



Royal College of
General Practitioners

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Academy of Medical Sciences consultation on addressing the global challenge of multimorbidity

1. The RCGP welcomes the opportunity to respond to the Academy of Medical Sciences' consultation on addressing the global challenge of multimorbidity.
2. The Royal College of General Practitioners (RCGP) is the largest membership organisation in the United Kingdom solely for GPs. Founded in 1952, it has over 52,000 members who are committed to improving patient care, developing their own skills and promoting general practice as a discipline. We are an independent professional body with expertise in patient-centred generalist clinical care.
3. The RCGP published a policy paper on multimorbidity in November 2016, [*Responding to the needs of patients with multimorbidity: a vision for general practice*](#). This outlines the College's position on multimorbidity, provides a synthesis of research to date in this area and makes a recommendation for increased funding for independent research into multimorbidity.

4. The RCGP would welcome the opportunity to discuss our respective work with the Academy of Medical Sciences and work together to take the multimorbidity agenda forwards.

Definitions

There is no standard definition of ‘multimorbidity’ – various different definitions are used. Which definitions (or aspects of definitions) do you think are most helpful to efforts to describe and understand multimorbidity?

5. In our recent policy paper the College adopted the following approach to defining and understanding multimorbidity:
6. “Multimorbidity is often defined as two or more long-term conditions that coexist independently in the same individual. While with comorbidity the focus is on an index condition (e.g. diabetes), multimorbidity does not imply any one condition is more important than another. This is particularly relevant in the general practice setting, as the relative importance of different conditions can wax and wane over time. When defining multimorbidity, it is also important to remember that multimorbidity itself is not a disease. To each patient, different things matter and this makes establishing the impact of multimorbidity, both on the patient and their utilisation of the wider health care system, difficult to measure”.
7. Statistical research based on datasets and lists of chronic conditions is necessary to provide insight into who and how many people are affected, common clusters of conditions, and the impact on patients and the health services. However, it is very difficult to use this as basis for a definition of multimorbidity given the wide range of differing analyses produced depending on the datasets used and how many conditions these include.
8. The College therefore feels it is more appropriate to take a person-centred approach to defining and understanding multimorbidity as outlined under point 6. This is particularly true within the context of general practice, which takes a holistic view of patients and ensures continuity of care.

Current knowledge base

What are the key data, and what data sources exist, on the prevalence, burden (including costs and impact on health systems) and determinants of multimorbidity? Are there significant gaps in such data and, if so, what are they?

Prevalence

9. The College focused on two studies when considering the prevalence of multimorbidity within the UK:
10. Salisbury et al. (2011): a retrospective study of approximately 100,000 adult patients across 182 practices in England which found that 16% of patients had multimorbidity, defined as having two or more of the chronic diseases in the Quality and Outcomes Framework, but that 58% had multimorbidity when a wider list of 114 chronic conditions was considered.¹
11. Barnett et al. (2012): a study which extracted data on 40 morbidities from a database of approximately 1.75 million people in Scotland and found that 23.2% of the population studied were living with multiple long-term conditions.²
12. The variation in estimations as outlined under points 10 and 11 is indicative of the challenges posed by adopting a statistical approach to the definition of multimorbidity as raised under points 5-8.
13. Nonetheless, it is clear that the prevalence of multimorbidity across the UK is rising. The College has conducted analysis which shows that by the year 2025 the number of people living with one or more serious long-term condition in the UK will increase by nearly one million, rising from 8.2 million to 9.1 million.
14. However, an established and widely accepted definition of multimorbidity is necessary in order to minimise variation in estimations and enable a more comprehensive understanding of the changing prevalence of multimorbidity.

