

Process of Pharmaceutical Review

Follow-up Audit Report
2011

Clinical Quality Improvement Directorate
Office of Safety and Quality in Healthcare

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EXECUTIVE SUMMARY

The WA Pharmaceutical Review Policy, launched in March 2007, consists of five standards:

1. Chart Review,
2. Medication Reconciliation on Admission,
3. Medication Education during Hospitalisation and on Discharge,
4. Discharge Process: Communication with General Practitioners and other Health Professionals, and
5. Quality Activities Promoting Medication Safety.

A Pharmaceutical Review Baseline Audit was conducted over a one-month period in July 2007 which assessed compliance to these five standards. A total of 18 sites participated in the 2008 audit (11 metropolitan and 7 country sites). Data was captured for 1459 patients, with 44% being identified as high-risk patients. Of the sites with clinical pharmacist services, the pharmacist:bed ratio ranged from 1:38 to 1:178.

The results of the Pharmaceutical Review Baseline Audit indicate that there was significant variation between clinical practice in WA public hospitals and the standards outlined in the WA Pharmaceutical Review Policy. The Baseline Audit Report September 2008 recommended that the Department of Health undertake a state-wide audit to reassess compliance with the Pharmaceutical Review Policy to verify implementation of the recommendations of this audit within 24 months of the publication.

This Follow-up Audit Report outlines the results of the Follow-up Audit 2010, a mandatory audit undertaken by the same 18 hospitals in the original baseline audit using the same audit tool to allow direct comparison. Of the 6007 patients admitted to a WA public hospital during the audit period 22% (1301) of admissions were captured for auditing over the sample period. Of the sites with clinical pharmacy services, the pharmacist : bed ratio for this audit ranged from 1:12 to 1:123.

Compliance with Standard 1 requires all inpatient medication charts to be reviewed ideally on a daily basis.

- An overall improvement was noted with a 15% increase (65%) in patients receiving a chart review with a 13% increase (78%) in high-risk patients receiving a chart review (compared with 50% and 65% respectively for 2008).
- Of patients that received a chart review, approximately 78% (compared with 79% in 2008) were reviewed within one day of admission. This is in light of increased numbers of patients admitted to hospital and overall shorter patient bed days.

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- There were no significant differences between the percentages of chart reviews conducted on each weekday; however there was a considerable reduction in chart review activity on the weekend.
- Compliance with completing the *adverse drug reaction (ADR) section* on the National Inpatient Medication Chart (NIMC) improved significantly compared to the baseline audit, although there is still capacity to further improve documentation of ADRs. The adverse drug reaction section was completed fully for 73% of patients (35% in 2008).
- This demonstrates a significant improvement in documentation of ADRs and validates the need for Area Health Services to provide increased resources to enable chart review to be completed for every patient, especially high-risk patients to continue to improve this important aspect of medication safety.

Compliance with Standard 2 requires medication reconciliation, including an accurate medication history, to be conducted for all inpatients, ideally within 24 hours of admission.

- Approximately three quarters (77%) of the audit population had a medication history documented increasing to 86% for high-risk patients (68% and 81% respectively for 2008), and 90% of medication histories were documented within one day of admission (91% in 2008).
- Pharmacists were the primary health professional listed as documenting medication history at metropolitan sites, and doctors and appropriately credentialed nurses at country sites, while patients were the principal source for providing medication history information.
- The completion of Standard 2 is also facilitated by the SQulRe (Safety and Quality Investment for Reform) Program's Medication Reconciliation initiative. An improvement has been noted in this standard though there is still room for further improvement.

Compliance with Standard 3 requires that patients/carers have an understanding of their medications through medication education and provision of a medication profile on discharge.

- A marginal improvement was observed as data indicated that just over a quarter of patients (28%) who had changes to their medication management were documented as having received education on how to manage these changes correctly (19% in 2008). Medication education was reported to primarily be provided by the clinical pharmacist at metropolitan sites, and by the doctor and trainee pharmacist at country sites. This does not necessarily mean that education is not provided to patients, it could reflect a lack of documentation of patients receiving education.

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The WA Anticoagulant Medication Chart was the most consistent place of documentation due to the specific allocation on the chart for this purpose. Further investigation is required to review the need for documentation of medication counselling, and if required, where it would be most appropriate to document.

- Of those patients discharged prior to the end of the audit period, an 8% improvement was evident (24% compared with 16% in 2008) where patients were provided with a medication profile on discharge (35% for high-risk patients compared with 31% in 2008).
- However due to variable definitions of a medication profile at the various sites, the provision of medication information to a patient on discharge may be underrepresented. It is recommended that a standardised practice is adopted across all hospital sites with regards to production of medication profiles. Investment in ICT solutions, such as electronic medication management systems to allow for easy generation of electronic medication profiles from dispensing systems, is required.

Compliance with Standard 4 requires a patient's medication-related information to be provided to his or her general practitioner and other health professionals upon discharge, and a pharmacist to be involved in the medication component of the discharge summary.

- The audit data indicated that 79% of patients (70% in 2008) had a discharge summary prepared within the audit period (83% for high-risk patients - 80% in 2008). No significant change was observed in the provision of discharge summaries to general practitioners. There did appear to be an improvement in quality of medication management information in the discharge summaries and this may be attributable to the increase in pharmacist involvement in the discharge summary.

Compliance with Standard 5 requires health services to be involved in medication-related safety and quality initiatives, including detecting, reporting and analysing adverse drug reactions and participating in Quality Use of Medicines activities and drug use evaluations.

- The audit data indicated that of the 2.1% of the patient population that experienced an adverse drug reaction during their admission (2.2% in 2008), reporting of these reactions to the Adverse Drug Reaction Advisory Committee did not occur. It is recommended that ADRs which occur during the hospital admission should be reported to ADRAC and that discussion regarding standardisation across all sites of the practice of ADR documentation and reporting be undertaken.

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There has been considerable improvement in some areas of medication management since the Baseline Audit, although there are still areas that require further improvement. This improvement may reflect an increased focus and improved processes of pharmaceutical review, in part as a result of the SQUIRE Medication Reconciliation Project since 2008.

As foreseen during the policy development phase, there were considerable gaps between policy and practice. The identified gaps are the result of a number of factors, including: workforce and resource issues, a lack of knowledge/impetus to conduct certain tasks, as well as a lack of standardised documentation confirming whether the tasks have been performed.

In some areas workforce and resources have improved due to Pharmaceutical Benefits Scheme (PBS) Reform. This does not, however, address all issues in the Pharmaceutical Review Policy as some areas are still dependent upon non-pharmacist input (i.e. discharge summaries are traditionally the sole responsibility of medical practitioners).

It is of note that the audit was conducted prior to appointments of approved clinical pharmacy positions in the country hospitals. This was brought to the attention of the audit co-ordinator at the time of educating site auditors. Difficulty in recruiting pharmacists to rural sites has also been problematic. Improvements due to increased staffing resources that have recently been implemented are not reflected in this audit.

The process of pharmaceutical review is a multidisciplinary, however responsibility primarily lies with clinical pharmacists or appropriately credentialled professionals. Area Health Services must define which health professionals are 'appropriately credentialled' to undertake the pharmaceutical review process, and invest resources accordingly to build the pool of appropriately credentialled professionals to undertake pharmaceutical review activities.

Implementation and support of the Pharmaceutical Review Policy is an operational responsibility of hospitals. Area Health Services should review existing clinical pharmacy resourcing, knowledge and practices within their sites, and implement appropriate human resources, clinical policies and clinical practice improvement strategies to achieve full compliance with the standards of the policy.

The WA Department of Health can further support Pharmaceutical Review in WA hospitals through the implementation of appropriate Information and Communications Technology (ICT) mechanisms to ensure that clinical staff have access to appropriate clinical decision support tools and evidence-based practice information for pharmaceutical review.

KEY RECOMMENDATIONS - FOLLOWING 2010 AUDIT

The following are the key recommendations from the Follow-Up Audit 2010. The bolded recommendations are deemed high priority.

Section 1 - Chart Review

That Area Health Services:

- ***Implement strategies to increase the number of patients receiving a medication chart review, ensuring that high-risk patients continue to be prioritised for chart review and receive a chart review at least once daily.***
- ***Implement strategies to increase resourcing and chart review on weekends.***
- Review the timeliness of chart reviews to reduce preventable medication-related adverse events and improve patient safety.
- Identify who is to undertake the chart review at each hospital site and ensure that they are appropriately credentialed and trained to conduct the chart review effectively.
- Ensure that prescribers and pharmacists use standardised abbreviations for all medication orders on NIMC.

Section 1.4 - Allergies and Adverse Drug Reactions

That Area Health Services:

- ***Provide further education and training to relevant health practitioners to improve documentation and completion of the Allergy and Adverse Reactions (ADR) section on the NIMC.***
- Monitor and report completion of the ADR section of the NIMC and provide feedback to relevant health practitioners.
- Ensure any adverse drug reactions occurring during an admission are documented on the patient's medication chart, in the patient's medical record and reported in the patient's discharge summary and to ADRAC where appropriate.

Section 2 - Medication Reconciliation on Admission

That Area Health Services:

- ***Implement policies in all WA hospitals governing the standardised documentation of medication history at the time of hospital admission, such as the use of a Medication History Form.***

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- Identify who is to undertake the medication reconciliation at each site and ensure that they are appropriately credentialled and trained to conduct the medication reconciliation process effectively.
- Ensure that the Medication Reconciliation on Admission component of the SQuRe Medication Reconciliation CPI initiative is standardised throughout all WA hospitals by June 2012 by implementing strategies to ensure that an accurate medication history is completed for all inpatients in a timely manner, ideally within 24 hours of admission for high-risk patients.

