3.17 THE CLINICAL EXAMPLE ON

Care of People with Metabolic Problems

This statement is part of the curriculum produced by the Royal College of General Practitioners (RCGP) which defines the learning outcomes for the discipline of general practice and describes the skills you require to practise medicine as a general practitioner in the National Health Service (NHS) of the United Kingdom. Although primarily aimed at the start of independent work as a general practitioner, it must also prepare the doctor beyond the training period and provide support for a professional life of development and change.
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KEY MESSAGES

- The prevalence of overweight and obesity, together with their associated complications including diabetes mellitus and non-alcoholic fatty liver disease (NAFLD), is increasing.
- As a general practitioner (GP) you should have an understanding of how common endocrine or metabolic disorders such as diabetes mellitus, thyroid or reproductive disorders can present. You must also be aware of rarer and important disorders such as Addison’s disease, which can be potentially life-threatening if missed.
- Biochemical tests can be diagnostic and often necessary for monitoring metabolic and endocrine diseases, so it is important for GPs to know which tests are useful in a primary care setting and how to interpret these tests and understand their limitations.
- GPs should appreciate the health and medical consequences of obesity including malnutrition, increased morbidity and reduced life expectancy, and have an understanding of the social, psychological and environmental factors underpinning obesity.\(^1\)
- GPs should understand the role of good diabetes management in prevention and/or postponement of associated morbidity and mortality.
- All GPs should be competent in the recognition and primary care management of metabolic and endocrine emergencies.

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Mrs Jones is 46 years old and has struggled with her weight for many years. Despite numerous diets, she has never managed to achieve sustained weight loss and is obese with a BMI of 36. She has a history of hypertension and hyperlipidaemia, and type 2 diabetes mellitus was diagnosed three years ago. Annual checks have identified background retinopathy but no evidence of nephropathy or neuropathy. Six months ago she was started on insulin by the diabetes specialist team as her glycaemic control was poor on maximal oral hypoglycaemic therapy and she was due to undergo a cholecystectomy. Unfortunately, her glycaemic control has deteriorated further since starting insulin. Her HbA1c has increased from 91 mmol/mol Hb (DCCT 10.5%)2 six months ago to 102 mmol/mol Hb (DCCT 11.5%). The practice nurse has been unable to check this result against the patient’s home monitoring record because Mrs Jones has not been testing her blood glucose levels but monitoring her urine glucose instead. When her urine test is negative she has been omitting her insulin dose. You note that her blood pressure, cholesterol and triglycerides are elevated and that her weight has increased by a further 3 kg over the last six months.

As her GP, you are aware that Mrs Jones is divorced and is a single parent to her two young children. She also looks after her elderly parents and holds down a full-time job at a local bank. You are concerned that she is not prioritising her health and is not coping with insulin injections. She admits that she has not been prioritising her diabetes, she resents being on insulin and has also been forgetting to take her oral medications. On exploration of her health beliefs, she expresses her fear of having a hypoglycaemic episode. She has been eating larger amounts of carbohydrate regularly to run high blood glucose levels as she had one ‘hypo’ several months ago which frightened her. She has stopped driving since then and this is making life more stressful. Following discussion with Mrs Jones and the diabetes consultant, an urgent review with the diabetes clinical team is arranged.

The result of this multidisciplinary team (MDT) work is that more time is spent teaching her how to test and manage her blood glucose. She is informed of targets to aim for and a concordant agreement is reached regarding the number of blood glucose measurements and the number of insulin injections per day. Her obesity is discussed sensitively. It becomes clear that she has developed a number of eating behaviours that have contributed to her weight gain. She agrees to enrol on a structured education programme for type 2 diabetes and to be referred to the psychology service for support to change her eating behaviours. GLP-1 agonist therapy is initiated to assist weight loss and insulin is down-titrated. To support her making long-term significant changes to her lifestyle you signpost her to sources of information on local facilities for exercise and weight management.

Six months later, she has lost 12kg and is reaching glycaemic, lipid and blood pressure targets. She remains on the GLP-1 agonist and no longer requires insulin.