¹ Salisbury C, Valderas J. M, Montgomery A. A. (2011). Epidemiology and impact of multimorbidity in primary care: a retrospective cohort study. *British Journal of General Practice*. Available at:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3020068/>

² Barnett K, Mercer SW, Norbury M, Watt G, Wyke S, Guthrie B. (2012). Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross sectional study. Available at:

<http://www.ncbi.nlm.nih.gov/pubmed/22579043>

15. Some research has been conducted into clusters of conditions, including a study by Van den Akker and Muth (2014) which identified cardiovascular/metabolic, anxiety/depression/psychological disease, and neuropsychiatric or psychogeriatric conditions as common combinations.³
16. A systematic review by Violan et al. (2014) investigated patterns of multimorbidity. This found the most common pair of conditions as to be osteoarthritis plus a cardio-metabolic condition, such as diabetes or hypertension.⁴
17. Figure 1 illustrates clusters of common conditions as reported by Barnett et al. (2012).

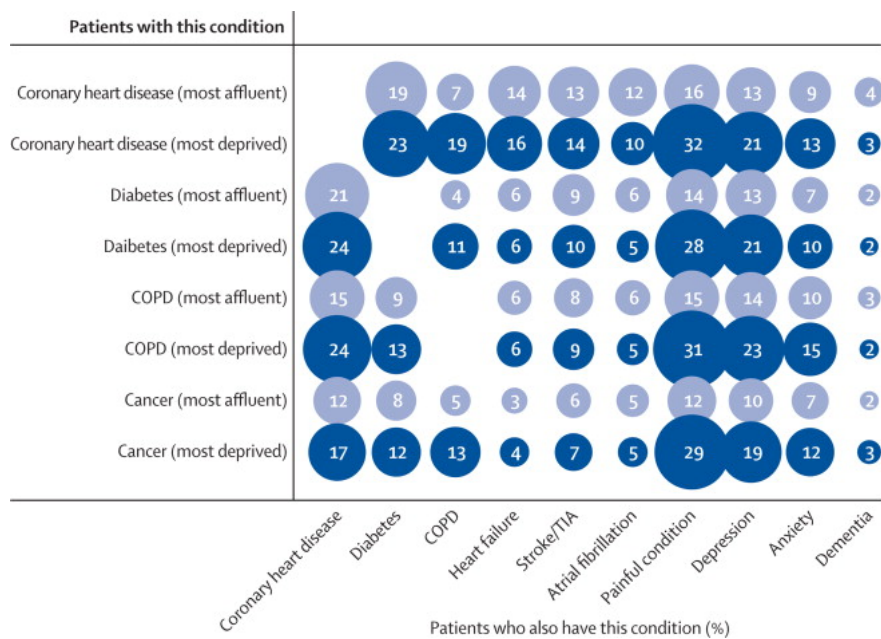


Figure 1. Selected comorbidities in people with four common, important disorders in the most affluent and most deprived deciles

18. A secondary analysis of this study found that only 10 conditions accounted for the five most prevalent conditions at different ages in patients with multimorbidity across the life-

³ Van den Akker and Muth C. (2014). 'How common is multimorbidity?' In Mercer S. W, Salisbury C and Forton M edited *ABC of Multimorbidity*. Wiley Blackwell

⁴ Violan C, Foguet-Boreu Q, Flores-Mateo G, Salisbury C, Blom J, Freitag M, Glynn L, Muth C, Valderas J. M. (2014). Prevalence, Determinants and patterns of multimorbidity in primary care: A systematic Review of Observational Studies. *PLoS One*. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/25048354>

course; in every ten-year age group pain and depression featured in the top five conditions (McLean et al., 2014).⁵

19. Physical and mental multimorbidities are one of the most common combinations. The King's Fund has reported that 30% of people with a long-term condition also have a mental health condition and 46% of people with a mental health problem have a long-term illness.⁶ The effect of mental health on physical illness is estimated to cost the NHS between £8 and £13 billion a year in England.⁷
20. However, in spite of the commonality of these combinations, there are still relatively few studies that review the impact these clusters have in terms of clinical interactions, quality of life and service use.

