

PERSONAL VIEWPOINT

Managing patients with severe asthma in Australia: Current challenges with the existing models of care

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Abstract

Severe asthma leads to debilitating symptoms for patients and excessive socioeconomic burden for the community. Comprehensive models of care are required to address complex issues, risk factors and comorbidities in patients with severe asthma, and to identify patients most appropriate for specialised treatments. Dedicated severe asthma services improve asthma control, reduce asthma exacerbations and hospital admissions, and improve quality of life. Currently, diverse models of care exist for managing severe asthma across Australia. Most referrals to severe asthma services are from respiratory physicians seeking a second opinion or from primary care for poorly controlled asthma. Despite benefits of specialised severe asthma services, many patients are not referred and resources are limited, often resulting in long waiting times. Patient referral is often unstructured and there are considerable variations in the management of severe asthma with limited access to other health care professionals such as speech pathologists and dieticians, and restricted scope to optimise patient work-up before referral. Ongoing communication between the specialist and referring clinician is essential for continuity of care but is often lacking. Referral pathways can be optimised by developing referral criteria and guidelines to triage patients with severe asthma and to improve resource efficiency. Additional education and tools for assessing and managing severe asthma are needed, and mechanisms should be developed for involving primary care in the management of stabilised patients. Strategies to increase patient access to multidisciplinary services are recommended.

Background

Severe asthma can be defined broadly as asthma that remains poorly controlled despite patients taking high-dose inhaled corticosteroids and long-acting beta₂-agonists, when alternative diagnoses and causes have been excluded.¹ Although severe asthma only affects about 3–10% of the total asthma population,^{1,2} it is responsible for a disproportionate number of exacerbations, impaired health-related quality of life and a substantial health economic and societal burden.^{3,4}

Severe asthma is a complex heterogeneous disorder that includes ‘difficult-to-treat’ asthma and ‘severe

refractory asthma’. Difficult-to-treat asthma may be effectively managed by specific attention to comorbidities, psychosocial issues and risk factors.^{5,6} The smaller proportion with severe ‘treatment-refractory’ asthma usually requires additional intervention,² and effective targeted therapies are now available for patients with the specific phenotypes,⁷ but these treatments should be initiated by an experienced specialist. An ideal severe asthma service must assess and manage the complex confounding issues and treatments in severe asthma. This requires a multidisciplinary approach above and beyond the format of a standard specialist consultation.⁸

A dedicated severe asthma service with a multidisciplinary team (MDT) environment provides flexible and comprehensive consultation and enables regular input from medical, nursing and other allied health members. Such a service also offers opportunities for participation in clinical trials and registries and training of healthcare

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staff. Specialised centres are also better equipped to manage service growth and ongoing process improvement in severe asthma management.

Although evidence is emerging that dedicated severe asthma services improve asthma control, reduce asthma exacerbations and hospital admissions and improve HRQOL,⁹⁻¹³ the provision of, and access to, such services remains inconsistent across Australia.¹⁴ A key priority is to ensure that appropriate patients have access to specialised clinics to allow differentiation of asthma from alternative or coexisting pulmonary diagnoses and severe treatment-refractory asthma from difficult-to-treat asthma. Specialised clinics provide a comprehensive systematic assessment and tailored investigations and personalised management strategies that target the reasons for poor asthma control. These aspects include untreated comorbidities, suboptimal adherence¹⁵ and/or inhaler technique, targeted management plans for exacerbations, unrecognised occupational or environmental exposures or other patient factors.¹³ Such an approach may therefore help to select patients most appropriate for the various advanced therapies for asthma, such as macrolides, biological therapies or bronchial thermoplasty.

This paper describes existing models of care for severe asthma in Australia, highlights gaps and challenges and pursues opportunities for advancing care in this patient population.