2 Diabetes Control and Complications Trial (DCCT) aligned units for HbA1c – see also Examples of Relevant Texts and Research below
To help you understand how the GP curriculum can be applied to this case, ask yourself the following questions:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care management</td>
<td>As Mrs Jones’ GP, where and how, in this case illustration, am I demonstrating my ability to act as a team leader and a team member?</td>
</tr>
<tr>
<td>Person-centred care</td>
<td>On what occasions have Mrs Jones’ ideas, concerns and expectations been explored? Where in this case illustration has respect for the patient’s autonomy been demonstrated?</td>
</tr>
<tr>
<td>Specific problem-solving skills</td>
<td>What potential emergencies may arise in this situation?</td>
</tr>
<tr>
<td>A comprehensive approach</td>
<td>How would I explain to Mrs Jones the importance of blood glucose, blood pressure, lipids and weight management in keeping well?</td>
</tr>
<tr>
<td>Community orientation</td>
<td>What is the local strategic approach to tackling overweight and obesity in my area, including non-NHS partners?</td>
</tr>
<tr>
<td>A holistic approach</td>
<td>How does an awareness of social and psychological factors help the management of this patient?</td>
</tr>
<tr>
<td>Contextual features</td>
<td>As Mrs Jones’ GP, what is my legal responsibility in relation to her fitness to drive with diabetes? What is the GMC’s advice? (see also case illustrations in 3.16 Care of People with Eye Problems and 3.18 Care of People with Neurological Problems and Web Resources below)</td>
</tr>
<tr>
<td>Attitudinal features</td>
<td>What are my own feelings about overweight and obesity? How might my attitude, as well as societal attitudes, influence my care of patients who are overweight or obese? What are the social implications of obesity?</td>
</tr>
<tr>
<td>Scientific features</td>
<td>What is the evidence base for current glycaemic, lipid and blood pressure targets in diabetes?</td>
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</tbody>
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LEARNING OUTCOMES

The following learning outcomes or objectives relate specifically to the management of metabolic problems. These learning outcomes are in addition to those detailed in the core statement, Being a General Practitioner. The core statement and this statement should be used in conjunction with the other curriculum statements. In order to demonstrate the core competences in the area of metabolic problems you will require knowledge, skills and attitudes in the following areas:

The RCGP areas of competence

1 Primary care management

This area of competence is about how you manage your contact with patients, dealing competently with any and all problems that are presented to you. (This area of competence is not limited to dealing with the management of the practice.)

This means that as a GP you should:

1.1 Manage appropriately primary contact with patients who have a metabolic problem
1.2 Co-ordinate care with other primary care and secondary care professionals with diabetes as a focus
1.3 Know the indications for referral to an endocrinologist, metabolic medicine specialist or nephrologist for investigation of suspected endocrine disease, management of complex metabolic problems, or diabetic renal complications respectively
1.4 Understand the systems of care for metabolic conditions including the roles of primary and secondary care, shared-care arrangements, multidisciplinary teams and patient involvement
1.5 Understand the role of particular groups of medication in the management of diabetes, e.g. anti-platelet drugs, ACE inhibitors, angiotension-2 receptor antagonists, lipid-lowering therapies, GLP-1 agonists
1.6 Understand the use and main limitations of tests commonly used in primary care to investigate and monitor metabolic or endocrine disease, e.g. fasting blood glucose, HbA1c, urinalysis for glucose and protein, urine albumin: creatinine ratio, ‘near patient testing’ (point of care testing) for capillary glucose, lipid profile and thyroid function tests, and uric acid tests
1.7 Recognise the risk of co-morbid mental health problems in people with metabolic problems such as diabetes and obesity, and the effect of these on morbidity and mortality
2 Person-centred care

This area of competence is about understanding and relating to the context of your patients as individuals, and developing the ability to work in partnership with them.

This means that as a GP you should:

2.1 Be aware that non-concordance is common for chronic metabolic conditions, e.g. diabetes, and respect the patient’s autonomy when negotiating management
2.2 Communicate with patients clearly and effectively about the risk of complications from obesity and diabetes mellitus
2.3 Develop a flexible approach to health promotion which reflects that certain groups with obesity and diabetes mellitus require different approaches, e.g. children, adolescents and young adults (see also statement 3.04 Care of Children and Young People), pregnant women, ethnic minorities
2.4 Negotiate a programme of weight-reduction sensitively with patients, giving appropriate health promotion advice regarding diet, exercise and pharmacological therapies
2.5 Utilise disease registers and data-recording templates effectively for opportunistic and planned monitoring of metabolic problems to ensure continuity of care between different healthcare providers
2.6 Recognise the potential for abuse of thyroxine and propose strategies to reduce dosage

3 Specific problem-solving skills

This area of competence is about the context-specific aspects of general practice, dealing with early and undifferentiated illness and the skills you need to tolerate uncertainty, and marginalise danger, without medicalising normality.