Section 3 - Medication Education during Hospitalisation and on Discharge

That Area Health Services:

- *Develop strategies and allocate resources to support the involvement of clinical pharmacists and other credentialed health practitioners in the discharge process, including provision of medication education to patients.*
- Undertake education and monitoring activities to ensure that health practitioners document the provision of medication education and Consumer Medication Information (CMI) leaflets. Implement strategies to improve the timeliness of medication education (including medication counselling) and the provision of medication profiles to patients.

Section 4 - Discharge process: Communication with the general practitioner and other health professionals

That Area Health Services:

- *Review discharge planning and clinical handover procedures to improve communication with general practitioners and community pharmacists and improve the timeliness and accuracy of discharge summaries and medication profiles.*
- Implement strategies to increase the level of detail included in the discharge summary regarding medication changes, and facilitate the involvement of a clinical pharmacist in the medication component of the discharge summary.
- Ensure the implementation of the *Medication Reconciliation on Discharge* component of the SQuRe Medication Reconciliation CPI initiative is standardised throughout all WA hospitals by the end of June 2012.

Section 5 - Quality activities promoting medication safety

1. That Area Health Services:

- *Encourage hospitals to conduct routine review/audits of medication charts and ensure compliance in the following areas: legibility, errors on charts, dose administration times and dose omissions.*
- Develop education and promotional strategies to increase participation by health practitioners in hospital-based Quality Use of Medicine activities.

General Recommendations

That Area Health Services disseminate the findings of this report to all relevant health practitioners working within their hospitals and health services.

To support the implementation of the Pharmaceutical Review related initiatives:

- *The WA Department of Health via the Chief Information Officer, should progress the implementation of appropriate Information and Communications Technology (ICT) platforms for medication management, which are currently lacking, to ensure that clinical staff have access to appropriate clinical decision support tools, electronic medication management tools (ie medication profiles) and evidence-based practice information for pharmaceutical review and pharmacy management areas.*
- The WA Department of Health, via the Quality Improvement Directorate should consult Area Health Services to ascertain a consistent approach to documentation of medication education provision.(i.e. on the National Inpatient Medication Chart [NIMC] or a standardised Medication Management Plan [MMP])

Workforce Recommendations

That Area Health Services:

- For those hospitals not yet PBS Reform:
 - Progress the implementation of the PBS Reform Program at their hospitals, including the preparation of a business case to obtain funding under the PBS Reform Agreement to engage additional pharmacists to meet the requirements of PBS Reform.
- Implement measures to increase activities related to pharmaceutical review on weekends.

DEFINITIONS

Chart review - a review of a patient's medication chart(s) to identify potential risks associated with a patient's medications and clarify information that is not clear or legitimate. The review of the medication chart(s) may involve reference to other sources of information, such as the IV Fluid chart.

Appropriately credentialed professional - a pharmacist, doctor or nurse who has the relevant knowledge, or the ability to access relevant knowledge, about certain aspects of the medication management cycle. Assessment and monitoring of appropriate competency is at the discretion of the health service and beyond the scope of this document.

Illegible prescription - a prescription that is NOT considered to be printed legibly and has the potential to be misinterpreted. The prescription must be able to be clearly interpreted by all clinicians involved in the patient's care.

High-risk patient - a patient who meets one or more of the following criteria:

- is currently prescribed five or more medications;
- has multiple co-morbidities;
- is prescribed a medication with a narrow therapeutic index;
- is receiving therapy with high-risk drugs (such as anticoagulants and immunosuppressants);
- has symptoms suggestive of a drug-related admission; and
- is having difficulty managing medicines because of literacy, language difficulties, dexterity problems, impaired sight, dementia or other cognitive difficulties.

Medication History - the recording of all medications (including over-the-counter medications and complementary therapies) a patient is taking at the time of hospital admission or presentation. It includes recording previous adverse drug reactions and allergies and any recently ceased or changed medications.

Supplementary activities - tasks that are expected to enhance the outcome of the standard, and should be undertaken if the activity concurs with current practice and resources are available.

PBS Reform - On 28 June 2007, amendments to the National Health Act 1953 received royal assent which gave effect to a significant restructure of PBS pricing arrangements to ensure the long-term sustainability of the PBS. This restructure is referred to as PBS reform. PBS Reform grants access to items listed on the Pharmaceutical Benefits Scheme (PBS) to eligible patients in public hospitals. The agreement with the Commonwealth requires hospitals to move towards implementing the principles of the APAC Guidelines to achieve the continuum of quality use of medicines between hospital and community, published by the Australian Pharmaceutical Advisory Council (APAC) in 1998.

INTRODUCTION

In April 2004, Australia's Health Ministers agreed on a national health reform agenda. To reduce the number of adverse events and improve patient safety, eight key safety and quality initiatives were endorsed. One of these initiatives stipulated, *"To also help safer use of medicines, by the end of 2006, every hospital will have in place a process of pharmaceutical review of medication prescribing, dispensing, administration and documentation processes for the use of medicines."*¹

Each State/Territory was required to define and implement its own process of pharmaceutical review. In Western Australia (WA), the process commenced in May 2006 with an introductory workshop that established a definition of pharmaceutical review for WA Health, identified current practices of pharmaceutical review and agreed on a process for the planning and implementation of pharmaceutical review across the State.

Following the workshop, it was decided that the Ministerial Directive would be implemented in two phases in WA:

- Phase One - Development of the Pharmaceutical Review Policy, outlining the ideal standards for Pharmaceutical Review.
- Phase Two - Implementation of an audit to establish the current level of compliance by WA Health Services against the standards outlined in the Pharmaceutical Review Policy.

The WA Pharmaceutical Review Policy was completed and distributed in March 2007. The five standards for pharmaceutical review in WA are:

1. Chart Review.
2. Medication Reconciliation on Admission.
3. Medication Education during Hospitalisation and on Discharge.
4. Discharge Process: Communication with General Practitioners and other Health Professionals.
5. Quality Activities Promoting Medication Safety.

Further information about these standards is available in the Pharmaceutical Review Policy, and can be viewed online at

www.safetyandquality.health.wa.gov.au/medication/pharmaceutical_review.

When the Pharmaceutical Review Policy was being developed, Health Services advised that it was impractical for the standards within the policy to be met at the outset with current levels of resourcing. For this reason, it was agreed that a baseline audit would be undertaken in 2007

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to establish the extent of pharmaceutical review activity in WA health services and identify the gap between current practice and the required practice. This audit concentrated on quantitative rather than qualitative outcomes.

The Baseline Audit Report September 2008 recommended that the Department of Health undertook a state-wide audit to reassess compliance with the Pharmaceutical Review Policy to verify implementation of the recommendations of this audit.

This report outlines the results of the Follow-up Audit in October 2010 which was a mandatory audit undertaken by the same hospitals in the original baseline audit and used the same audit tool to allow direct comparison.

METHODOLOGY

Audit Tool

- The audit tool was developed by the Office of Safety and Quality in Healthcare in consultation with the Pharmaceutical Review Expert Advisory Group in 2007. (The audit tool is available on request from the Office of Safety and Quality.)
- The audit tool was developed in close reference to the Pharmaceutical Review Policy to ensure that the pertinent points within each standard of the policy were measured.
- The audit tool consisted of nine sections with 49 questions, categorised under each pharmaceutical review standard.
- Each hospital was required to complete a hospital demographic information sheet (Appendix 1) relating to hospital capacity, staffing levels and quality improvement activity participation.

Audit Process

- Participating hospitals were requested to nominate a Pharmaceutical Review Audit Project Lead.
- The Office of Safety and Quality in Healthcare conducted a briefing sessions for the Project Leads in September 2010. The briefing session covered the structure of the audit tool, and detailed instructions on how each section of the audit tool should be completed.
- A PowerPoint presentation and detailed guidelines were made available to Project Leads detailing the purpose of the audit and how the tool should be completed. Project Leads were encouraged to use this presentation when coaching their hospital staff on how to undertake the audit.
- The following instructions were given to hospitals about the audit process:
 - The audit will be conducted over a one-month period, Sunday 17 October 2010 to Sunday 14 November 2010.
 - A random selection of newly admitted patients between Sunday 17 October 2010 to Sunday 24 October 2010 are to have the audit tool attached to their file notes.
 - The audit tool should be kept with the patient's notes until the patient is discharged from hospital. If the patient is not discharged by the end of the audit period (14/11/2010), tick the '*Not discharged prior to audit completion date*' box.
 - The purpose of this audit is to gauge the current level of compliance by WA Health Services against the five standards of the WA Pharmaceutical Review Policy. To

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ensure that we have accurate data, do not alter your behaviour for patients that are being audited.

Data Entry and Analysis

- At the conclusion of the audit period, the audit tools were collated by Project Leads and returned to the Office of Safety and Quality in Healthcare for data entry.
- Data was entered into a Pharmaceutical Review Database.

Participating Sites and Sample Group

- Eleven metropolitan sites participated in the audit.
- Seven country sites participated in the audit.
- A total of **1301 patients** were audited, **22%** of admissions for the one-week data collection period. (6007 patients admitted over audit period)
- High-risk patients constituted 53% of the sample group (Table 1).

