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Managing multimorbidity in primary care

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Managing multimorbidity in primary care

Approximately eight in ten of all GP consultations involve a patient with multimorbidity. An average consultation covers 2.5 problems, but those involving a patient with multimorbidity will often be more complex, usually without additional time being available to address the extra problems. As the population ages the prevalence of multimorbidity and the pressures it creates will increase. Although there is little evidence to suggest the best way to deliver care for these patients, it is apparent that the use of single-disease-oriented guidelines without due regard for the individual is often inappropriate. GPs need the confidence and ability to interpret evidence-based recommendations within the context of individual patients. This article discusses the growing phenomenon of multimorbidity, its impact on patients, GPs and the health service, and outlines the skills required of GPs to provide optimal management.

The GP curriculum and multimorbidity

The core curriculum statement *Being a general practitioner* sets out a need for GPs to be able to manage multiple complaints and pathologies simultaneously, for both acute and chronic health problems. It states that as a GP you should:

- Understand the concept of co-morbidity in a patient
- Develop your skills to manage the concurrent health problems experienced by your patient through identification, exploration, negotiation, acceptance and prioritisation
- Develop your skills in using the medical records and other information
- Develop your skills and attitudes so that you seek and use the best evidence in practice
- Develop your skills in the review and management of patients taking multiple medications

The contextual statement on *Enhancing professional knowledge* also recognises that GPs should be able to:

- Apply findings from multimorbidity research, taking into account limitations in the evidence and the fact that certain groups, e.g. the elderly, are excluded from research trials

What is multimorbidity?

Put simply, multimorbidity is the coexistence of multiple diseases in an individual. Although it is not a new phenomenon it is a surprisingly new concept, only achieving proper recognition in the literature in the mid-1990s. As the concept has evolved so too has its definition, graduating from the idea of 'co-morbidity' (in which one disease coexisted with a 'primary' disease), through to the World Health Organization (WHO) definition of 'being affected by two or more chronic health conditions' (WHO, 1995) acknowledging that the primacy of one

condition may vary. However, this definition fails to specify what constitutes a 'chronic health condition', and does not take into account important constructs such as the chronology of conditions, interactions between conditions and treatments, and the influence of socio-economic, cultural, environmental and behavioural characteristics.

Moreover, it might be argued that a clinically useful definition of multimorbidity also needs to capture its meaning to the patient; not every person with multiple health conditions will consider him or herself impaired. A better definition was reported by the United States National

Quality Forum (National Quality Forum, 2012), which recognises multimorbid patients as 'having two or more concurrent chronic conditions that collectively have an adverse effect on health status, function, or quality of life and that require complex healthcare management, decision-making, or coordination'. This article adheres to this definition, as it includes a measure of impact and recognises the need to consider outcomes that matter to the patient, which may relate to physical function or quality of life more often than biomarkers of disease.

The epidemiology of multimorbidity

Several factors, including the ageing population, improvements in medical care, lower or more-sensitive diagnostic thresholds, and changing use of health care services have led to a steadily increasing number of people with multimorbidity. It is thought that people with multimorbidity now account for the greatest burden of disease in most Organisation for Economic Co-operation and Development (OECD) countries (including the majority of European Union member states and the USA), with prevalence and cost expected to rise (OECD, 2011). Reported prevalence rates vary considerably, depending on the definition used, method of data collection and population examined. One recent cross-sectional study of 1 751 841 people registered with general practices in Scotland found that 23% of patients had two or more disorders (Barnett et al., 2012). A study using a wider definition of multimorbidity found that it affected 58% of patients attending general practice in the UK (Salisbury, Johnson, Purdy, Valderas, & Montgomery, 2011). In the USA, over 60% of those aged 65 years or older have multiple chronic conditions (Wolff, Starfield, & Anderson, 2002) rising to 81% among those aged 85 or more (Salive, 2013).