This means that as a GP you should:

3.1 Intervene urgently when patients present with a metabolic emergency, e.g. hypoglycaemia and hyperglycaemic conditions
3.2 Recognise that patients with metabolic problems are frequently asymptomatic or have non-specific symptoms and that diagnosis is often made by screening or recognising symptom complexes and arranging appropriate investigations
3.3 Demonstrate a logical, incremental approach to investigation and diagnosis of metabolic problems
3.4 Understand the need for early recognition and monitoring of complications in diabetes mellitus
3.5 Case find for depression and manage appropriately
4 A comprehensive approach

This area of competence is about how you as a general practitioner must be able to manage co-morbidity, co-ordinating care of acute illness, chronic illness, health promotion and disease prevention in the general practice setting.

This means that as a GP you should:

4.1 Recognise that patients with diabetes mellitus often have multiple co-morbidities such as neuropathy, nephropathy and cardiovascular disease, and consequently polypharmacy is common
4.2 Develop strategies to simplify medication regimes and encourage concordance with treatment
4.3 Advise patients appropriately regarding lifestyle interventions for obesity, diabetes mellitus, hyperlipidaemia and hyperuricaemia

5 Community orientation

This area of competence is about the physical environment of your practice population, and the need to understand the interrelationship between health and social care, and the tensions that may exist between individual wants and needs and the needs of the wider community.

This means that as a GP you should:

5.1 Recognise that environmental and genetic factors affect the prevalence of metabolic problems, e.g. diabetes mellitus is more prevalent in the UK in patients of Asian and Afro-Caribbean origin, hyperuricaemia is more common in prosperous areas and is associated with obesity, diabetes, hypertension and dyslipidaemia
5.2 Recognise that public health interventions are likely to have the largest impact on obesity and diabetes mellitus, and be able to signpost patients to such programmes where possible, e.g. exercise on prescription
5.3 Know the exemptions form prescription charges for patients with metabolic conditions
5.4 Understand how obesity and overweight can impact directly and indirectly on a wide variety of disease areas and thus why there is a need to consider obesity in the commissioning of a wide range of health services
6 A holistic approach

This area of competence is about your ability to understand and respect the values, culture, family structure and beliefs of your patients, and understand the ways in which these will affect the experience and management of illness and health.

This means that as a GP you should:

6.1 Recognise the psychosocial impact of diabetes mellitus and other long-term metabolic problems, e.g. the risk of depression, sexual dysfunction, restrictions on employment and driving for diabetes
6.2 Recognise the stigma associated with obesity
6.3 Empower patients to self-manage their condition, as far as is practicable

The essential features of you as a doctor

The three essential features (EFs) below are concerned with the features of you as a doctor which may influence your ability to apply the core competences to real life in the work setting.

EF1 Contextual features

This essential feature is about understanding your own context as a doctor and how it may influence the quality of your care. Important factors are the environment in which you work, including your working conditions, community, culture, financial and regulatory frameworks.

Examples of this are:

EF1.1 Recognising your central role as a primary care physician in managing diabetes mellitus and hypothyroidism
EF1.2 Understanding the key government policy documents and the way they influence healthcare provision for your patients with metabolic problems
**EF2 Attitudinal features**

This essential feature is about your professional capabilities, values, feelings and ethics and the impact these may have on your patient care.

Examples of this are:

- **EF2.1** Ensuring that the patient’s weight does not prejudice your decisions
- **EF2.2** Ensuring that the risks of complications from obesity or diabetes are not overstated in order to coerce a patient into complying with treatment

**EF3 Scientific features**

This essential feature is about the need to adopt a critical and evidence-based approach to your work, maintaining this through lifelong learning and a commitment to quality improvement.

