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Defragmenting health care for patients with chronic obstructive pulmonary disease

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EDITORIAL

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When your computer starts to slow down or reaches capacity, you should consider running the 'defrag' program. Defragmentation reverses fragmentation that occurs when parts of a file are not stored as a unit in the same place on the computer's hard drive, but instead are spread across several areas. Health care fragmentation refers to delivery of care revolving around health care provider locations and medical specialties rather than using a patient-centred approach. Lack of coordination and communication between multiple decision makers are common problems seen in this setting and can adversely affect patient safety, delay diagnoses and treatments and increase cost.[1] There are encouraging signs that the 'defrag' button has been hit for the Australian health care system. Models of integrated care, which connect services across different providers and focus on patient needs, are being piloted and implemented in all jurisdictions. Sharing of patient information—an essential component of integrated care—is increasingly facilitated by shared and linked electronic health records.

The Healthier Medicare reform announced in March 2016 aims to establish general practice based 'Health Care Homes', which will coordinate health care (including medical, allied health and out-of-hospital services) for people with chronic and complex conditions as part of a patient's tailored care plan. The new Health Care Homes model is backed up by information technology tools such as the *My Health Record,* telehealth and remote monitoring technologies. No doubt, the initiative is mainly an attempt to reduce the rising health care costs for persons with chronic diseases who are frequent users of the acute public hospital system. Public hospital services are the largest component of health spending in Australia,[2] and patients with chronic diseases have high numbers of potentially avoidable hospital admissions. The important question is whether Health Care Homes will improve the value of health care delivered to patients. Value should be measured in terms of patient-centred outcomes (such as quality of life and functional status) achieved per dollar spent, and not just in terms of improved health system measures such as a reduction in hospital (re-) admissions and hospital length of stay.

Patients' treatment burden associated with fragmented health care

Health care in Australia and in many other countries is highly fragmented for patients who require ongoing, coordinated care for chronic conditions and co-morbidities.[3] Navigating the health care maze adds to the considerable treatment burden that many chronically ill patients experience. 'Treatment burden' is a concept describing the burden that patients with chronic health conditions experience not from their illness directly, but from the health care regimens to manage their illness, which can include medication-taking, keeping medical appointments, monitoring health, diet, and exercise.[4] Excessive treatment burden, exacerbated by uncoordinated care, may be the cause for non-adherence to prescribed treatments as patients balance competing priorities—managing illness versus living life. It is important to identify overburdened patients and those with capacity problems, such as poor recall or comprehension of instructions or difficulties in administering their treatment, in order to tailor an effective and least burdensome treatment programme for these patients.

Patients and their families are the main coordinators of all care: They decide where to turn for help when they are unwell, and they are often in charge for sharing information about diagnoses, test results and treatment recommendations between different healthcare providers. Most health care providers would have had encounters with patients who come with a pile of laboratory reports, letters from specialists and hospital discharge summaries to their clinic appointment. These patients are usually well-informed, savvy navigators of the health care system. They have learned that they need to take matters into their own hands to ensure that all decision makers involved in their care are apprised of their up-to-date medical history.

Defragmenting health care through an integrated approach and sharing of clinical information

The health care system was designed to focus on acute care and short-term follow-up in the community. Nowadays, however, patients with chronic conditions, such as chronic obstructive pulmonary disease (COPD), cardiovascular disease or diabetes have become the norm, and the challenge for the system is to provide continuity of care for patients with long-term conditions. This will require improved community based management of patients, greater adoption of telemedicine, communication and collaboration between the public and private sector and sharing of clinical information between all care providers.

Access to patient information is essential to avoid ordering of unnecessary laboratory tests and repeating medical imaging and other examinations. Up-to-date information on a patient is also often essential for 'medication reconciliation', as not all patients can give an appropriate account of their medications and dosages when seeing a specialist, or when they are admitted to hospital. Unintended changes of medication dosages or omission of medications are frequent and can potentially harm patients. A systematic review on medication history errors found discrepancies between physician acquired medication histories and the actual medication in up to 67 per cent of patients admitted to hospital.[5] Up to 27 per cent of all medication prescription errors in hospital can be attributed to incomplete medication histories at the time of admission.[6] These errors can be avoided by sharing and linking up-to-date information on a patient's medication between health care providers.

