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Independent learning program for GPs

Unit 512 December 2014

Preventive health

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- Communication skills and the patient-doctor relationship
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ABOUT THIS ACTIVITY

'Prevention is better than cure' is a concept embedded in medical culture and preventive healthcare reflects measures that can be taken for disease prevention. These measures include the prevention of illness, the early detection of specific disease and the promotion and maintenance of good health.[1] In Australia, chronic disease is the leading cause of death and disability.[2] However, modification of risk factors through lifestyle change and pharmacological intervention can reduce the incidence of chronic disease and reduce premature death and disability.[2] The RACGP's *Guidelines for preventive activities in general practice* (Red book)[1] provides a framework for preventive activities in general practice. This edition of *check* considers case studies that explore preventive health in general practice.

LEARNING OUTCOMES

At the end of this activity participants will be able to:

- summarise evidence-based guidelines for primary prevention including calculation of a person's absolute cardiovascular disease risk
- develop a systematic approach to managing patients after myocardial infarction
- describe the approach to undertaking a vulval examination as part of a regular Pap smear
- outline preventive health activities suitable for people working in rural settings
- explain current immunisation recommendations for Aboriginal and Torres Strait Islander peoples.

AUTHORS

Penny Abbott MBBS, MPH, FRACGP is a senior lecturer at the School of Medicine, University of Western Sydney and a GP in the Aboriginal community controlled health sector and with the Justice Health and Forensic Mental Health Network of NSW.

Rachael de Jong BSc (Nutr) MPH is a national cardiovascular health project officer for the National Heart Foundation of Australia. Rachael is involved in food supply and cardiac rehabilitation projects that facilitate the translation of evidence into practice and support for system improvements.

Kristen FitzGerald MBBS (Hons), DRANZCOG, FRACGP, MPH&TM is a GP and senior lecturer in rural health at the Rural Clinical School, University of Tasmania.

Rebecca Lee BPharm MPH is a national project officer in Health Equity and Secondary Prevention for the National Heart Foundation of Australia. Rebecca's special interests include heart failure and policy-focused improvement in health among Australia's most vulnerable populations.

Tanya Medley PhD is a guideline developer for the clinical programs at the National Heart Foundation of Australia. She has special interests in both dissemination of evidence-based recommendations and regenerative medicine in the area of cardiology and immunology.

Karen Page DN RN GradDip (CritCare) BEd is the national manager of Health Equity and Secondary Prevention for the National Heart Foundation of Australia and a professor at Deakin University. Karen is known for her leadership in cardiovascular nursing and in managing risk in heart disease. Her experience spans the clinical, academic and non-for-profit sectors.

Jan Radford MBBS, FRACGP, FARGP, MPsychMed, MEd is associate professor of general practice at the University of Tasmania in Launceston. Jan has been a GP for 28 years. She has an academic interest in medical education and clinical audit within general practice.

Miranda Sherley BSc (Hons), PhD, MBBS, FRACGP is a sexual health registrar at Canberra Sexual Health Centre and a GP at Bungendore Medical Centre. Miranda is a molecular microbiologist who previously lectured in medical microbiology. She has a particular interest in plasmid evolution and the roles of horizontal gene transfer and host–pathogen interactions in microbial evolution and speciation.

Michelle Stewart BHthSc (Health Information Management) is the national manager of Heart Care (Acute Coronary Syndromes) for the National Heart Foundation of Australia. Michelle is involved in various programs to support the translation of the evidence base into management and support system change to improve the provision of acute coronary syndrome care in Australia.

Jen Thompson MPH is a national policy advisor for Active Living at the National Heart Foundation of Australia. She has broad experience in health policy development, stakeholder engagement and program management and was previously the executive officer of the National Vascular Disease Prevention Alliance.

PEER REVIEWERS

Linda Barrett MBBS FRACGP has worked as a GP in Sydney, and as a medical educator and examiner for the RACGP. She has developed, reviewed and presented educational content for the RACGP.

Mark F Harris MBBS, MD (Syd), DRACOG, FRACGP is foundation professor of general practice, and executive director of the Centre for Primary Health Care and Equity at The University of New South Wales. Mark's clinical practice is as a volunteer GP with the Asylum Seekers Centre from 2000 to the present. He is a member of the NHMRC Academy 2010–2013 and the Prevention and Community Health Committee. He has 300 publications and 2200 citations in peer reviewed journals. He received the Australian Association for Academic Primary Care Charles Bridges-Webb Medal in 2010 and the Humanitarian Award in Health in 2010 from the Refugee Council of Australia.

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GUIDE TO ABBREVIATIONS AND ACRONYMS IN THIS UNIT OF *CHECK*

5As	assess, advice, agree, assist and arrange
ACEI	angiotensin converting enzyme inhibitor
AF	atrial fibrillation
ARB	angiotensin receptor blocker
BMI	body mass index
BP	blood pressure
CHD	coronary heart disease
CIN	cervical intraepithelial neoplasia
COPD	chronic obstructive pulmonary disease
COX-2	cyclooxygenase-2
CVD	cardiovascular disease
DTPa	diphtheria, tetanus, pertussis vaccine
ECG	electrocardiogram
eGFR	estimated glomerular filtration rate
FBE	full blood evaluation
HbA1c	glycated haemoglobin
HDL-C	high-density lipoprotein cholesterol
HEADSS	Home, Education/Employment, Activities, Drugs, Sexuality and Suicide
HIV	human immunodeficiency virus
HMR	home medicines review
HPV	human papillomavirus
HRT	hormone replacement therapy
IgE	immunoglobulin E
LDL-C	low-density lipoprotein cholesterol
LFT	liver function test
MCS	microscopy, culture and swab
MI	myocardial infarction
NHF	National Heart Foundation
NHMRC	National Health and Medical Research Council
NRT	nicotine replacement therapy
NSAID	non-steroidal anti-inflammatory drug
PBS	Pharmaceutical Benefits Scheme
PENCAT	Pen Computer Systems Audit Tool
PHQ	patient health questionnaire
RAST	radioallergosorbent test
SCC	squamous cell carcinoma
SNAP	smoking, nutrition, alcohol and physical activity
STI	sexually transmissible infection
TG	triglycerides
TSH	thyroid stimulating hormone
UACR	urinary albumin:creatinine ratio
UAE	urea and electrolytes
VIN	vulval intraepithelial neoplasia

CASE 1

RONALD HAS A COUGH

Ronald, aged 26 years, is an Aboriginal man who coaches a junior football team. Ronald presents with a 3-week cough. He previously had rhinorrhoea, which settled after a few days. He has a strong family history of asthma and had asthma as a child. He considers himself a healthy man and takes no regular medications but is worried that his asthma may have come back.

QUESTION 1

How could you manage this consultation to provide preventive care for Ronald?

QUESTION 2

What preventive health screening/assessments would you consider for Ronald?

FURTHER INFORMATION

Ronald is a smoker, having started smoking tobacco in his early teens, and is interested in quitting. His wife is pregnant and this is part of his motivation to quit smoking. Apart from his health concerns, he tells you he had money problems recently and it would save him money if he could stop smoking.

On examination, Ronald has a normal body mass index (BMI) and waist circumference, blood pressure, random blood sugar level and heart rate. His respiratory and cardiovascular examination is unremarkable. You perform spirometry, which shows mild, reversible airways obstruction, and you advise him his cough might be due, at least in part, to asthma. There is no evidence of chronic obstructive pulmonary disease (COPD) on spirometry.

QUESTION 3

Is there a role for spirometry in screening of asymptomatic individuals for early detection of asthma and COPD?

FURTHER INFORMATION

In view of Ronald's interest in stopping smoking, you discuss his options in depth, advising smoking cessation counselling and discuss medication options.

QUESTION 4

What type of smoking cessation counselling is likely to be most valuable for Ronald?

FURTHER INFORMATION

You note that Ronald is up-to-date on tetanus immunisation but has not had any other adult immunisations.

QUESTION 5

What immunisations are recommended for Ronald? What is the rationale for these recommendations?

FURTHER INFORMATION

As Ronald mentioned having money problems, you ask him if he would like to discuss the reasons for his money problems and decide to opportunistically screen him for gambling-related problems.

QUESTION 6

What would be an appropriate method for screening? What is the rationale for deciding to screen Ronald for problem gambling?

FURTHER INFORMATION

Given his strong family history of asthma, Ronald asks if their unborn child is likely to develop asthma and if there is anything he and his wife can do to prevent the development of asthma in their child. His wife has no health issues and does not smoke. Ronald also knows not to smoke in the house. He has heard there are other lifestyle modifications and preventive supplements that may be helpful prenatally and wants to discuss these.

QUESTION 7

How would you respond?

CASE 1 ANSWERS

ANSWER 1

This visit could be used opportunistically to undertake a preventive health assessment for Ronald in addition to managing his presenting concerns. Delivery of preventive health services improves health outcomes.[1,2] Preventive health services can be delivered in a way that takes into account the age and/or stage of life of the patient and may be of benefit in identifying risks in asymptomatic individuals.

The *National guide to preventive health assessment for Aboriginal and Torres Strait Islander people*, could be used as a guide for undertaking preventive healthcare in a culturally targeted way.[2] In many cases, deaths in Aboriginal and Torres Strait Islander peoples arise from potentially preventable chronic diseases and injury. It has been noted that diseases such as diabetes, hypertension, cardiovascular disease and chronic renal failure, which are known to have an insidious onset, are more prevalent in Aboriginal and Torres Strait Islander populations.[2] Chronic diseases are the largest contributors to the unacceptable life expectancy gap between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians; the combination of diabetes, coronary heart disease, cerebrovascular disease and chronic kidney disease is a particularly major health issue.[3] Aboriginal and Torres Strait people experience marked socioeconomic disadvantage and increased life stressors, compared with other Australians, contributing to their higher burden of chronic disease and risk of early death.[4,5]

ANSWER 2

The following preventive health screening/assessments could be considered for Ronald given his age and background:[2]

- lifestyle (including smoking, overweight/obesity, physical activity, alcohol, gambling)

- rheumatic heart disease
- hearing
- sexual health
- mental health
- respiratory health, cardiovascular health, chronic kidney disease, diabetes
- immunisation status
- dental health.