Current models of care for severe asthma

There are currently diverse models of care for severe asthma management across Australia, dependent on healthcare context. In metropolitan areas, multidisciplinary severe asthma clinics often exist within tertiary hospitals (Fig. 1). In some centres, referral may be direct from general practitioners (GP) for the management of poorly controlled asthma. Most referrals, however, are received from respiratory specialists, within or external to the hospital, seeking a highly specialised management of severe asthma, which may include opinion on diagnosis or initiation of biological therapies. A cross-sectional, prospective audit at the Alfred Hospital, Melbourne, showed that the main reasons for referral to a severe asthma clinic were poor symptom control (62%),

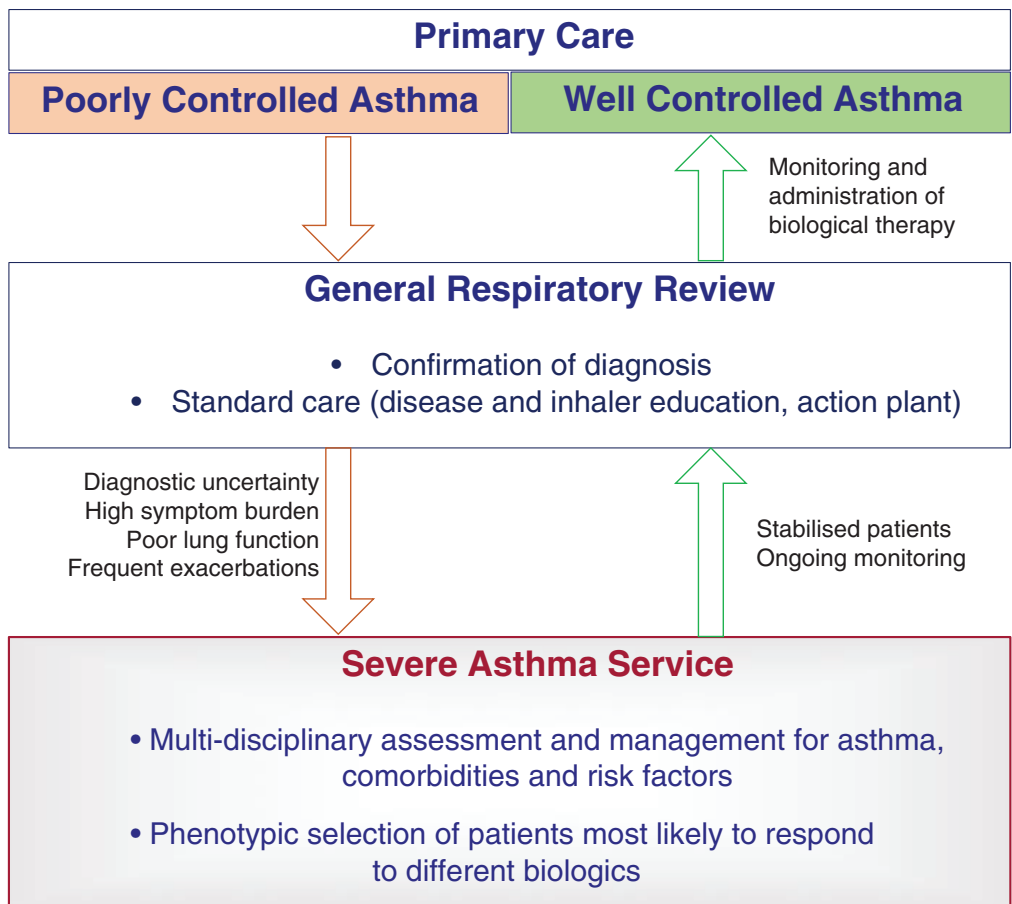


Figure 1 Severe asthma model of care in Australia.

frequent exacerbations (44%), poor lung function (42%), patient factors (29%) and diagnostic uncertainty (26%).¹⁶

Severe asthma clinics vary in the duration of care provided, with some centres providing indefinite care for patients, while others offer a consultative service with a limited number of subsequent visits.

Alternative models of care exist within selected private practices. Some respiratory specialists with an interest in severe asthma manage patients in their general respiratory practice, including the initiation and monitoring of advanced therapies. This model is challenging and labour intensive for the physician as there are usually more limited resources than in a hospital setting. Furthermore, private specialist care is not often affordable for patients. However, the private practice model does offer advantages of potentially shorter waiting times and the opportunity to provide a more patient-centred environment away from hospital.

In rural areas, severe asthma is typically managed by respiratory or general physicians, often in collaboration with GP, some who may have a special interest in severe asthma. Access to multidisciplinary clinics at rural centres is often not possible, and these services will frequently have to engage with larger tertiary centres.

Challenges in managing severe asthma

Within the current models of care in Australia, clinicians face several challenges in diagnosing and managing patients with severe asthma.

