The RCGP Curriculum: Clinical Modules

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➢ 3.12 Cardiovascular Health

Summary

- Cardiovascular problems are an important cause of morbidity and mortality
- Managing the risk factors for cardiovascular problems is an essential part of health promotion activity in primary care
- As a general practitioner you should be competent in the management of cardiovascular emergencies in primary care
- Accurate diagnosis of symptoms that may potentially be caused by cardiovascular causes is a key competence for general practice

Knowledge and skills guide

Core Competence: Fitness to practise

This concerns the development of professional values, behaviours and personal resilience and preparation for career-long development and revalidation. It includes having insight into when your own performance, conduct or health might put patients at risk, as well as taking action to protect patients.

This means that as a GP you should:

- Ensure that personal opinions regarding risk factors for cardiovascular problems (e.g. smoking, obesity, exercise, alcohol, age, ethnicity) do not influence your management decisions

Core Competence: Maintaining an ethical approach

This addresses the importance of practising ethically, with integrity and a respect for diversity.

This means that as a GP you should:

- Recognise that non-concordance is common for many preventative cardiovascular medicines and respect your patient's autonomy when negotiating management

Core Competence: Communication and consultation

This is about communication with patients, the use of recognised consultation techniques, establishing patient partnership, managing challenging consultations, third-party consulting and the use of interpreters.

This means that as a GP you should:

- Communicate the patient's risk of cardiovascular problems clearly and effectively in a non-biased manner
- Utilise disease registers and data-recording templates effectively for opportunistic and planned monitoring of cardiovascular problems to ensure continuity of care between different healthcare providers
- Consider involving the patient in self-monitoring and self management (for instance of hypertension)

Core Competence: Data gathering and interpretation

This is about interpreting the patient's narrative, clinical record and biographical data. It also concerns the use of investigations and examination findings, plus the adoption of a proficient approach to clinical examination and procedural skills.

This means that as a GP you should:

- Identify your patient's health beliefs regarding cardiovascular problems and either reinforce, modify or challenge these beliefs as appropriate
- Demonstrate an understanding of the importance of risk factors, including chronic kidney disease, in the diagnosis and management of cardiovascular problems

Core Competence: Making decisions

This is about having a conscious, structured approach to decision-making; within the consultation and in wider areas of practice.

This means that as a GP you should:

- Intervene urgently when patients present with a cardiovascular emergency, e.g. myocardial infarction, stroke and critical ischaemia
- Demonstrate a reasoned approach to the diagnosis of cardiovascular symptoms (e.g. chest pain) using history, examination, incremental investigations and referral. Investigations you will be expected to understand and utilise include:
    - blood pressure measurement
    - 12-lead electrocardiogram
    - 24-hour ambulatory blood pressure measurement and ECG monitoring

- venous dopplers and ankle brachial pressure index (ABPI) measurement
- echocardiogram
- secondary care investigations and treatment

Core Competence: Clinical management

This concerns the recognition and management of common medical conditions encountered in generalist medical care. It includes safe prescribing and medicines management approaches.

This means that as a GP you should:

- Manage primary contact with patients who have a cardiovascular problem
- Make an initial diagnosis to elicit the appropriate signs and symptoms, and subsequently investigate and/or refer patients presenting with symptoms (below) that might be cardiac in origin, noting that in each case there will be a non-cardiac differential diagnosis:
  - chest pain
  - breathlessness
  - ankle swelling
  - symptoms or signs thought to be caused by peripheral vascular disease (arterial and venous)
  - palpitations and silent arrhythmias
  - signs and symptoms of cerebrovascular disease
  - dizziness and collapse
- Be able to manage cardiovascular conditions, including:
  - coronary heart disease
  - heart failure
  - arrhythmias (atrial fibrillation is by far the commonest)
  - other heart disease (valve disease, cardiomyopathy, congenital problems)
  - peripheral vascular disease (arterial and venous)
  - cerebrovascular disease
  - thromboembolic disease (PE and DVT)
- Describe strategies for early detection of cardiovascular problems that may already be present but have not yet produced symptoms

Core Competence: Managing medical complexity

This is about aspects of care beyond managing straightforward problems. It includes multi-professional management of co-morbidity and poly-pharmacy, as well as uncertainty and risk. It also covers appropriate referral, planning and organising complex care, promoting recovery and rehabilitation.