More information about screening/assessments can be obtained from the *National guide to preventive health assessment for Aboriginal and Torres Strait Islander people*.[2]

Questioning and history taking for Ronald could be tailored to obtaining information about the preventive areas of relevance to him, in addition to obtaining more information about his presenting concerns. The SNAP (smoking, nutrition, alcohol and physical activity) risk factors and the 5As framework (Ask, Assess, Advise, Assist, Arrange) can be used to engage people in lifestyle discussions and the 5As framework can be used to facilitate the detection, assessment and management of SNAP risk factors.[1,2]

ANSWER 3

In Ronald's case, spirometry was indicated given his symptoms.[6] However, there is no evidence to recommend routine spirometry for screening of asymptomatic individuals for either asthma[2] or COPD.[1,2] Spirometry should only be undertaken in those with symptoms suggestive of asthma or COPD.[6,7] However, early detection of asthma and COPD is recommended. Strategies for early detection of asthma include clinical vigilance and detailed history taking, considering conditions that mimic asthma.[2] Screening for symptoms of COPD should be undertaken opportunistically in all smokers and in all ex-smokers over the age of 35 years.[2,7]

ANSWER 4

There is strong evidence for the effectiveness of brief advice, brief interventions, cessation counselling, proactive Quitlines and pharmacotherapy in increasing quit rates in general populations.[8] There are few studies assessing the effectiveness of smoking cessation interventions for Aboriginal and Torres Strait Islander peoples; however, there is no evidence to suggest interventions found to be effective in other populations would be any less effective for Aboriginal and Torres Strait Islander peoples. Flexible and culturally targeted modes of delivering smoking cessation interventions[1,2] are likely to improve their effectiveness for Aboriginal and Torres Strait Islander peoples. For example, resources created for Aboriginal and Torres Strait Islander peoples and brief interventions delivered by Aboriginal health workers may be useful.[9,10] Treatment could be delivered by a range of health professionals, including Aboriginal health workers, practice nurses, GPs and smoking cessation counsellors to increase tobacco cessation rates.[10,11] The RACGP's *Supporting smoking cessation: a guide for health professionals*[11] contains a number of specific points of relevance to Aboriginal and Torres Strait Islander peoples, including the following:

- People who identify as Aboriginal or Torres Strait Islander qualify for Pharmaceutical Benefits Scheme (PBS) authority listing that provides up to two courses per year of nicotine patches, each of a maximum of 12 weeks. Under this listing, participation in a support and counselling program is recommended but not mandatory.
- Access to nicotine patches, bupropion and varenicline for Aboriginal and Torres Strait Islander peoples can be facilitated through the Closing the Gap PBS co-payment measure.

A number of guidelines provide advice on smoking cessation, often using the 5As model.[1,2,12] The basic principles of setting a quit date, emphasising the importance of abstinence and providing multi-session support (preferably four or more sessions) are important evidence-based strategies that assist people to stop smoking.[1,2] Even minimal advice assists people to quit smoking.[11] There is also a positive correlation between successful smoking cessation and counselling activities such that the longer the duration of the person-to-person intervention, the more effective it is.[13,14] Smoking cessation advice should be sensitive to the patient's preferences, needs and circumstances and should be delivered in a culturally appropriate manner.[1] There is no evidence that any particular behaviour change method is more effective than another in promoting change.

Studies suggest GPs underuse effective smoking cessation treatment approaches such as Quitline, pharmacotherapy and motivational interviewing.[1] Referral to Quitline should be strongly considered for all smokers.[1,2,12] Quitline has been shown to be effective in many populations worldwide and is likely to be beneficial for Aboriginal and Torres Strait Islander peoples. Quitline includes the option for online registration of patients, which can be done during a GP consultation, so they can receive follow-up phone calls.

ANSWER 5

Some groups of Aboriginal and Torres Strait Islander peoples may be at increased risk of vaccine-preventable diseases.[15] Influenza, pneumococcal and hepatitis B vaccines are recommended for Ronald, as discussed below.[7,15]

An annual influenza vaccine should be considered for Ronald. All Aboriginal and Torres Strait Islander peoples over the age of 15 years should be offered the current influenza vaccine annually, preferably in March to April before the Australian influenza season. This recommendation has been incorporated into Australian guidelines in view of the substantially increased risk of hospitalisation and death from influenza and pneumonia for Aboriginal and Torres Strait Islander peoples.[15] An influenza pandemic, the first since 1968, occurred in 2009 with the emergence of a new H1N1 influenza strain. Aboriginal and Torres Strait Islander peoples were disproportionately affected by the 2009 H1N1 influenza outbreak,[15] being four times more likely than non-Indigenous Australians to be admitted to hospital.[16]

Although Ronald does not have a chronic health condition, as a smoker he should be advised to have the pneumococcal vaccine (23vPPV) for the prevention of pneumococcal disease.

This vaccination is recommended for Aboriginal and Torres Strait Islander peoples aged 15–49 years who are smokers or have an underlying high-risk condition (eg chronic cardiac, renal or lung disease, diabetes, alcohol-related problems, immunosuppression).[2,15] Aboriginal and Torres Strait Islander children and adults have a significantly higher incidence of all pneumococcal disease than non-Indigenous Australians.[15] The risk of invasive pneumococcal disease in young Aboriginal and Torres Strait Islander adults is 11-fold higher than in non-Indigenous Australians.[17]

Pneumonia is the most common communicable disease contributor to premature death in Aboriginal and Torres Strait Islander adults. Hospitalisation for pneumonia is four times more common in Aboriginal and Torres Strait Islander peoples than in non-Indigenous Australians and up to eight times higher in younger Aboriginal and Torres Strait Islander adults compared with non-Indigenous young adults.[15,18]

Current immunisation guidelines recommend all Aboriginal and Torres Strait Islander adults should be offered testing for previous hepatitis B infection and, if non-immune, they should be offered vaccination.[15] These guidelines also recommend pertussis vaccination for those at risk of transmitting it to vulnerable persons (eg neonates). Given that Ronald's wife is pregnant, he should be offered the pertussis vaccination to prevent transmission to the baby.

ANSWER 6

There are several validated tools to screen for gambling that may be useful in community education and screening programs for those at high risk;[19] however, these have not yet been validated in Aboriginal and Torres Strait peoples.[2] Simple questions such as 'Do you gamble?' and 'Have you ever had an issue with your gambling?'[2] may be as effective as more detailed tools and more appropriate for primary care screening.[20]

The National Aboriginal Community Controlled Health Organisation (NACCHO) and the Royal Australian College of General Practitioners (RACGP) guidelines, *National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people*, recommends that opportunistic screening for gambling behaviour and problems should be undertaken for all people over the age of 12 years. Screening may be undertaken in response to concerns arising within consultations, as with Ronald, or may be included as part of an annual health assessment.[2]

Gambling is a significant issue for many Aboriginal and Torres Strait Islander peoples, and can have serious consequences for individuals, families and communities. Aboriginal and Torres Strait Islander peoples are more likely to be regular and problem gamblers than non-Indigenous Australians, and to start gambling at a younger age. Surveys of Aboriginal and Torres Strait Islander communities have found that problems associated with gambling include financial hardship, social and emotional difficulties, substance misuse, and contact with the criminal justice system. Shame and stigma may prevent Aboriginal and Torres Strait Islander peoples from accessing help for gambling-related problems.[21] Specific groups at risk of problem gambling include young people or adults with stress related medical problems, mental health issues, substance misuse.[2,20,21]

ANSWER 7

Environmental and lifestyle factors interact with genetic factors, such as an allergic tendency, to increase the risk of developing asthma.

There is no evidence that maternal dietary changes or allergen avoidance in pregnancy decreases the risk of asthma in the child. For example, avoidance of house dust mite or pet allergens has not been shown to be effective in preventing asthma prenatally.[22]

There is also no evidence that taking probiotic dietary supplements, vitamin A, D or E supplements, or fish oil in pregnancy is effective in preventing asthma.[22] However, family lifestyle changes are likely to improve the health of the whole family and, for example, quitting smoking and ensuring that the child is not exposed to environmental tobacco smoke are important preventive measures.[2]

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CASE 2

PETE'S CHECK-UP

Pete reluctantly visits you at the urging of his wife, who is concerned about his osteoarthritis and diminishing dexterity. You ask Pete how the arthritis is affecting him and he replies 'it does not stop me fishing'. He also states that he will soon retire from his landscaping business to concentrate on the things he loves – his family and fishing. Pete is 65 years of age and has smoked up to 10 cigarettes a day for most of his adult life. Recently, he reduced his smoking to three cigarettes a day but finds it hard to give up smoking completely.

QUESTION 1

What should you assess in Pete?

FURTHER INFORMATION

Pete attends a follow-up visit 1 week later. At this visit his systolic blood pressure (BP) is 135 mmHg (target <140 mmHg). His blood test results are shown in *Table 1*. Pete's waist circumference and body mass index (BMI) were in the normal range at 92 cm and 24 kg/m^2 respectively.

Table 1. Pete's blood test results

Test	Result	Target
Total cholesterol	6.0 mmol/L	<4.0 mmol/L
High density lipoprotein	1.5 mmol/L	≥1.0 mmol/L
Fasting blood sugar	6.3 mmol/L	<7.0 mmol/L

QUESTION 2

Given Pete's unremarkable results, how can you assess his risk of a future cardiovascular event?

QUESTION 3

Can Pete's absolute cardiovascular disease (CVD) risk be better assessed?

QUESTION 4

If intensive lifestyle modification advice did not alter Pete's absolute CVD risk after 3 months, what therapeutic steps could you take to ensure Pete's risk of a stroke or heart attack is reduced?

QUESTION 5

What is the best way of ensuring that high CVD risk patients in your practice are identified and managed appropriately?

QUESTION 6

How could you implement assessment of absolute CVD risk in your general practice?

CASE 2 ANSWERS

ANSWER 1

As Pete infrequently visits a GP, this is a good opportunity to perform a general check-up and update Pete's health record, for example, his smoking status, BP, BMI and waist circumference. It would also be useful to discuss his diet, other lifestyle/psychosocial issues and any other concerns that he may have regarding his health in addition to his arthritis. Given Pete's outdoor occupation, a skin cancer screen should be considered. In addition, a clinic blood pressure reading and a pathology request for fasting glucose and lipid profile are the beginnings of establishing a CVD risk profile.[1] Note, screening for diabetes with HbA1c is now acceptable and does not require a fasting blood test. In relation to his arthritis, physical approaches to arthritis management and pharmacological interventions for pain management could be discussed and arranged; however, care must be taken in prescribing anything in addition to paracetamol, as many of the immunosuppressive drugs including non-steroidal anti-inflammatory drugs (NSAIDs) and cyclooxygenase-2 (COX-2) inhibitors have an adverse effect on CVD risk. There are no evidence-based cardiovascular guidelines specifically for patients on immunosuppressive drugs, but efforts to achieve risk factor reduction should be more rigorous than for the general population. In particular, further encouragement and external assistance to cease smoking altogether should be offered.

The Royal Australian College of General Practitioners' *Guidelines for preventive activities in general practice*[2] provides a useful framework for undertaking preventive activities in general practice settings, tailored to individual patient needs for people such as Pete.

