**Conclusions:** The current study provides an insight into the role of major crab allergens, which maybe be the primary sensitizer in the development of allergy and asthma in the crab industry. The outcome of this study assists in better work safety for workers at risk of developing ingestion-induced food allergy and future development of immunotherapeutic strategies.

### ASCIA-P39
### MEDICATION ADHERENCE IN A DIFFICULT ASTHMA POPULATION

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**Background:** Non-adherence to medication amongst difficult-to-treat asthmatics may lead to inappropriate treatment escalation. We describe the prevalence and causes of non-adherence in our difficult asthma cohort, and the utility of an electronic monitoring device for objective adherence monitoring.

**Methods:** 117 consecutive specialist-referred patients underwent the Alfred difficult asthma assessment protocol between June 2014 and June 2016. At first consultation, physician assessment of non-adherence was documented. From June 2015, patients also routinely completed an "Adult Asthma Adherence questionnaire". From May 2015, patients were also issued an electronic monitoring device for two months to monitor preventer adherence.

**Results:** On physician assessment, 22 (18.8%) of 117 patients were suspected to be non-adherent. We attempted to issue an electronic monitoring device in 57 patients. 11 patients used a preventer incompatible with the device; and 7 did not return the device with usable data. Of 31 patients with usable data, 21 (67%) patients had a preventer adherence rate of >75%.The 'Adult Asthma Adherence Questionnaire' was completed in 52 patients. Of these, 28 (53.8%) patients were concerned about medication side effects, and 8 (16%) believed that these outweighed the benefits. 10 (19.6%) reported difficulty in paying for medication. 4 (8%) did not 'agree with doctor's advice' on asthma preventers, and 6 (12.7%) did not believe that their preventer helped to control symptoms. Only 2 (3.8%) reported not taking their asthma medications routinely with 5 (9.6%) reporting a tendency to forget doses.

**Conclusion:** Based on objective assessment in a subset of this cohort, a third of patients were non-adherent to preventers, this non-adherence was underestimated by physicians. On patient report, a variety of factors may impact medication adherence. Non-adherence is likely a major contributor to poor asthma control in this patient group.

### ASCIA-P40
### PHOLCODINE-ASSOCIATED ALLERGY AND CROSS-REACTIVITY WITH NEUROMUSCULAR BLOCKING DRUGS

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**Background:** Neuromuscular blocking drugs (NMBDs) are the most common cause of intraoperative anaphylaxis in Australia.[1] Pholcodine is an opioid-based antitussive agent commonly available without prescription which shares a common epitope with NMBDs. A link between pholcodine hypersensitivity and potential for NMBD-associated anaphylaxis led to pholcodine withdrawal from Norway.[2] The Australian Therapeutic Goods Administration (TGA) has recently rejected applications to restrict pholcodine use.

**Method:** We describe two patients with pholcodine anaphylaxis who subsequently had positive skin tests (SPT) to one or more NMBD.

**Case 1:** A 76 year old ex-public servant presented with five days of cough and was given a dry cough mixture. Within ten minutes of ingestion she developed facial pruritus, rash, hoarseness and tongue swelling. She was treated with adrenaline, hydrocortisone and cetirizine. She had detectable specific IgE to pholcodine (7.14 kU/L) and morphine (1.91 kU/L) but not suxamethonium. When tested to a panel of NMBDs she had a positive intra-dermal test to atracurium. Avoidance of pholcodine, cisatracurium and atracurium was advised.

**Case 2:** A 40 year old office worker developed palmar itch, urticaria, facial oedema, throat tightness and syncope 20 minutes after ingesting a pholcodine-containing cough mixture and aspirin, for a sore throat and cough. She was treated with adrenaline. Serum specific IgE was positive to morphine and negative to suxamethonium. SPT demonstrated a 4 mm wheal to pholcodine but 0 mm to NMBDs. Intradermal testing demonstrated a 9 mm wheal to suxamethonium. The patient was advised to avoid both pholcodine and suxamethonium. Oral aspirin challenge is pending.

**Conclusion:** Although its overall incidence is low, NMBD-associated anaphylaxis remains a serious clinical problem with a greater incidence in countries with high pholcodine use. Our cases demonstrate the presence of specific IgE to different NMBDs in patients presenting with pholcodine-associated anaphylaxis. We recommend that all similar cases be reported to the TGA.

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### ASCIA-P41
### RISK FACTORS FOR VOCAL CORD DYSFUNCTION IN A DIFFICULT ASTHMA POPULATION

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**Background:** Vocal cord dysfunction (VCD) is characterised by inappropriate adduction of the vocal cords and manifest as dyspnea, voice change and throat tightness. It can be misdiagnosed as asthma. The two conditions are not mutually exclusive- a high proportion of difficult-to-treat asthmatics are reported to have coexisting VCD. VCD does not respond to usual asthma treatment, but does to speech therapy.

**Methods:** One hundred and seventeen consecutive difficult asthma patients referred by respiratory specialists underwent the Alfred assessment protocol. Vocal cord dysfunction was diagnosed either by; an ENT specialist; or clinically, based on characteristic symptoms (throat symptoms, especially if associated with laryngeal hypersensitivity with typical triggers such as strong odours), and supported by a positive Pittsburgh VCD index or VCD-Questionnaire. Univariate analyses were performed to identify clinical factors associated with vocal cord dysfunction.

**Results:** Forty (34.2%) of 117 difficult asthma patients had VCD. The majority (n = 33) of these also had asthma demonstrable by variable airflow obstruction. Patients with VCD were more likely to; be female (OR 2.45, 95%CI 1.03-5.84, p = 0.04); have poorer asthma control and quality of life (ACT $13 \pm 5$ vs. $15 \pm 5$, p = 0.023; AQLQ $3.59 \pm 1.41$ vs $4.61 \pm 1.38$, $p < 0.001$); have more frequent exacerbations [3(2-5) versus 2 (0-2) over six months, p = 0.003], and; be less severely obstructed (FEV1/FVC ratio $68\% \pm 13$ vs. $61\% \pm 16$, p = 0.028).

**Conclusions:** VCD is present in a third of patients with difficult-to-treat asthma. VCD diagnosis is associated with female sex and poorer asthma outcomes (increased exacerbations, poorer asthma control and quality of life) despite better lung function. These findings highlight the importance of identifying and addressing VCD in this challenging patient group.

### ASCIA-P42
### ALLERGIC RHINITIS MANAGEMENT IN AUSTRALIAN GENERAL PRACTICE

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