Table 1: Participating Sites and Sample Group

Hospital	Patients Audited	High-risk Patients Audited	Female Patients ^a	Male Patients ^a
METROPOLITAN				
Armadale Health Service	55	34 (62%)	28 (51%)	27 (49%)
Bentley Health Service	43	30 (70%)	21 (49%)	22 (51%)
Fremantle Health Service	113	83 (73%)	59 (52%)	54 (48%)
Graylands Health Service	26	17 (65%)	9(34%)	17 (66%)
King Edward Memorial Hospital	113	17 (15%)	113 (100%)	0 (0%)
Osborne Park Hospital	79	18 (23%)	58 (73%)	21 (27%)
Peel and Rockingham Kwinana	34	4 (12%)	24 (71%)	10 (29%)
Princess Margaret Hospital	106	71 (67%)	41 (39%)	65 (61%)
Royal Perth Hospital	127	85 (67%)	77 (61%)	50 (39%)
Sir Charles Gairdner Hospital	182	143 (79%)	81 (44%)	101 (56%)
Swan Kalamunda Health Service	75	54 (72%)	43 (57%)	32 (43%)
COUNTRY				
Albany Hospital	110	57 (52%)	51 (46%)	59 (54%)
Broome Hospital	28	12 (43 %)	17 (61%)	11 (39%)
Bunbury Regional Hospital	78	29 (37%)	43 (55%)	35 (45%)
Geraldton Hospital	62	29 (47%)	31 (50%)	31 (50%)
Kalgoorlie Hospital	40	8 (20%)	23 (58%)	17 (42%)
Narrogin Regional Hospital	13	0(0%)	10 (83%)	3 (17%)
Port Hedland Hospital	17	9 (53%)	8 (47%)	9 (53%)
Total	1301	700 (53%)	737 (57%)	564 (43%)

^a146 patients (10%) did not have gender documented.

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Sample Group Age Distribution

Table 2: Sample Group Age Distribution in Years

Age Group ^a	No. of Patients	Group Mean Length of Stay (days) ^b	Median Length of Stay (days)	Age Group ^a	No. of Patients	Group Mean Length of Stay (days) ^b	Median Length of Stay (days)
0 - 9	132	3.12 (n=129)	2	50 - 59	144	4.89 (n=135)	3
10 - 19	67	3.84 (n=67)	2	60 - 69	155	4.89 (n=140)	3
20 - 29	138	3.62 (n=130)	3	70 - 79	186	6.28 (n=170)	4
30 - 39	156	4.13 (n=141)	3	80 - 89	148	7.18 (n=131)	5
40 - 49	118	4.20 (n=113)	2	90 - 99	44	6.61 (n=41)	4

^a 16 patients (1.3%) did not have their date of birth documented.

^b 88 patients (6.7%) were not discharged prior to the end of the audit period and were not included in calculating mean length of stay. The number of patients included in the average length of stay calculation is presented in brackets.

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Participating Sites Demographic Details

Table 3: Hospital Demographic Details^a

Hospital	# Beds	# Patients Admitted	# Audit Attached	# Audit Completed	# Audit Incomplete	% Audited
Armadale Health Service	262	278	55	55	0	19.7%
Bentley Health Service	235	206	43	43	0	20.8%
Fremantle Health Service	550	873	116	113	3	13.0%
Graylands Health Service	242	26	26	26	0	100.0%
King Edward Memorial Hospital	252	181	120	113	7	60.7%
Osborne Park Hospital	229	92	82	79	3	85.8%
Peel and Rockingham Kwinana	110	250	(34) ^b	34	-	13.6%
Princess Margaret Hospital	247	313	128	106	22	33.8%
Royal Perth Hospital	746	894	128	127	1	14.1%
Sir Charles Gairdner Hospital	523	1568	182	182	0	11.5%
Swan Kalamunda Health Service	213	215	90	75	15	34.8%
Albany Hospital	108	278	(110) ^b	110	-	39.5%
Broome Hospital	35	113	28	28	0	24.7%
Bunbury Regional Hospital	113	391	78	78	0	20.2%
Geraldton Hospital	66	123	65	62	3	49.5%
Kalgoorlie Hospital	89	101	60	40	20	39.6%
Narrogin Regional Hospital	51	67	(13) ^b	13	-	19.4%
Port Hedland Hospital	40	38	(17) ^b	17	-	44.7%
Total	4087	6007	1375	1301	74	Mean: 35.8%

^a The data above was supplied by the hospitals participating in the audit collected using the Hospital Demographics Information Sheet (Appendix 2), unless more accurate data was obtained during data analysis.

^b In the section “# Audit Attached” some hospitals did not provide this figure and it was assumed that the total number completed was the total number attached.

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Participating Sites Demographic Details

Table 4: Hospital Pharmacy Service Capacity^a

Hospital	1. Authorised FTE Pharm	2. Filled FTE Pharm	3. # Pharm	4. Authorised FTE Clin Pharm	5. Filled FTE Clin Pharm	6. # Clinical Pharm ^b	7. # Clinical Tech ^b	8. Clinical Pharm:bed
Armadale Health Service	6.75	6.75	7	4.5	4.5	5	0	1:58
Bentley Health Service	5	6	6	4	4	4	0	1:58
Fremantle Health Service	27	27	41	13	13	22	1	1:35
Graylands Health Service	12	11.7	12	6	5.7	6	0	1:40
King Edward Memorial Hospital	6.8	6.8	11	2.6	2.6	4	1	1:75
Osborne Park Hospital	9	9	11	7	7	10	0	1:33
Peel and Rockingham Kwinana	6	6	7.5	-	3	3.5	0	1:30
Princess Margaret Hospital	17	17	25	4.5	4.5	6	0.3	1:55
Royal Perth Hospital	69	63	63	36	25	28	1	1:39
Sir Charles Gairdner Hospital	43	43	49	18	18	19	0	1:28
Swan Kalamunda Health Service	7	7	7	7	7	7	0	1:30
Albany Hospital	2.2	2.2	3	0	0	0	0	-
Broome Hospital	1	0	0	0	0	na	0	1:35
Bunbury Regional Hospital	2	2	2	0	0	0	0	-
Geraldton Hospital	2	2	2	1	1	1	0	1:123
Kalgoorlie Hospital	2	2	2	0	0	0	0	0
Narrogin Regional Hospital	1.1	1.1	1	0	0	0	0	1:51
Port Hedland Hospital	2	2	2	1	1	1	0	1:30

^a The data above was supplied by the hospitals participating in the audit collected using the Hospital Demographics Information Sheet (Appendix 2), unless more accurate data was obtained during data analysis.

^b Number of clinical pharmacists/clinical technicians includes full-time, part-time and casual. Country hospitals do not necessarily have specific FTE for clinical pharmacy - all FTE do some clinical.

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Participating Sites Demographic Details

Table 5: Quality Use of Medicines Activities within the Hospital Service

Hospital	Does Hospital have a committee responsible for QUM?	Does Hospital promote participation in QUM activities?	Does Hospital participate in drug use evaluations?	Does Hospital conduct routine reviews/audit of chart for features such as legality, errors, dose administration times and dose omissions?	If YES are the review/audit of charts endorsed by an appropriate QA committee?	Are hospital staff involved with other hospital and state medication safety working groups?
Armadale Health Service	Y	Y	Y	Y	Y	Y
Bentley Health Service	Y	Y	Y	Y	Y	Y
Fremantle Health Service	Y	Y	Y	Y	Y	Y
Graylands Health Service	N	Y	Y	Y	N	N
King Edward Memorial Hospital	Y	Y	Y	Y	Y	Y
Osborne Park Hospital	Y	Y	N	Y	Y	Y
Peel and Rockingham Kwinana	Y	Y	Y	Y	Y	Y
Princess Margaret Hospital	N ^b	Y	Y	Y	N	Y
Royal Perth Hospital	Y	Y	Y	N	NA	Y
Sir Charles Gairdner Hospital	Y	Y	Y	Y	Y	Y
Swan Kalamunda Health Service	Y	Y	Y	Y	Y	Y
Albany Hospital	Y	Y	N	Y	N	Y
Broome Hospital	N	Y	N	Y	N	Y
Bunbury Regional Hospital	Y	Y	N	Y	N	Y
Geraldton Hospital	Y	Y	Y	Y	Y	Y
Kalgoorlie Hospital	N	N	N	N	NA	Y
Port Hedland Hospital	N	N	Y	Y	N	N
Total	12/17	15/17	12/17	15/17	9/17	15/17

^a The data above was supplied by the hospitals participating in the audit collected using the Hospital Demographics Information Sheet (Appendix 2), unless more accurate data was obtained during data analysis.

^b Various committees are informed of incidents/errors etc, such as Drug and Therapeutics Committee, Medical Advisory Committee, but no single committee across the hospital. Narrogin hospital did not report this information.

RESULTS

Section 1 - Chart Review

All inpatient medication charts are to be reviewed ideally on a daily basis by an appropriately credentialed person such as a pharmacist or clinical pharmacist.

- The frequency of chart review needs to be determined by the acuity or clinical risk of the patient.
- High-risk patients require daily chart review.

Regular chart review is recommended to reduce preventable medication-related adverse events and improve patient safety. The audit ascertained if a chart review was carried out by an appropriately credentialed person as determined by each hospital. The day(s) chart review occurred was noted, as well as the compliance with a number of tasks which should occur during a chart review as per the Pharmaceutical Review Policy. The documentation of allergies on the chart was audited to review the level of completion.

