

People regularly dispensed short-acting beta agonists (SABA) and not regularly dispensed preventer

Technical information	
Indicator name (short)	People regularly dispensed SABA and not regularly dispensed preventer.
Description	This measure details the percentage of people who are dispensed short-acting beta agonists (SABA) in at least two quarters in a year and not regularly dispensed a preventer.
Rationale	High rates of people not receiving regular preventer therapy despite regular SABA use highlights the potential for ongoing chronic condition management. The NZ Adult Asthma guideline identifies that good control of asthma shows little use of reliever medication (less than two days per week). The guideline recommends that ICS therapy is introduced if patients have symptoms ≥ 2 times in the last week, but there is also evidence of benefit in patients with less frequent symptoms. This indicator replaces the previous indicator of reliever: preventer ratio.
Numerator	The number of people who were dispensed SABA in two or more quarters and who were not dispensed preventer in two or more quarters in the year.
Denominator	People dispensed SABA in two or more quarters in a year.
Inclusions	Medicines: SABA (relievers): beta-adrenoceptor agonists – salbutamol (2096) and terbutaline (2404) Preventers: - Inhaled corticosteroids: fluticasone (1065), beclomethasone dipropionate (1108) and budesonide (1168) - Inhaled long-acting beta-adrenoceptor agonists: salmeterol (1066) and eformoterol fumarate (1083) - Inhaled corticosteroids with long-acting beta-adrenoceptor agonists: budesonide with eformoterol (3758) and fluticasone with salmeterol (3858). - Leukotriene antagonists: montelukast (3967) - Mast cell stabilisers: sodium cromoglycate (2144)
Exclusions	<i>See appendix for more details.</i>
Note for calculation	Unit of measure: Percentage Adjustment applied: None District health board (DHB) assignment: Domicile

Data sources	Pharmaceutical Collection, Ministry of Health.
Suppression rule	Data is not presented where the counts are less than 10.
Notes	<i>See appendix for more details.</i>

Appendix 1. Interpretation notes

Standard deviation
Data is presented as standard deviation from the mean. Standard deviation is a statistical measure of variation from a mean. Assuming that recorded instances are normally distributed (ie, they are in the usual 'bell-shaped curve'), 68 percent of all recorded instances would be expected to be within one standard deviation either side of the mean and 95 percent within two standard deviations.

Confidence intervals
Data for each DHB are presented as rate per 1,000 population. Upper and lower confidence intervals were calculated to 95 percent level of confidence.

Age groups	
Children	The age used in the Atlas for children is 0–14 years. This is in line with guidelines. Children aged 0–4 years were not included in indicators looking at medication use as they are a distinct group. Not all will respond to inhaled corticosteroid (ICS) therapy and of those who do, only some will have asthma at school age or as an adult. For these reasons, it was considered including preschool children in an indicator of regular ICS use would be difficult to interpret. Childhood admissions in this age group are included to show the burden of disease of asthma and wheeze, and a proportion of those admitted as pre-schoolers will have asthma as a school child and adult. The Expert Advisory Group developing the Asthma Atlas noted the issue of diagnosing asthma in those aged under 5. However, given both their high rate of admissions and that some will go on to develop asthma, it was considered both informative and appropriate to present these data.
Adults	For adults, the age presented in the Atlas was restricted to those aged less than 50 years. This is because the accuracy of the diagnosis of asthma of those aged 50 years and over is reduced because of the increasing likelihood of a diagnosis of chronic obstructive pulmonary disease (COPD).

Hospital admissions due to asthma	
Admission type	Both acute (AC) and acute arranged (AA) admission types are included. An acute arranged admission is a non-acute admission with an admission less than seven days after the date the decision was made that the admission was necessary.
Emergency department admissions are included	ED attendances meeting the three-hour rule were included as admissions in this Atlas. This method is consistent with the New Zealand Child and Youth Epidemiology Service (www.otago.ac.nz/nzcyes). Counting all admissions (ED admission and hospital admissions) is considered the most robust way to ensure consistency between DHBs, particularly in children as different DHBs handle admissions differently. Some for example use an inpatient service to manage all their paediatric work, whereas others have short stay units.

Primary or secondary diagnoses	As part of the Asthma Atlas, we considered whether to include those with a primary diagnosis of asthma or a primary diagnosis of respiratory disease where there was a secondary diagnosis of asthma. Analysis showed the 49% of those with a secondary diagnosis of asthma had a primary diagnosis of respiratory disease, of which pneumonia was the most frequent. However, the inclusion of admissions with a secondary diagnosis of asthma and a primary diagnosis of respiratory disease did not have large impact on admission rates overall. By DHB, the increase was typically by 0.1–0.3/1,000 population. For ease of interpretation and local replication, it was decided only to present those admitted with a primary diagnosis of asthma. It is suggested however that this group with a primary diagnosis of respiratory disease and a secondary diagnosis of asthma also be considered for further analysis locally.
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Appendix 2. Definition of levels of recent asthma symptom control in adults and adolescents (regardless of current treatment regimen).

Good control	Partial control	Poor control
All of: • Daytime symptoms ≤ 2 days per week • Need for reliever ≤ 2 days per week¹ • No Limitation of activities • No symptoms during night or on waking	One or two of: • Daytime symptoms > 2 days per week • Need for reliever > 2 days per week¹ • Any limitations of activities • Any symptoms during night or on waking	Three or more of: • Daytime symptoms > 2 days per week • Need for reliever > 2 days per week¹ • Any limitations of activities • Any symptoms during night or on waking

1. Not including SABA taken prophylactically before exercise (record this separately and consider when assessing management.)

Note: Recent asthma symptom control is based on symptoms over the previous 4 weeks.

Source: Adapted from Global initiative for Asthma (GINA). Global strategy for asthma management and prevention. GINA;2021. Australian Asthma Handbook v1.1 asset ID: 33

Te Kāwanatanga o Aotearoa
New Zealand Government