Burden

21. The College's policy paper identifies three primary areas of impact on patients living with multimorbidity: burden of illness, burden of treatment, and medication burden.
22. Burden of illness: patients often have to change their behaviour to manage their illnesses and even influence the behaviour of others to fit in with the lifestyle shaped by their conditions.⁸ Research has also found that factors such as frailty, deteriorating manual dexterity, low health literacy and cognitive impairment that occur alongside multimorbidity increase the burden of illness.⁹
23. Burden of treatment: treatment of multiple long-term conditions takes up a significant amount of effort and time for patients, who must learn about their conditions, arrange their lives around clinical appointments and navigate complex specialist care pathways that are not always joined-up.¹⁰ In addition, the current system is not designed to support

⁵ McLean G, Gunn J, Wyke S, Guthrie B, Watt GCM, Blane DN, Mercer SW. (2014). The influence of socioeconomic deprivation on multimorbidity at different ages. *British Journal of General Practice*; 64 (624), e440-7. Available at: <http://bjgp.org/content/64/624/e440.most-cited>

⁶ King's Fund. (2012). *Long term conditions and mental health*. Available at: http://www.kingsfund.org.uk/sites/files/kf/field/publication_file/long-term-conditions-mental-health-cost-comorbidities-naylor-feb12.pdf

⁷ Ibid.

⁸ Mair S F, May C R. (2014). Thinking about the burden of treatment. *The BMJ*. Available at: <http://www.bmj.com/content/349/bmj.g6680>

⁹ Ibid.

¹⁰ O'Brien R, Wyke S, Watt G, Guthrie B, Mercer SW. The 'everyday work' of living with multimorbidity in socio-economically deprived areas of Scotland. *Journal of Comorbidity* 2014,9:62

the lifestyles of patients living with long-term conditions, tending to prioritise measures to maximise clinical outcomes.

24. Medication burden: medications can have adverse side effects and affect a patient's quality of life. The more complex a patient's medication regimen becomes, the less likely they are to be able to follow it properly. One fifth of preventable hospital admissions being due to patients not adhering to their medication.¹¹ Patients also need to have high levels of numeracy and literacy, and may have to learn new practical skills.
25. In addition to the burden on patients, caring for patients with multimorbidity also has a considerable impact on the wider health and social care system. The Department of Health has estimated that in England long-term conditions account for 50% of all GP appointments, 64% of outpatient appointments and 70% of inpatient bed days.¹² Research by van den Akker and Muth suggests that the proportion of general practice appointments accounted for by patients with multimorbidity could be even higher at 80%.¹³ Overall, £7 out of every £10 of health and social care expenditure in England is on patients with long-term conditions, with the spend per patient per year increasing according to the number of long-term conditions they have.¹⁴

Determinants

26. The College's policy paper looks at research by Salisbury et al. (2011) and Barnett et al. (2012) on factors linked to the likelihood of developing multimorbidity.
27. Salisbury et al. (2011) found a positive correlation between age and both the percentage of people living with multimorbidity, and the number of conditions experienced. See Figure 2 below.

¹¹ Van den Akker and Muth C. (2014). 'How common is multimorbidity?' In Mercer S. W, Salisbury C and Forton M edited *ABC of Multimorbidity*. Wiley Blackwell

¹² Department of Health. (2012). Long term conditions compendium of information. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216528/dh_134486.pdf

¹³ Van den Akker and Muth C. (2014). 'How common is multimorbidity?' In Mercer S. W, Salisbury C and Forton M edited *ABC of Multimorbidity*. Wiley Blackwell

¹⁴ Department of Health. (2012). Long term conditions compendium of information. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216528/dh_134486.pdf

