

Acute Postoperative Pain Project APOP

NSW/ACT Summary Report
February 2008



NSW Therapeutic Advisory Group

NSW TAG Project Coordinator: Mr David Maxwell

NSW TAG Project Lead: Ms Karen Kaye

Funded and supported by the National Prescribing Service

Contents	Page
NSW/ACT overview	2
Participating hospitals	3
Background	4
Aims	4
Methods	4
Results	6
Intervention activity logs	12
Acknowledgements	16

NSW/ACT Overview

The APOP project (Acute postoperative pain management) is a national multicentre quality improvement initiative that was conducted in 2006-07. A total of 19 hospitals participated in NSW and the ACT.

Aim

The project aimed to improve the management of postoperative pain through the promotion of best practice.

Methods

APOP utilised drug use evaluation (DUE), a proven quality improvement methodology, that involved data collection and evaluation, followed by 'action' or intervention and a repeat or 'follow-up' audit to monitor changes in practice. A set of key messages (see Box) were identified in the pain literature as best practice and were promoted using evidence based behaviour-change methodologies (eg. academic detailing and audit and feedback) during the intervention period.

APOP Key Messages

- Optimal postoperative pain management begins in the preoperative period
- Measure pain regularly using a validated pain assessment tool
- Ensure all patients receive safe and effective analgesia
- Monitor and manage adverse events
- Communicate ongoing pain management plan to both patients and primary healthcare professionals at discharge.

Highlights

There was an increase in documented patient education in the pre-operative setting, 43% vs 55% ($p < 0.0001$).

There was a significant increase in the number of patients with at least one pain score documented in the post operative setting, 47% vs 70% ($p < 0.0001$).

There was a significant increase in the number of patients prescribed analgesia at discharge that also had a documented pain management plan, 35% vs 59% ($p < 0.0001$).

APOP was funded and supported by the National Prescribing Service.

Participating Hospitals - NSW/ACT

Bankstown Hospital (SSWAHS)

Bega District Hospital (GSAHS)

Blacktown Hospital (SWAHS)

Calvary Hospital (ACT)

Campbelltown Hospital (SSWAHS)

The Childrens Hospital at Westmead (Westmead Children's)

Coffs Harbour Base Hospital (NCAHS)

Dubbo Base Hospital (GWAHS)

Goulburn Base Hospital (GSAHS)

Maitland Hospital (HNEAHS)

Moruya Hospital (GSAHS)

Nepean Private Hospital (Healthscope)

Nowra Private Hospital (Ramsay Health)

Royal North Shore Hospital (NSCCAHS)

St. Vincents Hospital (SESIAHS)

Sydney Adventist Hospital (The SAN)

Tamworth Base Hospital (HNEAHS)

Wagga Wagga Base Hospital (GSAHS)

Westmead Hospital (GSAHS)

Wollongong Hospital (SESIAHS)

Background

NSW Therapeutic Advisory Group (NSW TAG) is working, in collaboration with similar state-based quality use of medicines groups, as part of a national quality improvement program in Australian hospitals, funded and supported by the National Prescribing Service.

A consultation process across the NSW TAG membership in 2005 indicated that management of postoperative pain was of interest to a number of clinicians in NSW. A similar level of interest was also reported across the other participating states. From this consultation process it was agreed that management of acute postoperative pain (APOP) would be the focus of the next initiative within the national quality improvement program - the APOP project.

Aims

To improve the management of acute postoperative pain by targeting three key areas:

1. Pain assessment - pre and postoperative
2. Analgesic prescribing - promoting safe and effective use of analgesics
3. Communication at the point of discharge - to the patient and the general practitioner (GP).

Methods

Hospital recruitment

Hospitals across NSW and the ACT were recruited to participate on a voluntary basis. Expressions of interest were invited through the NSW TAG membership and the Australian Private Hospitals Association.

Patient recruitment

Participating hospitals were able to select the particular surgical group(s) of interest for inclusion in APOP. Each hospital was required to identify 50 surgical patients for inclusion in the project.

Key messages

A national reference committee was convened by the National Prescribing Service that had representation from the Faculty of Pain Medicine of the Australian and New Zealand College of Anaesthetist and members of the state-based project teams. This Committee was responsible for the development and endorsement of the key messages for APOP (see Box). The expert members of the Committee also provided feedback during the development of all the APOP educational material.