Studies have consistently found that multimorbidity is more prevalent among women and older patients (see Fig. 1) (Van den Akker, Buntinx, Metsemakers, Roos, & Knottnerus, 1998). Although it is proportionally more common in the elderly, there are more people in total aged under 65 with multimorbidity than aged over 65 years, and this younger cohort are more likely to have a combination of physical and mental health disorders. Multimorbidity is also seen at a younger age in socially deprived populations, where it tends to occur 10–15 years sooner than in more affluent populations (Barnett et al., 2012).

What is the impact of multimorbidity?

Multimorbidity can have a significant impact on the lives of patients. It also affects the work of GPs and has wider

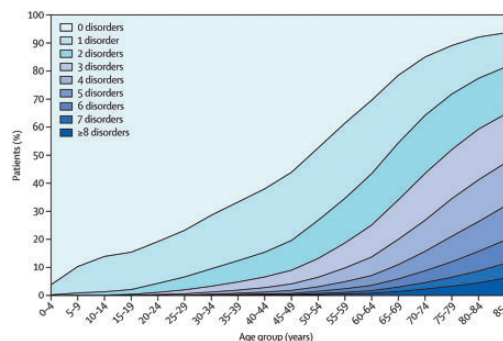


Figure 1. Number of chronic disorders by age group. Reproduced from Barnett, K., Mercer, S. W., Norbury, M., Watt, G., Wyke, S., & Guthrie, B. *Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. Lancet*, 380(9836), 37–43. Copyright Elsevier (2012).

implications in terms of financial cost and efficiencies for health care services.

The lived experience of multimorbidity varies between patients, with some describing significant suffering whereas others report no disease burden. Possible reasons include varying levels of personal resilience, symptom burden, or ability to use prescribed therapies, as well as the fact that the concept of multimorbidity encompasses a wide range of disease combinations of varying severity. Perceived levels of burden may vary over time within the individual. However, in general, patients who have multimorbidity have been found to have a lower quality of life, reduced physical function, and higher rates of morbidity and mortality compared with their non-multimorbid counterparts (Fortin et al., 2004; Fortin, Stewart, Poitras, Almirall, & Maddocks, 2012). They are also more likely to suffer from depression; patients with more chronic physical conditions tend to have more depressive symptoms – this relationship is mediated at least partially via self-perceived functional limitation and health status (Gunn et al., 2012).

Patients with multimorbidity are exposed to potential medical error, both drug/drug and drug/disease interactions, because of the trend to focus on treating one disease without considering the impact on other conditions or therapies. This can result in complex non-pharmacological treatment regimens and potentially risky polypharmacy; a common end-product of following multiple single-disease guidelines (see Case study 1). The single-disease-focused approach also creates problems with fragmented care, including the inconvenience of patients being recalled multiple times to separate disease-specific clinics.

Patients with multimorbidity are high users of primary care. They account for around eight in ten of all GP consultations, and see their GP more often than patients who do not have multimorbidity (Salisbury et al., 2011). They

Case study 1.

Mr Desmond Clarke is an 89-year-old gentleman who has been registered at his practice for over 30 years. During that time he has been diagnosed with hypertension and type 2 diabetes, had two myocardial infarctions, and suffered an episode of shingles that left him with severe post-herpetic neuralgia. Over the past year he has developed symptoms of cardiac failure and his renal function has deteriorated to stage 4 chronic kidney disease. He comes to see his GP, Dr Arthur, complaining of increasing problems with lethargy, reduced appetite, poor mobility and myalgia.

After taking a history Dr Arthur reviews Mr Clarke's medical notes. She also notes his repeat prescriptions:



She establishes that he is taking the medications as prescribed. She also notes that his diabetes control was good when he came for his review 5 months ago. However, she is concerned that on examination today his blood pressure is low at 110/74 mmHg sitting, 100/68 mmHg standing and he also seems pale. He has mild pedal oedema and there are fine crepitations at both lung bases. His gait is hesitant and slow.