This means that as a GP you should:

- Prioritise interventions for multiple risk factors and symptoms of cardiovascular problems, according to their severity and prognostic risk
- Advise your patients appropriately regarding lifestyle interventions, according to their cardiovascular risk and level of disability
- Consider whether other co-morbidities are present and manage these appropriately

Core Competence: Working with colleagues and in teams

This is about working effectively with other professionals to ensure good patient care. It includes sharing information with colleagues, effective service navigation, use of team skill mix, applying leadership, management and team-working skills in real-life practice, and demonstrating flexibility with regard to career development.

This means that as a GP you should:

- Co-ordinate and commission care with other primary care health professionals, cardiologists and other appropriate specialists, leading to effective and appropriate acute and chronic disease management – including prevention, rehabilitation and palliative care for those with end-stage cardiac failure
- Make timely appropriate referrals on behalf of patients to specialist services, especially to rapid-access chest pain, stroke/TIA and heart failure clinics

Core Competence: Maintaining performance, learning and teaching

This area is about maintaining performance and effective CPD for oneself and others, self-directed adult learning, leading clinical care and service development, participating in commissioning, quality improvement and research activity.

This means that as a GP you should:

- Be able to describe the key research findings that influence management of cardiovascular problems (e.g. Heart Protection study, Framingham study and Interheart; plus see the reading list below)

Core Competence: Organisational management and leadership

This is about the understanding of organisations and systems, the appropriate use of administration systems, effective record keeping and utilisation of IT for the benefit of patient care. It also includes structured care planning, using new technologies to access and deliver care and developing relevant business and financial management skills.

This means that as a GP you should:

- Describe and be able to implement the key national guidelines that influence healthcare provision for cardiovascular problems

Core Competence: Practising holistically and promoting health

This is about the physical, psychological, socioeconomic and cultural dimensions of health. It includes considering feelings as well as thoughts, encouraging health improvement, preventative medicine, self-management and care planning with patients and carers.

This means that as a GP you should:

- Appreciate the importance of the social and psychological impact of cardiovascular problems on the patient, their family, friends, dependants and employers
- Recognise the impact cardiovascular problems have on disability and fitness to work
- Recognise the cultural significance that people attach to the heart as a seat of emotions
- Promote cardiovascular well-being by applying health promotion and disease prevention strategies appropriately

Core Competence: Community orientation

This is about involvement in the health of the local population. It includes understanding the need to build community engagement and resilience, family and community-based interventions, as well as the global and multi-cultural aspects of delivering evidence-based, sustainable healthcare.

This means that as a GP you should:

- Recognise social determinants of health and the importance of population interventions
- Advise patients appropriately about driving, according to their cardiovascular risk and Driving and Vehicle Licensing Agency (DVLA) guidelines
- Be able to describe current population trends in the prevalence of risk factors and cardiovascular disease in the community
- Be able to describe the key government policy documents that influence healthcare provision for cardiovascular problems

Case discussion

Example adapted from C. Heneghan in *Cardiovascular Disease in Primary Care - a guide for GPs*, RCGP Publications, 2010.

Mr Black is a 58-year-old man who presents to your clinic with a history of central chest pain radiating to the left arm. This occurs on exertion and is relieved by rest. It started about one month ago and has not got any worse.

He has no history of hypertension, diabetes or hyperlipidaemia that you are aware of, but he rarely visits the practice. He smokes. There is no family history of ischaemic heart disease but his mother developed diabetes from the age of 65.

On examination, he is comfortable. His blood pressure is 155/95 with a pulse rate of 85 b.p.m. regular. His BMI is 32 kg/m².

Reflective questions

To help you understand how the GP curriculum can be applied to this case, ask yourself the following questions:

