

The November 2016 Victorian epidemic thunderstorm asthma event: an assessment of the health impacts

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Background

- 21st November 2016 - largest epidemic thunderstorm asthma event on record
- Unprecedented in size, acuity and impact
- Unexpected, widespread
- Presented a large challenge for emergency health services and the Victorian community more generally



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The Chief Health Officer's Report, 27 April 2017

Objectives:

- Describe the current understanding of epidemic thunderstorm asthma
- Describe the environmental and meteorological conditions before and during the event
- **Analyse the health impact of the event**

Methods – Health Outcome Data

Primary Care

- **NURSE-ON-CALL**
- **National Home Doctor Service**
- **Supercare Pharmacies**

Ambulance

- **Ambulance Victoria**

Hospitals

- **Victorian Emergency Minimum Dataset**
- **Private hospital emergency dataset**
- **Victorian Admitted Episodes Dataset**

Deaths

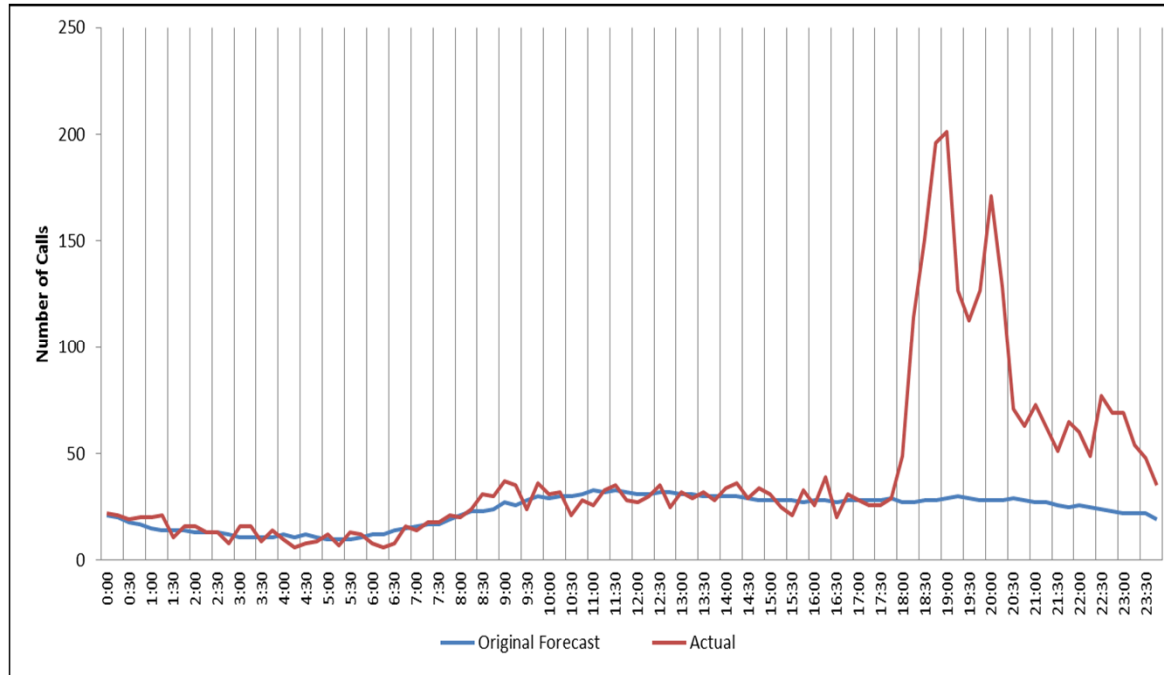
- **Coroner's Court of Victoria**
- **Victorian Registry of Birth, Deaths and Marriages**