Box: APOP Key Messages

- Optimal postoperative pain management begins in the preoperative period
- Measure pain regularly using a validated pain assessment tool
- Ensure all patients receive safe and effective analgesia
- Monitor and manage adverse events
- Communicate ongoing pain management plan to both patients and primary healthcare professionals at discharge.

Drug use evaluation methodology

APOP utilised a proven quality improvement methodology known as drug use evaluation (DUE - see Figure 1). DUE involves four key steps: data collection, data evaluation, feedback of evaluation data and action (or intervention). This is usually followed by a repeat audit to monitor any changes in practice.

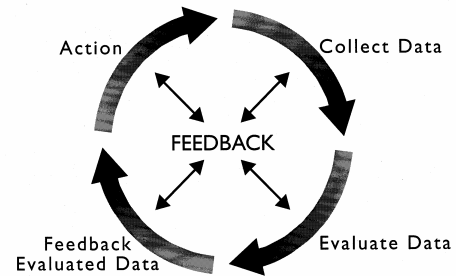


Figure 1: DUE Cycle (SHPA)

Data collection tools

Three data collection tools were developed by the national project team: inpatient medical record review; patient telephone survey and GP postal survey. These tools were used to capture data related to current management of postoperative pain management (baseline data collection) and to assist in monitoring change(s) in practice after the intervention period (follow-up data collection).

The National Prescribing Service developed an electronic data entry system, known as the e-DUE tool that was available for participating hospitals to download from the APOP website. Hospitals were able to submit their completed datasets to NPS via the internet or as an email attachment.

Evaluation of data

Data were analysed by the NPS and reported back to participating hospitals. Feedback was provided to all hospitals through three separate reports that summarised key measures from the inpatient medical record review, the patient telephone survey and the GP postal survey. Participating hospitals were able to compare local results to the state and national data sets. A generic

PowerPoint presentation was also provided at baseline and follow-up to facilitate the sharing of results.

Intervention materials

A suite of educational intervention materials were developed by the national project team in consultation with the national reference committee. These materials included:

- Academic detailing cards
- Wall posters
- Generic PowerPoint presentations for group education sessions
- Bookmarks
- Pain assessment tools

Up to two representatives from each hospital participated in a two-day academic detailing workshop, facilitated by NSW TAG and NPS. Workshop participants received academic detailing training as well as a therapeutic briefing by a leading pain management expert.

Hospitals were requested to maintain intervention activity logs during the intervention phase, specifically the number of group sessions and academic detailing visits that were undertaken. A summary of NSW intervention activity has been provided at the end of this summary report.

Results

Hospital recruitment and participation

Twenty-six hospitals expressed interest in the APOP project across NSW/ACT. A final 20 hospitals were selected to participate. One of these final hospitals withdrew prior to project commencement leaving a total 19 hospitals in the NSW arm of the project.

Patient and GP recruitment and participation

Inpatient medical record review

A total of 870 patients were recruited across the 19 hospitals at baseline. However, at the time of analysis data from 758 patients were available for inclusion in the baseline feedback report for the inpatient medical record review. There were a total of 925 patients recruited in the follow-up audit and all 925 records were included in the follow-up feedback report.

Patient telephone survey

A total of 694 and 838 patients were entered into the eDUE tool for the patient telephone survey at baseline and follow-up, respectively. The eDUE tool had an option within the patient survey to indicate that a given patient was not able to complete this section of APOP (due to not being contactable etc). Therefore the total number of patients who completed the survey was 609 at baseline and 683 at follow-up.

GP postal survey

A total of 402 and 300 GPs participated in the postal survey at baseline and follow-up respectively.

Patient Demographics

A summary of the patient demographics for both audits is outlined in Table 1.