Core Competence	Reflective Questions
Fitness to practise This concerns the development of professional values, behaviours and personal resilience and preparation for career-long development and revalidation. It includes having insight into when your own performance, conduct or health might put patients at risk, as well as taking action to protect patients.	How important is it for me to model healthy living for my patients?
Maintaining an ethical approach This addresses the importance of practising ethically, with integrity and a respect for diversity.	How might cardiovascular disease prevention vary in different cultures and sexes? Should overweight smokers be offered open access to treatment if they do not lose weight or stop smoking?
Communication and consultation This is about communication with patients, the use of recognised consultation techniques, establishing patient partnerships, managing challenging consultations, third-party consulting and the use of interpreters.	How would I go about explaining cardiovascular risk to this patient? How could I influence a change in Mr Black's lifestyle? How would I explore this patient's ideas, concerns and expectations?
Data gathering and interpretation This is about interpreting the patient's narrative, clinical record and biographical data. It also concerns the use of investigations and examination findings, plus the adoption of a proficient approach to clinical examination and procedural skills.	What additional information do I need? If I have access to same day ECG, how confident am I at interpreting it? Would blood tests be useful? Which ones?
Making decisions This is about having a conscious, structured approach to decision-making; within the consultation and in wider areas of practice.	What is my differential diagnosis? What drug treatment might I prescribe for Mr Black?

	How does prevalence of cardiovascular disease vary in the UK population?
Clinical management This concerns the recognition and management of common medical conditions encountered in generalist medical care. It includes safe prescribing and medicines management approaches.	What are the national guidelines for diagnosis and longer-term treatment in this case? What would be the key features of my safety-netting conversation with Mr Black? What advice would I give him about smoking cessation?
Managing medical complexity This is about aspects of care beyond managing straightforward problems. It includes multi-professional management of co-morbidity and poly-pharmacy, as well as uncertainty and risk. It also covers appropriate referral, planning and organising complex care, promoting recovery and rehabilitation.	How would I manage his multiple risk factors at this initial consultation? What can I do to help manage the risk in this patient? What are the criteria for referral to secondary care and what would I include in my referral letter?
Working with colleagues and in teams This is about working effectively with other professionals to ensure good patient care. It includes sharing information with colleagues, effective service navigation, use of team skill mix, applying leadership, management and team-working skills in real-life practice, and demonstrating flexibility with regard to career development.	How might other members of the practice team be involved in the care of this patient? What rapid access clinics are available locally?
Maintaining performance, learning and teaching This is about maintaining performance and effective CPD for oneself and others. This includes self-directed adult learning, leading clinical care and service development, participating in commissioning*, quality improvement and research activity.	What quality improvement could I consider for patients with Ischaemic Heart Disease at my practice?
Organisational management and leadership This is about the understanding of organisations and systems, the appropriate use of administration systems, effective record keeping and utilisation of IT for the benefit of patient care. It also includes structured care planning, using new technologies to access and deliver care and developing relevant business and financial management skills.	How do I record cardiovascular risk on my IT system?

Practising holistically and promoting health This is about the physical, psychological, socioeconomic and cultural dimensions of health. It includes considering feelings as well as thoughts, encouraging health improvement, preventative medicine, self-management and care planning with patients and carers.	What is Mr Black's job? How might this be relevant? What are his home circumstances? What would I advise him about having sex? What patient information resources are available?
Community orientation This is about involvement in the health of the local population. It includes understanding the need to build community engagement and resilience, family and community-based interventions, as well as the global and multi-cultural aspects of delivering evidence-based, sustainable healthcare.	What community resources are available for cardiovacular disease prevention in my area?

How to learn this area of practice

Work-based learning

In primary care

- Primary care is a good place for you to learn how to manage cardiovascular problems because of the wealth of clinical material. Patients will present with various symptoms, at varying stages in the natural history of their illness. Critical, professional discourse with a trainer will aid specialty trainees in developing heuristics to help in problem-solving. Supervised practice will also give trainees confidence.
- In particular, the GP specialty trainee should be able to learn about risk factor management and gain experience in the management of cardiovascular problems as they present (acute and chronic), including emergencies. Primary care is also the best place to learn about chronic disease management (angina, post-myocardial infarction (MI), heart failure, stroke, peripheral vascular disease).

In secondary care

- Some GP training programmes have placements of varying lengths with cardiologists. The acute setting is the place for you to learn about the immediate management of acute coronary syndrome (ACS), MI, stroke and aortic aneurysms. As a specialty trainee you will also learn about the invasive management of cardiovascular problems: angioplasty, coronary artery bypass grafts, transplantation, other forms of vascular surgery (carotid endarterectomy, vascular bypass). Outpatient or clinic settings are ideal places for seeing concentrated groups of patients with cardiovascular problems. They provide you with opportunities to learn about secondary care investigation of cardiovascular problems (exercise tests, radionucleotide scans, MRI/CT, carotid dopplers, angiography and echocardiography).
- Vocational training programmes should offer you the opportunity to attend cardiovascular clinics when working in other hospital posts and you should also consider attending specialist clinics during your general practice-based placements.