ANSWER 2

Pete's modifiable risk factors of systolic BP, blood lipids and blood glucose, considered individually, are only moderately raised. With the exception of smoking, Pete presents as being reasonably healthy. However, if his risk factors were to be considered as a coherent risk profile, the cumulative effect of BP, lipid profile, smoking status and age, Pete's clinical picture will become clearer with regards to his risk of a future cardiovascular event. Assessment of a person's CVD risk using multiple risk factors is more accurate than consideration of their individual risk factors, given that the cumulative effects of multiple risk factors in a person can have additive or synergistic effects.[4–6]

The *Guidelines for the management of absolute cardiovascular disease risk*[1] *were* approved by the National Health and Medical Research Council (NHMRC) in 2012 and should be used to assess adults who have no existing CVD and are 45 years of age and over, or 35 years and over for Aboriginal and Torres Strait islander peoples.

ANSWER 3

Absolute CVD risk refers to the likelihood of a person experiencing a cardiovascular event within the next 5 years. In a treatment context, absolute risk offers a means of predicting the impact of Pete's risk factors on his overall cardiovascular wellbeing. The *Guidelines for the management of absolute cardiovascular disease* risk recommends at least three points of care for Pete:[1]

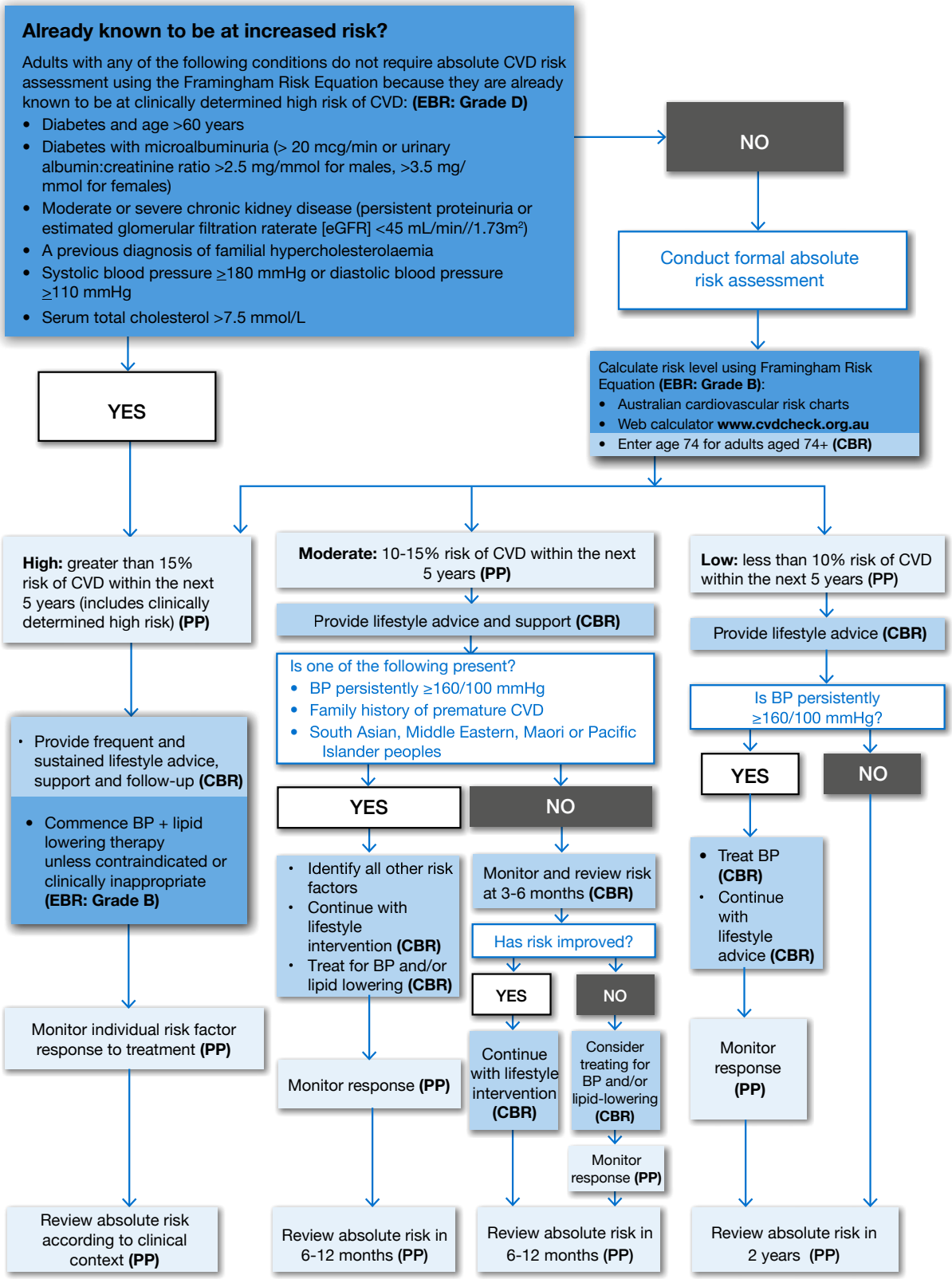
1. Risk assessment using the *Australian absolute cardiovascular disease risk calculator*[3] and collection of data on:
   - kidney function using urine albumin:creatinine ratio (UACR) for albuminuria and a blood test for serum creatinine to estimate glomerular filtration rate (eGFR)
   - diabetes status
   - age
   - sex
   - smoking status
   - systolic BP
   - total cholesterol levels
   - high-density lipoprotein cholesterol (HDL-C) levels
   - left ventricular hypertrophy (if known).

   Using the *Australian absolute cardiovascular disease risk calculator* (www.cvdcheck.org.au)[3], and Pete's clinical data a CVD risk score can be calculated for Pete. He has an absolute risk score of 18%. This score is considered high as it means that Pete has approximately a one in five chance of experiencing a stroke or heart attack over the next 5 years.[2]

   Additional risk factors that may influence treatment decisions that should be considered include:[1,2]
   - waist circumference and BMI
   - family history of premature cardiovascular disease
   - ethnicity
   - psychosocial factors including depression, social isolation and socio-economic status
   - atrial fibrillation (AF).
2. Provision of lifestyle modification advice on alcohol consumption, physical activity, diet and smoking cessation. The calculator can be used to demonstrate to Pete the benefits of giving up smoking. He can be shown that by giving up smoking completely, his CVD risk would decrease from 18% to 10% over 12 months (ie from 1 in 5 to 1 in 10 chance of having a cardiovascular event in the next 5 years). Furthermore, multiple lifestyle modifications could reduce his risk even further.
3. Reviewing Pete's risk after 3 months of undertaking lifestyle modifications.

Figures 1 and *2* outline aspects of the management suggested above in an algorithm.

RISK ASSESSMENT AND MANAGEMENT ALGORITHM: ADULTS AGED 45 YEARS AND OVER WITHOUT KNOWN HISTORY OF CVD



EBR: Evidence-based recommendation (Graded A-D) CBR: Consensus-based recommendation PP: Practice point

Figure 1. Absolute CVD risk algorithm for adults ≥45 years of age

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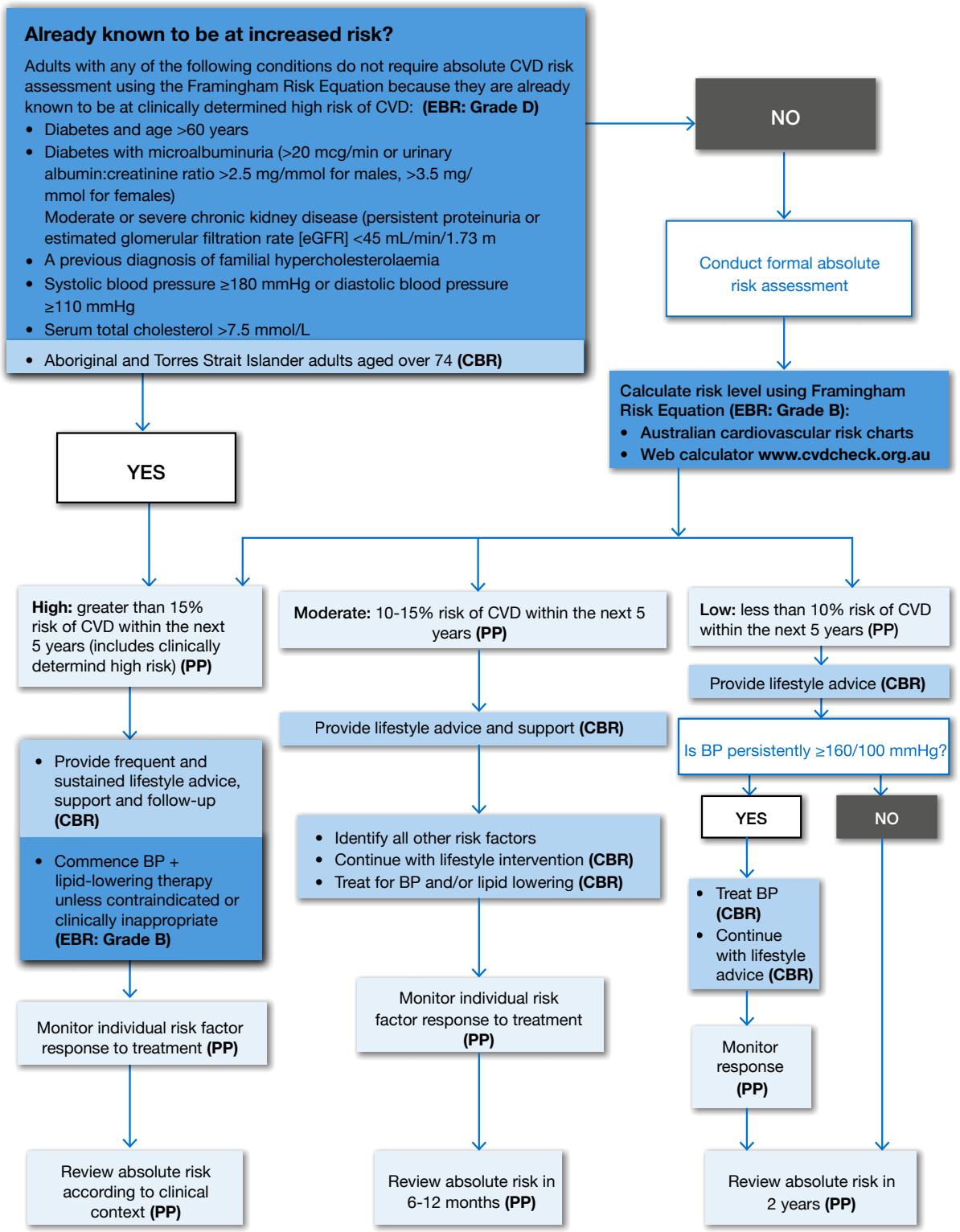
RISK ASSESSMENT AND MANAGEMENT ALGORITHM: ABORIGINAL AND TORRES STRAIT ISLANDER ADULTS AGED 35 YEARS AND OVER WITHOUT KNOWN HISTORY OF CVD