Recommendations for Area Health Services:

- Implement strategies to increase the number of patients receiving a medication chart review.
- Review the timeliness of chart reviews to reduce preventable medication-related adverse events and improve patient safety.
- Ensure that high-risk patients continue to be prioritised for chart review and receive a chart review at least once daily.
- Identify who is to undertake the chart review at each hospital and ensure that they are appropriately credentialed and trained to conduct the chart review effectively.
- Implement strategies to increase resourcing and chart review on weekends.
- Provide appropriate education and training to relevant health practitioners to further improve documentation and completion of the Allergy and Adverse Reactions (ADR) section on the NIMC.
- Monitor and report completion of the ADR section of the NIMC and provide feedback to all health practitioners.

1.1. During the audit period was at least one chart review conducted during patient's admission?

- At least one chart review was conducted for approximately 65% (compared with 49.8% in 2008) of the sample group during the audit period.
- The percentage of chart reviews at the metropolitan sites was 82% (63% in 2008), compared to 20% (19% in 2008) at the country sites.
- The percentage of chart reviews state-wide increased to 78% (65% in 2008) for high risk patients - 90% (75% in 2008) at the metropolitan sites, compared to 33% (28% in 2008) at the country sites.
- Details of chart reviews at each health service are provided in Appendix 2, 3, and 4. This information does not take into account the patient's length of stay. (The average length of stay is tabulated in Appendix 4).

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- There has been a significant increase in the number of charts reviewed since the baseline audit was undertaken.

Table 6: Chart Review All Patients 2010

All Patients	Yes	No	NA ^a	Unknown	Total	Missing
Metropolitan	771 (81.8%)	168 (17.8%)	2 (0.2%)	2 (0.2%)	943	9
Country	69 (20.1%)	229 (66.8%)	9 (2.6%)	36 (10.5%)	343	6
WA State	840 (65.3%)	397 (30.9%)	11 (0.9%)	38 (2.9%)	1286	15

^a NA (Not applicable) was indicated for 11 persons, reasons given include no chart written or available for review and no regular medications charted for patient.

NOTE: At Fremantle Hospital, pharmacists did not sign pharmacist review box of the medication chart. They did sign and date each drug. These dates were recorded as the review dates - reviews occurred more frequently than documented on the chart.

Table 7: Chart Review All Patients 2008

All Patients	Yes	No	NA ^a	Unknown	Total	Missing
Metropolitan	641 (62.7%)	355 (34.7%)	22 (2.2%)	5 (0.5%)	1023	4
Country	81 (18.9%)	340 (79.4%)	7 (1.6%)	-	428	4
WA State	722 (49.8%)	695 (47.9%)	29 (2%)	5 (0.3%)	1451	8

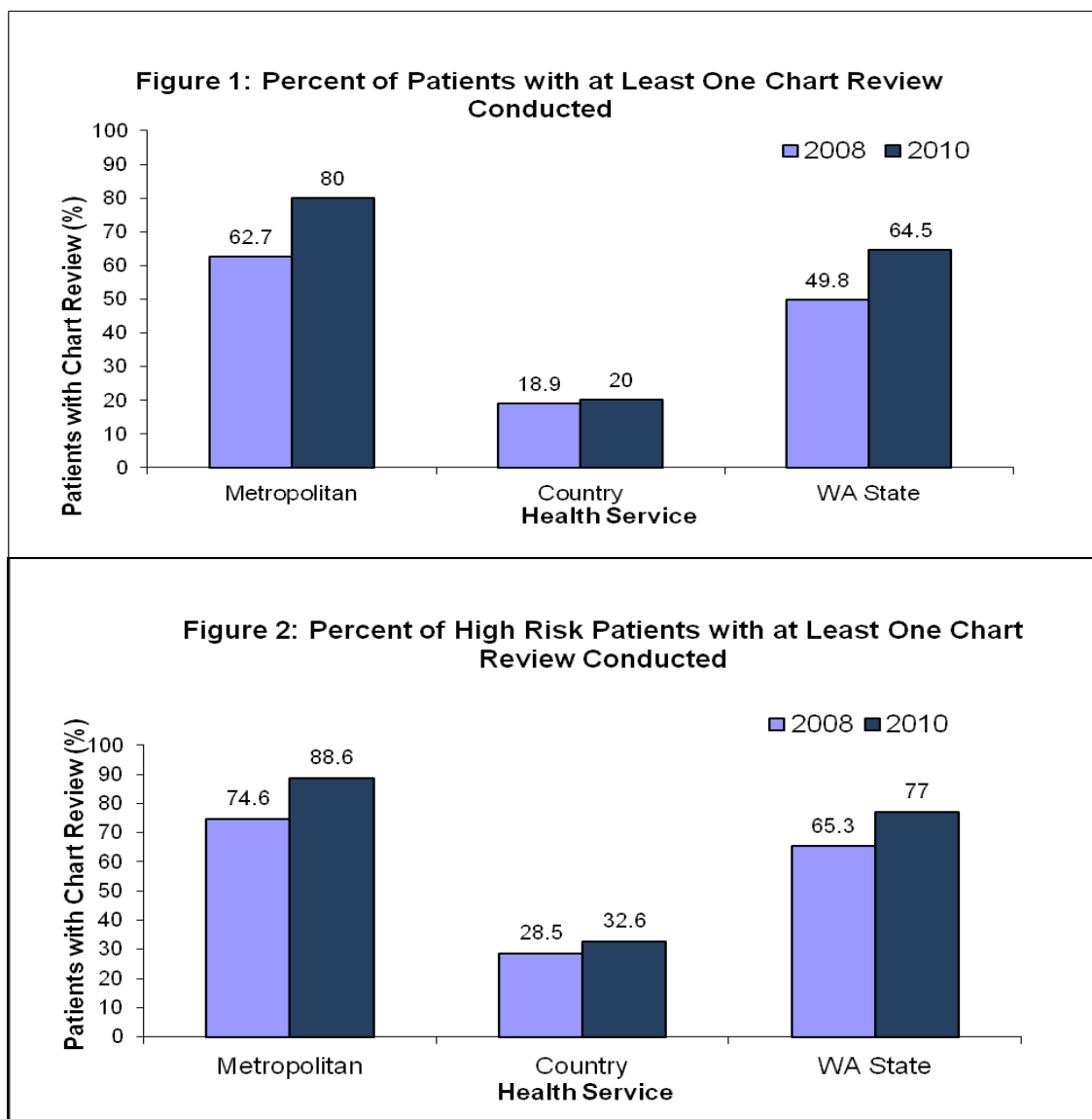
Table 8: Chart Review HIGH RISK Patients 2010

High-risk Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	494 (89.7%)	57 (10.3%)	-		551	5
Country	47 (32.6%)	90 (62.5%)	1	7 (4.8%)	144	
WA State	541 (77.8%)	147 (21.2%)	1	7 (1%)	695	5

Table 9: Chart Review HIGH RISK Patients 2008

High-risk Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	385 (74.6%)	127 (24.6%)	-	4 (0.8%)	516	
Country	37 (28.5%)	93 (71.5%)	-	-	130	1
WA State	422 (65.3%)	220 (34.1%)	-	4 (0.6%)	647	1

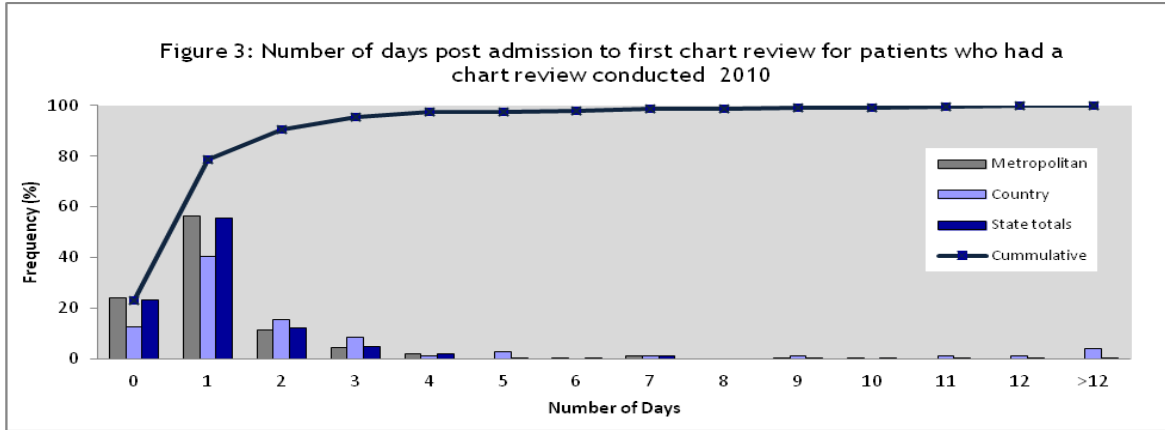
PHARMACEUTICAL REVIEW 2010 AUDIT REPORT



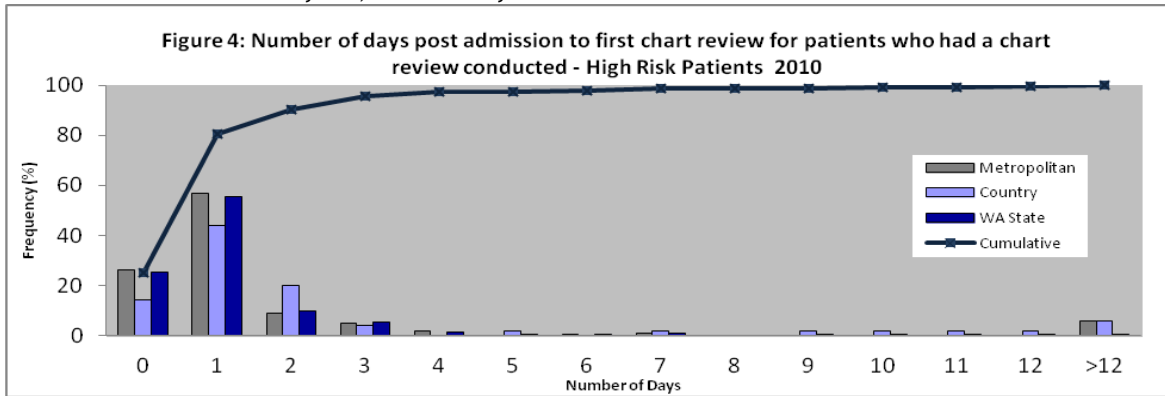
1.2. Number of days post admission to first chart review