Self-directed learning

- Many postgraduate deaneries provide courses on cardiovascular problems. Other providers include universities and the Royal College of General Practitioners. There is a growing body of e-learning to help you consolidate and build on the knowledge you have gained in the workplace.

Learning with other healthcare professionals

- Chronic disease management in primary care is a multidisciplinary activity. As a specialty trainee it is important for you to attend nurse-led cardiovascular disease annual review assessments in practice and gain an understanding of the follow-up of hypertensive patients in the practice's clinics that are often led and delivered by a practice nurse. It is also important to understand the role of district nurses in the assessment and management of leg ulcers or ankle oedema by attending their clinics or home visits. You should also take the opportunity to observe cardiovascular rehabilitation programmes led by physiotherapists.

Useful learning resources

Books and publications

- Beevers G, Lip GHY, O'Brien E. *ABC of Hypertension (5th edn)* London: BMJ Books, 2007
- British Medical Association and Royal Pharmaceutical Society of Great Britain. *The British National Formulary* London: BMJ Books, updated annually
- Davis RC, Davies MK, Lip GYH. *ABC of Heart Failure (2nd edn)* London: BMJ Books, 2006
- Hampton JR. *The ECG Made Easy (8th edn)* London: Churchill Livingstone, 2013
- Hobbs R, McManus RJ, Taylor CJ (eds). *Cardiovascular Disease in Primary Care – a guide for GPs* RCGP Publications, 2010
- Jones R, Britten N, Culpepper L, *et al*. (eds). *Oxford Textbook of Primary Medical Care* Oxford: Oxford University Press, 2005
- Warrell D, Cox TM, Firth JD (eds). *Oxford Textbook of Medicine (5th edn)* Oxford: Oxford University Press, 2010

Interesting papers -

Acute coronary syndrome

- Hoenig MR, Aroney CN, Scott IA. Early invasive versus conservative strategies for unstable angina and non-ST elevation myocardial infarction in the stent era. *Cochrane Database of Systematic Reviews* 2010 Mar 17; 3: CD004815

Angina

- Pfisterer ME, Zellweger MJ, Gersh BJ. Management of stable coronary artery disease *Lancet* 2010; 375(9716): 763–72

Cardiac rehabilitation

- Heran BS, Chen JM, Ebrahim S, *et al*. Exercise-based cardiac rehabilitation for coronary heart disease. *Cochrane Database of Systematic Reviews* 2011 Jul 6;(7): CD001800. doi: 10.1002/14651858.CD001800.pub2.
- Davies EJ, Moxham T, Rees K, Singh S, Coats AJ, Ebrahim S, Lough F, Taylor RS. Exercise based rehabilitation for heart failure *Cochrane Database of Systematic Reviews New England Journal of Medicine* 2010 Apr 14; 4: CD003331.

Heart disease statistics

- The best source of these can be downloaded as both PDF and Excel spreadsheets from the British Heart Foundation 'Heart Stats' website: www.bhf.org.uk/heart-health/statistics.aspx

Heart failure

- Arroll B, Doughty R, Andersen V. Investigation and management of congestive heart failure *British Medical Journal* 2010 Jul 14; 341: c3657. doi: 10.1136/bmj.c3657
- Paulus WJ. Novel strategies in diastolic heart failure *Heart* 2010 96(14): 1147–53

Patient's perspective

- McAlister FA, O'Connor AM, Wells G, Grover SA, Laupacis A. When should hypertension be treated? The different perspectives of Canadian family physicians and patients *Canadian Medical Association Journal* 2000; 163(4): 403–8
- Pattenden J, Watt I, Lewin RJP, Stanford N. Decision making processes in people with symptoms of acute myocardial infarction: qualitative study *British Medical Journal* 2002; 324: 1006
- Mackintosh JE, Murtagh MJ, Rodgers H, et al. Why people do, or do not, immediately contact emergency medical services following the onset of acute stroke: qualitative interview study *PLoS One* 2012; 7(10):e46124. doi:10.1371/journal.pone.0046124. Epub 2012 Oct 4. PubMed PMID: 23056247 www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0046124

