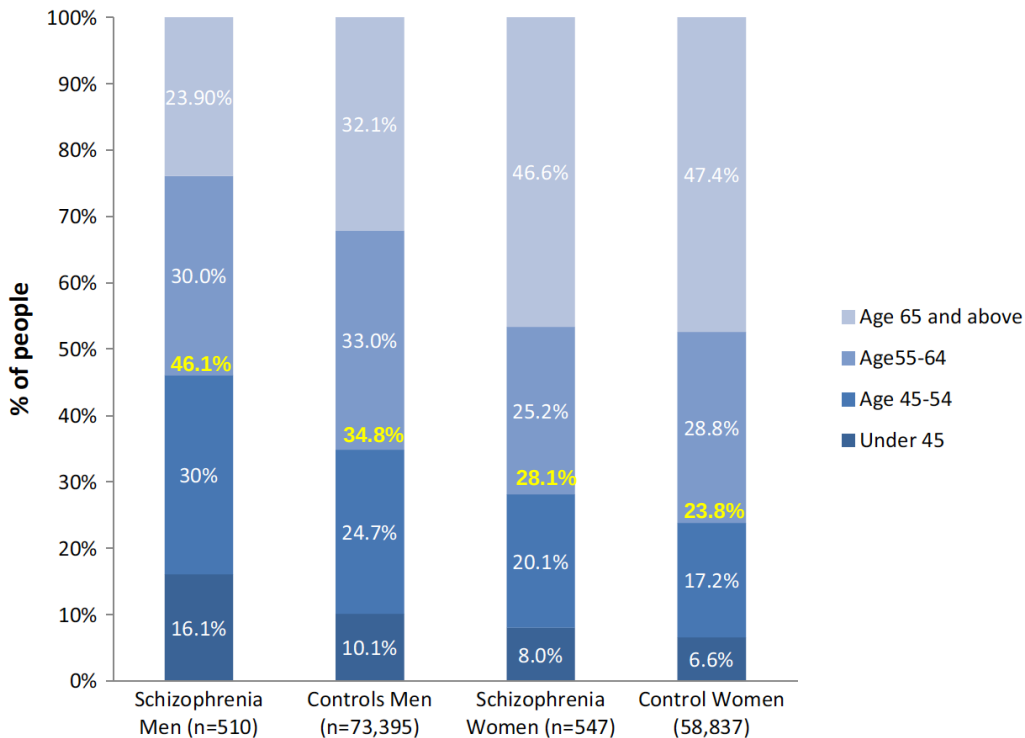
Age group	% Male Patients	% Male Controls
35 - 44	1.2	0.8
45 - 54	5.6	4.2
55 - 64	15.9	13.4
65 - 74	27.2	29.8

Risk of death from coronary heart disease in SMI is present from early adulthood

Age group	All SMI HR (95% CI)	Not taking Anti-psychotics	Taking Anti-psychotics
18 - 49	2.88 (1.77-4.70)	2.75 (1.17-6.44)	3.13 (1.84-5.35)
50 - 75	1.76 (1.54-2.01)	1.40 (1.10-1.79)	2.01(1.73-2.33)
≥75	1.04 (0.91-1.18)	1.17 (0.94-1.46)	0.98 (0.84-1.13)

Adjusted for age, sex, smoking status and deprivation

Cardiovascular disease risk algorithms underestimate the risk of CVD in schizophrenia



	CVD < 55yrs
Males - actual rate	46.1%
calculated high risk	3.2%

Is CVD risk being well managed in SMI?

Evidence of disparities in health care

Metabolic syndrome

- Obesity measures and blood pressure frequently not recorded
- Low metabolic testing rates – up to 30%
- Follow-up assessments – performed in 9%

Diabetes

- Low screening rates with haemoglobin A1c testing
- Poor lipid control common
- Non treatment rate of diabetes in schizophrenia – 45%

Cardiovascular disease

- Hypertension 63% untreated, heart failure not well treated in SMI
- Lower rates of coronary artery stenting and CABG
- Barriers to care – failure to seek treatment during acute coronary syndrome

Are interventions to reduce CVD risk in serious mental illness effective?

- Weight loss
 - Behavioural interventions – medium strength evidence
 - Metformin – moderate to high strength evidence
 - Topiramate, aripiprazole as adjunctive or primary – limited evidence
 - Exercise programmes – mixed results
- Smoking cessation
 - Varenicline (Champix), Bupropion (Zyban)*
- Lifestyle interventions
 - General population – meaningful but modest effects
 - Further research needed to adapt for persons with serious mental illness
- General population risk management intervention suggested
 - Diabetes, hypertension, dyslipidaemia

Cardiovascular Disease Risk Assessment and Management for Primary Care

Released 2018

[health.govt.nz](https://www.health.govt.nz)

<https://www.health.govt.nz/publication/cardiovascular-disease-risk-assessment-and-management-primary-care>

New Zealand CVD screening recommendations

Table 4: When to start risk assessments for men and women in different population subgroups