Results

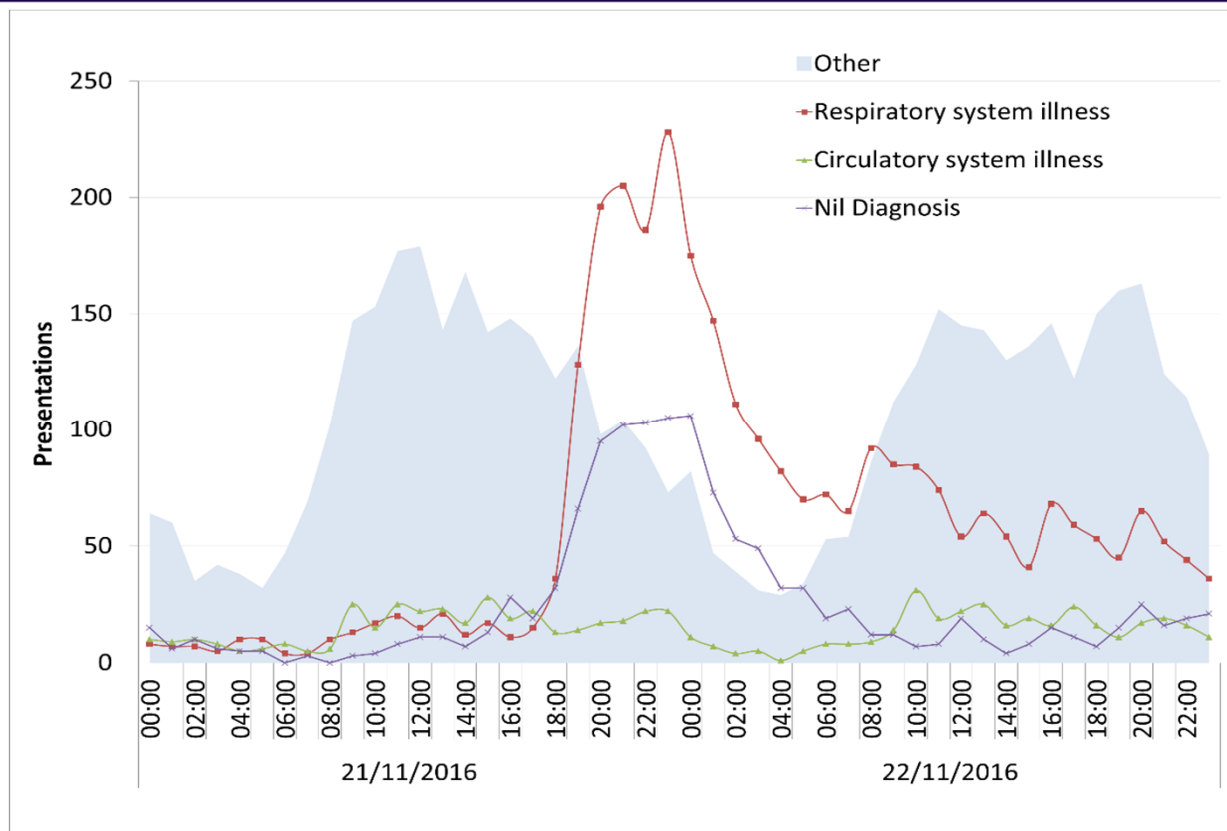
Ambulance Victoria

Emergency Services Telecommunications Authority call volume 21 November 2016



Source: Emergency Services Telecommunications Authority

Presentations to public hospital EDs, 21 - 22 Nov 2016 (Melbourne and Geelong)

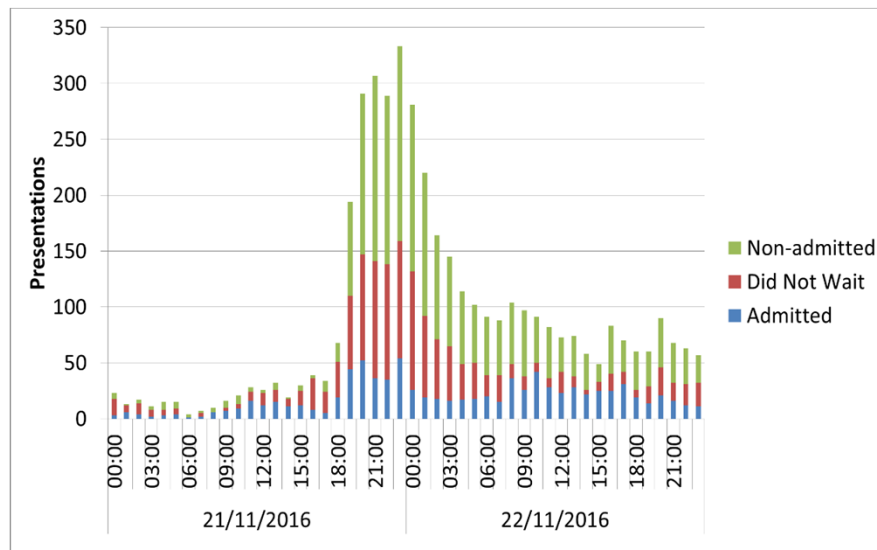


Victorian public hospital emergency department presentations, 21-22 November 2016