- Of the 840 patients who had a chart review conducted in 2010, 799 audit forms identified the number of days to first chart review.
- As the date of admission and chart reviews were reported rather than the date and time, the exact time (ie within 24 hours of admission) of the initial chart review is not able to be identified. At the State level, 78% (79% in 2008) of charts were reviewed within 1 day of admission, and 90% (90% in 2008) of charts were reviewed within 2 days of admission.
- The percentage of charts reviews conducted within 1 day of admission increased to 80% (81.5% in 2008) for high risk patients, and 90% of charts were reviewed within 2 days of admission.
- Maximum number of days to chart review was 10 days (6 days in 2008) after admission at metropolitan sites and 20 days (12 days in 2008) after admission at country sites.
- Details on days to chart review at each health service are provided in Appendix 5.
- There was little difference observed between 2008 and 2010 auditing for days post admission to first chart review.

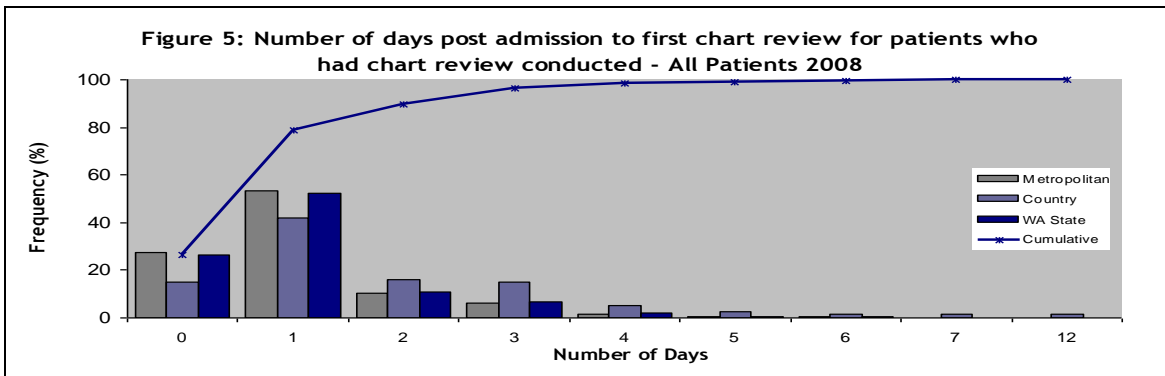
PHARMACEUTICAL REVIEW 2010 AUDIT REPORT



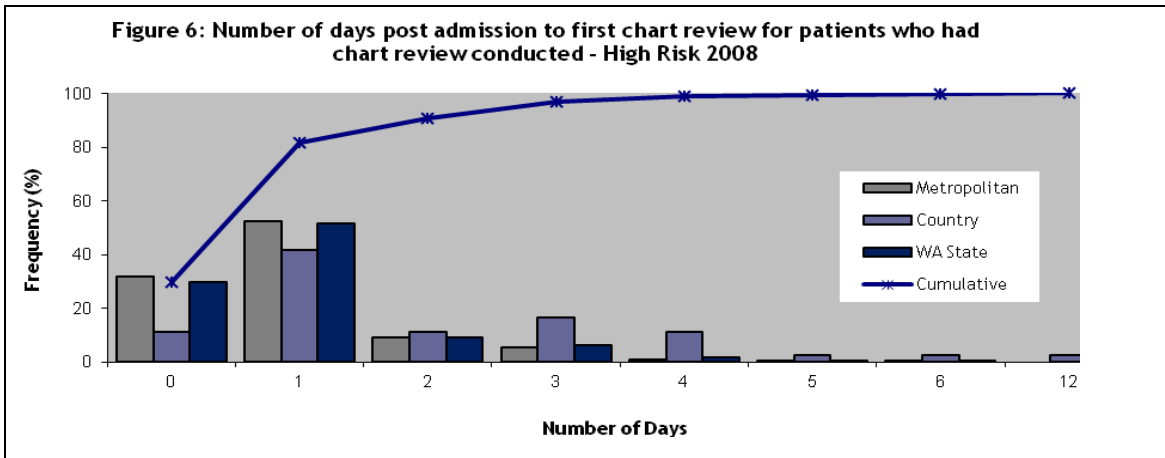
NOTE: Where the number of days = 0, this is the day of admission.



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PHARMACEUTICAL REVIEW 2010 AUDIT REPORT

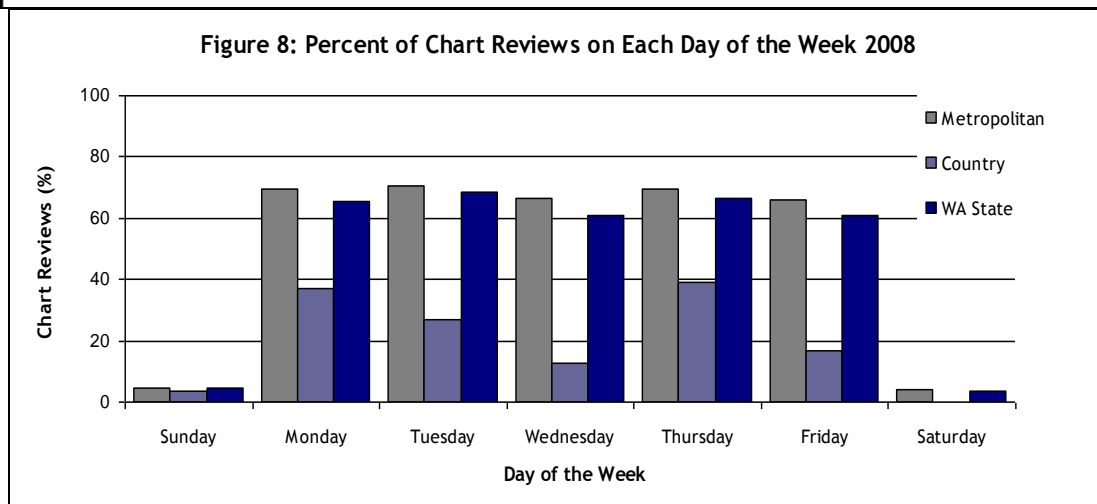
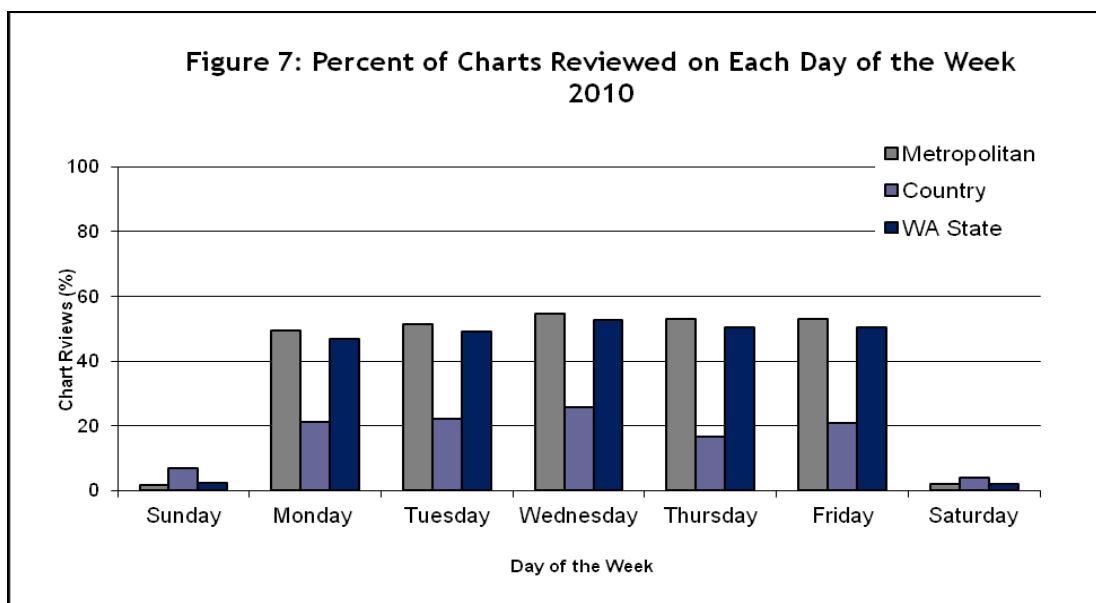
1.3. Breakdown of chart review for each day of the week

- At a State level, the breakdown of chart review for each day of the week shows little variation across the working week (47-53% reviewed for Mon-Fri) but considerably reduced on weekend days to less than 3%. This result was different to that seen in 2008 at the State level where the breakdown of chart review for each day of the week was 61 - 68% of charts reviewed Mon-Fri and less than 5% on weekend days.
- Across the State, 99.1% of charts were reviewed by a pharmacist (98% in 2008) and 0.9% by another appropriately credentialed professional.
- This data was difficult to interpret as some sites did not submit information in this section of the audit tool. It may not give a clear picture of the number of charts reviewed each day. It may also reflect that the pharmacist review section on the NIMC is underutilised, and hence this information was not available to the auditor, especially on weekends.
- Completeness of data is also a problem - some sites did not fill in this section of audit.
- There also appeared to be a higher percentage of patients seen in the country sites on weekends, from those sites that provided data in this section, the sum of patients that were in hospital was 70 over the audit period for Sundays and 4 patients documented as having had a chart review. This is compared to 796 in metropolitan hospitals and 15 patients documented as having had a chart review.