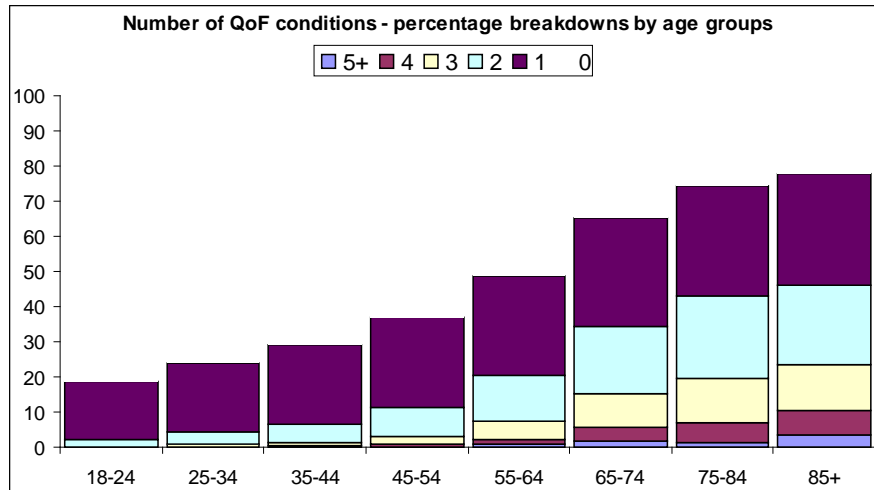


Figure 2: Number of QOF conditions – percentage breakdowns by age group (Salisbury et al. 2011)

28. However, it is important to recognise that multimorbidity is not just a problem among the elderly. Barnett et al. (2012) found that of the 1.8 million people examined in their study there were more individuals living with multimorbidity aged below 65 than above.

29. While research into the prevalence of multimorbidity in elderly patients and areas of high deprivation is more established, there is a gap in terms of research into the experience of certain ethnic groups, those with poor social support and those with drug or alcohol problems.¹⁵

What are the key data, and what data sources exist, on the management of multimorbidity? Are there significant gaps in such data; if so, what are they?

30. Broadly speaking, there is a lack of research into the ways in which professional practice can be developed and services designed to provide the most effective care to patients with multiple long-term conditions.

Research focused on single diseases

31. One of the primary barriers in understanding the effectiveness of treatments for patients with multimorbidity is the fact that these patients are often excluded from single disease clinical research, which aims to understand how to treat an ‘average uncomplicated patient’ and therefore seeks to exclude any influencing external factors. Consequently

¹⁵ Mercer S W, Smith S M, Wyke S, O’Dowd T, Watt g C M. (2009). Multimorbidity in primary care: developing the research agenda. *Family Practice*. Available at: <http://fampra.oxfordjournals.org/content/26/2/79.full.pdf+html>

there is little evidence base for patients with multimorbidity, yet the findings of this research are often applied to these patients.

32. While there has been more research into co-morbidity, it is often specialist based and the findings are not always applicable to patients with multimorbidity in the primary care setting. A systematic review of US based studies published between 2008 and 2014 showed that only 27 met the selection criteria of including those with multiple long-term conditions, addressing either improved clinical outcomes, efficiency of health care and spending or patient satisfaction and making comparisons to a baseline measurement.¹⁶
33. Moreover, research is often led by those with vested interests in the study outcomes. The drug and medical services industry plays a large role in clinical trials, and is often responsible for defining an illness and the levels of benefit at which a drug is deemed to be successful.¹⁷ This makes it difficult for clinicians to establish if an intervention is suitable for an average patient, let alone for patients with multimorbidity.

Consultation length

34. Current consultation lengths are a major barrier GPs face in providing care for patients with multimorbidity. It is apparent these patients will need longer consultations than the standard 10 minute slot to make their care most effective.¹⁸
35. Research conducted in Scotland by Mercer et al. (2007) found that patients in the most deprived areas had more problems to discuss (especially psychosocial), yet clinical encounter length was generally shorter, at 8.2 minutes on average compared to 8.6 minutes in more affluent areas.¹⁹ However, further research on the impact of longer consultations in deprived areas found that an increase in consultation length for patients with complex needs to an average of 15 minutes was associated with enhanced levels of