EBR: Evidence-based recommendation (Graded A-D), CBR: Consensus-based recommendation, PP: Practice point

Figure 2. Absolute CVD risk algorithm for Aboriginal and Torres Strait Islanders ≥35 years of age

ANSWER 4

If lifestyle modifications had not altered Pete's pathology, anthropometric measurements or his overall CVD risk, it would have been important to consider appropriate therapeutic options. The following could be considered in such circumstances:

- Determine whether a lack of improvement is due to non-adherence to lifestyle changes and consider if further support could be provided by referral to additional health professionals.
- Commence BP and/or lipid lowering therapy in accordance with current guidelines to reduce CVD risk. Patients at moderate risk may be put on one or other therapy and reviewed. Patients at high risk should be put on both BP and lipid-lowering therapy unless contraindicated.[1] The aim is to reduce CVD risk regardless of the level of BP (as long as the medication does not cause hypotension) or lipids. If it is deemed clinically appropriate to commence medication, a statin is recommended as first-line therapy for lipid lowering and/or one of the following for reducing BP:[1]
  - angiotensin-converting-enzyme inhibitor (ACEI)
  - angiotensin II receptor blocker (ARB)
  - calcium channel blocker
  - low-dose thiaxide
  - thiazide-like diuretic
- Provide structured advice, support, referral and/or pharmacotherapy for smoking cessation, if not previously done.[1,2]
- If risk reduction remains unsatisfactory, reassess for underlying causes that may be contributing to the person's overall CVD risk.
- Where indicated, dual antihypertensive therapy, using a second agent from a different pharmacological class, could be considered for patients whose BP is not sufficiently reduced with a single agent. Addition of a third antihypertensive agent could be considered if dual therapy does not sufficiently reduce the person's BP. Similarly, where statins do not adequately reduce cholesterol levels, addition of one or more lipid lowering agents may be required. Referral may also be warranted if treatment resistance is suspected.[1]

Note, low-dose aspirin is no longer routinely recommended for people clinically determined or calculated to be at a high absolute risk of a cardiovascular event (>15%) in the next 5 years, with the exception of Aboriginal and Torres Strait Islander peoples.[1]

ANSWER 5

The best way to ensure that patients at high risk of CVD are identified is to use a systematic approach to assessing absolute CVD risk within your practice. This involves the collection of a patient's risk factor information (eg blood pressure, smoking status, presence of diabetes, lipid levels) over a series of visits. Before calculating an actual absolute CVD risk score for a person, two fundamental questions need to be considered:

1. Do the guidelines apply to this patient?

The *Guidelines for the management of absolute cardiovascular disease risk*[1] are applicable to adults who have no existing cardiovascular disease and are 45 years of age and over, or 35 and over for Aboriginal and Torres Strait islander peoples.

2. Is this patient immediately at high risk?

No absolute CVD risk score is required for people who meet any of the immediate high-risk criteria, as they are already known to be clinically at high risk of CVD. High-risk criteria include:

- diabetes and age >60
- diabetes with microalbuminuria (>20 µg/min or UACR >2.5 mg/mmol for males, >3.5 mg/mmol for females)
- moderate-to-severe chronic kidney disease (persistent proteinuria or eGFR <45 mL/min/1.73 m^2)
- previous diagnosis of familial hypercholesterolaemia
- systolic or diastolic BP ≥180 mmHg or ≥110 mmHg, respectively
- serum (fasting) total cholesterol >7.5 mmol/L
- Aboriginal and Torres Strait Islander peoples aged over 74 years.[1]

People with any of the above risk factors should be managed in accordance with the high-risk recommendations of the guidelines.[1,2] *Figures 1* and *2* provide algorithms for assessment and management in accordance with currently approved guidelines.[1]

A patient who has previously experienced a CVD event should be treated in accordance with secondary prevention guidelines. These patients are at high risk of further events and require aggressive therapy.[7]

ANSWER 6

Practice level implementation of absolute CVD risk assessment can be supported by streamlining practice systems and optimising practice teams and processes, including:

- using registers to identify patients
- collecting missing data then undertaking assessment
- review and treat where recommended.

Each member of the practice team, including the receptionist, practice manager, practice nurse and GP, can contribute to implementing an absolute CVD risk program by:

- opportunistically identifying eligible patients: practice staff can review patient's records and flag them for an absolute CVD risk assessment
- excluding those patients not eligible (eg those under the age of 45 years and with existing cardiovascular disease): this will involve data cleaning at the practice level
- beginning with a subset of patients, for example, those with at least one known risk factor and then systematically collecting other risk factor information over a series of visits
- collecting missing data: this can be done by practice nurses, practice managers or GPs with assistance from receptionists, who can identify missing data required for an absolute CVD risk assessment and notify the GP of the tests required prior to the patient entering the consulting room

- undertaking risk assessments: any trained member of the practice team can conduct the assessment with or without the patient being present. Once pathology reports are received assessments can be done in 'batches', with nominated staff allocating dedicated time to enter patient details onto the calculator and to systematically record results. Alternatively, the patient could be invited to attend and the calculation can be performed with them. The approved absolute CVD risk assessment algorithm provided in the approved guidelines and/or website (www.cvdcheck.org.au) should be used.

An audit tool, such as the Pen Computer Systems Audit Tool (PENCAT), can be used to identify patients at high risk of CVD and to target them for recall and/or education/follow-up.

Irrespective of the severity or intensity of a risk factor, each additional risk factor intensifies the overall risk of a cardiovascular event.[8] Therefore, conducting an absolute risk assessment and managing according to absolute risk has been taken up by many countries around the world. In general, the processes for implementing absolute CVD risk are comparable to the approach used by GPs to fulfill public health obligations, such as cervical cancer screening and immunisation.

RESOURCES FOR DOCTORS

- National Heart Foundation, www.heartfoundation.org.au/information-for-professionals/Clinical-Information/Pages/absolute-risk.aspx
- Australian absolute cardiovascular disease risk calculator, www.cvdcheck.org.au

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CASE 3

ANGUS WORKS ON A FARM

Angus is 17 years of age and works on his family's farm. Angus presents for review following an acute exacerbation 2 weeks ago of his longstanding asthma, which was first diagnosed at 5 years of age. He responded well to treatment and continues to use his regular preventive inhaler. He is concerned about future exacerbations, which always seem to occur during busy harvesting times when he can least afford to take time off work. These exacerbations are often associated with allergic rhinitis and conjunctivitis.

He smokes 20 cigarettes per day, drinks alcohol on 2–4 days each week and sometimes exceeds safe adult drinking guidelines. Angus recently got his 'P' plates. He and his family are well known to the local general practice.

Angus is well, apart from previous presentations for asthma, acute sinusitis and musculoskeletal injuries.

QUESTION 1

What non-pharmacological measures can Angus take to reduce his risk of asthma exacerbations?

QUESTION 2

What is the role of allergy testing and desensitisation therapy in this case?

QUESTION 3

What risk factors does Angus have for chronic lung disease? How can they be managed?

FURTHER INFORMATION

Angus left school at 15 years of age to help manage the family farm after his father's heart attack at the age of 47 years. Angus is now taking on much of the physical side of running the farm, while his father takes care of the business. The farm consists of mixed livestock and cropping and there are significant financial pressures.

QUESTION 4

How would you assess Angus's psychosocial health risks?

QUESTION 5

Should Angus have cardiovascular and metabolic screening?

QUESTION 6

What immunisations would you consider for Angus?

QUESTION 7

What resources are available for GPs caring for patients working in agriculture?

CASE 3 ANSWERS

ANSWER 1

A wide range of factors can trigger asthma and asthma triggers vary from patient to patient. Current guidelines recommend discussing asthma triggers and avoidance strategies with all patients.[1] Non-pharmacological measures that Angus could take to reduce his risk of asthma exacerbations will depend on the specific factors contributing to his asthma. Angus's history may reveal avoidable and non-avoidable asthma triggers.

Cigarette smoke is among the avoidable triggers and has the following adverse effects on people with asthma:

- Increases the risk of asthma flare-ups and increases the risk of chronic obstructive pulmonary disease (COPD)
- Reduces the probability of achieving good asthma control
- Reduces therapeutic response to inhaled corticosteroid
- Accelerates long-term decline in lung function.[1]

Asthma guidelines recommend advising smokers to quit smoking and suggest clinicians should repeatedly offer assistance to this end, regardless of the person's interest in stopping. Clinicians should follow national guidelines for smoking cessation.[2,3]

Angus should be encouraged to stop smoking. He should also avoid or reduce, if possible, exposure to proven allergens (including dietary allergens if applicable), airborne irritants, and some medications such as non-steroidal anti-inflammatory drugs (NSAIDs), bee pollen extracts and echinacea.[1]

Given that Angus was diagnosed with asthma at the age of 5 years, he has work-exacerbated asthma as opposed to occupational-induced asthma, also referred to as work-related asthma (ie new-onset asthma).[1]

ANSWER 2

Angus's history of asthma exacerbations associated with allergic rhinitis and conjunctivitis is highly suggestive of an allergic trigger. The first step in managing allergic triggers is to attempt to avoid obvious triggers, such as wheat dust at harvest time, and to commence or increase the use of antihistamines and prophylactic asthma medication (eg inhaled corticosteroids)[4] where avoidance is not possible.

Angus should be educated about allergens and advised to reduce exposure to allergens during harvesting, for example:

- using tractors and vehicles with closed cabs and well-maintained air filtering systems, if possible
- using personal respiratory equipment such as masks
- considering ventilation in storage facilities
- ensuring all clothing is removed and washed after work.

If these approaches are not successful, testing for allergic triggers may be useful. Exposure to animal urine or dander, pollens, moulds

and other occupational allergens could be triggers for Angus's asthma. Household triggers could include house dust mites.

Use of skin-prick testing would be ideal but may be limited for rural patients. Blood tests for allergen-specific immunoglobulin E (IgE), formerly known as the radioallergosorbent test (RAST), can be a useful alternative.[5] Testing may suggest desensitisation[5] as a management option and this could be carried out at the local general practice following consultation with an allergist.

ANSWER 3

Angus has a number of risk factors for chronic lung disease. These include smoking, which is best managed as discussed earlier by encouraging and supporting smoking cessation. Exposure to allergens and other particles and gases is a risk for asthma and chronic respiratory disorders, including COPD, extrinsic allergic alveolitis and pneumoconiosis.[6,7]

It is important to educate Angus about his increased risk of work-related disease, particularly his risk for chronic respiratory illnesses associated with agriculture and exposure to dusts, bacteria, fungal spores and chemicals.[8–11] He should be aware of mechanisms to reduce these exposures in the occupational setting. Appropriate resources could also be made available to him, for example, discussing the availability of farmer resources and training on the Australian Centre for Agricultural Health and Safety website (www.aghealth.org.au).