Examples of this are:

- **EF3.1** Understanding and implementing the key national guidelines that influence healthcare provision for cardiovascular problems associated with metabolic problems such as diabetes, e.g. NICE guidelines, British Hypertension Society Joint Committee recommendations, national frameworks and quality markers
- **EF3.2** Knowing the key research findings that influence management of metabolic problems, e.g. Diabetes Control and Complications Trial (DCCT), United Kingdom Prospective Diabetes Study (UKPDS), Action to Control Cardiovascular Risk in Diabetes Trial (ACCORD), and the ADVANCE trial in diabetes and cardiovascular disease (see also Learning Resources below)
LEARNING STRATEGIES

Work-based learning – in primary care

As a GP specialty trainee, primary care is the best place for you to learn how to manage common metabolic problems such as diabetes because it is where the vast majority of patients present and are managed. There is no substitute for clinical experience, supported by your GP trainer and experienced members of the primary healthcare team.

Particular areas of learning include risk factor management, ‘motivational interviewing’ to help people change health behaviours, acute and emergency management of metabolic problems as they present in primary care, and chronic disease management including surveillance for and early diagnosis of complications.

Some GP practices offer level 2 services in diabetes or obesity. Other arrangements may include intermediate diabetes care clinics. You will find it beneficial to attend some sessions.

Work-based learning – in secondary care

Secondary care is the best place for you to learn about patients with uncommon but important metabolic or endocrine conditions such as Addison’s disease and hypopituitarism, as well as about patients with complex needs or with complications of the more common metabolic conditions.

Some GP training programmes include placements of varying duration with diabetes or endocrinology specialists, giving trainees exposure to patients with serious diabetes or endocrine problems in the acute setting. Most specialist care is, however, provided in outpatient clinic settings and you should take the opportunity to attend specialist diabetes, endocrine and obesity clinics when working in other hospital posts. You should also consider attending specialist clinics during your general practice placements.

Particular areas of learning include how to recognise metabolic or endocrine disorders that may be life-threatening if missed, which groups or types of patients are best followed up by a specialist team and when patients who are usually managed in primary care should be referred to a specialist team, including the timing and route of such referrals.

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3 Motivational interviewing (MI) is an evidence-based technique for producing behavioural change by helping patients explore and resolve ambivalence towards change. It uses a patient-centred, supportive and goal-directed approach which is collaborative rather than ‘coercive’ (see also Examples of Relevant Texts and Research below)
Non-work-based learning

An e-learning programme for practitioners in the NHS and local authorities working in weight management has been developed by the Department of Health obesity team in partnership with the Department of Health e-learning for Healthcare (www.e-lfh.org.uk).

As part of the e-GP programme (www.e-GP.org) the RCGP offers two curriculum-based e-learning modules on metabolic problems (Diabetes; Endocrine and Metabolic Problems). There are also sessions on obesity in adults and children (in the Promoting Health & Preventing Disease module and the Children and Young People module). These are interactive and reflective e-learning sessions that enhance GP training and support preparation for appraisal and revalidation.

Learning with other healthcare professionals

The achievement of good outcomes in the care of chronic metabolic conditions such as diabetes or obesity requires well-organised and co-ordinated services that draw on the knowledge and skills of health and social care professionals across primary and secondary care. As a specialty trainee it is important for you to attend nurse-led diabetes annual review assessments in practice and gain an understanding of the follow-up of diabetic patients in primary care. It is also important to understand the role of district nurses in the management of diabetic leg ulcers. You should also take the opportunity to sit in with colleagues such as specialist diabetes or obesity nurses, dieticians and psychologists in a secondary or intermediate care setting to learn from and appreciate the contribution of these professional groups.

Formal learning

Some higher-education institutions provide postgraduate certificate courses in diabetes and metabolic problems. The Intercollegiate Group on Human Nutrition is a group of the Academy of Medical Royal Colleges whose main objective is to provide courses and education on nutrition primarily for medical practitioners. For example, the Intercollegiate Course on Human Nutrition is suitable for general practitioners wishing to develop a special interest in nutrition (http://aomrc.org.uk/committees/intercollegiate-group-on-nutrition).
LEARNING RESOURCES

Examples of relevant texts and research

- United Kingdom Prospective Diabetes Study – UKPDS 33. Intensive blood glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes Lancet 1998; 352: 837–53
- United Kingdom Prospective Diabetes Study – UKPDS 34. Effect of intensive blood-glucose control with metformin on complications in overweight patients with type 2 diabetes Lancet 1998; 352: 854–65
- Gadsby R. Diabetes and Endocrine Disorders in Primary Care London: RCGP Publications, 2009
Web resources