Many severe asthma patients are not referred: Global data suggest that many patients with poorly controlled asthma are not referred by their primary care provider to a specialist.¹⁷ A cross-sectional Australian survey in 2012 reported that 45% of participants in the community had uncontrolled asthma with associated frequent unscheduled medical visits and admissions. Yet, only half of the participants were routinely reviewed by their GP, and only 10% were reviewed by a specialist in the previous year.⁴ Reasons for these findings are multifactorial and may include a lack of recognition of asthma severity, limited access to specialist services or a lack of clear guidance as to when patients should be referred.¹⁴

Moreover, there may be under-referral of severe asthma patients from secondary care. At a Melbourne severe asthma service, one in eight patients from the general asthma clinic was considered likely to benefit from a comprehensive assessment of severe asthma. However, a third of the patients deemed suitable for systematic assessment were not referred to the severe asthma clinic.¹⁶

Insufficient medical resources: Despite proven benefits of specialised severe asthma services, most clinics in Australia operate with limited resources. Typically, a severe asthma clinic consists of a sole respiratory physician and a clinical nurse consultant (CNC) or specialist (CNS), ideally with a training registrar. Due to limited personnel at most centres, waiting times for a severe asthma service may be in the region of 6 months. The Pharmaceutical Benefit Scheme application for biological therapies is complex, detailed and time consuming, usually requiring the support of other team members, including the CNC and/or administrative staff.

Insufficient multidisciplinary resources: A major issue is poor access to multidisciplinary specialists, including speech and language therapists, dietitians, psychologists, physiotherapists, respiratory scientists and administrative support. For many centres, there is a limited number of speech pathologists with expertise in vocal cord dysfunction and physiotherapists with experience in dysfunctional breathing. Allied health services are often not government funded, which increases financial pressure on the patient, many of whom cannot pay for the services. It also creates additional HRQOL burden to patients who may need to attend multiple centres or services to access the comprehensive care needs of individuals with severe asthma.

Patient work-up prior to referral to specialised asthma services could be improved: Spirometry is under-utilised for diagnosis of asthma in primary care^{18,19} but is useful before referring patients for specialist care. In addition, patient outcomes can be improved by addressing smoking behaviours, correcting inhaler technique and/or improving adherence in the primary or secondary care setting.⁹

No consistent approach for patient referral, diagnosis or management: There is no consistent approach for patient referral and a lack of standardised procedures for diagnosing and managing severe asthma in Australia. As a result, services for severe asthma may be fragmented. Developing agreed-upon guidelines aimed at managing the severe asthma group more optimally could provide an opportunity to improve the quality of care for all patients with severe asthma, irrespective of geographical location.

Gaps in communication: Ensuring that there is adequate communication between the severe asthma service and the referring respiratory specialist and/or primary care physician is necessary to foster continuity of care and to prevent disengaging and deskilling of the referral base.

Opportunities for advancing care

Various strategies can be implemented to improve the accurate diagnosis and appropriate management of patients with severe asthma in Australia (Table 1).

Table 1 Strategies for maximising resources to optimise patient outcomes in severe asthma

Develop universal but flexible tools for diagnosing and managing severe asthma in primary and secondary settings
Standardise referral criteria and guidelines for severe asthma management
Improve access to multidisciplinary team review through clinic restructuring approach and teleconferencing
Education programmes and materials for respiratory physicians and GP to improve referral and work-up of asthma patients
Registrar training within hospitals to ensure maximal experience in severe asthma
Co-management of stable patients with secondary hospitals, private services or primary care
Clarification of patient discharge pathways to their referring doctor and primary care physician
Develop protocols and support tools to assist GP in ongoing administration of biological therapies
Effective training and engagement of skilled respiratory nursing staff to assist with service delivery

Abbreviation: GP, general practitioner. Source: Chung *et al.*¹

Optimise referral pathways and resources: The goals for optimising severe asthma services should include appropriate expert care and minimising patient travel in order to access requisite investigations and treatment. Where possible, strategies to overcome resource constraints and sharing data and clinical expertise should be pursued, including optimal use of community resources where possible.

Strategies to optimise resources, such as creating universal referral and agreed-upon triage criteria, as well as guidelines for the diagnosis and management of severe asthma, are warranted. Ideally, there should be a centralised web-based system operative across the states, rather than individual data systems, in every hospital. Standard referral criteria will help identify patients likely to benefit from specialist review, and adequate information provided at the time of referral will facilitate triage and improve overall waiting times. Information documented at referral should include the reason for referral, such as persistent symptoms, frequent exacerbations despite standard maintenance therapy, emergency presentation or hospitalisation for asthma, diagnostic uncertainty or the need for a multidisciplinary approach due to risk factors or comorbidities.