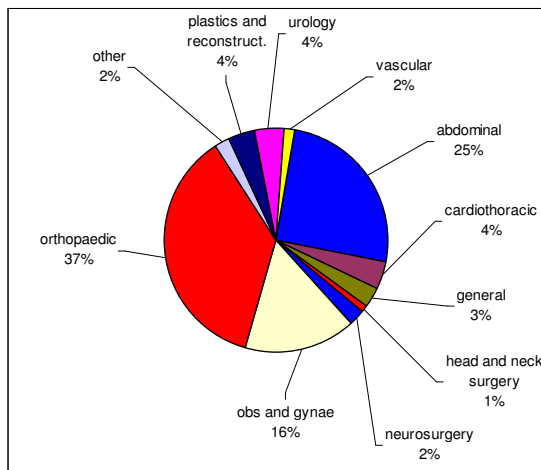
Table 1. Patient Demographics

Patient Demographics	Baseline (n=758)	Follow-up (n=925)
% female	56	57
Median age and range (yrs)	60 (10 - 94)	61 (10 - 100)
Median length of stay and range (days)	6 (0 - 112)	5 (0 - 102)
Mean post-op stay (days)	6	6

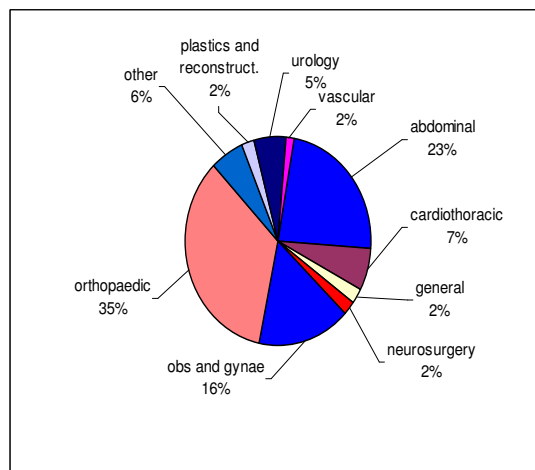
Surgical Type

Participating hospitals were able to select the surgical type(s) of interest for inclusion in APOP. The three most common surgical types included in the NSW/ACT state datasets were orthopaedic (37% and 35%), abdominal (25% and 23%) and obstetrics/gynaecology (16% and 16%) for baseline and follow-up, respectively. The distribution of surgical types included in the baseline and follow-up audits are described in the charts below.

Surgical type - baseline (n=758)



Surgical type - follow-up (n=925)



Pain Assessment

APOP Key Message:

Optimal postoperative pain management begins in the preoperative period

Prior to surgery a similar proportion of patients attended a pre-admission clinic across the two audits, 60% vs 65% respectively. There was an increase in the proportion of patients documented to have received education relating to postoperative pain management, 43% vs 55% ($p < 0.0001$) respectively.

The patient telephone survey asked patients to recall if they had any preoperative discussion regarding postoperative pain management options with a healthcare professional. 60% of patients who answered this question in the baseline survey recalled having this discussion. This increased slightly to 65% ($p < 0.05$) at follow-up.

APOP Key Message:

Measure pain regularly using a validated pain assessment tool

Documentation of pain scores increased after the intervention period with 70% of patients having at least one pain score document post-op compared to 47% of patients in the baseline audit ($p < 0.0001$). Although the overall documentation of pain being assessed at both rest and movement at the same time did not improve greatly, there was a significant increase compared to baseline (16% of pts vs 4%, ($p < 0.0001$)).

The most frequently documented pain scale used in NSW/ACT arm of APOP was the numerical rating scale (NRS) with 40.4% of patients having their pain assessed with the NRS at baseline and 46.4% at follow-up.

Results of the patient telephone survey indicated a higher proportion of patients had their pain assessed using a pain scale than according to documentation in hospital medical records. Results of the patient telephone survey relating to patients recall of pain assessment in the postoperative setting are summarised in the table below.

Table 2: Patients recall of pain assessment in the postoperative setting

Indicator	Baseline (n=609)	Follow-up (n- 683)
Percentage of patients who reported having their pain assessed using a pain scale	68%	74% ($p < 0.001$)
Percentage of patients who reported having their pain assessed at rest	72%	76% (n.s.)
Percentage of patients who reported having their pain assessed on movement	60%	60%

Analgesic Use

APOP Key Message:

Ensure all postoperative patients receive safe and effective analgesia

Analgesic prescribing

Multimodal analgesia was prescribed consistently before and after the educational intervention as outlined in Table 3. At baseline 83% of all patients prescribed analgesia were prescribed at least two different types of analgesics. Similarly in the follow-up audit 85% of patients prescribed analgesia were prescribed at least two different types of analgesics (Table 3).