ANSWER 4

About 50% of adult mental health disorders have an onset by age 14 years. Preventive guidelines, therefore, recommend screening of adolescents aged 12–18 years for major depressive disorder if systems are in place to facilitate an accurate diagnosis and provide appropriate psychotherapy and follow-up. A chronic medical condition, such as asthma, is a risk factor for depression.[2]

The Home, Education/Employment, Activities, Drugs, Sexuality and Suicide (HEADSS) framework offers a means of getting to know Angus and his strengths and risks in this regard. The HEADSS framework also offers a chance to provide brief messages and encourage risk reduction strategies, for example, in relation to alcohol and other drug use, driving and accidents, nutrition and sexual practices.[2,12]

Given that rural patients may find access to further assessment and/or care limited, if a significant psychological disorder is suspected, rural GPs may arrange alternatives such as online or telehealth services. Their Medicare Local may be of assistance in collating or providing local solutions to access problems. Note, however, that Medicare Locals are being phased out in 2015. GPs, and their patients, may find the website www.mindhealthconnect.org.au a useful online repository of Australian mental healthcare resources. Access to means of suicide, especially firearms, is of importance in a psychosocial assessment.

The GP should use the 5As approach (assess, advice, agree, assist and arrange) with regard to Angus's smoking.[3,13] For detailed advice on smoking cessation, see the RACGP's *Supporting smoking cessation: a guide for health professional.*[3]

ANSWER 5

Angus should have cardiovascular and metabolic screening as he has several risk factors for these diseases, including smoking, family history and living in a rural area.

Angus's physical fitness also needs review, as fitness cannot be taken for granted in an age of labour-saving devices.

The RACGP's *Guidelines for preventive activities in general practice* recommend:[2]

- opportunistic assessment of nutrition and physical activity
- opportunistic assessment of height, weight and calculated body mass index (BMI)
- smoking assessment and early intervention from 10 years of age
- 2-yearly measurement of blood pressure from 18 years of age.

The guidelines do not recommend population screening for cholesterol and lipids, diabetes (except in Aboriginal and Torres Strait Islander peoples)[14] or assessment of absolute cardiovascular disease (CVD) risk in young adults;[15] however, these may be indicated on clinical grounds depending on other findings. In adults not known to have CVD or not clinically determined to be at high risk, absolute CVD risk assessments should be conducted every 2 years, starting from age 45, up to 74 years of age. For Aboriginal and Torres Strait Islander peoples, CVD risk assessments should commence at 35 years of age.[2]

ANSWER 6

Angus left school early and may have missed his routine school-based immunisations, including the combined diphtheria, tetanus, pertussis vaccine (DTPa), cervical cancer and varicella vaccines.

An annual influenza vaccination is recommended for all people wishing to reduce their risk of influenza and for those with chronic illnesses such as severe asthma. There is insufficient data to make clear recommendations about the benefits of vaccination for people with mild–moderate asthma; however, it is known that influenza infection can cause severe exacerbations of wheezing. Note, vaccination may not necessarily reduce the risk or severity of asthma flare-ups during the influenza season.[1,16]

Q fever vaccination is recommended given the occupational risks (pre-vaccination skin testing is required).[15] It is worth noting that post-Q fever fatigue syndrome has been reported to occur in 10–15% of people who previously had acute Q fever.[17–19]

ANSWER 7

The Australian Centre for Agricultural Health and Safety (www.aghealth.org.au) has produced many useful resources, including *The Farm Health & Safety Toolkit for Rural General Practices* (the Toolkit; refer to *Resources for doctors*), to assist in injury and disease prevention for farmers. The website and Toolkit are highly recommended to GPs caring for farmers. The Toolkit provides a contextualised framework for addressing the health risks farmers face with regard to life-threatening injury on farms and roads, suicide, early death from CVD, skin and other cancers, exposure to organic dust, zoonoses and arboviruses, and hearing loss.

RESOURCES FOR PATIENTS

- The Australian Centre for Agricultural Health and Safety, www.aghealth.org.au

RESOURCES FOR DOCTORS

- Australasian Society of Clinical Immunology and Allergy (ASCIA). Allergy and asthma, www.allergy.org.au
- The Australian Centre for Agricultural Health and Safety, www.aghealth.org.au
- Farm Health & Safety Toolkit for Rural General Practices, www.aghealth.org.au/tinymce_fm/uploaded/Health%20Workers/_gp_toolkit_booklet_lores.pdf

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CASE 4

BARBARA REQUESTS A ROUTINE PAP SMEAR

Barbara, a businesswoman aged 48 years, has booked a double appointment for a routine Pap smear. She is often busy with her work and finds it difficult to make time to attend routine medical appointments. She looks slightly embarrassed as she admits that she is not sure when her last Pap smear was done.

QUESTION 1

What information should you obtain at a visit for a routine Pap smear?

FURTHER INFORMATION

Barbara used to have regular Pap smears but in the past 10 years she has been having them less regularly because of increased pressures at work. She thinks her last Pap smear was 3 years ago and has she has never had an abnormal Pap smear result. She is currently single, and has had six casual male partners over the past 12 months. Prior to this, she had been married for 20 years.

When asked about lifestyle, Barbara says she is a smoker and has smoked about 10 cigarettes per day for the past 25 years. She has a balanced diet (ie regular meals and snacks in moderation) and walks to and from work each day (20 minutes each way). Her body mass index (BMI) is 21 kg/m^2, which is within the normal range.

When asked about genital and continence symptoms, Barbara reveals she has had problems with thrush. For the past year, she has had vulval itch and soreness, which have failed to settle despite multiple courses of clotrimazole cream and fluconazole tablets. She has not noticed any changes to her vaginal discharge.

QUESTION 2

What are possible causes of Barbara's vulval itch?

FURTHER INFORMATION

After allowing Barbara some privacy and time to undress appropriately for her Pap smear, and to cover up with a sheet, you join her at the examination couch. The Pap smear is easily performed. You examine the external genitalia as well as the vaginal walls and cervix in good light, with Barbara positioned to ensure adequate visualisation of these areas. The vaginal walls and cervix appear unremarkable and there is no abnormal discharge seen. You check for the presence or absence of rash, erythema, pallor, other colour change, lichenification, erosions and any change to the normal architecture including atrophic changes or the presence of adhesions. Examination of the vulva identifies an obvious abnormality of the inferior labia bilaterally (*Figures 1*, *2*). Barbara confirms these are areas of maximum itch. There are no palpable inguinal lymph nodes and the mons appears normal.

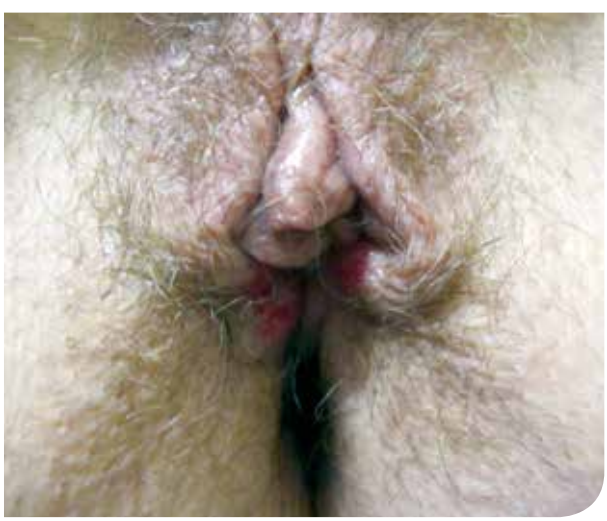

Figure 1. External genitalia demonstrating an area of abnormality affecting the inferior labia majora

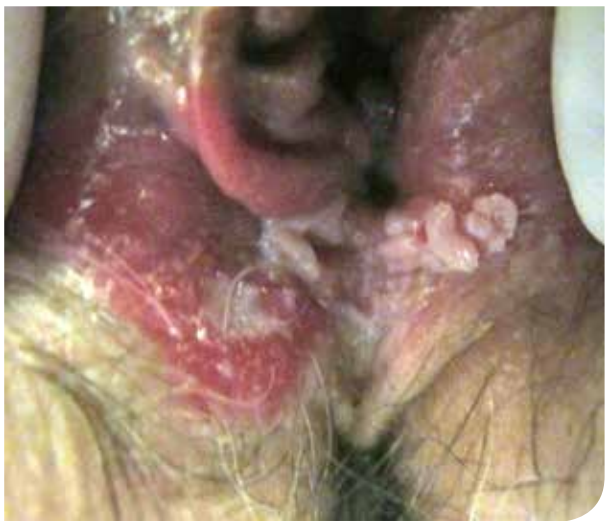

Figure 2. Detail of the affected area demonstrating abnormalty of both labia majora and both labia minora inferiorly, including the navicular fossa

QUESTION 3

What is the most likely diagnosis now? What serious cause must be excluded?

QUESTION 4

What investigations should be ordered at this stage?

FURTHER INFORMATION

Barbara agrees to have a punch biopsy performed. The result is reported by telephone the following day as 'florid vulval intraepithelial neoplasia 3 (VIN3) with features consistent with HPV infection'. She is contacted to come in to discuss the results and is referred to her nearest gynaecology-oncology service.

A wide excision biopsy is performed by her gynaecology-oncologist and the biopsy is later reported as squamous cell carcinoma (SCC). Pelvic ultrasound is unremarkable.

Barbara has an uncle who had multiple SCCs on his face and was told these were caused by smoking. She asks if smoking caused her SCC.

QUESTION 5

How would you respond to Barbara's query about smoking?

QUESTION 6

What ongoing care will Barbara need?

CASE 4 ANSWERS

ANSWER 1

Current guidelines recommend that Pap smears should be done every 2 years for any woman who has ever had sex (and still has an intact cervix), from the age of 18 years or 2 years post-coitarche (whichever is later) up to the age of 70 years.[1] Note, these guidelines are currently under review.[2,3] Pap smear visits provide the opportunity to review past Pap smear history, any current urogenital symptoms and sexual history, and to undertake any other preventive activities appropriate for the woman's age range.[1]

Depending on the time available and clinical judgment regarding the patient's individual risk factors and presenting concerns, questions could be asked about Pap smear history, current symptoms and sexual history. Examples of questions include:

- **Pap smear history**:
  - Has she had a Pap smear before?
  - When was the last Pap smear?
  - Has she had any previous abnormal Pap smear results? If so, when and did she require any treatment?
  - Has she had any human papillomavirus (HPV) vaccinations?
- **Current symptoms**:
  - Does she have any concerns about her genital area?
  - Are there any lumps, bumps or rashes?
  - Is she suffering from itch?
  - Has her vaginal discharge changed recently?
  - Is she having any pain with urination or with sex?
  - Is she experiencing bleeding after sex?
  - Have her periods changed recently?
  - Does she have any urinary or faecal continence issues?
- **Sexual history**:
  - Is she in a regular relationship?
  - Does she have casual sexual partners?
  - Does she have male/female partners or both?
  - What types of sexual activity does she engage in?
  - When was her last unprotected sex?
  - Has she ever been screened for sexually transmissible infections (STIs)? If so, when and did she require any treatment?
  - What contraception is she using?