What are the potential causes of Mr Clarke's current symptoms?

Could Mr Clarke's medications be contributing to his symptoms, and if so what changes to his prescription might Dr Arthur make?

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are also higher users of secondary care services; they have more hospital admissions than those without multimorbidity, to a greater extent than would be expected for their individual conditions. This has an inevitable impact on cost. A 2011 study conducted in Ireland found that a patient with four or more chronic conditions had an average annual total healthcare cost of €4096.86, compared with a cost of €760.20 for a patient with no chronic conditions (Glynn et al., 2011).

Managing multimorbidity in primary care

GPs often find it difficult to manage the frequently complex presentation, symptom management, and uncertainties involved in treating multimorbid patients, even

before trying to deliver early preventative and anticipatory care. There are no specific guidelines or interventions available. Various initiatives have been attempted, including systematic changes to the delivery of care (e.g. care planning and case management) or schemes to improve self-management. However, there is a paucity of evidence to show that these interventions improve outcomes (e.g. improved prescribing), with results of published reviews showing mixed effects (Smith, Soubhi, Fortin, Hudon, & O'Dowd, 2012). Considering the heterogeneity of this patient group the fact that there is no 'one-size-fits-all' solution is unsurprising. Instead it may be more important to consider the key components of how we should manage multimorbid patients, using a flexible approach that focuses on meeting the outcomes desired by individual patients.

An example of such 'guiding principles' has been published by the American Geriatrics Society (American Geriatrics Society Expert Panel on the Care of Older Adults with Multimorbidity, 2012). These recommend that doctors caring for older adults with multimorbidity should:

1. Elicit and incorporate patient preferences into medical decision-making
2. Recognise the limitations of the evidence base, and interpret and apply the medical literature specifically to older adults with multimorbidity
3. Frame clinical management decisions within the context of risks, burdens, benefits and prognosis (e.g. remaining life expectancy, functional status, quality of life)
4. Consider treatment complexity and feasibility when making clinical management decisions
5. Use strategies for choosing therapies that optimise benefit, minimise harm, and enhance quality of life.

These principles broadly align with the RCGP curriculum competencies (see Curriculum box). Importantly, they also point towards the adoption of a patient-centred approach, in which GPs conduct consultations that address the patient's desired outcome, developing patient-centred treatment plans that also incorporate conventional disease management. The manner in which GPs might seek to follow these principles is described below.

The consultation

The most obvious place to put the above principles into practice is in the consultation. Most GP consultations are complex, dealing with multiple problems (a mean of 2.5) across a range of disease areas in a short duration (Salisbury et al., 2013). Consultations with multimorbid patients are especially likely to fit this picture, and are often perceived by GPs to be challenging. A particular issue involves knowing how to balance the varying risks and benefits of treatments in the context of multiple conditions. The situation is further complicated by the need to consider patient preferences and the time-limits of the

consultation (O'Brien, Wyke, Guthrie, Watt, & Mercer, 2011) (see Case study 2).

Continuity of care (seeing the same doctor for an episode of care and/or keeping medical notes that enable effective continuity of care by an alternative GP) is helpful when caring for patients with multimorbidity. It is also an important determinant of patient satisfaction, and reduces hospital admissions and emergency visits. Unfortunately, patients with multimorbidity have lower continuity of care than those without (Salisbury et al., 2011) and they often describe this as a problem (Bayliss, Edwards, Steiner, & Main, 2008). Changes in working practice, such as the rising numbers of part-time and salaried GPs, as well as delegation of work to nurse practitioners, may be partly responsible. One solution may be to devise better methods for handing over the care of patients and/or using appointment booking systems that enable patients to see the GP of their choice.