Table 3. Analgesic prescribing trends (of those prescribed analgesia)

Analgesics prescribed	Baseline % (n = 711)	Follow-up % (n = 918)
Opioid alone	9	9
Paracetamol alone	3	3
<i>Opioid+paracetamol</i>	<i>59</i>	<i>57</i>
<i>NSAID+opiod+paracetamol</i>	<i>21</i>	<i>25</i>
<i>NSAID+opiod</i>	<i>2</i>	<i>2</i>
<i>NSAID+paracetamol</i>	<i>1</i>	<i>1</i>
Other	5	3

Use of opioids generally not recommended in the management of acute pain (pethidine and dextropropoxyphene) was low at baseline and remained low at follow-up. Pethidine use represented 2% of opioid prescriptions at baseline and 1% at follow-up. Similarly dextropropoxyphene use (including the combined preparation with paracetamol) represented 3% and 2% of all opioids prescriptions at baseline and follow-up respectively.

In addition the practice of only prescribing PRN analgesia declined slightly. At baseline 18% of patients were prescribed PRN only analgesia compared to 13% at follow-up ($p < 0.001$).

Dose ranges and routes

It is acknowledged that use of dose ranges (e.g. 5 - 10mg) is common practice in the prescription of analgesia, particularly for 'breakthrough' or 'as required' analgesia. Whilst a dose range facilitates the tailoring of analgesia to the individual patient, it does rely on health care professionals to annotate the actual dose administered in order to provide a complete and accurate record.

At baseline 494 patients (65% of the baseline cohort) had at least one medication order that contained a dose range. In 356 (72%) of these patients the actual dose administered was annotated on the medication chart. In the follow-up audit 654 patients (71% of the follow-up cohort) had at least one

medication order that contained a dose range, 601 (92%) of these had the actual dose administered annotated on the medication chart.

It is also acknowledged that multiple routes are sometimes prescribed in a single medication order and, as in the case of dose ranges, health care professionals must annotate the actual route that each dose was administered. At baseline 408 patients (54% of baseline cohort) had at least one medication order that contained multiple routes. Of these, 245 (60%) had the actual route that the drug(s) was administered annotated on the medication chart. In the follow-up audit 588 patients (64% of follow-up cohort) had at least one medication order that contained multiple routes. Of these, 459 (78%) had the actual route that the drug(s) was administered annotated on the medication chart.

APOP Key Message:
Monitor and manage adverse events

There was no demonstrable change in practice related to monitoring and management of adverse events.

Sedation

There was no change in the % percentage of patients on opioids with at least one sedation score documented, 44% vs 48% (ns) at baseline and follow-up respectively. There was no difference in the number of patients on opioids noted to be sedated, 5% vs 6% at baseline and follow-up.

Nausea

The proportion of patients documented to have nausea without any antiemetics prescribed was low at baseline (1%) and remained low at follow-up (1%). There was an increase in the number patients on opioids that were prescribed antiemetics, 75% vs 90% at baseline and follow-up respectively.

The distribution of antiemetics prescribed remained constant across the two audits with 5-HT₃ antagonists (eg. ondansetron) the most common antiemetics prescribed - 47% of all antiemetic prescriptions, followed by metoclopramide - approximately 30% of all antiemetic prescriptions.

Discharge management

APOP Key Message:
Communicate ongoing pain management plan to both patients and primary healthcare professionals

At the point of discharge there was a significant increase in the proportion of patients prescribed analgesia with a documented pain management plan, 59% vs 37%, follow-up vs baseline respectively (p<0.001). Further details regarding

communication of the management plan and content of the plan are summarised in Table 4 below.

Table 4: Discharge Pain Management Plans

Indicator	Baseline	Follow-up
Percentage of patients prescribed analgesia at discharge that included a documented pain management plan	37%	59% (p<0.0001)
Percentage of plans that included intended duration of analgesic therapy	19%	42% (p<0.0001)
Percentage of plans communicated to the:		
<i>General practitioner</i>	77%	85% (p<0.0001)
<i>Patient</i>	74%	79% (n.s.)