Peripheral vascular disease

- Burns P, Gough S, Bradbury AW. Management of peripheral arterial disease in primary care *British Medical Journal* 2003; 326(7389): 584–8
- Simon RW, Simon-Schulthess A, Amann-Vesti BR. Intermittent claudication *British Medical Journal* 2007 Apr 7; 334(7596): 746. Review. Erratum in: *BMJ*. 2007 Apr 21; 334(7598)

Risk factors for CHD

- Beckett NS, Peters R, Fletcher AE, *et al.* Treatment of hypertension in patients 80 years of age or older *New England Journal of Medicine* 2008; 358:1887−1898
- Hippisley-Cox J, Coupland C, Vinogradova Y, *et al.* Predicting cardiovascular risk in England and Wales: prospective derivation and validation of QRISK2 *British Medical Journal* 2008; 336(7659): 1475−82
- Sudlow CL, Mason G, Maurice JB, Wedderburn CJ, Hankey GJ. Thienopyridine derivatives versus aspirin for preventing stroke and other serious vascular events in high vascular risk patients *Cochrane Database of Systematic Reviews* 2009; 7(4): CD001246
- Turnbull F, Neal B, Pfeffer M, *et al.* Blood Pressure Lowering Treatment Trialists' Collaboration: blood pressure-dependent and independent effects of agents that inhibit the renin−angiotensin system *Journal of Hypertension* 2007 May; 25(5):951-8. Erratum in: *Journal of Hypertension* 2007; 25(7):1524

Self-management

- Warsi A, Wang PS, LaValley MP, Avorn J, Solomon DH. Self-management education programs in chronic disease: a systematic review and methodological critique of the literature *Archives of Internal Medicine* 2004; 164(15): 1641–9

Stroke

- Wardlaw JM, Murray V, Berge E, Del Zoppo GJ. Thrombolysis for acute ischaemic stroke. *Cochrane Database of Systematic Reviews* 2009 Oct 7; (4):CD000213. doi:10.1002/14651858.CD000213
- Johnston SC, Rothwell PM, Nguyen-Huynh MN*, et al.* Validation and refinement of scores to predict very early stroke risk after transient ischaemic attack *Lancet* 2007; 369(9558): 283–92
- Lewington S, Whitlock G, Clarke R, *et al*. Prospective Studies Collaboration: blood cholesterol and vascular mortality by age, sex, and blood pressure – a meta-analysis of individual data from 61 prospective studies with 55,000 vascular deaths *Lancet* 2007; 370(9602): 1829–39
- Mant J, McManus RJ, Hare R. Applicability to primary care of national clinical guidelines on blood pressure-lowering for people with stroke: cross- sectional study *British Medical Journal* 2006; 332: 635–7
- Rothwell PM, Giles MF, Chandratheva A, *et al.* Effect of urgent treatment of transient ischaemic attack and minor stroke on early recurrent stroke (EXPRESS study): a prospective population-based sequential comparison *Lancet* 2007; 370(9596): 1432–42

Venous thromboembolism

- McManus RJ, Murray E, Taylor CJ, Fitzmaurice DA. *Thromboembolism in Clinical Evidence* London: BMJ Online, updated yearly
- Tovey C and Wyatt S. Diagnosis, investigation, and management of deep vein thrombosis *British Medical Journal* 2003; 326(7400): 1180–4

Web resources

British Cardiac Society www.bcs.com

British Heart Foundation www.bhf.org.uk

British Hypertension Society (lists of validated BP monitors) www.bhsoc.org

Long Term Conditions resources from RCGP www.rcgp.org.uk/policy/rcgp-policy-areas/long-term-conditions.aspx

NHS Evidence Health Information Resources [Note: additional information on a wide variety of topics]

Chest Pain: www.evidence.nhs.uk/topic/chest-pain
Stroke: www.evidence.nhs.uk/topic/stroke
Hypertension: www.evidence.nhs.uk/topic/hypertension
Chronic Kidney Disease: www.evidence.nhs.uk/topic/chronic-kidney-disease
Deep vein thrombosis: www.evidence.nhs.uk/topic/deep-vein-thrombosis

National Institute for Health and Care Excellence (NICE – for copies of guidelines including heart failure, hypertension, post MI, cardiovascular risk, chest pain.) www.nice.org.uk

Personal experiences of illness and health (multimedia) www.healthtalk.org

South Asian Health Foundation www.sahf.org.uk

The Stroke Association www.stroke.org.uk