Consultations must also be of sufficient duration. Most standard appointment times are unable to accommodate a patient-centred conversation that deals with multiple medical problems and includes screening, examination, test interpretation, patient education, and a review of medications. These issues have been highlighted in the past and pleas made to 'call time on the 10 minute consultation' (Silverman & Kinnersley, 2012). The RCGP supports this call; in its recent publication *The 2022 GP*, it anticipates that future practice will involve more flexible consultation times, with longer appointments available to adequately address problems within a wider biopsychosocial context (RCGP, 2013). It may be beneficial to ask patients with multimorbidity to book a longer (e.g. double) appointment if they, or you as their GP, anticipate this will be required.

Finally, adopting a patient-centred focus is advocated for all GP consultations, but it is especially important in the context of multimorbidity. The complexity of the types of conditions affecting patients, interactions between each, and the personalised context in which conditions occur means that the 'illness experience' varies between patients; an approach is needed in which treatment is provided according to individual patient priorities. GPs need to understand the perspectives, personal circumstances and needs of individual patients to plan appropriate and personalised interventions in a shared decision-making process. This process requires GPs to have sufficient expertise in consultation skills and the necessary clinical acumen to enable them to work collaboratively with patients, balancing the focus on the patient agenda with clinical knowledge to reach shared decisions. This reflects the philosophy of 'expert generalist practice', in which biomedical knowledge is applied alongside an exploration and integration of the patient's views, perspectives and culture using a person-centred approach – all the time acknowledging that health is a resource to enable individuals to lead as full a life as

Case study 2.

A few weeks later Mr Clarke again attends the surgery. Dr Arthur is away and so the appointment has been booked with a locum GP, Dr Thomas. Dr Thomas has only been working at the practice for a few days. He has a fully booked surgery and is running 20 minutes late as it has taken him time to get used to the computer system.

Mr Clarke tells Dr Thomas that he booked the appointment because he has a painful shoulder. He also wanted to find out the results of the blood tests that Dr Arthur requested and hoped that his blood pressure could be rechecked following the changes that were made to his medications.

Dr Thomas takes a focused history of the shoulder pain and performs a shoulder examination. He concludes that it is likely that Mr Clarke has osteoarthritis affecting the shoulder joint. He suggests an X-ray to confirm the diagnosis and advises simple shoulder exercises. He also discusses potential analgesic options, but finds it difficult to suggest any to add to those already on Mr Clarke's repeat scripts. By now 10 minutes is almost up, but Dr Thomas agrees to check on the blood test results as requested. They show:

Desmond Clarke 19/08/24 (NHS: 123 456 7890) 20/03/2014

Haemoglobin estimation 118g/L (130-170)*	Erythrocyte sedimentation rate 51 mm/hr (0-30)*
Red blood cell count $3.8 \times 10^{12}/L$ (4.5-5.5)*	Haemoglobin A1c level 56 mmol/mol
Haematocrit 0.356 (0.400-0.500)*	Total cholesterol 7.1 mmol/L (3.5 - 5.0)*
Mean corpuscular volume 94 fL (83-101)	Serum creatinine 299 $\mu\text{mol}/L$ (55-125)*
Mean corpuscular haemoglobin 31.1 pg (27.0-32.0)	Serum urea 13.4 mmol/L (1.7-7.1)*
Platelet count $303 \times 10^9/L$ (150-410)	Serum potassium 5.8 mmol/L (3.6-5.0)*
Neutrophil count $5.85 \times 10^9/L$ (2.00-7.00)	Serum sodium 128 mmol/L (134-145)*
Lymphocyte count $1.39 \times 10^9/L$ (1.00-3.00)	Estimated glomerular filtration rate
Monocyte count $0.67 \times 10^9/L$ (0.20-1.00)	18ml/min/1.73m ²
Eosinophil count $0.40 \times 10^9/L$ (0.02-0.50)	
Basophil count $0.10 \times 10^9/L$ (0.00- 0.10)	

It takes Dr Thomas a few minutes to review Mr Clarke's previous blood results and establish that his renal function is stable. The anaemia also appears to be chronic. However, the other deranged results are new. Mr Clarke clearly appears worried about the blood test results and asks Dr Thomas what they mean. He confides that he is the main carer for his wife, who is housebound due to severe rheumatoid arthritis and agoraphobia, and he is anxious about how they will cope if he becomes more unwell. He also reminds Dr Thomas that his blood pressure still needs to be checked. Dr Thomas is now running 30 minutes late.