The patient telephone survey results indicated no change in percentage of patients who believed their GP understood their pain needs, 72% vs 80% at baseline and follow-up respectively (ns). Similarly there was no change in the percentage of patients who were over all 'very satisfied' with their postoperative pain management, 42% vs 45% at baseline and follow-up respectively (ns).

The GP postal survey results indicated a significant increase in the perceived appropriateness by GPs of the postoperative pain management provided by the hospital, 32% vs 58% at baseline and follow-up (p<0.0001). There was also an increase in the overall satisfaction with the adequacy of communication from the hospital with 14% of GPs at baseline reporting that the communication was 'adequate' or 'very adequate'. This increased to 24% at follow-up (p<0.05).

Conclusion

APOP demonstrated moderate improvements in selected areas related to postoperative pain management. There were appreciable changes in the documentation of patient education in the pre-operative period, documentation of pain scores in the postoperative setting and documentation of pain management plans at the point of discharge.

It should be noted that a number of NSW/ACT hospitals reported initiating a number of system changes along with the educational interventions, such as revised observation charts and patient information leaflets. Some of these changes were not in place at the time that the follow-up data collection was conducted. We would suggest that these system changes, combined with the educational interventions, may result in sustained improvements in practice.

Intervention Activity Logs

A total of 813 academic detailing sessions (one-on-one visits) were conducted across NSW/ACT hospitals. Approximately half of the one-on-one visits were with nursing staff (53%), followed by doctors (42%) and pharmacists (5%). In addition there were a total 135 group sessions were conducted during the intervention period, involving a total of 1427 hospital staff. The group size ranged 2 to 40 people per session. A detailed summary of intervention activity is outlined in the tables below.

Intervention Activity Summary: Academic Detailing (one-on-one)

Hospital	Number of visits	Type of Health Care Professional													Av duration (mins)
		Doctors					Nursing						Pharmacy		
		Intern	Resident	Registrar	Physician	Other	NUM	CNC/CNE	CNS	RN	EN	Other	Pharmacist	Other	
1	26	5	5	5	1	-	2	2	2	4	-	-	-	-	15
2	44	7	8	-	1	-	1	21	-	3	-	-	3	-	19
3	224	31	32	7	10	24	8	22	15	45	20	-	10	-	30
4	44	-	-	-	3	2	3	3	5	28	-	-	-	-	15
5	15	5	-	4	-	5	-	1	-	-	-	-	-	-	24
6	14	-	3	-	3	-	2	3	-	-	-	-	3	-	20
7	74	-	2	-	23	-	6	7	3	25	4	-	4	-	21
8	35	5	8	19	3	-	-	-	-	-	-	-	-	-	25
9	25	-	-	-	-	2	3	1	3	10	1	-	5	-	20
10	20	-	1	-	1	6	7	4	-	-	-	-	1	-	10
11	6	-	-	-	1	2	-	1	-	-	-	-	2	-	10
12	56	-	6	9	10	3	5	-	5	15	-	1	2	-	17
13	17	2	-	-	5	1	3	1	1	2	-	-	2	-	41
14	13	-	2	2	3	-	-	1	2	-	2	-	1	-	28
15	68	-	5	7	5	-	3	3	6	30	6	-	-	-	8
16	41	-	2	7	3	5	3	5	1	5	4	-	6	-	14
17	35	-	-	6	-	12	-	5	2	10	-	-	-	-	31
18	23	5	-	7	2	4	1	1	-	-	-	1	2	-	35
19	28	2	-	6	3	-	2	2	2	6	4	-	1	-	21
Total	805	62	74	79	77	66	49	83	47	183	41	2	42	-	21 mins