Population subgroup	Men	Women
Individuals without known risk factors	Age 45 years	Age 55 years
Māori, Pacific peoples or South-Asian* peoples	Age 30 years	Age 40 years
People with other known cardiovascular risk factors or at high risk of developing diabetes	Age 35 years	Age 45 years
People with diabetes (type 1 or 2)	From the time of diagnosis	From the time of diagnosis
People with severe mental illness (Appendix C)	From age 25 years	From age 25 years

Repeat assessments should follow every two years, annually if 5 yr risk $\geq$ 15%

Recommendations

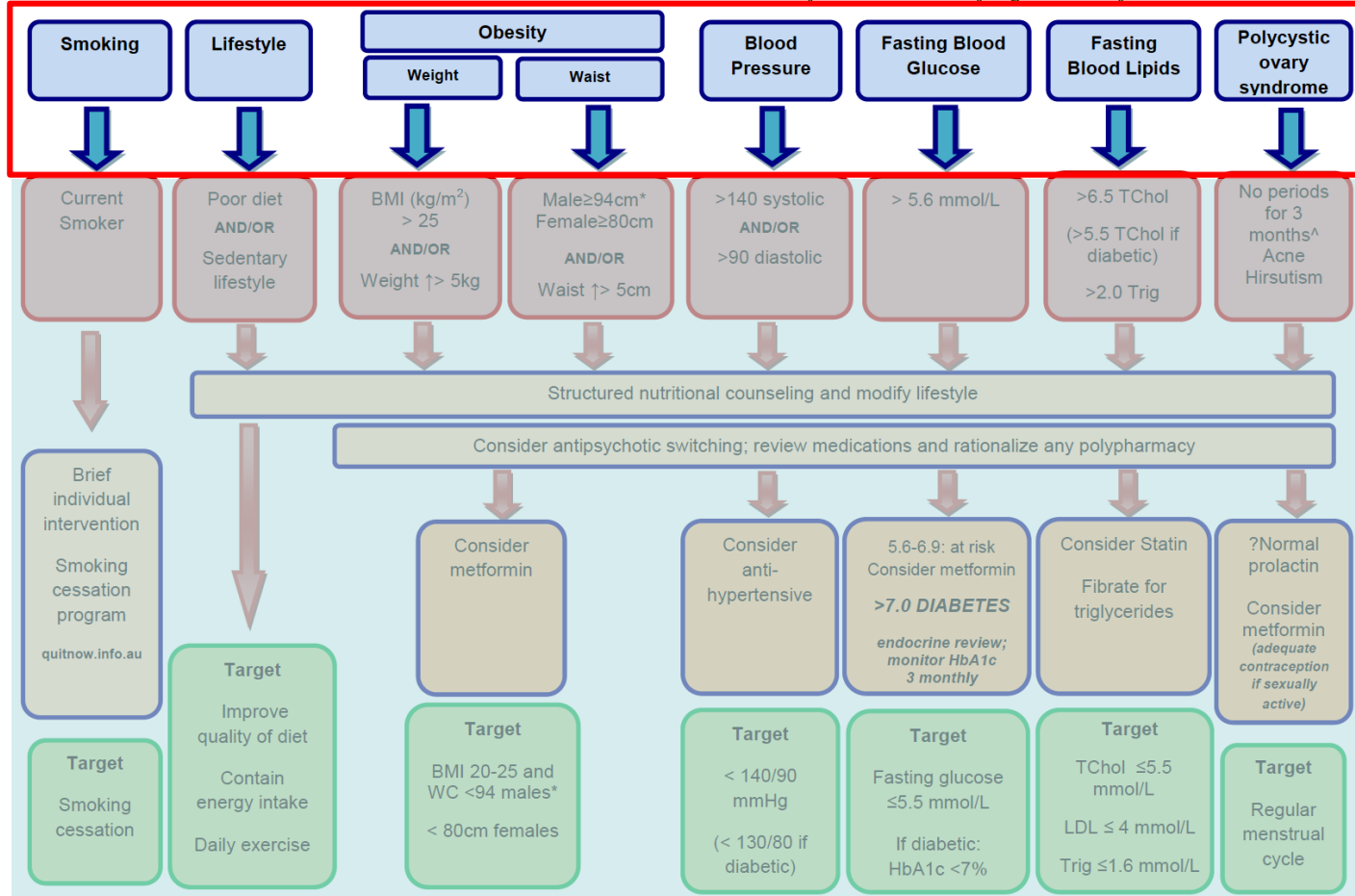
NICE clinical guideline 178, recommends:

GPs and other primary healthcare professionals should monitor the physical health of people with psychosis or schizophrenia when responsibility for monitoring is transferred from secondary care, and then at least annually (NICE 2014).