What are the most important issues for Dr Thomas to address from a clinical and from a patient perspective?
 Are there any strategies Dr Thomas might have employed to keep the consultation to time?
 How relevant are guidelines regarding the management of osteoarthritis and hypercholesterolaemia in this context?

possible, not as an end in itself (Reeve et al., 2013). A simple goal-setting process, giving patients an opportunity to prioritise their own goals and make an informed choice about treatment options, might facilitate the shared decision-making approach and ensure that both clinician and patient are working towards patient-desired outcomes.

Evidence-based medicine

The widespread incorporation of evidence-based medicine into modern health care is a significant advance. However, how do we apply evidence-based medicine to patients with multimorbidity when most trials purposely exclude these patients (Zulman et al., 2011)? Practitioners are left to decide if adding a treatment will have similar effects to those seen in trials when added to

a host of other medications and in the context of other conditions, such as in the case study used in this article.

Guidelines summarise evidence-based recommended treatments and are useful in raising the standard of care and reducing treatment inequalities. However, most focus on a single disease and are limited in the context of multimorbidity; most are based on studies that exclude patients with multimorbidity and fail to account for the interrelationship between disease and treatment combinations and the effects of age and frailty. The National Institute for Health and Care Excellence has produced numerous disease-specific guidelines, but none on multimorbidity. However, they have acknowledged that guidelines should consider multimorbidity and are exploring how to incorporate this into their guidance.

In the meantime, GPs face increasing pressure to adhere to national guidelines that may not necessarily be in the best interests of their patients. The point that guidelines are population-centred whereas clinicians operate at a patient-centred level is not a well-recognised issue. In most cases being patient-centred does mean using guidelines, but in patients with multimorbidity this is less clear. Clinicians need to be free to use their expert clinical judgement to make patient-centred decisions, yet clinical judgement has its limitations and can sometimes be difficult, particularly in the present system, where a significant proportion of GP income is received through a pay for performance system based on management of single diseases (e.g. the Quality and Outcomes Framework).

There is a need for evidence-based practice in this cohort of patients, but this will only be achieved when trials start to include more 'real life' (i.e. multimorbid) participants and results are analysed to measure the impact of multimorbidity. Even then it may not be possible to practise evidence-based medicine in its current form, requiring a shift in the paradigm away from guidelines focused on organs or diseases and instead customised to the patient's characteristics (e.g. type and severity of conditions, or age), with treatment recommended based on what is likely to achieve the greatest benefit. Ways of using new technology to bring together guidelines on individual conditions have been proposed in the literature (Guthrie, Payne, Alderson, McMurdo, & Mercer, 2012).

Managing polypharmacy

Although it may be appropriate to prescribe multiple medications for a patient, this should only take place when it is anticipated that each drug is being used as prescribed, the patient suffers no side effects, and prescribing decisions are based on good evidence. This leaves several situations in which polypharmacy may be problematic (see Box 1); patients with multimorbidity frequently fall into one of these categories.

Box 1. Reasons for problematic polypharmacy.

- Treatment is not evidence-based for the patient
- Risk of harm from treatment is likely to outweigh benefit to the patient
- Drug combination is hazardous due to interactions
- The burden of pill-taking is unacceptable to the patient
- The burden of pill-taking hinders clinically useful medication adherence
- Medications are prescribed to treat side effects of other medications, when alternative solutions to reduce the number of medications prescribed are available

Source: Duerden, Avery, & Payne (2013).

