Presentations to emergency departments by children and young people with food allergy are increasing

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The prevalence of food allergy among Victorian children is rising.[1] In Victoria, children with suspected food allergies can be on hospital outpatient clinic waiting lists for months before being assessed.[2] This may lead families to consider alternative avenues, which can lead to poor allergy management and the need for emergency care. Increasing numbers of Victorian children are presenting to emergency departments,[3] but we do not know whether the number visiting with food allergy is also rising.

We analysed Victorian Emergency Minimum Dataset (VEMD) data for the period 2005–06 to 2014–15. The VEMD is a statewide

1 Presentations to Victorian public emergency departments by children and young people (0–19 years) with food allergy-related problems

	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
All food allergy presentations										
Number	2368	2680	2754	2991	3082	3159	3185	3422	3881	4263
Rate (per 10 000 population)*	18	20	21	22	23	23	23	24	27	29
ICD-10-AM diagnostic codes										
T78.0	141 (6.0%)	152 (5.7%)	154 (5.6%)	168 (5.6%)	233 (7.6%)	283 (9.0%)	289 (9.1%)	339 (9.9%)	437 (11.3%)	501 (11.8%)
T78.1	800 (33.8%)	948 (35.4%)	962 (34.9%)	1127 (37.7%)	1167 (37.9%)	1152 (36.5%)	1117 (35.1%)	1288 (37.6%)	1464 (37.7%)	1624 (38.1%)
T78.4	1234 (52.1%)	1351 (50.4%)	1441 (52.3%)	1488 (49.8%)	1552 (50.4%)	1597 (50.6%)	1633 (51.3%)	1702 (49.7%)	1881 (48.5%)	2031 (47.6%)
L27.2	193 (8.2%)	229 (8.5%)	197 (7.2%)	208 (7.0%)	130 (4.2%)	127 (4.0%)	146 (4.6%)	93 (2.7%)	99 (2.6%)	107 (2.5%)
Age										
Number										
0–4 years	1202 (50.8%)	1364 (50.9%)	1424 (51.7%)	1537 (51.4%)	1520 (49.3%)	1595 (50.5%)	1593 (50.0%)	1759 (51.4%)	2015 (51.9%)	2152 (50.5%)
5–9 years	466 (19.7%)	515 (19.2%)	521 (18.9%)	573 (19.2%)	673 (21.8%)	608 (19.3%)	660 (20.7%)	702 (20.5%)	813 (21.0%)	967 (22.7%)
10–14 years	305 (12.9%)	335 (12.5%)	355 (12.9%)	405 (13.5%)	403 (13.1%)	426 (13.5%)	383 (12.0%)	433 (12.7%)	515 (13.3%)	561 (13.2%)
15–19 years	395 (16.7%)	466 (17.4%)	454 (16.5%)	476 (15.9%)	486 (15.8%)	530 (16.8%)	549 (17.3%)	528 (15.4%)	538 (13.8%)	583 (13.7%)
Rate (per 10 000 population)*										
0–4 years	38	42	43	45	43	45	44	47	53	55
5–9 years	15	16	16	18	21	18	19	20	22	26
10–14 years	9	10	11	12	12	13	12	13	15	16
15–19 years	12	13	13	13	14	15	15	15	15	16
Sex										
Number										
Boys	1284 (54.2%)	1435 (53.5%)	1476 (53.6%)	1625 (54.3%)	1663 (54.0%)	1723 (54.5%)	1779 (55.9%)	1867 (54.6%)	2158 (55.6%)	2388 (56.0%)
Girls	1084 (45.8%)	1245 (46.5%)	1278 (46.4%)	1366 (45.7%)	1419 (46.0%)	1436 (45.5%)	1406 (44.1%)	1555 (45.4%)	1723 (44.4%)	1875 (44.0%)
Rate (per 10 000 population)*										
Boys	19	21	21	23	24	25	25	26	29	32
Girls	17	19	20	21	21	22	21	22	24	26
Hospital region										
Number										
Metropolitan†	1560 (65.9%)	1860 (69.4%)	1907 (69.2%)	2008 (67.1%)	2071 (67.2%)	2194 (69.5%)	2186 (68.6%)	2345 (68.5%)	2781 (71.7%)	3149 (73.9%)
Rural‡	808 (34.1%)	820 (30.6%)	847 (30.8%)	983 (32.9%)	1011 (32.8%)	965 (30.5%)	999 (31.4%)	1077 (31.5%)	1100 (28.3%)	1114 (26.1%)
Rate (per 10 000 population)*										
Metropolitan†	18	22	22	23	23	25	24	25	29	32
Rural‡	26	27	27	32	33	31	32	35	35	36

Continues

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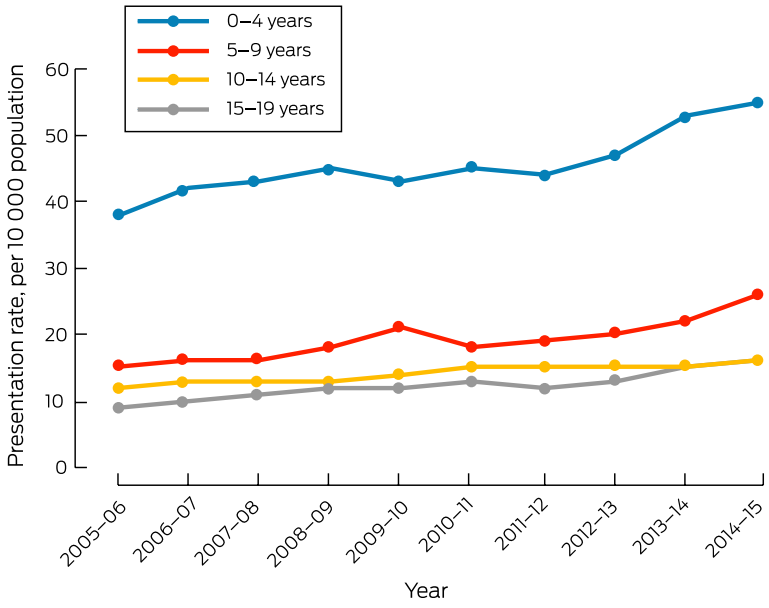
1 continued