Intervention Activity Summary: Group Sessions

Hospital	Session		Type of Health Care Professional												Total					
	Number of sessions	Session number	Doctors					Nursing					Pharmacy							
			Intern	Resident	Registrar	Physician	Other	NUM	CNC/CNE	CNS	RN	EN	Other	Pharmacist		Other				
1	x	x	16					56					12		84					
			2	16	1	13	13	-	-	-	-	-	-	-	-	-	-	-	26	
					2	-	-	-	20	-	-	-	-	-	-	-	-	-	-	20
					3	-	-	-	-	-	-	-	7	-	-	-	-	-	-	7
					4	-	-	-	-	-	1	-	-	6	1	-	-	-	-	8
					5	-	-	-	-	-	-	-	-	6	-	-	-	-	-	6
					6	-	-	-	-	-	-	-	-	5	2	-	-	-	-	7
					7	-	-	-	-	-	-	1	-	5	1	-	-	-	-	7
					8	-	-	-	-	-	-	-	1	7	1	-	-	-	-	9
					9	-	-	-	-	-	-	-	1	1	3	-	-	-	-	5
					10	-	-	-	-	-	-	1	-	4	2	-	-	-	-	7
					11	-	-	-	-	-	-	-	1	6	1	-	-	-	-	8
					12	-	-	-	-	-	-	-	-	1	7	2	-	-	-	10
					13	-	-	-	-	-	-	-	-	-	6	-	-	-	-	6
					14	-	-	-	-	-	-	-	-	-	3	-	-	-	-	3
					15	-	-	-	-	-	-	-	-	-	4	-	-	-	-	4
					16	-	-	-	-	-	-	-	-	-	1	1	-	-	-	2
3	8	1	-	-	-	-	-	-	10	-	-	-	-	-	-	10				
		2	7	5	-	-	-	1	6	-	17	-	-	-	-	36				
		3	-	-	-	-	-	-	-	-	15	5	-	-	-	20				
		4	-	-	-	-	-	-	-	-	33	5	-	-	-	38				
		5	-	-	-	-	-	-	-	-	-	-	7	-	-	7				
		6	-	-	-	-	-	-	-	-	-	-	7	-	-	7				
		7	-	-	-	1	-	-	-	-	32	7	-	-	-	40				
		8	-	-	-	-	-	-	-	-	14	4	-	-	-	18				
4	4	1	-	-	-	-	-	-	-	-	32	-	-	-	-	32				
		2	-	-	-	-	-	-	-	18	-	-	-	-	18					
		3	-	-	-	4	2	-	2	3	1	-	-	-	12					
		4	-	-	-	-	-	-	1	-	8	-	-	-	9					
5	13	1	-	-	-	-	3	-	-	-	-	-	-	-	-	3				
		2	-	-	-	-	-	-	-	-	4	-	-	-	-	4				
		3	-	-	-	-	-	-	1	4	-	-	-	-	-	5				
		4	-	-	-	-	-	-	-	-	3	3	-	-	-	6				
		5	-	-	-	-	-	-	-	1	4	-	-	-	-	5				
		6	-	-	-	-	-	-	-	-	3	-	-	-	-	3				
		7	-	-	-	-	-	1	-	-	7	1	-	-	-	9				
		8	-	-	-	-	-	-	-	-	3	3	-	-	-	6				
		9	-	-	-	-	-	-	-	-	-	18	-	-	-	18				
		10	2	-	-	-	-	-	-	-	-	-	-	-	-	2				
		11	-	-	-	-	-	-	-	-	11	-	-	-	-	11				
		12	-	-	-	-	-	1	1	-	-	-	-	-	-	2				
		13	-	-	2	5	-	-	1	1	2	-	-	-	-	11				
6	8	1	-	-	-	-	-	-	-	-	-	-	12	-	12					
		2	-	-	-	-	-	-	-	2	-	-	-	-	2					

