'Addressing the global challenge of multimorbidity': oral evidence session

Professor Susan Smith, author of a Cochrane review on *'Improving outcomes for people with multiple chronic conditions'*.[1]

Professor Smith noted she has had an interest in multimorbidity for more than ten years, stemming from a clinical encounter with a patient. She initially approached the topic from an epidemiological angle, but later focused on the practical measures which can be used to improve patient health. She began work on the Cochrane review on *'Improving outcomes for people with multiple chronic conditions'* in 2007. This was first published in 2012, then updated and published again in 2016.

She noted how the review focused on 18 identified, generally well-designed randomised controlled trials. Overall, there was no clear answer as to how to improve health outcomes. Professor Smith noted that it may not be possible to have a clear answer, and that the recent NICE guidelines on multimorbidity agreed that there is probably not one answer; instead, the approach will depend on the desired outcome.

The Cochrane review drew the tentative conclusion that, particularly when there is a co-morbidity focus – i.e. a focus on a defined set of conditions – a targeted approach can be effective. However, Professor Smith noted that the review also supports a focus on a more generic approach to multimorbidity, for example interventions designed to improve patient functioning and well-being.

Professor Smith highlighted the interesting result of the Guided Care study, which tested a broad organisational-type intervention, targeted at high risk individuals with multimorbidity, but found no overall effect.[2] Professor Smith mentioned that she felt that such work shows that it really matters where an intervention is placed, as the intervention was effective on one of the health systems involved. She noted that there is little evidence to support the use of patient interventions that are stand-alone and disconnected from health care delivery.

Professor Smith explained that there are several relevant studies still ongoing that might be able to provide more information on how best to improve health outcomes for patients with multimorbidity. These include the CARE Plus Study in Scotland, a whole-system primary care-based complex intervention which, with a reported cost-effectiveness ratio of around £12,000 per QALY (quality-adjusted life year), is relatively affordable, and the large 3D Study in the UK, which focuses on organisational intervention.[3,4] Professor Smith also noted a cluster trial run by HRB Centre for Primary Care Research in Ireland focussing on patients prescribed 15 or more

[1] Smith S, *et al.* (2016). *Interventions for improving outcomes in patients with multimorbidity in primary care and community settings*. Cochrane Database of Systematic Reviews. https://www.ncbi.nlm.nih.gov/pubmed/22513941

[2] Boult, *et al* (2013). *A Matched-Pair Cluster-Randomized Trial of Guided Care for High-Risk Older Patients. J* Gen Intern Med **28(5)**, 612–621. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3631081/

[3] Mercer S, *et al* (2016). *The CARE Plus study – a whole-system intervention to improve quality of life of primary care patients with multimorbidity in areas of high socioeconomic deprivation: exploratory cluster randomised controlled trial and cost-utility analysis.* BMC Med **14**: 68. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4916534/

[4] The 3D study: Improving whole person care. http://www.bristol.ac.uk/social-community-medicine/projects/3d-study/

medicines, and a smaller trial being conducted in the Centre with Trinity College Dublin that is testing an occupational-therapy led self-management support programme.[5,6]

Professor Smith concluded that she favours a combined approach of '*patient-centred organisational intervention*', noting that the success of organisational interventions alone depends on the ability of the health system to incorporate them, while patient interventions alone may be too disconnected from patients.

Q1. Within primary care, is there evidence that a different management strategy is specifically required when considering patients with multiple conditions, rather than individual conditions in isolation?

- From a general practitioner's perspective, patients with multiple conditions definitely feel the increased treatment burden, particularly those with higher numbers of conditions.
- It's not clear that the existing guidelines - which are focused on single diseases - work well for these patients as they are typically excluded from clinical trials and so empirical evidence on how best to treat patients with multiple conditions is lacking.
- Patients with multiple conditions also need more appointment time, as the existing limits do not provide enough time to optimally manage each disease they may have.
- Qualitative work with GPs and patients has highlighted the challenges faced.
- No trial has specifically addressed this question. It is not clear how a randomised controlled trial would work in this setting.

Q2. In the studies discussed in the Cochrane review, were outcomes stratified by the number of conditions a patient has? If a patient has four conditions, are the interventions more, less, or equally successful than if a patient has two conditions?

- In the Cochrane review, multimorbidity was defined as two or more chronic conditions in the same individual.
- However, most patients had more than two conditions. The mean number was between four and five conditions.
- This number, around four to five conditions, seems to be a tipping point, beyond which patient outcomes are poorer and management becomes more complex, particularly when there are combinations of physical and mental health conditions

Q3. Is collaborative care effective, given its impressive results for treating those with depression?

- Shared care works for depression as evidenced, for example, in the Stepped Care model used in Northern America. This is a more elaborate approach than simple case management.
- Several recent reviews of case management suggest that it may improve patient and carer satisfaction but that it has limited effects on hospital admission rates, though again it may work better in some settings rather than others.

[5] *Supporting medicines management in older adults with multiple medical conditions.* http://www.isrctn.com/ISRCTN12752680?q=&filters=&sort=&offset=28&totalResults=15091&page=1&pageSize=100&searchType=basic-search

[6] *Enhancing self-management of multimorbidity in primary care.* http://www.isrctn.com/ISRCTN67235963?q=susan%20smith&filters=&sort=&offset=2&totalResults=7&page=1&pageSize=10&searchType=basic-search

Q4. How broad was the evidence base for the review? Where do you see the gaps in evidence?

- A literature search identified 18 generally well-designed randomised controlled trials meeting the eligibility criteria.
- One important issue is trial duration. A short duration could be considered as a weakness of the available studies, as it is not clear as to whether the outcomes can be sustained over time.
- It would be helpful to recommend to funders that very large and carefully thought out studies are required, addressing appropriate outcomes and testing sustainability of intervention effects over longer periods of time.

Q5. What evidence do we need to decide how to design a health system? Are there other forms of evidence beyond trial data from which we can learn?

- We also need to learn from qualitative research.
- There is also huge potential to mine patient data from electronic health records, such as from some of the Canadian eHealth systems.
- This question also has a wider scope than multimorbidity; it is about how to perform all health related research. Control groups are really important to ensure the validity and relevance of any findings.
- Gathering this evidence is achievable. Clear reporting guidelines are key however, particularly to enable the decision of whether an intervention would be generalisable to other settings.

Q6. What are the important patient related outcomes?

- There are numerous important outcomes, meaning it is difficult to agree on a reasonable number of core outcomes.
- Professor Smith added however her personal opinion that health-related quality of life is key as it is an outcome of importance to patients and can be used to determine cost effectiveness.