Examples of a more detailed sexual history are reviewed in *check* unit 496 July 2013 – Sexuality and Sexual Health and in the National Sexual Health Guidelines.[4]

ANSWER 2

Vulval itch is a common symptom in women and is easily assumed to be vulvovaginal candidiasis. Nevertheless, itch can have a wide range of causes.[5] It is important to note that chronic vulvovaginal candidiasis is unusual in postmenopausal women who are otherwise healthy and not taking hormone replacement therapy (HRT).[6]

Common and important dermatological causes of vulval itch include:[5,7,8]

- vulval dermatitis (atopic or contact)
- lichen simplex chronicus
- lichen sclerosus, lichen planus
- plasma cell vulvitis
- psoriasis
- vulvovaginal candidiasis
- *Streptococcus agalactiae* vulvitis
- dermatophytosis
- VIN
- SCC
- STIs
- atrophic vaginitis.

ANSWER 3

The changes seen on examination are consistent with HPV infection, showing areas of discrete wart growth and areas of less well-defined changes consistent with dysplasia VIN/SCC. SCC needs to be excluded.

HPV infection is very common and a history of genital warts is reported by 5–10% of women in northern Europe, UK, USA and Australia.[9] However, vulval cancers are relatively rare – fewer than 300 cases are reported annually in Australia. These cancers account for 0.4% of cancer deaths in women, with a 5-year relative survival rate of approximately 72%.[10]

ANSWER 4

A histological diagnosis is essential at this stage. Depending on the services available locally, Barbara might have a punch biopsy taken in the GP rooms, she might be referred to a dermatologist, plastic surgeon or general surgeon for biopsy, or might be referred directly to a specialist gynaecological-oncology team for further assessment and management.

Histological grade can vary substantially between regions of a given lesion[11] and VIN/SCC may be multifocal.[12] Therefore, where punch biopsy is utilised, the entire anogenital region should be examined carefully for skin changes and the biopsy taken from the most abnormal area. If appropriate, multiple biopsies should be taken.[11]

There are a wide range of treatment options for VIN/SCC, including local ablation, topical medical management and surgical options;[7,13,14] however, surgical management is the gold standard for the management of both VIN and SCC.[13,14] Wide local excision by a specialist service may therefore be both an initial investigation and appropriate management.

Given Barbara's history of recent partner change, STI screening is appropriate (and should include chlamydia, human Immunodeficiency virus (HIV), syphilis and hepatitis B screening),[1] as is vulval/vaginal microscopy, culture and swab (MCS) to exclude infectious of itch or superinfection at the affected site.[7]

ANSWER 5

Smoking has been found to increase the risk of cutaneous SCC by approximately 50%[15] and the risk of smoking associated SCC is reported to be threefold greater in women, compared with men.[16] Identified risks for vulval SCC include tobacco use, HPV exposure, alcohol intake, immunosuppression, chronic dermatoses, radiotherapy and chemotherapy.[17–19] Women who smoke are also at increased risk of VIN recurrence.[20]

ANSWER 6

Studies have found that women with SCC benefit from multidisciplinary care, ideally involving a centralised specialist cancer service.[19,21] The anogenital region, including the draining lymph nodes, will require ongoing monitoring for recurrence, and the importance of ongoing routine Pap smears must be emphasised as there is an association between VIN/SCC and cervical intraepithelial neoplasia (CIN).[22]

Vulvovaginal conditions and their management can have a significant negative impact on sexual identity and function, both psychologically and physically.[23,24] Barbara will need ongoing emotional and psychological support and may benefit from referral to a sexual health counsellor.

RESOURCES FOR PATIENTS

- The Cancer Council NSW. Understanding vulva and vagina cancers, a guide for women with cancer, their families and friends 2011, www.cancercouncil.com.au/wp-content/uploads/2011/10/Understanding-Vulva-and-Vagina-Cancers_LR-website.pdf
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CASE 5

JENNY HAD A HEART ATTACK

Jenny, 62 years of age, is a retired seamstress who lives with her husband. She has been coming to your practice for many years. She has four children and six grandchildren. You have treated her previously for angina, hypertension and osteoporosis. She has a history of non-adherence to her angina medication because of dizziness. She presents today following discharge from hospital after experiencing a heart attack last week.

QUESTION 1

What would be important for you to consider in your assessment of Jenny following her myocardial infarction (MI)?

FURTHER INFORMATION

During her admission to hospital, Jenny had a drug-eluting stent implanted. Her cardiologist discharged her with a few changes to her medication, which you can see on the discharge summary Jenny has given you.

New medication list:

- Perindopril 10 mg one tablet daily (*altered dose*)
- Atenolol 50 mg one tablet daily (*unchanged*)
- Atorvastatin 40 mg one tablet daily (*altered dose*)
- Aspirin 100 mg one tablet daily (*new*)
- Clopidogrel 75 mg one tablet daily (*new*)
- Calcium carbonate 600 mg, two tablets daily (*unchanged*)
- Alendronate 70 mg/cholecalciferol 70 µg weekly (*unchanged*)

The pharmacist also provided Jenny with a new glyceryl trinitrate spray and counselled her on its use, along with a heart attack action plan.

It is unclear whether Jenny has been referred for cardiac rehabilitation. Her discharge letter indicates she will be seen again in the cardiology clinic but does not indicate when and she has not received an appointment as yet.

QUESTION 2

In developing a management plan for Jenny, what would you consider?

FURTHER INFORMATION

History and examination reveal that Jenny has never smoked but her husband does, she exercises irregularly and has 3–4 glasses of wine at the weekends.

Physical examation findings are:

- height: 177 cm
- weight: 94 kg
- body mass index (BMI): 31 kg/m^2 (healthy range: 18.5–24.9 kg/m^2)
- blood pressure (BP): 130/80 mmHg (goal <130/80 mmHg)
- waist circumference: 91 cm (goal <80 cm for women)
- cardiac exam: normal
- peripheral pulses: normal
- no organomegaly.

Laboratory/investigation results obtained before discharge from hospital are:

- urea and electrolytes (UAEs), full blood evaluation (FBE), liver function tests (LFTs), thyroid stimulating hormone (TSH): all within normal range
- triglycerides (TG): 1.6 mmol/L (<2.0 mmol/L)
- high-density lipoprotein cholesterol (HDL-C): 1.1 mmol/L (>1.0 mmol/L)
- low-density lipoprotein cholesterol (LDL-C): 2.2 mmol/L (<1.8 mmol/L)
- HbA1C: 42 mmol/mol (6.0%)
- urinalysis: without protein
- resting electrocardiogram (ECG): old anterior infarction with left axis deviation, otherwise normal.

QUESTION 3

How would you interpret these results? What action should be taken?

QUESTION 4

What medications are commonly prescribed for people requiring secondary prevention of coronary heart disease (CHD)?

QUESTION 5

How would you approach or structure a discussion to provide lifestyle advice for Jenny?

QUESTION 6

What advice regarding lifestyle and psychosocial risk factors would you give to patients such as Jenny following an MI?

QUESTION 7

How would attending a cardiac rehabilitation program help Jenny?

FURTHER INFORMATION

Jenny complains of not sleeping well and having too many medicines. She is not sure why she needs all these medicines when she has a stent. She asks 'haven't I been fixed?'.

QUESTION 8

How would you manage Jenny's sleep concerns?

QUESTION 9

How would you respond to Jenny's concerns regarding having 'too many' medications?

CASE 5 ANSWERS

ANSWER 1

The initial assessment of Jenny after her MI provides you with an opportunity to re-assess her condition, current symptomology and her risk factors. This information will help to determine her risk of future cardiovascular events and inform your management plan. The key components of the initial assessment should include:[1,2]

- Review her discharge summary, including the diagnosis, procedures performed during hospitalisation, risk factors for follow-up, new or altered medicines, referral to cardiac rehabilitation or other specialist or allied health services.
- Identify cardiovascular disease (CVD) risk factors, with an emphasis on modifiable risk factors.
- Assess individual physical, social, cultural and psychosocial factors that would influence their ability to engage in behaviour change strategies.

This information can be gathered through a combination of a review of her health record, the hospital discharge summary and the consultation with Jenny (and her family member, if in attendance). The outcomes of this assessment will assist you to personalise Jenny's management according to her prognosis, comorbidities, medication tolerance, lifestyle and living circumstances, and wishes.[1,2]

ANSWER 2

The following could be considered in a management plan for Jenny:[1,2]

- Review current treatment/medications to address cardiac risk factors.
- Organise follow-up tests and ongoing review.
- Consider referral for cardiac rehabilitation or secondary prevention if not already referred.
- Consider a team care arrangement to help Jenny access Medicare-rebated allied health services, especially if she does not attend cardiac rehabilitation.
- Consider a home medicines review (HMR), given Jenny's recent hospital admission, changes to her medications and that she takes more than five medications per day. Additionally, a medication review could be considered when poor medication adherence is suspected.
- Provide written information outlining the warning signs of heart attack and an action plan for patients to follow in the event they have warning signs of a heart attack.
- Provide education/reinforcement as to what to do if further symptoms arise.
- Provide written information and self-management resources, such as *My heart for life* and *My heart my life*, available from the National Heart Foundation (NHF).

ANSWER 3

Most of these results are normal. The main results that require action are the cholesterol readings. Ideally, Jenny's HDL-C should be higher, while her LDL-C should be lower. Given Jenny is already taking a statin, this should be continued to reduce her LDL-C. Jenny should be encouraged to increase her physical activity to raise her HDL-C.[3]

ANSWER 4

A number of medications may be prescribed for patients who require secondary prevention. These include:[2]

Antiplatelet agents

The usual antiplatelet regimen consists of aspirin (at least 75 mg up to 150 mg/day) indefinitely and clopidogrel (75 mg/day). Drug-eluting stents have been associated with late restenosis and, therefore, an increasing number of cardiologists recommend combination therapy (aspirin plus clopidogrel) for at least 1 year and, in some instances, indefinite combination therapy for patients with drug-eluting stents.[4]

Anticoagulants

The NHF 2012 *Guidelines for reducing risk in heart disease*[2] recommend use of warfarin in patients at high risk of thromboembolism due to atrial fibrillation (AF) post-MI. The NHF does not presently provide guidance on the use of newer anticoagulants for AF prevention in this context. Other guidelines such as the *Australian Medicines Handbook 2014* recommend consideration of warfarin for secondary prevention in all people with AF, with newer agents such as apixaban, dabigatran or rivaroxaban suggested as alternatives to warfarin in patients without a prosthetic heart valve or significant valvular disease.[5] *Therapeutic Guidelines 2012* recommend use of warfarin or dabigtran for patients with AF requiring long-term anticoagulation.[6]

Statins

Statins should be prescribed on a risk basis, not on lipid levels. Jenny has been commenced on a statin because of her risk of a secondary event. Statins are recommended for all patients with CHD, unless contraindicated.