Table 10: Chart Review on Each Day of the Week - Statewide						
WA State	Total sum of days	Sum of charts reviewed by pharmacist	Sum of charts reviewed by other professional	Total number reviews	Percent of charts reviewed 2010	Percent of charts reviewed 2008
Sunday	866	18	2	20	2.3%	4.5%
Monday	1023	477	4	481	47.0%	65.7%
Tuesday	1147	562	2	564	49.1%	68.4%
Wednesday	1137	593	6	599	52.6%	61.1%
Thursday	1075	539	4	541	50.3%	66.6%
Friday	933	465	5	471	50.4%	61%
Saturday	802	17	1	18	2.2%	3.5%
Total	6983	2671	24	2694	38.5%	49.2%

Table 10 includes each chart review conducted for each patient. Those patients that had a length of stay greater than one week and had frequent chart reviews may have had the same day documented for chart review over multiple weeks.

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1.4. Allergies and Adverse Drug Reactions

NOTE: Data for the section below was missing for seven patients, therefore these patients were excluded from the sample group.

- 73.4% (compared with 35% in 2008) had the nil/NKA (No Known Allergy) box ticked and signed/dated.
- Of the sample group 26.4% (compared to 5% in 2008) had a drug/allergy documented completely ie ADR sticker attached, drug/allergen documented, reaction details documented and initialled and ADR box signed and dated by clinician.
- For 53% (60% in 2008) of the group the ADR section was incomplete in some form. All charts in 2010 had some form of ADR recorded as compared to 8% of charts in 2008 that had no information recorded.
- A considerable improvement is evident with regards to ADR documentation between 2010 and 2008.

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1.5. Completion of tasks associated with chart review for each drug prescribed on the NIMC.

To complete this question, the auditor examined each drug prescribed on the NIMC in relation to the tasks associated with chart review as per the Pharmaceutical Review Policy. These tasks included ensuring that generic drug names were used and ensuring appropriate doses for all medications. The completion of these tasks was assessed by evaluating the areas listed below (Tables 11 - 22).

If a chart review had not been conducted prior to the audit, or drugs were prescribed after the chart review had been conducted, the outcomes for each task were included in the pre chart review column. If a chart review had been conducted for the drugs prescribed, the outcomes for each task were included in the post chart review column.

If the auditor observed discrepancies and made any changes to the chart, these changes were not included in the post chart review data so not to bias the results.

Caution should be applied in interpreting the results below. Direct comparisons cannot be made between the pre and post figures due to differing sample sizes.

TABLE 11. Total Number of Prescription Entries				
	Pre		Post	
	2008	2010	2008	2010
Sample Size	1005	832	627	901
Sum of Entries	8436	6277	7005	8485

Table 12. Number of Prescription Entries Per Person That Do Not Use Generic Drug Name				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	2.02	1.5	1.46	1.02

i.e. In 2010, 1.5 prescription entries per person did not use generic drug name (or agreed exception) pre chart review compared with 1.02 prescription entries per person that did not use generic drug name (or agreed exception) after chart review.

Legal Requirements				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	0.73	0.48	0.51	0.36

Table 14. Number of Prescription Entries Per Person That Are Not in Accordance With Hospital Policy, Guidelines and Restrictions on Use.				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	1.18	0.29	0.16	0.28

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Table 15. Number of Illegible Prescription Entries Per Person				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	0.25	0.25	0.10	0.33

Table 16. Number of Potential Known Drug Interactions Identified				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	0.59	0.15	0.74	0.35

Table 17. Number of Potential Known Drug Interactions Identified with No Documented Action/Monitoring				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	0.31	0.09	0.28	0.12

Table 18. Number of Prescription Entries Per Person Not Using Approved Abbreviations as Per Published Commonly Used and Understood Abbreviations				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	0.99	1.13	0.68	1.2

Table 19. Number of Prescription Entries Per Person Not For An Appropriate Indication				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	0.24	0.05	0.20	0.04

Table 20. Number of Unintentional Dosage Discrepancies Identified Per Person				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	0.15	0.09	0.07	0.08

Table 21. Number of Unintentional Drug Form Discrepancies Identified Per Person				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	0.10	0.02	0.04	0.02

Table 22. Number of Route Discrepancies Identified Per Person				
	Pre		Post	
	2008	2010	2008	2010
Prescription entries per patient	0.37	0.08	0.26	0.1

Section 2 - Medication Reconciliation on Admission

Medication reconciliation, including an accurate medication history, is to be conducted for all inpatients by an appropriately credentialed professional, ideally within 24 hours of admission for high-risk patients. Further to obtaining a medication history from the patient/carer, one other source should be consulted to confirm the patient's current medications. This source should ideally be the patient's general practitioner, or alternatively, the community pharmacist, carer or family member.

Although the audit question for this section asked whether a medication history was completed, it was not possible for all auditors to fully assess the completeness of the medication history documented. Some audits were conducted retrospectively rather than prospectively and the patients may have been discharged prior to auditing so not available for detailed questioning about their medication history to verify the completeness of information available. For this reason, this section reviews if a medication history was documented and does not assess the extent of completion of the medication history.

Recommendations for Area Health Services:

- Identify who is to undertake the medication reconciliation at each site and ensure that they are appropriately credentialed and trained to conduct the medication reconciliation process effectively.
- Implement strategies to ensure that an accurate medication history is completed for all inpatients in a timely manner, ideally within 24 hours of admission for high-risk patients.
- Implement policies governing the standardised documentation of medication history at the time of hospital admission.
- Encourage patients to bring medications/documentation to hospital on admission to help health practitioners obtain a complete medication history.
- Ensure that the Medication Reconciliation on Admission component of the Medication Reconciliation CPI initiative is standardised throughout all WA hospitals by June 2012.

2.1. Was a medication history documented?

- A medication history was documented for 77% (68% in 2008) of patients in the sample group. (Table 23)
- Documentation of medication history increased to 86% (81% in 2008) for high-risk patients. (Table 25)
- In tables 23-26, NA (Not Applicable) was indicated for some patients - the main reason given for this was the patient was on no regular medications.
- Detail of medication history documentation at each health service are provided in Appendix 6, 7 and 8.
- An overall improvement was demonstrated for metropolitan and country hospitals in medication history documentation.

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Table 23: Was a Medication History Documented for ALL Patients? 2010

All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	819 (86.3%)	113 (11.9%)	3 (0.3%)	14 (1.5%)	949	3
Country	173 (50%)	153 (44.2%)	10 (3%)	10 (3%)	346	3
WA State	992 (76.6%)	266 (20.5%)	13 (1%)	24 (1.9%)	1295	6