Table 1: Victorian public hospital emergency department presentations, 21-22 November 2016

	Number of presentations	3 year average	Excess cases (% increase on 3 year average)
Total presentations (including respiratory and 'nil diagnosis')			
Melbourne & Geelong	9909	6266	3643 (58%)
Other hospitals	2814	2590	224 (9%)
	12723	8856	3867 (44%)
Respiratory presentations			
Melbourne & Geelong	2973	453	2520 (556%)
Other hospitals	239	151	88 (58%)
	3212	604	2608 (432%)
'Nil Diagnosis' presentations			
Melbourne & Geelong	1253	313	940 (300%)
Other hospitals	175	125	50 (40%)
	1428	438	990 (226%)
All other presentations (excluding respiratory and 'nil diagnosis')			
Melbourne & Geelong	5683	5500	183 (3%)
Other hospitals	2400	2314	86 (4%)
	8083	7814	269 (3%)

Departure status of respiratory and nil diagnosis presentations

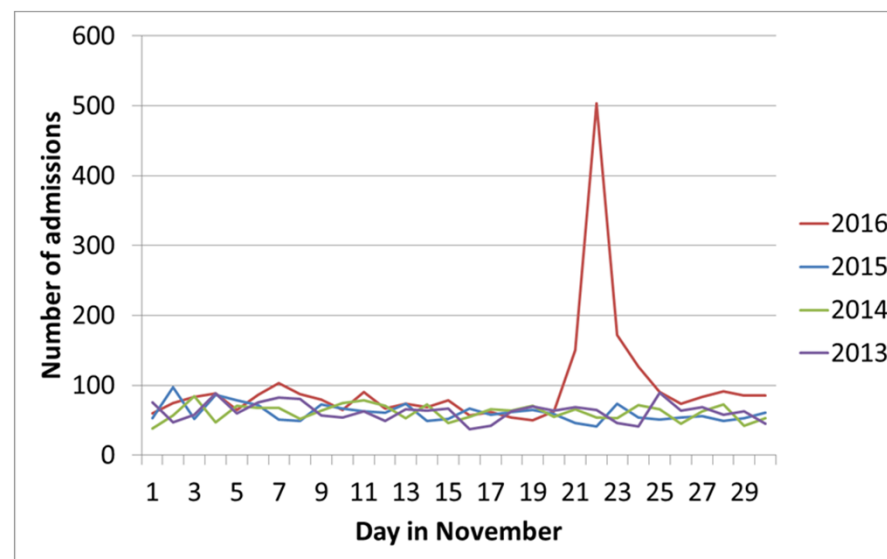


Of the 4,226 presentations to Melbourne and Geelong public hospital emergency departments on 21 and 22 Nov

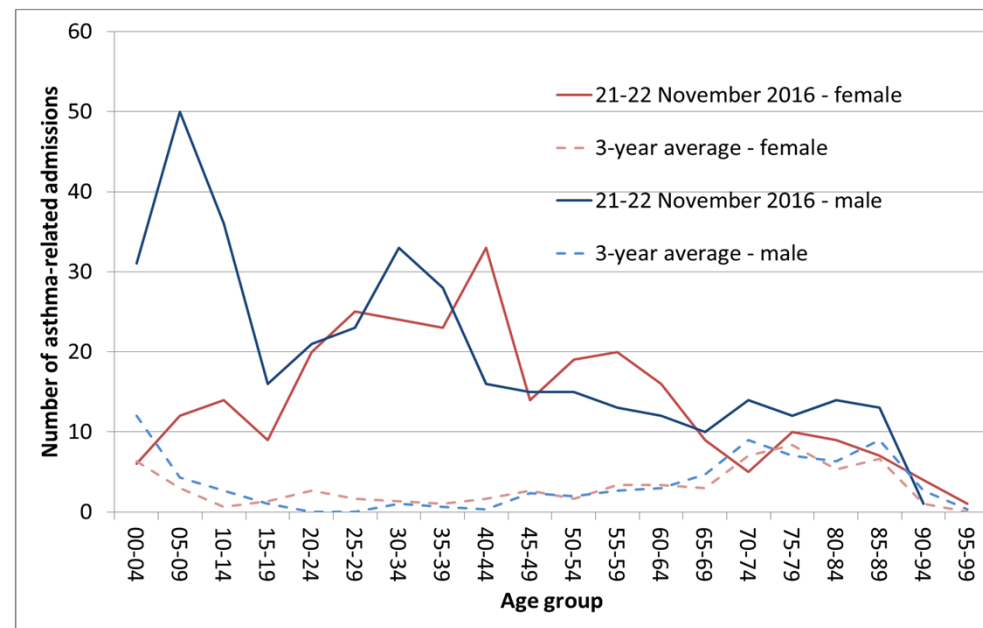
- 21% were admitted
- 49% patients were not admitted
- 30% 'did not wait'