Association for the Study of Obesity (ASO)
The UK’s foremost charitable organisation dedicated to the understanding and treatment of obesity.
www.aso.org.uk

Diabetes in Scotland
*The Scottish Diabetes Framework* published in April 2002 sets out the first steps of a 10-year programme to address the problem of diabetes. This website provides a record of what has been achieved as well as a means of sharing information and ideas about the challenges and opportunities ahead.
www.diabetesinscotland.org.uk/Publications.aspx

Diabetes UK
The leading charity working for people with diabetes, funding research, campaigning and helping people to live with the condition.
www.diabetes.org.uk

Driver and Vehicle Licensing Agency (DVLA)
DVLA guidelines for doctors regarding driving licences for patients with medical disorders.
www.dft.gov.uk/dvla//medical.aspx

International Diabetes Federation
A non-governmental organisation working with the World Health Organisation (WHO) and the Pan American Health Organisation (PAHO) to promote diabetes care, prevention and research into a cure.
www.idf.org

International Association for the study of obesity (IASO)
The International Association for the Study of Obesity (IASO) is an umbrella organisation for 53 national obesity associations, representing 55 countries. SCOPE (Specialist Certification in Obesity Professional Education) is IASO’s official obesity education programme, designed for all health professionals and is comprised of 5 different workstreams including e-learning and live training courses.
www.iaso.org/scope/about-scope/

Malnutrition Task Force
A number of guides on implementing nutritional care in hospital and community settings, as well as some brief summary information for commissioners are available on this website
www.malnutritiontaskforce.org.uk/index.html

Diabetes National Service Framework (Wales)
The Diabetes NSF standards were published in England in December 2001 and have been adapted for use in Wales. The Diabetes NSF Standards (Wales) were published on 29 April 2002. The Delivery Strategy was launched in Wales in Spring 2003. The website provides information on key documents.
www.wales.nhs.uk/sites3/home.cfm?orgid=440

National Institute for Health and Care Excellence – NICE Guidelines: Clinical Guidance (CG) and Public Health Guidance (PH)
- Behaviour change at population, community and individual levels (PH 6), 2007
- Cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease (CG 67), 2008
- Identification and management of familial hypercholesterolaemia (CG 71), 2008
- Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children (CG 43), 2006
- Preventing type 2 diabetes – population and community interventions in high-risk groups and the general population (PH 35), 2011
- Type 2 diabetes: prevention and management of foot problems (CG 10), 2004
- Nutrition support in adults (CG32)
- Type 2 diabetes: the management of type 2 diabetes (CG 66), 2008
- Type 2 diabetes: newer agents (CG 87), 2009
- Weight management before, during and after pregnancy (PH 27), 2010
- QS6 Diabetes in adults quality standard, 2011
- Obesity - working with local communities (PH42) 2012
- Managing overweight and obesity among children and young people (PH47) 2013
- Acute kidney injury: Prevention, detection and management of acute kidney injury up to the point of renal replacement therapy (CG169)
www.nice.org.uk

National Obesity Forum
An independent organisation set up to raise awareness of the emerging epidemic of obesity and its impact on both individuals and the NHS. Resources are designed to help prevent and treat obesity in adults.
www.nationalobesityforum.org.uk

Obesity Learning Centre
A website developed by the National Heart Forum with the support of the Department of Health and Department of Education to support people who work either directly or indirectly in promoting a healthy weight and tackling obesity.
www.obesitylearningcentre-nhf.org.uk
Primary Care Diabetes Society
This group represents all healthcare professionals involved with primary care diabetes, not only general practitioners and practice nurses but also GPSIs (GPs with a Special Interest) and clinical assistants. It has built a database of key opinion leaders working in primary care as well as forged close links with leading bodies in diabetes.
www.pcdsociety.org

Royal College of General Practitioners
e-GP includes two curriculum-based e-learning modules on metabolic problems (Diabetes; Endocrine and Metabolic Problems), a number of sessions on obesity in adults and children, and a session on the examination of a patient with symptoms of an overactive thyroid
www.e-GP.org
RCGP Nutrition resource
This provides essential information under four separate topics obesity, malnutrition and nutritional deficiency, food allergy and eating disorders.
www.rcgp.org.uk/clinical-and-research/clinical-resources/nutrition.aspx
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