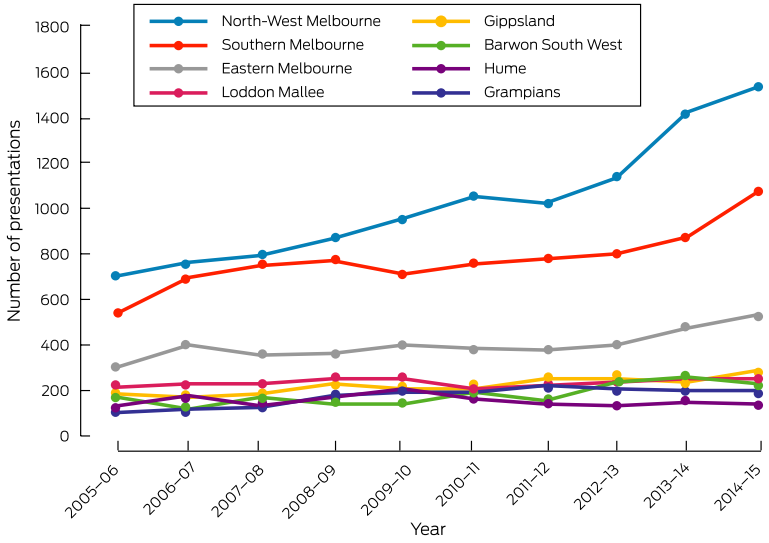
	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
Triage category										
Categories 1–3	1198 (50.6%)	1429 (53.3%)	1568 (57.0%)	1707 (57.0%)	1830 (59.3%)	1861 (59.0%)	1807 (56.8%)	2047 (59.8%)	2365 (61.0%)	2694 (63.2%)
Categories 4, 5	1170 (49.4%)	1251 (46.7%)	1186 (43.0%)	1284 (43.0%)	1252 (40.7%)	1298 (41.0%)	1378 (43.2%)	1375 (40.2%)	1516 (39.0%)	1569 (36.8%)

ICD-10-AM = International Classification of Diseases, tenth revision, Australian modification. * All presentation rates are per 10 000 children in Victoria aged 0–19 years in the corresponding category. † Victorian Emergency Minimum Dataset (VEMD) regions: North-West, Southern, and Eastern Melbourne. ‡ VEMD regions: Loddon Mallee, Gippsland, Barwon South West, Hume, Grampians. ◆

2 Presentations to Victorian public emergency departments by people aged 0–19 years with food allergy-related problems: rates per 10 000 population, by age group



3 Presentations to Victorian public emergency departments by people aged 0–19 years with food allergy-related problems, by hospital campus region



administrative dataset that includes non-identifiable patient-level data for all Victorian public emergency department encounters. We included all food allergy-related presentations by children and young people aged 0–19 years, selected according to International Classification of Diseases, tenth revision, Australian modification (ICD-10-AM) codes: T78.0 (anaphylactic shock due to a food reaction), T78.1 (other adverse food reactions, not elsewhere classified), T78.4 (allergy, unspecified: includes non-food-related allergies), and L27.2 (dermatitis due to ingested food). Presentation rates by age group were calculated using Australian Bureau of Statistics (ABS) age-stratified population data for Victorians aged 0–19 years;[4] rates for regions were calculated using ABS population data for Statistical Areas 2 (SA2).[5]

The study was deemed exempt from the need for formal ethics approval by the Royal Children's Hospital Human Research Ethics Committee.

The number of children presenting to emergency departments with food allergy-related problems increased from 2368 in 2005–06 to 4263 in 2014–15; the presentation rate increased from 18 to 29 per 10 000 population (Box 1). About half the children who presented with food allergy-related problems were aged 0–4 years, the rate for this age group increasing from 38 to 55 per 10 000 population (Box 2). The proportion of presentations triaged as being more urgent (triage categories 1–3) also increased, from 51% to 63% (Box 1).

The rate of presentations to metropolitan hospitals increased more (from 18 per 10 000 in 2005–06 to 32 per 10 000 in 2014–15; 78% increase) than did the rate for rural hospitals (26 per 10 000 in 2005–06 to 36 per 10 000 in 2014–15; 38% increase) (Box 1). Hospitals in the North-West Melbourne region received about one-third of all allergy-related emergency department visits, and the number in this region doubled over the study period (706 in 2005–06; 1536 in 2014–15) (Box 3).

These data indicate that the demand for emergency services associated with food allergy-related problems in children increased during 2005–15. The increase was particularly marked for children aged 0–4 years and for children and young people in the North-West Melbourne and Southern Melbourne regions. While the reason for the increased burden is not clear — that is, whether the prevalence of allergy had increased (including because of a change in population composition), management plans had changed, or access to community services was reduced — the consequence is greater demand on emergency services across Melbourne.

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