		3	-	-	-	-	-	1	2	-	-	-	-	-	-	3	
		4	-	-	-	-	-	-	-	-	-	-	-	17	-	17	
		5	-	-	-	-	-	-	-	10	2	-	-	-	-	12	
		6	-	-	-	-	-	-	-	8	-	-	-	-	-	8	
		7	-	-	-	-	-	-	-	15	4	-	-	-	-	19	
		8	2	-	-	-	-	-	-	-	-	-	-	-	-	2	
7	18	1	-	-	-	-	-	-	-	1	4	-	-	-	-	5	
		2	-	-	-	-	-	-	10	-	-	-	-	-	-	-	10
		3	-	-	-	-	-	-	-	-	-	-	-	17	-	-	17
		4	-	-	-	-	-	-	-	-	10	-	-	-	-	-	10
		5	-	-	-	-	-	-	-	1	-	8	1	-	-	-	10
		6	-	-	-	-	-	-	-	1	-	10	-	-	-	-	11
		7	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2
		8	-	-	-	-	-	-	-	-	-	-	-	-	10	-	10
		9	-	-	-	-	-	-	1	1	1	12	-	-	-	-	15
		10	-	-	-	-	-	-	-	-	-	13	3	-	-	-	16
		11	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
		12	-	-	-	-	-	-	-	-	1	7	-	-	-	-	8
		13	-	-	-	-	-	-	-	-	-	12	-	-	-	-	12
		14	-	-	-	-	-	-	-	1	-	6	-	-	-	-	7
		15	-	-	-	-	-	-	-	-	-	9	-	-	-	-	9
		16	-	-	-	-	-	-	-	-	-	5	1	-	-	-	6
		17	-	-	-	-	-	-	-	-	-	17	-	-	-	-	17
		18	-	-	-	-	-	-	-	-	-	10	-	-	-	-	10
8	10	1	-	-	-	-	-	-	-	-	11	-	-	-	-	11	
		2	-	-	-	-	-	-	-	-	6	-	-	-	-	6	
		3	-	-	-	-	-	-	-	-	3	3	-	-	-	6	
		4	-	-	-	-	-	-	-	-	5	1	-	-	-	6	
		5	-	-	-	-	-	-	-	-	3	-	-	-	-	3	
		6	-	-	-	-	-	-	-	-	4	-	-	-	-	4	
		7	-	-	-	-	-	-	-	-	8	-	-	1	-	9	
		8	-	-	-	-	-	-	-	-	5	-	-	1	-	6	
		9	-	-	-	-	-	-	-	-	4	-	-	-	-	4	
		10	-	-	-	-	-	-	-	-	3	-	-	-	-	3	
9	2	1	-	1	-	-	-	-	-	6	2	-	1	-	10		
		2	-	-	-	-	-	2	1	1	8	-	-	-	-	12	
10	2	1	-	-	-	-	-	-	-	8	-	-	-	-	8		
		2	-	-	-	-	-	-	-	16	-	-	-	-	16		
11	2	1	-	-	-	-	-	-	-	4	4	-	-	-	8		
		2	-	-	-	-	-	-	-	16	4	-	-	-	20		
12	10	1	-	-	-	-	-	-	-	13	4	-	-	-	-	17	
		2	-	6	3	1	1	-	1	-	-	-	-	1	-	13	
		3	-	-	-	-	-	-	-	-	3	-	-	-	-	3	
		4	-	-	-	-	-	-	-	-	19	4	-	-	-	23	
		5	-	-	-	-	-	-	2	-	4	14	-	-	-	20	
		6	-	-	-	-	-	-	-	-	5	2	-	-	-	7	
		7	-	-	-	-	-	-	-	-	1	3	-	-	-	4	
		8	-	-	-	-	-	-	-	-	-	5	2	1	-	8	
		9	-	-	-	-	-	-	-	-	-	3	-	-	-	3	
		10	-	-	-	-	-	-	1	-	-	13	3	1	-	18	
13	4	1	3	-	1	2	4	-	-	-	1	2	-	-	2	15	
		2	-	-	-	-	-	-	-	-	3	-	-	-	-	3	
		3	-	-	-	-	-	-	-	-	8	-	-	-	-	8	

