Sleepwalking towards more harm from asthma

The burden of asthma for patients and doctors can be reduced through simple evidence-based approaches to care and self-management

Asthma continues to be a major but avoidable burden on the Australian health care system.[1] It is a treatable and responsive disease, and much has been achieved in the years since asthma was declared a National Health Priority. However, we are locked into an old paradigm of care that does not serve the best interests of either patients or doctors and is long past its use-by date.[2] Several key issues need urgent attention and action: fragmented and suboptimal care,[3] over-reliance on reliever therapies,[4] neglect of rural and remote populations,[5] and overprescription of oral corticosteroids.[6,7] Add to this the impact of environmental threats such as climate change, wildfires,[8] thunderstorm asthma, and respiratory viral pandemics,[9] with the increasing association of asthma with obesity and sedentary lifestyle,[10] and we have the ingredients of a perfect storm.

In 2017–18, there were almost 40 000 hospitalisations for asthma, up to 80% of which could have been avoided with better asthma care and resources in the community.[11-13] In 2020–21, the numbers were reduced, paradoxically thanks to the COVID-19 pandemic.[14] However, children aged under 15 years still constitute the largest proportion of people presenting to emergency departments in Australia with a respiratory condition, and asthma is the leading preventable cause of these presentations.[15-17] Respiratory conditions generally account for the highest proportion of emergency department presentations in relation to other disease systems, and around one-third of these people are admitted to hospital.[5] These presentations and admissions for asthma comprise a large group of patients with a readily treatable disease.[12] Further, there is a tenfold variation in hospitalisation rate between the highest and the lowest socio-economic regions, and people with asthma in low income settings and in rural Australia are doing worst of all.[5,18] This is not inevitable — much of it can be prevented by simple evidence-based approaches to asthma care, including assessing triggers, performing spirometry, devising a written action plan, and checking device use and adherence.

Although asthma is eminently treatable, suboptimal asthma control is prevalent in Australia.[19] Greater awareness and more options for effective management in the community can prevent asthma flare-ups, persistent symptoms, permanent airway remodelling, psychological stress, and even death.[12,20] Indeed, people with asthma are more likely to experience high (15%) and very high (11%) levels of psychological distress compared with those without asthma, and better asthma control can help alleviate this burden.[21] Lower quality of life, reduced workforce participation, and likelihood of an emergency hospital admission are also all strongly linked to poorly controlled asthma.[22-24]

Although death rates from asthma have fallen markedly in Australia over the past 10 years, there is more to achieve. Asthma death rates are higher among people living in regional and remote areas, in low compared with high socio-economic areas, and among Aboriginal and Torres Strait Island people. People aged over 65 years now predominate, possibly reflecting the fact that older adults tend to understate their symptoms and may not regard their asthma as a priority.

Current models of care are failing people with asthma, resulting in management that does not align with the evidence clearly articulated in guidelines recommending inhaled corticosteroids as a starting therapy, and by dispensing excessive burst oral corticosteroid therapy.[6,7] The time pressures on primary care physicians might limit their capacity to have a detailed discussion with patients about asthma and the many issues that need attention. It behoves us to develop better tools and strategies to help facilitate this and achieve better asthma outcomes on low doses of preventer and controller medication[25,26] to avoid excessive exposure to oral corticosteroids. It is hoped that the proposed review and strengthening of Medicare[27] will more appropriately reimburse clinicians for a systematic, evidence-based approach to patients with chronic disease such as poorly controlled asthma, and address the disproportionate financial reimbursement for hospital admissions compared with prevention via optimal community care. Spirometry is underfunded given its time and complexity, and solutions using innovative technologies or referral to a community respiratory service need to be developed. Several studies[28,29] suggest that training and engagement of pharmacists in asthma care can deliver significant benefits in device use, asthma control and self-management, and training standards and reimbursement for pharmacy-based care are needed to encourage shared asthma support between primary care and pharmacy.

Nationally at a regulatory level, as matter of extreme urgency, Australia needs to re-examine its approach to over-the-counter availability of short-acting β2-agonist (SABA) medications and the excessive number of inhalers available on prescription.[30] Over-the-counter availability was put in place over 30 years ago as a stop-gap measure when asthma death rates were high and community awareness of asthma as a potentially life-threatening disease was low, meaning patients sought help far too late. Since then, asthma research findings and management recommendations[31] have shown that this practice is no longer fit for purpose, indeed it is antiquated and harmful.[30,32] There are few diseases that are still treated as they were 30 years ago, yet that is what is happening for many patients with asthma. In addition

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to excessive SABA use, oral corticosteroids are overused and inhaled corticosteroids underused[33] — we are often using a sledgehammer to kill an ant. The recent change to the Pharmaceutical Benefits Scheme subsidy for low dose fluticasone will particularly affect socio-economically disadvantaged families, risking further attacks, unnecessary oral steroid use, and hospital admissions.

In the coming years, we are likely to reap the consequences of the huge cumulative oral steroid burden to which many people have been exposed, especially as cardiovascular and metabolic harms are manifest later in life.