Angiotensin converting enzyme inhibitors (ACEIs)/angiotensin II receptor blockers (ARBs)

These are recommended for all patients unless contraindicated, especially those at high risk of recurrent events, and should be started early post-MI. Consider an ARB for patients who develop unacceptable side effects with ACEIs such as persistent, distressing coughing.

Beta-blockers

Beta-blockers are recommended for all patients post-MI, unless contraindicated, especially in high-risk patients. High-risk patients are defined as those with significant myocardial necrosis, left ventricular systolic dysfunction, persistent evidence of ischaemia or ventricular arrhythmia.

The benefit of long-term treatment with beta blockers post-MI is well-established. Given Jenny has achieved her target BP (<130/80 mmHg),

she may not require both beta blocker and ACEI therapy, unless she shows signs of heart failure, left ventricular (LV) dysfunction or develops diabetes. [7–11]

Short-acting nitrates

These are recommended for all patients with CHD, unless contraindicated. As mentioned earlier, all patients should be provided with a written action plan to manage chest pain.

Patients should have the risks and possible side effects, and benefits of their medications explained to them and should be provided with written information for drugs such as warfarin that have a narrow therapeutic index.

ANSWER 5

The 5As is a model that can be used to provide Jenny with structured and suitable lifestyle advice. The 5As include:[12,13]

Assess

Begin with an assessment of Jenny's knowledge, beliefs and behaviours and your review of her clinical data. This first step provides useful feedback to Jenny on her health status. Include questions about lifestyle factors such as smoking, physical activity, diet, medicine adherence, psychosocial health (as above) and health literacy.

Advice

The next step is to tell Jenny about her health risks and the benefits of change. Offer brief advice with clear messages of encouragement to change.

Agree

This step involves working with Jenny to set specific behavioural goals on the basis of her interests, confidence and priorities. Use empathic listening to encourage Jenny to share her beliefs and to develop an understanding about her disease and to negotiate appropriate management plans.

Assist

Explore Jenny's commitment to her goals and discuss any barriers and concerns she may have. This could include a referral for Jenny to attend a suitable cardiac rehabilitation program if she has not done so already, or to attend another long-term prevention program such as 'NHF Walking' or 'Heart Moves'.

Arrange

The final step involves arranging a follow-up plan. The GP management team needs to be aware of Jenny's action plan and to reinforce her goals. Arrange for Jenny to have regular follow up visits with a GP or practice nurse.

This method allows for short consultations structured around detection, assessment and management of her risk factors. It will engage Jenny by encouraging her to discuss her experiences and issues, thus focusing the clinical encounter around Jenny and her concerns. This approach allows for Jenny to make decisions regarding her health, while giving consideration to her condition, lifestyle, psychosocial factors and individual capabilities and barriers. As a health professional, this model also allows for the assessment of Jenny's readiness to change so that a suitable treatment plan is agreed.

ANSWER 6

Patients should be provided with advice to manage any lifestyle and psychosocial risk factors that apply for them. For example: [2]

Smoking

Advise complete cessation of smoking (for smokers) and avoidance of the husband's second-hand smoke. Consider referral to Quitline (13 7848), a specialised smoking cessation program, use of nicotine replacement therapy (NRT) in selected patients and pharmacotherapy.

Return to an active lifestyle

People with heart disease gain great benefits from regular exercise and it can assist them with return to a normal life after a heart attack. Exercise can also improve other risk factors such as lowering BP and cholesterol and maintaining a healthy weight.

Encourage Jenny to continue to follow the physical activity advice from her rehabilitation program if she has attended one. If she hasn't, inform Jenny that she can resume normal physical activities as long as you consider it safe.

Physical activity

Patients should be advised to progress, over time, to at least 30 minutes of moderate-intensity physical activity on most, if not all, days of the week (150 minutes per week minimum). Regular, moderate-intensity physical activity such as walking is ideal. You could refer Jenny to a local and free NHF Walking Group through the NHF website.

Nutrition/healthy eating

Healthy eating and drinking is an important part of Jenny's recovery. It can reduce her risk of future events by reducing her BP and cholesterol and helping her achieve a healthy weight. Encourage the establishment/maintenance of healthy eating patterns and recommend that Jenny limit her salt intake to ≤4 g/day (1550 mg sodium). The following healthy eating goals could be discussed and the information provided to Jenny in a written format:

- Reduce intake of saturated and trans fats, which are found in fatty meats, full-cream dairy products, butter, coconut and palm oils, most fried foods and commercially baked products.
- Eat vegetables, whole grains, fruit, nuts and seeds everyday.
- Eat 2–3 serves of oily fish per week.
- Use healthier fats and oils such as olive, canola, sunflower, soybean, sesame and peanut oils.
- Avoid or limit fried or baked foods including chips, biscuits, cakes and other baked cereal products.
- Limit sugary, fatty and salty takeaway meals and snacks.
- Avoid adding salt to foods and choose foods stating 'no added salt', 'low salt' or salt reduced' where possible.
- Drink mainly water.

You could refer Jenny to the NHF website for heart healthy recipe ideas.

Alcohol

Low-risk alcohol consumption should be encouraged in all people with CHD. All patients should be advised to drink ≤2 standard drinks per day. Women with high BP or who are taking antihypertensive medicine should drink ≤1 standard drink per day.

Healthy weight

Jenny is currently overweight. Carrying excess body weight can have a serious negative impact on Jenny's health and can increase her risk of another heart event, developing diabetes and a range of other diseases. It is not about dieting or running marathons – it is about making small, easy changes so that they become the norm for life. Slow progress is more likely to deliver long-term results.

Advice for constructing a weight management plan can be found in the National Health and Medical Research Council (NHMRC) summary guide for the management of overweight and obesity in primary care 2013, which uses the 5As approach.[14] Jenny will need coaching regarding her weight, aiming for weight loss to achieve a waist measurement ≤80 cm (females), with BMI = 18.5–24.9 kg/m^2. Consider referral to professionals such as an accredited practicing dietician or an exercise physiologist.

Depression

Assess all patients for comorbid depression. Initiate psychosocial and medical management if appropriate.

Social support

Assess all patients for their level of social support and provide follow-up for people considered at risk by referral to cardiac rehabilitation and/or a social worker or psychologist.

ANSWER 7

The aim of cardiac rehabilitation programs is to assist people with heart disease return to a full, active and satisfying life as quickly as possible. They can also help prevent further heart events, such as a second heart attack. For Jenny, a program can:[2]

- help her learn about her condition
- provide an exercise program tailored to her needs and condition
- guide her to change her lifestyle to improve heart health
- educate her in taking her prescribed medicines and assist with medication adherence
- answer any questions or practical concerns she may have about living with heart disease
- support her social and emotional wellbeing during this time of change.

In addition to these core goals, attending a program can also:[2]

- increase her independence and confidence
- reduce depression and anxiety
- connect her with other people in similar situations
- increase her ability to be physically active.

ANSWER 8

Jenny's sleeping problems could be an indication of depression or anxiety. The prevalence of depression is high in patients with CHD. Rates of major depressive disorder of around 15% have been reported in patients following MI or coronary artery bypass grafting. The benefits of treating depression include improved quality of life and adherence to therapy, and potentially improved CHD prognosis.[15]

The NHF recommends that all patients with CHD be routinely screened for depression by their GP or a health professional at first presentation, using the Patient Health Questionnaire 2 (PHQ2) shown below (*Table 1*). If Jenny answers yes to either question in the PHQ2, it is recommended that GPs follow up with the Patient Health Questionnaire 9 (PHQ9),[16] which can be used to quantify depression severity, assess change over time and response to treatment. This should be repeated at the next follow-up appointment.[16]

Preparation of a GP mental health treatment plan could be considered to help Jenny access Medicare-rebated psychology services.

Table 1. Patient Health Questionnaire (PHQ2)[16]

During the past month, have you often been bothered by feeling down, depressed or hopeless? Yes/No
During the past month, have you often been bothered by little interest or pleasure in doing things? Yes/No

ANSWER 9

It's important to talk to Jenny about the importance and benefits of adherence to her medications, particularly given her history of non-adherence to her angina medication and her possible depression following her MI. There are a number of options that might assist her in managing her medication adherence:

- Referring Jenny for a HMR may be useful. This will involve an accredited pharmacist visiting Jenny in her home environment and discussing the medicines she takes and the troubles she has with adherence.[17]
- Use of combination medicines could be an option to reduce the number of individual tablets Jenny is taking.[18] First, a combination clopidogrel/aspirin product could be considered, given that Jenny is likely to continue this therapy long term. Also, Jenny currently takes a combination of calcium carbonate and alendronate/cholecalciferol for osteoporosis. This would further reduce the number of tablets she takes. Although there are a number of combination products available for BP and cholesterol, it may be advisable for Jenny to continue taking these medicines individually until her dose(s) are stabilised. This may take up to 1 month following the most recent dose change.[19]
- Price isn't always a barrier to adherence but should be considered. If Jenny finds that the cost of the co-payments of her new medication regime are adding up, she may benefit from use of generic medicines, along with provision of information to understand which medicines are the same, so she does not confuse different brands as different medicines.

- A dose administration aid, either self-filled or prepared by her local pharmacy, may also improve Jenny's adherence.

RESOURCES FOR PATIENTS

- My Heart My Life is a patient resource produced by the Heart Foundation containing information and action plans important to recovery – including healthy eating, physical activity, smoking cessation, medicines, services and support, heart disease facts and the warning signs of a heart attack. It is now available as a mobile app or can be ordered through the Heart Foundation's Health Information Service (1300 36 27 87) or online at heartfoundationshop.com/main_menu/
- The Heart Foundation, www.heartfoundation.org.au, and the Health Information Service, provide free, personalised information and support on heart health, nutrition and healthy lifestyle. The service is run by qualified health professionals and an appointment is not needed. Call the Health Information Service on 1300 36 27 87 (cost of a local call).