Table 24: Was a Medication History Documented for ALL Patients? 2008

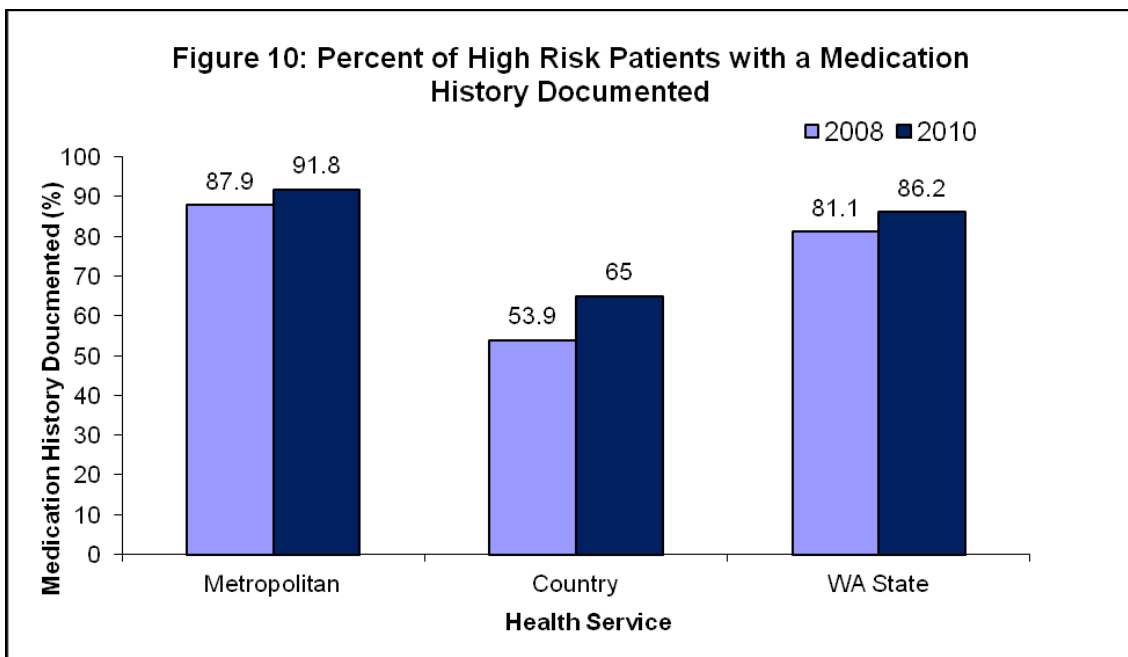
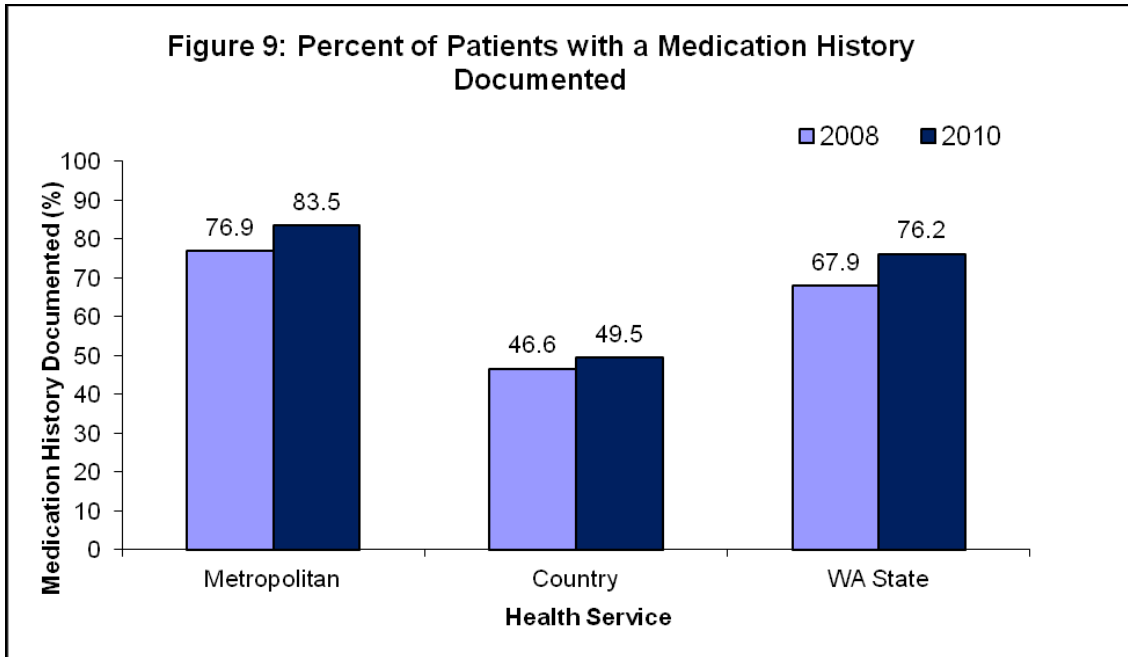
All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	780 (76.9%)	152 (15%)	65 (6.4%)	17 (1.7%)	1014	13
Country	199 (46.6%)	191 (44.7%)	35 (8.2%)	2 (0.5%)	427	5
WA State	979 (67.9%)	343 (23.8%)	100 (6.9%)	19 (1.3%)	1441	18

Table 25: Was a Medication History Documented for HIGH RISK Patients? 2010

High-risk Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	507 (91.5%)	42 (7.5%)		5 (1%)	554	2
Country	93 (65.0%)	46 (31.2%)	2 (1.4%)	2 (1.4%)	143	1
WA State	600 (86%)	88 (12.7%)	2 (0.3%)	7 (1%)	697	3

Table 26: Was a Medication History Documented for HIGH RISK Patients? 2008

High-risk Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	451 (87.9%)	55 (10.7%)	5 (1.0%)	2 (0.4%)	513	3
Country	69 (53.9%)	49 (38.3%)	9 (7.0%)	1 (0.8%)	128	3
WA State	520 (81.1%)	104 (16.2%)	14 (2.2%)	3 (0.5%)	641	6



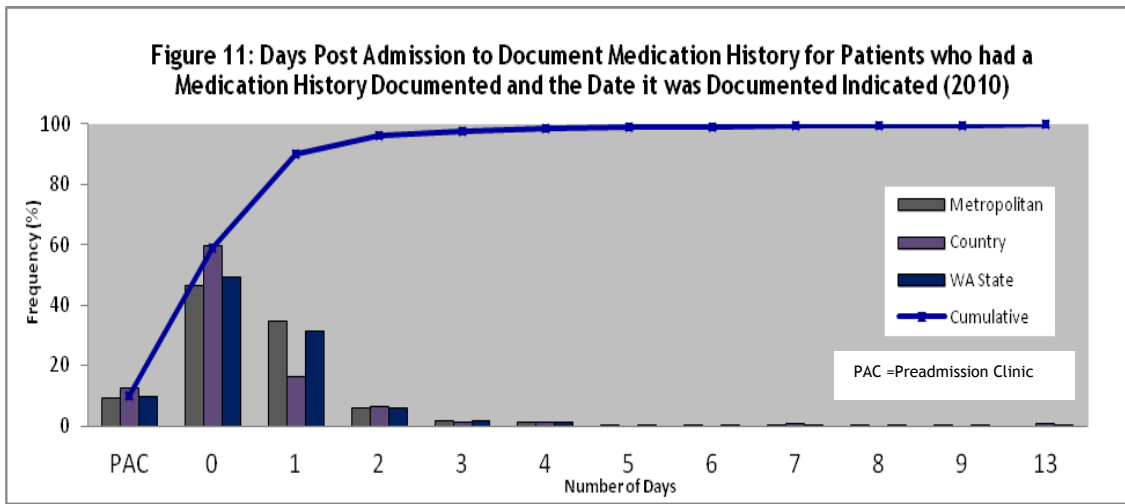
2.2. Days to document medication history

The following information is based on those charts where the date of medication history documentation was specified

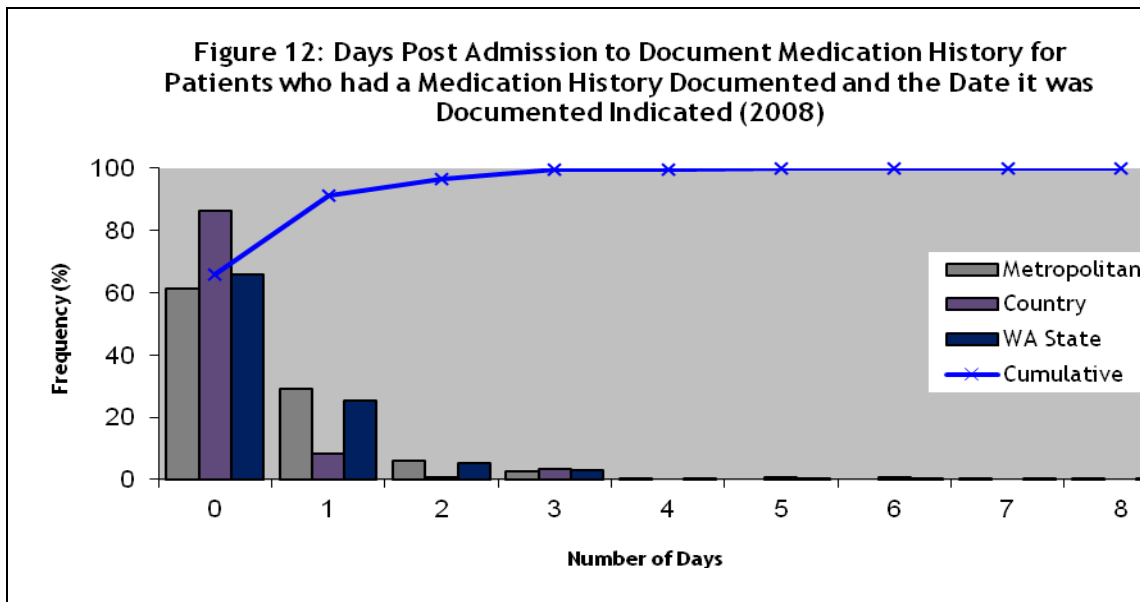
- In 2010, 96.7% of patients had a medication history documented compared with 97% in 2008.
- As the dates of admission and medication history were reported rather than the date and time, the detailed timing (i.e. within 24 hours of admission) of the medication history taking is not available.
- At the State level, 90% of patients had their medication history documented within 1 day of admission (91% in 2008), 59% (66% in 2008) on the day of admission and 31% (25% in 2008) the day after admission.

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- The maximum number of days taken to document medication history was 9 day (metro) and 13 days (country). (8 days in 2008)
- Approximately 10% of patients (7% in 2008) had their medication history documented prior to admission through the pre-admission clinics (PAC).
- Details of days to document medication history at each health service are provided in Appendix 9.
- Slight increase in time to medication history documentation could be attributed to the increased number of sources checked for best possible medication history and an increase in patients having a medication history taken in the preadmission clinic (PAC).



Note: Where the number of days = 0, this is the day of admission.



Note: Where the number of days = 0, this is the day of admission.

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2.3. Health professional documenting the medication history

- Pharmacists (55% up from 42% in 2008) predominantly documented the medication history at metropolitan sites. A concomitant reduction in doctors documenting the medication was also observed.
- Doctors (38%) predominantly documented the medication history at country sites. Appropriately credentialed nurses (33% down from 50% in 2008) were also involved in documenting a medication history at country sites.
- There was significant variation between the country health professionals documenting the medication history and metropolitan health professionals.
- This definition of appropriately credentialed nurse was interpreted on a site by site basis and inter-rater variability exists.
- The health professional documenting the medication history was unknown for 2.1% (1.2% in 2008) of the sample group.