However, different approaches for maximising referrals might need to be considered depending on patient geographical location and the availability of local severe asthma services. Changes to referral pathways could be prospectively assessed over a defined period to gauge benefits on the number and quality of referrals and average waiting times.

Ensure appropriate resourcing: Specialised asthma services require at least one respiratory physician and specialist nurse. Ideally, a second physician or fellow is required at each severe asthma centre to help share patient load and cover periods of absence. Where there is only one physician and nurse specialist, partnerships with other nearby asthma services may help manage short-term periods of absence. Access or referral to MDT members is also required. Suitable mechanisms need to be developed to manage demand as the severe asthma service expands. Consultative asthma services using a model in which patients are returned to referring

specialists or primary care after comprehensive assessment and stabilisation^{9,11} may be more sustainable than services that manage all patients indefinitely.¹⁰ Alternatively, a shared-care model between public and private care providers could be expanded as a way to share and optimise resources.

Improve access to MDT service: Regular multidisciplinary case reviews are important to discuss challenging cases and share best management approaches. In addition to physicians and specialist nurses, participation of a speech and language pathologist, physiotherapist, psychologist and immunologist is recommended. Funding for MDT clinics could be achieved by a clinical redesign approach⁸ and, at least in part, offset by reductions in healthcare utilisation and rationalised use of advanced, often expensive, therapies. This may be possible by MDT clinics using teleconferencing to allow other practitioners to participate in the management decision-making process. Telehealth services are increasingly accessible and may be considered for follow up of patients after initial in-person consultation.

Ultimately, detailed cost modelling analysis may be required to compare the cost associated with various models of delivery. This will have to be balanced against potential gains, including a reduction in healthcare utilisation, appropriate pharmacotherapy and patient outcomes, such as symptom control, quality of life and reduced exacerbations. In our view, there needs to be further discussion in the Australian healthcare sector about how expensive therapies should be best targeted to those most likely to respond. The UK approach of restricting prescription to a small number of tertiary referral centres may not be the ideal option in the Australian healthcare system, where it is difficult to establish severe asthma centres due to the current limitations and funding restrictions. Furthermore, concentrating patients in a small number of severe asthma centres may increase travel burdens for patients and risk deskilling general respiratory specialists with the capacity to manage severe asthma. Greater use of the MDT clinics and 'second opinions' from physicians with recognised experience in severe asthma may be a more practical

way to ensure excellence in management in severe asthma.

Further education and tools: Given the diversity in clinical practice across the country, there is a need for universal but flexible tools to assist with identification and management of patients with severe asthma. Further education for MDT is required to improve appropriate referral and work-up of patients with asthma, including checking and assessing inhaler technique and treatment adherence. The NHMRC-funded Centre of Excellence in Severe Asthma has developed an online Severe Asthma Toolkit to try and address this gap, which is available at <http://toolkit.severeasthma.org.au>.²⁰ It may be valuable to undertake a review of registrar training within hospitals to ensure there is sufficient education and experience regarding severe asthma.

Mechanism for involving primary care: Scope exists for better communication and collaboration with GP in the overall management of severe asthma. This includes opportunities to educate about specific aspects, such as early identification and referral, management of selected comorbidities and how to improve access to community-based allied health services.²¹ It is equally important that clear plans and processes exist for appropriately returning patients to primary care once treatment is optimised. This may include specific education and support tools for patients and GP to maximise adherence and ensure safe administration of add-on treatments. Returning patients with stable severe asthma to primary care is essential for

continuity of care, maximising resources and empowering primary care physicians to continue optimal management. It is optimal for GP to have access to a central contact person, such as a specialist nurse, and be able to escalate to the treating consultant if problems arise.

Conclusion

Specialised severe asthma services, preferably using an MDT approach, are required to manage complex patient issues and treatments in severe asthma. These services improve asthma control, reduce asthma exacerbations and hospital admissions and improve HRQOL in severe asthma. Current models of care for managing severe asthma in Australia are diverse and frequently hampered by significant resource constraints. There is a need to optimise referral, management and discharge pathways to improve management of limited resources and to enhance operational efficiencies. This can ultimately achieve the aim of improving patient outcomes in this difficult-to-manage patient population.

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