Postoperative nausea and vomiting (PONV) and post discharge nausea and vomiting (PDNV) are recognised as relatively common adverse side effects of general anaesthesia. ANZCA has endorsed the Society for Ambulatory Anaesthesia (SAA) guidelines\(^1\) for the management of these conditions.

The SAA publication recommends seven guidelines in the management of PONV and PDNV. Guidelines 1, 3 and 4 respectively recommend strategies to stratify risk of PONV, to provide appropriate prophylaxis for patients assessed as medium risk for PONV, and to provide appropriate prophylaxis for patients assessed as high risk for PONV.

### Aim and objectives

Assess compliance with recommended SAA guidelines in relation to stratifying patients’ risk for PONV, and provision of appropriate prophylaxis for each of the risk stratifications.

It is recognised that where local guidelines exist for PONV prophylaxis, it may be deemed more appropriate to use these as the benchmark for recognised management.

### Research evidence/ best practice

Overall incidence of PONV is approximately 30 per cent, with a reported incidence in “high risk” patients of up to 80 per cent. This unpleasant side effect results in patient dissatisfaction, and has the potential to delay resumption of oral intake, patient mobilisation and discharge.

**Identification of patients’ risk for PONV**

The use of PONV risk scores has been demonstrated to significantly reduce the incidence of PONV. The two most commonly used risk scores for inpatients undergoing balanced inhaled anesthesia are the Koivuranta score and the Apfel score.

On reviewing the available evidence, the SAA suggests that the following risk factors be assessed in determining the PONV risk for individual patients:

**Patient factors**

- History of PONV/motion sickness.
- Female gender.
- Non-smoker.

**Environmental factors**

- Postoperative opioids.
- Emetogenic surgery (cholecystectomy, laparoscopic, gynaecological, or duration >1.5 hours).

The SAA guidelines recommend that patients be stratified as follows.

- **Low risk:** Zero-one risk factor.
- **Medium risk:** Two risk factors.
- **High risk:** Three risk factors.

Like all drugs, antiemetics carry some risk for adverse effects. Therefore, the number and choice of prophylactic antiemetics should be titrated against the patient’s risk\(^1\).

**PONV prophylaxis for adult patients assessed as medium risk for**
PONV
The SAA guidelines recommend that patients with two risk factors be classified as “medium risk”. Consideration should be given to reducing baseline risks (nitrous oxide, volatile anaesthetics, postoperative opioids). In addition, it is recommended these patients receive one to two interventions from those included below:
- Dexamethasone 4-5 mg iv at induction.
- Droperidol/Haloperidol at end of case.
- 5HT3 antagonist.
- NK-1 receptor antagonists.
- Scopolamine (trans-dermal).
- Perphenazine.
- Dimenhydrinate.
- Propofol subhypnotic dose infusion or Propofol in PACU (rescue only).
- Propofol anaesthesia.
- Regional anaesthesia.
- Non-pharmacological: acupuncture.

Note: It is recognised that a number of these interventions are not traditionally used for PONV prophylaxis in Australia and New Zealand. The entire list is provided for completeness. More information on these interventions, including recommended dosage, is provided in the published SAA guidelines1.

PONV prophylaxis for adult patients assessed as high risk for PONV
The SAA guidelines recommend that patients with three risk factors be classified as “high risk”. Consideration should be given to reducing baseline risks (nitrous oxide, volatile anaesthetics, postoperative opioids). In addition, it is recommended these patients receive at least two interventions from the above list.

<table>
<thead>
<tr>
<th>Suggested indicators</th>
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<tbody>
<tr>
<td>Number of patients who have PONV risk assessed and documented.</td>
</tr>
<tr>
<td>Number of patients with zero to one risk factor who are documented as “low risk”, and who receive no documented PONV prophylaxis interventions (unless otherwise indicated).</td>
</tr>
<tr>
<td>Number of patients with two risk factors who are documented as “moderate risk”, and who receive one to two documented PONV prophylaxis interventions.</td>
</tr>
<tr>
<td>Number of patients with more than two risk factors who are documented as “high risk”, and who receive at least two of the documented PONV prophylaxis interventions.</td>
</tr>
</tbody>
</table>

Where local PONV prophylaxis guidelines are in place, the anaesthetist(s) may consider it more appropriate to measure their own practice against these.

Standards and criteria for best practice
Compliance of 100 per cent with patient assessment, appropriate risk categorisation and prophylaxis is desired, but in practical terms is unrealistic. If compliance rates are found to be unacceptably low, the anaesthetist(s) should explore reasons for this, institute changes to practice, and then repeat the audit, with the expectation that compliance will move towards 100 per cent.

Method
Data for series of 30 consecutive patients.
- Proportion of patients assessed for risk stratification for PONV.
- Proportion of patients administered PONV prophylaxis as per SAA guidelines.
| Acknowledgement | This audit guide is adapted from Kumar, A. and Brampton, W. “Postoperative Nausea and Vomiting (PONV)” in: Royal College of Anaesthetists. *Raising the Standard: a compendium of audit recipes*, 2012; p.120-121. The Royal College has kindly granted ANZCA permission to use this material. Author: Dr Rodney Mitchell, FANZCA. August 2014. |

**Associated documents:**

- PONV Prophylaxis Data Collection Form
- PONV Prophylaxis Results Summary and Conclusions Form