¹⁶ Bleich SN, Sherrod C, Chiang A, Boyd C, Wolff J, DuGoff E, et al. (2015). Systematic Review of Programs Treating High-Need and High-Cost People With Multiple Chronic Diseases or Disabilities in the United States, 2008–2014. *Prev Chronic Dis*. Available at: http://www.cdc.gov/pcd/issues/2015/15_0275.htm

¹⁷ Greenhalgh K., Howick J and Maskrey N. (2014). Evidence based medicine: a movement crisis? *British Medical Journal*. Available at: <http://www.bmj.com/content/348/bmj.g3725>

¹⁸ Mercer SW, O'Brien R, Fitzpatrick B, Higgins M, Guthrie B, Watt G, Wyke S. The development and optimisation of a primary care-based whole system complex intervention (CARE Plus) for patients with multimorbidity living in areas of high socioeconomic deprivation. *Chronic Illness*. Published online before print April 10, 2016, doi: 10.1177/1742395316644304

¹⁹ Mercer S, W., Watt, G. C. M. (2007) The Inverse Care Law Clinical Primary Care Encounters in Deprived and Affluent Areas of Scotland. *Annals of Family Medicine*. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2094031/>

patient enablement.²⁰ The study recommends that 15 minute consultations should be standard for patients with multimorbidity, and suggests that more integrated working would free up time to allow this to happen.²¹ The Deep End Project in Glasgow has taken these insights and is supporting practices to apply them.²²

36. However, there remains a lack of research into the feasibility of offering extended consultations as standard to all patients with multimorbidity.

Collaborative care and support planning

37. In Scotland, a five-year programme of research (2009-2014) called 'Living Well with Multimorbidity' resulted in the development of a whole-system intervention (CARE Plus) for patients with multimorbidity in very deprived areas.²³ A feasibility cluster randomised controlled trial in Glasgow showed preliminary evidence of benefit in terms of quality of life and cost-effectiveness.²⁴

38. The 3D study, which assessed the Dimensions of health, Drugs and Depression, with a view to addressing the issues of illness burden, treatment burden and lack of patient centred care, identified a number of interventions which produced better health care outcomes for patients with multimorbidity.²⁵

²⁰ Mercer S. W., McConnachie A and Watt G. (2007). More time for complex consultations in a high deprivation practice is associated with increased patient enablement. *British Journal of General Practice*. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2084135/>

²¹ Mercer S, W., Watt, G. C. M. (2007). The Inverse Care Law Clinical Primary Care Encounters in Deprived and Affluent Areas of Scotland. *Annals of Family Medicine*. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2094031/>

²² Watt G. (2011). *GPs at the Deep End. Connecting with general practice improving public health. Findings of the Primary Care Observatory and Deep End projects*. Available at: http://www.gcph.co.uk/assets/0000/2586/FINAL_VERSION_for_publication_without_financial_statement.pdf

²³ Mercer SW, O'Brien R, Fitzpatrick B, Higgins M, Guthrie B, Watt G, Wyke S. (2016). The development and optimisation of a primary care-based whole system complex intervention (CARE Plus) for patients with multimorbidity living in areas of high socioeconomic deprivation. *Chronic Illness* (Accepted Feb 2016)

²⁴ Mercer SW, O'Brien R, Fitzpatrick B, Higgins M, Guthrie B, Watt G, Wyke S. The development and optimisation of a primary care-based whole system complex intervention (CARE Plus) for patients with multimorbidity living in areas of high socioeconomic deprivation. *Chronic Illness*. Published online before print April 10, 2016, doi: 10.1177/1742395316644304

²⁵ University of Bristol. (2016). *3D Study*. Available at: <http://www.bristol.ac.uk/social-community-medicine/projects/3d-study/research/intervention/>

39. The College has already developed a Care and Support Planning Programme, and the collaborative care and support planning approach has been recommended by the National Institute of Health and Clinical Excellence.²⁶

What are the key sources of funding for research into multimorbidity? Are there gaps in funding and, if so, where?