RESOURCES FOR DOCTORS

- The Heart Foundation has produced a toolkit for health professionals called *Improving Adherence in cardiovascular care*. This resource is also available as a series of learning modules for GPs through ThinkGP and has been accredited with RACGP/ACCRM for continuing professional development. Access the toolkit at http://www.heartfoundation.org.au/SiteCollectionDocuments/FAT-WEB_20130420.pdf or go to ThinkGP for more information and access to the learning modules.
- A General Practice Management Plan (GPMP) template is available to download from the Heart Foundation website. Visit http://www.heartfoundation.org.au/information-for-professionals/Clinical-Information/Pages/gp-management-plan-chd.aspx
- HEART Online is an online resource developed to support clinicians in delivering evidence-based care in cardiovascular disease prevention and rehabilitation, and heart failure management. Visit http://www.heartonline.org.au/Pages/default.aspx
- The Australian Dietary Guidelines were endorsed by the NHMRC before their release in 2013 and have been developed to provide recommendations for all Australians. They are available to download in full or part https://www.nhmrc.gov.au/guidelines/publications/n55
- In addition to My Heart My Life, listed below, the Australian Government has developed a physical activity resource for older Australians – Choose Health: Be Active which can aid GPs in making recommendations for their patients aged 65 years and over. http://www.health.gov.au/internet/main/publishing.nsf/Content/3244D38BBBEBD284CA257BF0001FA1A7/$File/choosehealth-brochure.pdf

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Preventive health (Activity ID: 14017)

In order to qualify for 6 Category 2 points for the QI&CPD activity associated with this unit:

- read and complete the unit of *check* in hard copy or online at the *gplearning* website at http://gplearning.racgp.org.au
- log into the *gplearning* website at http://gplearning.racgp.org.au and answer the following 10 multiple choice questions (MCQs) online
- complete the online evaluation.

If you are not an RACGP member, please contact the *gplearning* helpdesk on 1800 284 789 to register in the first instance. You will be provided with a username and password that will enable you access to the test.

The expected time to complete this activity is 3 hours.

Do not send answers to the MCQs into the *check* office. This activity can only be completed online at http://gplearning.racgp.org.au

If you have any queries or technical issues accessing the test online, please contact the *gplearning* helpdesk on 1800 284 789.

FOR A FULL LIST OF ABBREVIATIONS AND ACRONYMS USED IN THESE QUESTIONS PLEASE GO TO PAGE 3.
FOR EACH QUESTION BELOW SELECT ONE OPTION ONLY.

CASE 1 – JAKE AND JOSH

Jake and Josh are twins aged 20 years. Josh works on the family farm, which consists of livestock and crops. Josh will take over the farm as their father transitions into retirement. Jake is studying law and plans to live and work in the city. He has no plans to return to farm work or being involved in animal husbandry.

QUESTION 1

Which statement is correct regarding immunisation prophylaxis for Jake and Josh?

A. Both Jake and Josh require the same immunisations.

B. Neither Jake nor Josh requires immunisation prophylaxis to minimise occupational risks.

C. Jake should be immunised for Q fever.

D. Neither Jake nor Josh would benefit from an annual influenza vaccination.

E. Josh should be immunised for Q fever.

FURTHER INFORMATION

The boys' father had a heart attack 1 year later at the age of 55 years, followed by a minor stroke and coronary artery bypass graft surgery. He retired early. Jake presents with symptoms suggestive of hay fever/allergy. His symptoms worsened over the harvest period and have improved but have not resolved. The boys' mother, aged 58 years, has diagnosed allergies and was recently diagnosed with type 2 diabetes. Jake drinks beer most nights and smokes 20 cigarettes a day.

QUESTION 2

Which statement outlines the best management approach(s) for Jake?

A. He should be encouraged to stop smoking.

B. He may benefit from allergy testing/desensitisation.

C. He should have cardiovascular screening appropriate for his age group and family history.

D. He should have metabolic screening appropriate for his age group and family history.

E. Answers A–D outline appropriate management approaches.

CASE 2 – JULIANNE

Julianne is 23 years of age and recently become sexually active. She presents to discuss contraception and cervical screening.

QUESTION 3

Which of the following statements regarding cervical screening is correct?

A. The age at which Julianne became sexually active will determine whether a Pap smear is warranted.

B. Pap smears are recommended annually for all women.

C. Pap smears are recommended every 2 years for all women.

D. Pap smears are recommended every 2 years for any woman who has ever had sex.

E. Julianne does not require a Pap smear.

CASE 3 – ANDREA

Andrea is 46 years of age and presents complaining of longstanding vulval itching. Her problem was diagnosed as thrush by another GP. Despite multiple treatments with prescription and over-the-counter medications over the past year, the itching persists.

QUESTION 4

Which of the following statements regarding causes of vulval itch is correct?

A. Lichen sclerosus and lichen planus do not cause vulval itching.

B. Vulval intraepithelial neoplasia (VIN) and squamous cell carcinoma (SCC) are not differential diagnoses.

C. Vulvovaginal candidiasis is still the most likely cause of Andrea's vulval itching.

D. A number of dermatological causes could account for Andrea's presentation.

E. Chlamydia is not a differential diagnosis.

CASE 4 – COPD

James, aged 43 years presents with a severe cold. He has a history of asthma, hypertension, hypercholestrolaemia and depression, and is on several medications. He currently smokes two packets of cigarettes a day. After taking a history and performing an examination you are concerned that he may have chronic obstructive pulmonary disease (COPD).

QUESTION 5

Which of the following statements is correct with regards to screening and diagnosis of asthma and chronic obstructive pulmonary disease (COPD)?

A. Routine asthma screening using spirometry is recommended for asymptomatic individuals.

B. Routine COPD screening using spirometry is recommended for asymptomatic individuals.

C. Spirometry should only be undertaken in those with symptoms suggestive of asthma or COPD.

D. Screening for the symptoms of COPD should be undertaken every 2 years in all smokers.

E. Screening for the symptoms of COPD should be undertaken in all ex-smokers.

CASE 5 – BILLY

Billy, a new patient, is an Aboriginal and Torres Strait Islander man aged 21 years. He has come to see you about a cold that he cannot shake off. He wonders if giving up smoking might help.

QUESTION 6

Which of the statements below regarding preventive health activities for Billy is the most correct?

A. Billy should be advised to have a pneumococcal vaccine (23vPPV).

B. Opportunistic screening for gambling behaviours and problems could be undertaken at this visit.

C. Billy should be provided with information, counselling and referral for smoking cessation.

D. Answers A, B and C are correct.

E. Answers B and C are correct but answer A is incorrect.

CASE 6 – RICHARD

Richard, 39 year of age, is a labourer who has no known cardiovascular disease (CVD). He is a smoker and a drinker. His most recent blood pressure reading was 149/81 mmHg, total cholesterol was 6.1 mmol/L and his high-density lipoprotein was 1.7 mmol/L.

QUESTION 7

Which of the following statements is correct regarding his absolute CVD risk?

A. His absolute CVD risk can be calculated using the information presented.

B. He does not meet the age criteria to have his absolute CVD risk calculated.

C. His risk is low.

D. He risk is moderate.

E. He risk is high.

FURTHER INFORMATION

Richard presents again 10 years later, aged 49 years. You now calculate his absolute CVD risk, which is found to be 21%.

QUESTION 8

Which statement correctly identifies the implications of his score?

A. He has approximately a one in five chance of having a cardiovascular event in the next 5 years.

B. He has approximately a one in five chance of having a cardiovascular event in the next 10 years.

C. He has approximately a one in five chance of having a cardiovascular event in the next 15 years.

D. Richard is at moderate risk of having a cardiovascular event.

E. Changes to Richard's lifestyle would make no difference to his cardiovascular risk.

CASE 7 – HEATHER

Heather, aged 79 years old, has been your patient for 37 years. She was recently discharged from hospital following a myocardial infarct (MI) and was advised to see you. She had several medication changes and additions.

QUESTION 9

Which statement regarding her management at this visit is correct?

A. You can safely assume that cardiac rehabilitation has been organised.

B. Heather is not eligible for a home medication review.

C. Heather does not require additional educational information provide to her.

D. You should review her discharge summary and update her electronic health record, noting her diagnosis and any medication changes .

E. You should calculate her absolute CVD risk.

FURTHER INFORMATION

During her hospital stay Heather had a drug eluting stent implanted and had changes made to her medications.

QUESTION 10

Which statement below correctly outlines medications that Heather would be expected to be taking on discharge for secondary prevention?

A. Aspirin, a statin, an angiotensin converting enzyme inhibitor (ACEI), a beta-blocker and a short-acting nitrate.

B. Aspirin, clopidogrel, a statin, an ACEI or angiotensin II receptor blocker (ARB), a beta-blocker and a short-acting nitrate.

C. Warfarin, an ACEI or ARB, a beta-blocker and a short-acting nitrate.

D. Warfarin, a statin, an ACEI, a beta-blocker and a short-acting nitrate.

E. Antiplatelet agents, an anticoagulant, a statin, an ACEI and a short-acting nitrate.

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AUTHORS

Penny Abbott
Omar Ahmad
Nicole Allard
John Atherton
Jacqueline Boyle
Frank Brennan
Wendy Brown
Anne Buist
Paul Burton
Fergus Cameron
Bruce Campbell
Philip Clarke
Kym Collins
Benjamin Cowie
Jane Deacon
Gary Deed
Rachael de Jong
Justin Denholm
Deanna Devers
Thanuja Dharmadasa
Katie Ellard
Magid Fahim
Kristen FitzGerald
Raie Goodwach
Miriam Grotowski
Emma Guymer
Sam Hayman
Rosemary Isaacs
Bronwyn Jenkins
David Johnson
Kate Johnston
Peter Katelaris
Ivor Katz
Mark Kennedy
Carol Lawson
Rebecca Lee
Kelly Li
Louise McCormack
Julie McGaughran
Donald McLeod
Tanya Medley
Betty Messazos
David Moses
David Mudge
Nyasha Mukandi
Pei Xuan Ong
Karen Page
Dharmenaan Palamuthusingam
Jan Radford
Gillian Rothwell
Carolyn Royse
John Scally
Anita Sharma
Miranda Sherley
Soulmaz Shorakae
Ronald Siu
Michelle Stewart
Christina Sun-Edelstein
Helena Teede
Jen Thompson
Bambi Ward
Ian Wardale-Greenwood
Sara Whitburn
Mary White
May Wong
Christine Younan
Alessandro Zagami

PEER REVIEWERS

Peter Bampton
Linda Barrett
Mark Beeby
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Gary Franks
Ashwin Garg
Mark F Harris
Elizabeth Hindmarsh
Rosemary Isaacs
Carol Lawson
Emma Manifold
Linda Mann
Tim Mathew
Mark Nelson
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