Problematic polypharmacy carries potential harms, such as an increased risk of adverse drug events (including drug/drug and drug/disease interactions), medication errors, falls, hospital admissions and functional impairment (Le Couteur, Hilmer, Glasgow, Naganathan, & Cumming, 2004). In addition, the higher potential for side effects increases the likelihood of poor medication adherence.

Given that polypharmacy presents such risks, why do so many of our patients have enormous, and lengthening, lists of medications? The average number of items prescribed for each person in England in 2012 was 18.7, compared with 12.4 in 2002 (NHS Information Centre, 2013). One factor may be that, although GPs recognise the need to discontinue drugs, they feel more comfortable doing this with symptomatic than preventive medications (e.g. they might stop an analgesic once pain has eased, but are less likely to stop a statin). This is largely due to the fact that the benefit/risk information for preventive drugs in the multimorbid population is often lacking, particularly for elderly patients (Schuling, Gebben, Veehof, & Haaijer-Ruskamp, 2012). So, how might we address this situation?

All but the first two points outlined in Box 1 could be tackled within the context of a face-to-face medication review. An open discussion with the patient (together with a carer, if needed) about his or her medication use should reveal any difficulties with taking medications as prescribed. Simple problems, such as trouble remembering to take pills, may have simple solutions (e.g. arranging for the pharmacy to provide a weekly dosette box – Fig. 2). Otherwise, if the patient reveals that he or she is suffering from unacceptable side effects, or it becomes apparent that some medications are only being prescribed to deal with the side effects of another (particularly when an alternative option is available) then it may be appropriate to stop the offending drug(s), following a discussion with the patient about the pros and cons.

Addressing the first two points in Box 1 is more challenging. The frequent lack of evidence gives more reasons



Figure 2. Consider use of a dosette box in polypharmacy. Saturn Stills/Science Photo Library.

for GPs to engage in person-centred and open discussions with patients, covering the known benefits and risks of individual medications in the patient's personal context and making shared decisions about treatment on a case-by-case basis. It might be helpful to include within these discussions the expected timescale over which the patient would expect to gain benefit, particularly for preventive medications. The National Prescribing Centre database of patient decision aids (National Prescribing Centre, 2011) is a helpful resource for such information.

During discussions with patients it is important to allow time for them to consider their personal perception of the potential benefits and risks and allow the opportunity to

take part in decisions about commencing, continuing or stopping treatments. A previous *InnovAiT* article on the topic of prescribing in the elderly covers some of these issues and may be helpful further reading (Simon, 2008).

Challenges for the future

Optimal care for patients with multimorbidity may be provided through the successful combination of the above approaches (see Case study 3 and 'top tips'

Case study 3.

Mr Clarke did not feel satisfied with his consultation with Dr Thomas, and so he called the surgery to speak to Dr Arthur as soon as she returned from her leave. Dr Arthur arranged for Mr Clarke to come and see her for a routine appointment, booking him a 20 minute slot in anticipation of his multiple problems. Prior to his appointment she took the opportunity to review his recent blood tests and the notes made by Dr Thomas.

When Mr Clarke arrived for his appointment Dr Arthur greeted him and opened the consultation with a general question about how he was getting on. Through this she established that he was still suffering with tiredness, myalgia and shoulder pain. Dr Arthur explored these symptoms further, asking about the impact that they had on Mr Clarke's life. At this point Mr Clarke became tearful, telling Dr Arthur that he was worried because he could no longer provide proper care for his wife – who now relied on him to carry out most personal care as well as all of the housework and cooking. The couple had no additional support at home and no relatives living close by. Dr Arthur asked Mr Clarke what would be most beneficial to him at present and together they agreed that his main priority was to obtain help in caring for his wife, but also to improve his shoulder pain, myalgia and tiredness.