Victorian hospital asthma-related admissions

- 30 hr from 6pm 21 November:
548 excess admissions (1034% increase)
- 30 excess ICU admissions
(3000% increase).
- Prior to 21 November, asthma admissions
already 14.8% greater than expected for
month
- Admissions remained high for rest of the
month



Age and sex distribution of asthma-related hospital admissions



Ethnicity - Increased proportion of admitted patients born overseas (38% vs 26%)

- Indian and Sri Lankan (8.4% vs 1.3%); South East Asian (6.7% vs 1.3%)

Deaths

- Data from 21-30 November 2016:
9 excess deaths with asthma as primary cause
- 2 additional deaths associated with event occurred outside this timeframe and are being considered in Coronial investigation

Conclusions

- Large numbers of Victorians affected. Need for broad, sustained knowledge in community and health services.
- Increased risk for young adults, South and South East Asian populations
- Analysis has informed 2017 forecast development, community education, clinical guidelines

INFORMATION BASED FOR HEALTH PROFESSIONALS
EPIDEMIC THUNDERSTORM ASTHMA

Epidemic thunderstorm asthma

SUMMARY

Several cases of thunderstorm asthma in early summer in Victoria were linked to high pollen concentrations in the air, but it is unclear how the weather changes affect pollen levels in the atmosphere, even if they have not had asthma before.

Episodes can occur when pollen is in the air in high concentrations and a major and regular asthma trigger in many susceptible individuals, especially in high pollen areas or those with asthma and/or allergic rhinitis. Thunderstorm asthma events are unpredictable.

Research in risk of acute asthma hospitalization suggests a link between pollen levels and asthma hospitalizations, both at individual level from self-reported asthma history, and at population level with population asthma.

Since then, thunderstorm asthma episodes suggest that the risk of asthma hospitalization by thunderstorm is highest in areas with an established high pollen area and have seasonal allergic rhinitis/asthma or asthma. The main population at risk are people with pollen controlled asthma. Regular medication with an inhaled corticosteroid and/or long-acting beta2 agonist may reduce the risk of asthma hospitalization.

Thunderstorm asthma is thought to be triggered by pollen in high concentrations in the air and pollen levels in the air are predicted to increase in the future due to climate change and population in high pollen areas.

Primary care management is based on:

- appropriate asthma control medication
- corticosteroid inhalers in patients with indicated symptoms
- appropriate treatment for people who are allergic to grass pollen for an airway allergy trigger medication
- appropriate management for people who are allergic to other pollen types
- appropriate management for people who are allergic to other pollen types
- appropriate management for people who are allergic to other pollen types

Address for more information to avoid being affected and to seek help in the future. Thunderstorm asthma is a public health concern. For more information, visit www.nacasthma.org.au or call 1300 762 762.

National Asthma Council Australia



PROTECT YOURSELF FROM THUNDERSTORM ASTHMA

1. Speak to your doctor or pharmacist about what you can do to protect yourself this pollen season.
2. Learn the 4 steps of asthma first aid.
3. Be aware of thunderstorm asthma forecasts during pollen season.

Protect yourself this pollen season. Managing asthma and allergies matters. Visit betterhealth.vic.gov.au for more information.

NATIONAL ASTHMA COUNCIL AUSTRALIA

References

**The November 2016 Victorian epidemic thunderstorm asthma event:
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www2.health.vic.gov.au/emergencies/thunderstorm-asthma-event/response

Literature review on thunderstorm asthma and its implications for public health advice

www2.health.vic.gov.au/emergencies/thunderstorm-asthma-event/response

Inspector General of Emergency Management (IGEM): Final Report

www2.health.vic.gov.au/emergencies/thunderstorm-asthma-event/review

Better Health Channel

www.betterhealthchannel.vic.gov.au/thunderstormasthma



Thank you