NICE clinical guideline 181 recommends:

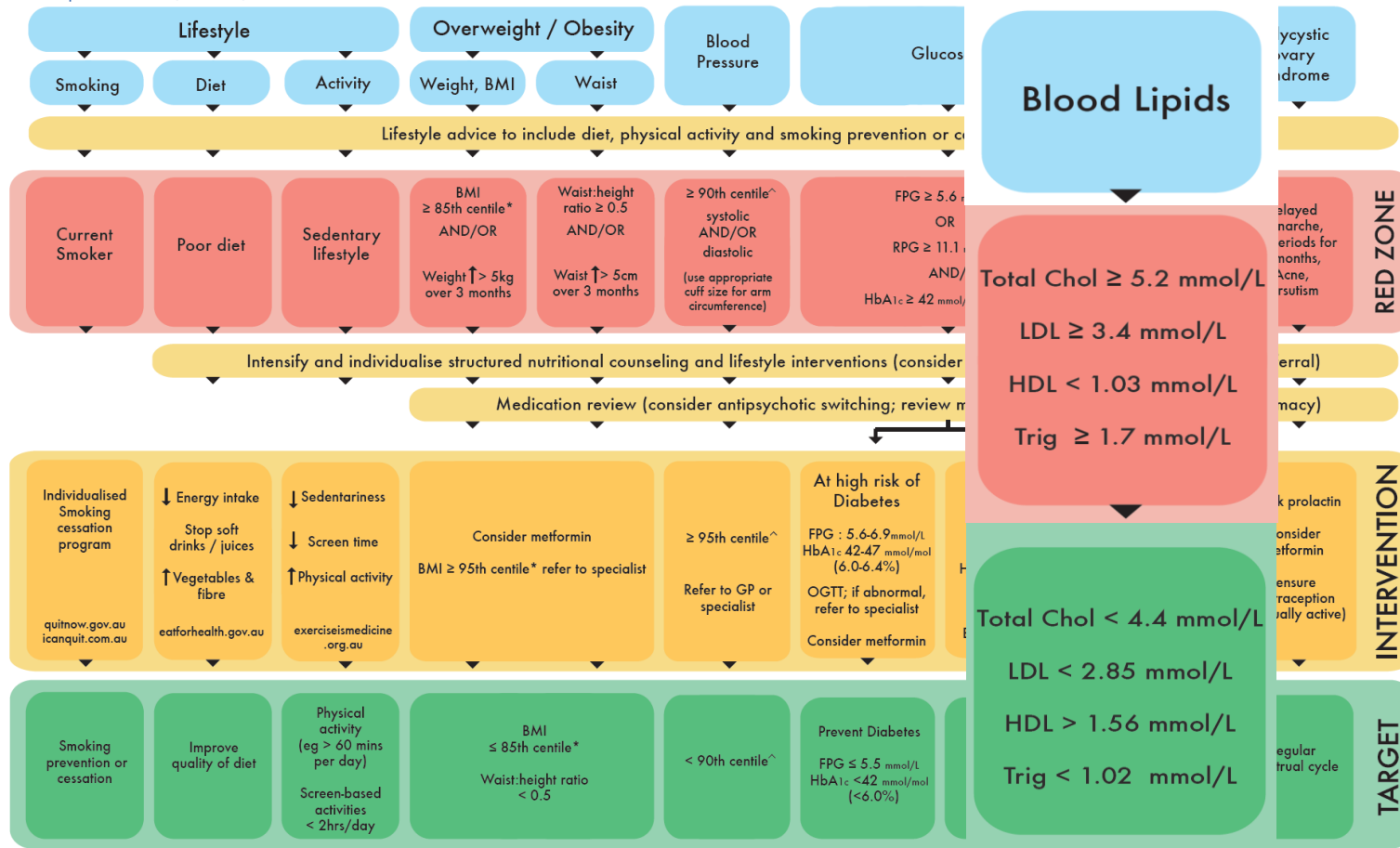
Recognise that standard CVD risk scores will underestimate risk in people who have additional risk because of underlying medical conditions or treatments. These groups include . . . people with serious mental health problems . . . [and] . . . people taking medicines that can cause dyslipidaemia such as antipsychotic medication, corticosteroids or immunosuppressant drugs (NICE 2016).

Positive Cardiometabolic Health : an early intervention framework for patients on psychotropic medication



Positive Cardiometabolic Health: An early intervention framework for adolescents on psychotropic medication

Adapted from Curtis J, Newall H, Samaras K. ©HETI 2011



Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the management of schizophrenia and related disorders

Effect	Strategies
<i>Metabolic effects</i> Obesity	Switch to an antipsychotic with low risk of weight gain Avoid polypharmacy if possible Provide appropriate advice about lifestyle interventions (diet and exercise) Consider metformin

The *Lancet Psychiatry* Commission: a blueprint for protecting physical health in people with mental illness



- Part 1: Physical health disparities for people with mental illness
- Part 2: Key modifiable factors in health-related behaviours and health services
- Part 3: Interplay between psychiatric medications and physical health
- Part 4: Multidisciplinary approaches to multimorbidity
- Part 5: Innovations in integrating physical and mental health care

Key Points

- Persons with serious mental illness have a reduced life expectancy of 10 to 20 years
- Multiple risk factors including psychiatric medications contribute to the increased risk of CVD
- General population CVD risk calculators underestimate risk in those with serious mental illness
- Screen for cardiometabolic risk factors from age 25
- Treat cardiometabolic risk factors!