40. There are a number of potential sources of funding in the UK, including charities such as the Richmond Group of Charities and Nesta, representative organisations such as National Voices, and research organisations such as the Health Foundation, The King's Fund and Nuffield Trust, all of whom have a stake in the multimorbidity agenda.

41. Research can also be commissioned by the Department of Health and NHS England on policy and service delivery respectively.

42. The National Institute for Health Research would be a primary port of call for funding for academic research into multimorbidity in the UK.

Looking forward

What should the definition of 'multimorbidity' be? How would this definition improve research and/or treatment?

43. The College's policy paper on multimorbidity calls for research to establish a definition of multimorbidity. We believe this definition should encompass all aspects of a patient's symptoms, both in terms of illnesses and psychological impacts, in order to understand the varying quality of life these patients can experience, and would refer back to the definition given under point 6.

44. The College also believes that the current lack of widely accepted definition is acting as a barrier to consistent, holistic care for all patients.

What are the priorities for research about the prevalence, burden and determinants of multimorbidity?

Prevalence

²⁶ Royal College of General Practitioners. *Care and support planning* (2014). Available at: <http://www.rcgp.org.uk/care-planning>

45. The College believes that, in order to make progress in delivering quality healthcare to patients with multiple long-term conditions, it makes sense to focus initial efforts and resource on further research into the most common combinations of conditions. This research should encompass the impact these conditions have on each other in terms of clinical interactions, quality of life and service use.

Determinants

46. The College would also suggest that research to support our understanding of factors that influence a person's likelihood of living with multimorbidity or impact the quality of care they receive, such as socio-economic deprivation, condition severity, frailty and vulnerability, should be a priority.

47. In tandem with continued research into better established areas such as age and deprivation, it is also vital that research is conducted into other influencing factors that have thus far received less attention. These include the experience of certain ethnic groups, those with poor social support and those with drug or alcohol problems.²⁷

48. Research to support a better and more in depth understanding of a wider range of influencing factors will give insight into the scale of the challenge and enable the health care system to be tailored to caring for patients with multimorbidity.

What are the priorities for research about the management of patients with multimorbidity?

49. More research into the interventions that are most effective in improving outcomes for patients with multi-morbidity is urgently needed. We believe that this research should focus in particular on what can be done to improve treatment for the most common clusters of conditions.

50. We would suggest that this research could focus on service delivery and design. This could include:

- commissioning specifically for patients with complex health needs

²⁷ Mercer S W, Smith S M, Wyke S, O'Dowd T, Watt g C M. (2009). Multimorbidity in primary care: developing the research agenda. *Family Practice*. Available at: <http://fampra.oxfordjournals.org/content/26/2/79.full.pdf+html>

- education and training for healthcare professionals targeted at caring for patients with multimorbidity
- research into the effectiveness of available information systems and decision-making tools, and gaps in this market
- opportunities for maximising the effectiveness and impact of multidisciplinary teams
- measures that can be taken to ensure continuity of care and appropriate handover of responsibility in order to improve patients' experience of care as they move between care settings

51. The College also believes that medication is another priority area. A better understanding is needed of drug effectiveness, both in trials which may show a drug to be successful when taken by patients with a single condition or in isolation, but which may be impacted by factors, and in relation to polypharmacy when a drug is taken by a patient in combination with other medications.

52. Medication reviews is an area where there is conflicting evidence, and further research would therefore be useful to evaluate the impact they can have.

53. In addition, developing a better understanding of how clinicians and patients use research evidence should be a matter of priority. Part of this should be to look at how research evidence feeds into clinical communication, diagnostic options and shared decision-making.²⁸

²⁸ Greenhalgh K., Howick J and Maskrey N. (2014). Evidence based medicine: a movement crisis? *British Medical Journal*. Available at: <http://www.bmj.com/content/348/bmj.g3725>