		4	-	-	-	-	-	-	-	-	10	-	-	-	-	10
14*	6	1	-	-	-	-	-	7	-	1	-	-	3	-	-	11
		2	-	-	-	-	-	-	4	-	-	-	-	-	-	4
		3	-	-	-	-	-	-	-	-	-	-	-	6	-	6
		4	-	-	-	-	-	1	3	4	2	-	1	-	-	11
		5	-	-	-	-	-	4	1	1	1	-	-	-	-	7
		6	-	-	-	1	-	1	2	1	5	4	-	-	-	14
15	3	1	-	-	-	-	-	-	-	-	-	-	5	-	-	5
		2	-	-	-	-	-	-	1	-	-	-	5	-	-	6
		3	-	-	-	-	-	-	-	-	7	4	-	-	-	11
16	2	1	-	2	3	3	1	2	2	-	1	-	6	-	-	20
		2	7	-	-	-	-	-	-	-	-	-	-	-	-	7
17	9	1	-	-	-	-	-	-	-	-	-	-	-	8	-	8
		2	-	-	-	-	-	-	7	-	-	-	-	-	-	7
		3	-	-	-	-	-	-	14	-	-	-	-	-	-	14
		4	-	-	-	-	-	-	2	-	21	-	-	-	-	23
		5	-	-	-	-	-	-	1	-	5	5	-	-	-	11
		6	-	-	-	-	-	-	-	-	4	2	-	-	-	6
		7	-	-	-	-	-	-	1	-	5	1	-	-	-	7
		8	-	-	-	-	-	-	-	-	7	-	-	-	-	7
		9	-	-	-	-	-	-	1	-	10	6	-	-	-	17
18	17	1	-	-	3	2	-	-	-	-	-	-	-	-	-	5
		2	-	-	-	-	-	-	-	-	-	-	-	5	-	5
		3	-	-	-	-	-	-	-	-	15	-	-	-	-	15
		4	-	-	-	-	-	-	-	-	20	-	-	-	-	20
		5	3	2	1	-	-	-	-	-	-	-	-	-	-	6
		6	-	-	-	-	-	-	-	-	4	-	-	-	-	4
		7	-	-	-	-	-	-	-	-	4	-	-	-	-	4
		8	-	-	-	-	-	-	-	-	6	1	-	-	-	7
		9	-	-	-	-	-	-	-	-	3	-	-	-	-	3
		10	-	-	-	-	-	-	-	-	6	1	-	-	-	7
		11	-	-	-	-	-	-	-	-	1	4	2	-	-	7
		12	-	-	-	-	-	-	-	-	1	7	-	-	-	8
		13	3	-	-	-	-	-	-	-	-	-	-	-	-	3
		14	-	-	-	-	-	-	-	-	-	-	-	9	-	9
		15	-	-	-	-	-	-	-	-	-	6	4	-	-	10
		16	4	-	4	4	-	-	-	-	-	-	-	-	-	12
		17	-	-	1	-	1	-	-	-	-	-	-	-	-	2
19	1	1	2	-	1	-	-	2	-	1	2	1	-	-	9	
Total	135	Medical = 165					Nursing = 1146					Pharmacy = 116		1427		

*plus one group session with 6 physiotherapists

4. Acknowledgements

NSW TAG would like to thank the following groups and individuals:

Hospital project teams for their time and effort given to the APOP project. In particular we would like to thank all the hospital project coordinators who were responsible for managing local project activity and reporting to NSW TAG.

Members of the NSW APOP Reference Committee for their advice and guidance in the planning stages of the project.

NSW APOP Reference Committee:

Dr Laura Ahmad, Geriatrician, Concord Hospital

A/Professor Milton Cohen, Pain specialist, St. Vincents Hospital

Dr Chris Fenn, General Practitioner, Moruya

Ms Linda Gaudins, Chair NSW TAG Drug Use Evaluation Support Group

Ms Aine Heaney, Pain Pharmacist, Sacred Heart

Dr Jonathan de Lima, Staff Anaesthetist, Childrens Hospital Westmead

Ms Judith Mackson, National Project Manager, National Prescribing Service

Dr Michelle Moyle, Anaesthetic Fellow, St Vincents Hospital

Ms Jenni Prince, Clinical Nurse Consultant, Northern Rivers Area Health Service

Dr Sallie Pearson, Academic, Population Health and Use of Medicines Unit

Dr Jenny Stevens, Anaesthetic Fellow, St Vincents Hospital

Professor Allan Spigelman, Professor of Surgery, St. Vincents Hospital

Dr Emily Stimson, Junior medical officer

Ms Sally Wilson, Clinical Nurse Consultant, Royal Hospital for Women.

State-based project teams we have collaborated with through the APOP project:

Victorian Department of Human Services/Victorian Drug Use Evaluation Group

South Australian Therapeutic Advisory Group/Department of Health

UMORE, Tasmanian School of Pharmacy, University of Tasmania

School of Pharmacy, University of Queensland.

National APOP Reference Committee representing the Faculty of Pain Medicine of the Australian and New Zealand College of Anaesthetists.

National Prescribing Service for their ongoing funding and support of APOP and other quality improvement activities across Australian hospitals.