A discussion about Mr Clarke's blood tests followed. Dr Arthur highlighted the elevated cholesterol level. She and Mr Clarke looked at a patient decision aid on her computer that showed the numbers needed to treat with statins over 10 years to prevent a future cardiovascular event. Dr Arthur pointed out that Mr Clarke was at higher risk than the figures shown, given his past history, but she was unable to provide a more specific risk as none of the studies used to create the risk calculator included multimorbid patients of his age. She also discussed the fact that statins can cause myalgia. On balance Mr Clarke felt that he would prefer to accept the increased risk of a cardiovascular event and try a period off the statin, as the myalgia was having a significant impact on his life. Dr Arthur also discussed the potential causes of the raised ESR level, explaining that it was a very non-specific test. Together they agreed that further investigation of this was not Mr Clarke's main priority at present, but they planned to recheck the levels in a month.

Next they reviewed Mr Clarke's medications. Dr Arthur had already stopped Mr Clarke's atenolol at an earlier appointment and a repeat check revealed that his blood pressure had improved. Having established that each remaining medication was being used as prescribed they went on to discuss the potential side effects each might be causing. They agreed to try reducing and then stopping gabapentin (which may be causing tiredness), alongside stopping simvastatin as already discussed.

Finally, they made plans to achieve Mr Clarke's key health goals. Dr Arthur gave Mr Clarke the details for Social Services so that he could arrange an assessment for further care at home. They had already agreed medication changes to help with the myalgia and tiredness, but Dr Arthur asked Mr Clarke how he would like to address his shoulder pain. He was not keen on using any further medications and so Dr Arthur offered to refer him for some physiotherapy, which he accepted.

They agreed to meet to review Mr Clarke's progress in a month. They also agreed that Mr Clarke would book an appointment with the nurse in the meantime, to review his diabetes, heart disease and renal disease. Dr Arthur anticipates avoiding several individual doctor appointments by using this more proactive approach.

Box 2. Top tips for managing patients with multimorbidity.

For the GP

- Ask patients with multiple chronic conditions whether they feel that this has an impact on their life, and if so how – find out about their main goals for health (in its widest sense)
- Adopt a critical approach when using evidence-based medicine to guide management decisions and explain these dilemmas to patients
- Undertake regular medication reviews, considering issues of patient concordance and the potential for side effects and interactions – discuss stopping medications if there is questionable evidence for efficacy

For the practice

- Use an appointment booking system that allows patients to book to see the GP of their choice and enables GPs and/or patients to book longer appointments when required
- Devise methods that encourage clear lines of communication between members of the multi-disciplinary team (e.g. regular meetings, direct dial telephone numbers) to enable efficient, safe information-sharing
- Instead of asking patients to attend multiple disease-specific clinics combine all reviews into one clinic appointment

in Box 2). However, it may be difficult for GPs to manage this within the constraints of today's NHS, with its heavy emphasis on single-disease management (Wilson, 2013). Changes need to be made; if we are struggling now how can we hope to address the health needs of the even larger and more multimorbid population of the future? The optimal model of primary health care for patients with multimorbidity remains unknown, but the evidence so far indicates that it needs to incorporate the aspects discussed above. A large multi-centre cluster randomised trial of an intervention to improve care for patients with multimorbidity in UK general practice has recently been commenced (Salisbury et al., 2014). This type of research, and in particular studies that explore the patients' context and desired outcomes, will be vital to ensuring an adequate and timely response to the burgeoning global phenomenon of multimorbidity.

Key points

- Multimorbidity is a common phenomenon, and as our population ages its prevalence will increase

- Patients with multimorbidities are more likely to have a poor quality of life, reduced function and higher mortality than those without. They are also more likely to use health care services
- The current single-disease-oriented model of health care that is predominant in Western medicine is often suboptimal at meeting the needs of multimorbid patients
- Caring for this group of patients requires the use of a generalist approach, with a consultation model that incorporates patient-desired outcomes, recognition of the difficulty in applying evidence-based guidelines, and appropriate management of polypharmacy.
- Further research is required to understand the optimal approach to managing multimorbidity

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