These observations matter primarily because asthma is a treatable condition. The therapeutic approach to asthma has changed but many patients receive a SABA as their first medication for asthma and remain long term on a pharmacological treatment that addresses symptoms only and does not treat the underlying disease. Excessive use of salbutamol, even as little as three or more times week, may aggravate the disease and the underlying airway hyperresponsiveness that contributes to symptoms and attacks.[2,34] Chronic high consumption of SABAs is also a common feature in people who die of asthma.[35]

Crucially, the first line treatment for symptomatic asthma should be inhaled anti-inflammatory medication.[36] Symptom relief will follow, whether the first treatment is an inhaled corticosteroid alone or combined with a fast-acting long-acting β2-agonist, as recommended in national and global guidelines.[30,37-39] There is now strong evidence that this medication strategy can be used by most patients in a symptom driven approach that does not necessitate daily maintenance treatment but reduces exacerbations and achieves good control.[36,39] Patients who are acutely unwell can be given SABAs, but only as an acute treatment and never as long term monotherapy. These steps alone, if widely implemented, could significantly reduce asthma morbidity and most likely also mortality.

Importantly, there are several non-pharmacological interventions that can help reduce the burden of asthma (and conditions treated as asthma) for many patients. In Australia in 2017–18, people aged 18 years and over

Addressing the major challenges in asthma care in Australia

Problem	Strategies	Outcome
High rates of asthma exacerbations and out-of-hours GP and ED visits	• Raise community asthma expectations and care seeking for asthma review	• Fewer acute attacks • Fewer hospitalisations
Underuse of spirometry leading to misdiagnosis	• GP training includes diagnostic spirometry as essential for asthma care • Increase reimbursement • New technologies • Enhanced community respiratory services	• Fewer side effects of ineffective treatment • Improved use of spirometry
Too few visits for asthma review	• Patients invited by general practices for guideline-based asthma review by GP or trained practice nurse	• Greater proportion of visits by patients who receive best practice asthma care and a written action plan
Overuse and overprescription of OCS	• Implement best practice to reduce exacerbations and include written action plans • Reduce repeat availability of OCS	• Most patients take an inhaled anti-inflammatory medication and avoid OCS use and adverse effects
High levels of avoidable ED presentations and hospital admissions	• Assess asthma control at each review visit and each time SABA is prescribed • Patients receive treatment appropriate to severity and control requirements • Patients receive self-management education and device use training by GPs, nurses or pharmacists	• More patients use a written action plan to step up medications before OCS required • More patients trained and use their devices correctly
Overuse of SABAs at first step in asthma management	• Guideline-based asthma care starting with as-needed anti-inflammatory medication • Reduce SABA availability on repeat and OTC	• Clinicians and patients treat their asthma with ICS and avoid SABA overuse • Patients who need a SABA are diagnosed and start ICS not SABA as needed
Underuse of ICS as monotherapy in long term asthma management, causing poor control	• Reinforce safety of ICS and effectiveness of as-needed ICS combined with fast-onset LABA	• More patients commence ICS alone or combined with fast-onset LABA, leading to better asthma control
Environmental threats: climate change, thunderstorm asthma, smoke exposure	• Strengthen community and clinician alerts, awareness and care regarding weather impact and air pollution • Subsidise HEPA filters for disadvantaged patients	• Greater availability of web-based, digital and hard copy information about climate and air pollution, available across population groups
COVID-19, respiratory viral infections, pandemic threats	• Maximise vaccination information and care • Educate patients regarding effective respiratory viral prevention measures	• More patients, families and carers are informed and take care in reducing respiratory viral exposures

ED = emergency department; GP = general practitioner; HEPA = high efficiency particulate air; ICS = inhaled corticosteroids; LABA = long-acting β2 agonist; OCS = oral corticosteroids; OTC = over the counter; SABA = short-acting β2 agonist. ◆

with asthma had higher rates of daily smoking than the general population (14.0% compared with 10.6%).[14] Among adolescents and young adults, the attributable burden of overweight and obesity is associated with asthma, and this strong association also exists for children aged 5–14 years, especially boys.[40] Preventive health education is necessary, through personal and national strategies that include promoting physical activity, healthy eating and weight, and smoking prevention and cessation in children and young adults.

Finally, the COVID-19 pandemic has reinforced the key role of respiratory viruses and the tractable aspects of asthma exacerbations. Around the world, emergency department presentations and hospital admissions for asthma were significantly reduced during periods of lockdown, restricted social movement, and transmission risk minimisation by mask wearing. The reduced prevalence of common respiratory viruses was strongly associated with the reduction in asthma admissions at both population and individual level.[41] Greater emphasis on prevention of viral infection, better care for children with respiratory viral symptoms, self-management education to help reduce exposure, and provision of action plans to help patients identify early signs of a flare-up will contribute to reducing virus-induced exacerbations. Some of these interventions are not new; however, they appear to have dropped off the priority list for clinicians and many people with asthma (Box).

Health professionals and patients can share these tasks effectively, despite major changes in health service delivery and pressures on primary care following the COVID-19 pandemic. Most of these relatively straightforward approaches can be implemented without massive costs, imposition or demands on patients and practitioners, simply by asking "Am I giving this patient the very best treatment available now?".

Key gaps in care highlight the urgent need for a refocus, but also provide considerable potential to reduce the personal and community impact of an eminently treatable disease. It is time to discard old habits and take a fresh look at asthma.

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