Integrated care for patients with COPD

Despite being a widespread and debilitating disease, COPD has long been under-recognised. It is estimated that one in thirteen (7.5 per cent) Australians aged 40 years or over has COPD associated with symptoms such as shortness of breath, cough, mucus and wheezing.[7] Based on information from the Australian Institute of Health and Welfare (AIHW), COPD has the highest hospital readmission rate of any other condition in Australia at over 62,000 a year.[8] Avoidable hospital admission rates for asthma and COPD in Australia are around 50 per cent higher than the OECD (Organisation for Economic Co-operation and Development) average.[8] Australia has one of the highest rates of COPD deaths in the developed world–Australian mortality rates place Australia in the bottom third of the 34 OECD countries.[8] Many patients severely affected by COPD belong to the most vulnerable people in our society, with COPD deaths being significantly more common among people residing in areas of greatest socioeconomic disadvantage, people residing in remote areas and among Indigenous people.[9] Despite the severity of their disease, only 10-40 per cent of patients with COPD adhere to their treatment regimen, mainly consisting of inhalers, resulting in poor clinical outcomes.[10] Non-pharmacological interventions such as pulmonary rehabilitation and long-term oxygen therapy (in patients who meet eligibility criteria) are persistently underutilised despite scientific evidence of their effectiveness.[11]

It remains to be seen whether the Healthier Medicare initiative's model of integrated care will improve health outcomes for patients with COPD (and other chronic diseases). One of the model's aims is to have a greater connection between primary health care and hospital care, which is crucial for patients who frequently transition between in- and outpatient care and are looked after by their general practitioner as well as a respiratory specialist. How this will be achieved, however, remains somewhat fuzzy without a clear strategy for care coordination between Primary Health Networks (PHNs) and Local Hospital Networks (LHNs)/Local Health Districts (LHDs). *HealthPathways*, a point-of care web-based tool with disease-specific referral and management pathways, is designed to help general practitioners to navigate patients through the complex primary, community and acute health care system. It provides details on how to refer patients to local specialists and services and includes service descriptions, contact information, clinical resources and guidelines. However, the impact of local *HealthPathways* on patient-centred outcomes as well as health system outcomes has not yet been formally evaluated. *HealthPathways* and *My Health Record* are a good starting point for integrated care across the traditional boundaries of PHNs and LHNs, but a deeper reform of the health system is required to align care coordination between the two networks. Inspiration can be drawn from the British IMPRESS (IMProving and Integrating RESpiratory Services) model—a joint initiative between the two leading respiratory clinical societies in the UK: The British Thoracic Society and the Primary Care Respiratory Society (PCRS)-UK.[12] An integral part of the model are consultants in integrated respiratory care who work closely with general practitioners, hospital specialists and relevant social care agencies.

Current research evidence on models of integrated care for patients with COPD provokes a number of questions as study outcomes are heterogeneous, with some studies showing improved outcomes with the use of integrated models of care, while others do not show any benefit. A 2013 Cochrane systematic review of 26 randomized clinical trials showed that integrated disease management of patients with COPD not only improved disease-specific quality of life and exercise capacity, but also reduced hospital admissions and hospital days per person.[13] However, these results could not be replicated in a Dutch multicentre, pragmatic cluster randomised controlled trial that evaluated an integrated disease management approach for patients with COPD delivered in primary care and showed no additional benefit compared with usual care.[14] This highlights that there are potential pitfalls when generalising findings from randomized clinical trials to health service delivery in the real-world.

A major consideration for any model of integrated care is which services should be included. For patients with COPD, interventions can for example include optimisation of medications, pulmonary rehabilitation, influenza and pneumonia vaccinations and nutritional, psychological and smoking cessation counselling.[15,16] Some data indirectly suggest that the key for a successful integrated model of care for COPD may lie in including social support as well as mental health services, in a disease that disproportionally affects people who live in disadvantaged communities (characterised by social isolation, limited opportunities and restriction of people's capabilities) and is associated with depression and anxiety in more than a third of patients.[17] Findings from the IMPRESS initiative indicate that people with COPD, despite being debilitated, are often embarrassed to ask for help because they like to stay independent and self-reliant. The lack of acceptance of the condition or what might have caused it (smoking, occupational exposure) may be a barrier to accessing help. Further patients' fear of breathlessness often stops them from going out and they become increasingly isolated.[18]

Other approaches to improve patient-centred care in COPD, such as shared decision making between patients and their physicians, should be explored and their impact on patient-centred health outcomes evaluated. Shared decision making can increase patients' adherence to treatment by engaging them and providing them with better information about their condition and their treatment options.[19] It can also be effective in bridging the evidence practice gap for underutilised evidence-based interventions.[20]

A lot more work needs to be done to re-structure Australian health care in general, and especially for patients with COPD, towards a patient-centred system. We should aim to empower patients to take charge of their condition by educating them and providing them with tools (decision aids, shared decision making) to find treatment solutions that fit their values and capacity, thus improving adherence and outcomes. We will have to work across PHNs and LHNs boundaries and bring together the traditionally separate areas of health and social care to implement integrated care that truly focuses on patients' needs.

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PEER REVIEW

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CONFLICTS OF INTEREST

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