Table 27: Health Professionals Documenting the Medication History					
2010	Pharmacist	Doctor	Appropriately Credentialed Nurse	Other	Not Identified
Metropolitan	517 (54.9%)	275 (29.2%)	120 (12.8%)	15 (1.6%)	14 (1.5%)
Country	43 (23.2%)	71 (38.3%)	61 (33%)	-	10 (5.4%)
WA State	560 (49.7%)	346 (30.7%)	181 (16.1%)	15 (1.3%)	24 (2.1%)

Table 28: Health Professionals Documenting the Medication History					
2008	Pharmacist	Doctor	Appropriately Credentialed Nurse	Other	Not Identified
Metropolitan	320 (42%)	296 (38.8%)	125 (16.4%)	16 (2.1%)	5 (0.7%)
Country	5 (3%)	61 (36.5%)	83 (49.7%)	12 (7.2%)	6 (3.6%)
WA State	325 (35%)	357 (38.4%)	208 (22.4%)	28 (3%)	11 (1.2%)

Note: These are not mutually exclusive categories, a medication history for one patient may have been documented by more than one health professional and hence included in the table twice.

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Figure 13: Health Professional Documenting the Medication History 2010

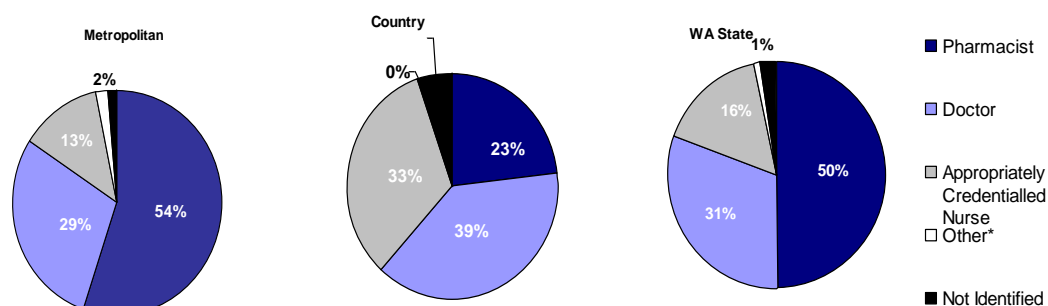
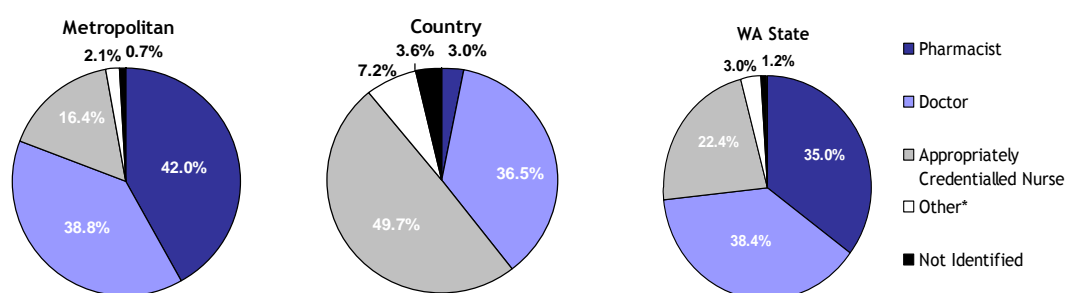


Figure 14: Health Professional Documenting the Medication History 2008



Other* - other health professionals documenting medication histories include nurses (triage enrolled nurse, admitting nurse and pharmacy students)

2.4. Source providing medication history information

- The patient was the primary source for providing information for the medication history in approximately 46% (60% in 2008) of the sample group.
- 42.8% (24% in 2008) of medication histories were obtained from more than one source thereby allowing confirmation of the information provided.
- Other sources as detailed in Table 31 accounted for 23% (19% in 2008) of the provision of medication history information.
- The source providing the medication history was unknown for 47 patients (3.3%) of the sample group. (139 patients (9.6%) in 2008)

Table 29: Source of Medication History Information 2010

2010	Patient	Carer	General Practitioner	Community Pharmacist	Other
Metropolitan	528 (44.8%)	142 (12.0%)	52 (4.4%)	165 (14.0%)	289 (24.57%)
Country	89 (50.5%)	10 (5.6%)	38 (21.6%)	14 (7.9%)	25 (14.2%)
WA State	617 (45.6%)	152 (11.2%)	90 (6.6%)	179 (13.2%)	314 (23.2%)

Note: These are not mutually exclusive categories, medication history that was confirmed by a second source would have 2 sources listed and be included in the table twice.

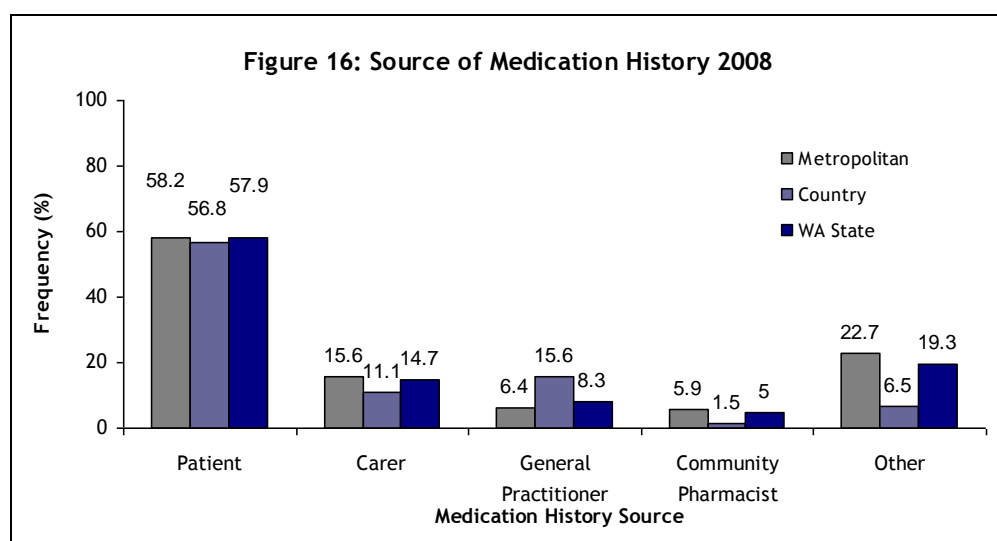
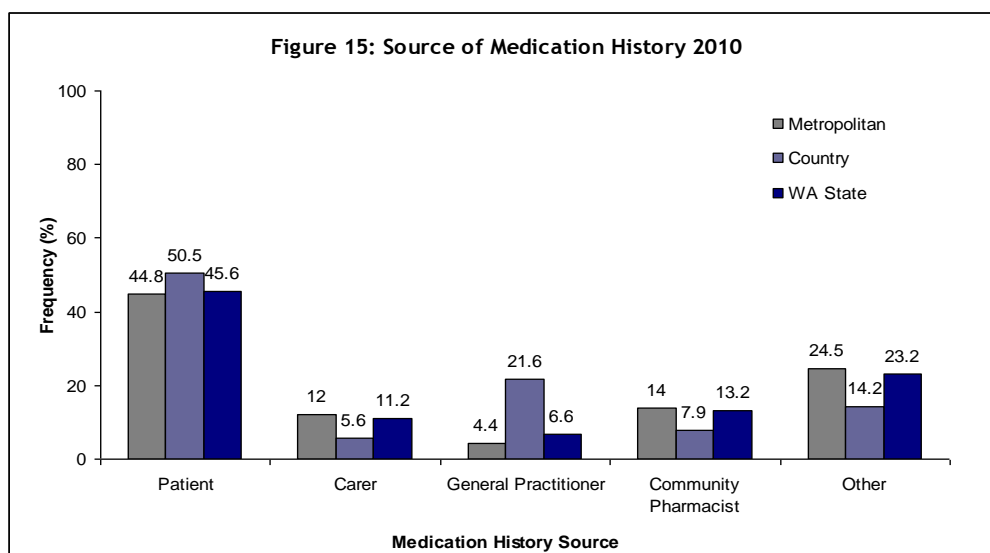
Table 30: Source of Medication History Information 2008

2008	Patient	Carer	General Practitioner	Community Pharmacist	Other
Metropolitan	454 (58.2%)	122 (15.6%)	50 (6.4%)	46 (5.9%)	176 (22.6%)
Country	113 (56.8%)	22 (11.1%)	31 (15.6%)	3 (1.5%)	13 (6.5%)
WA State	567 (57.9%)	144 (14.7%)	81 (8.3%)	49 (5.0%)	189 (19.3%)

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Table 31: Other category responses - medication history source

Copy of script on patient's file	Past medical record	Medication profile
Discharge letter	Discharge summary	Nursing home profile
Webster Pack	ED notes	Past medical history
Dietician	Medication list	Previous discharge letter
Copy of previous hospital charts	Discharge transfer notes from hospital	Psychiatrist/psychologist
Doctor's admission notes	Doctor's correspondence letter	Silver chain
Doctor from previous hospital	Hostel medication list	Previous admission
List brought in by patient	Medication list from GP	Previous discharge summary
Own medications	Medication profile from community pharmacy	Royal flying doctor service



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2.5. Medication reconciliation on admission - supplementary activities

Supplementary activities for medication reconciliation on admission include use of patient's own medication bags, consultation of medication profiles, discharge summaries, ambulance bracelet or card and home medication reviews. These activities enhance the outcome of the standard and are undertaken when resources are available.

There was generally a low compliance with the supplementary activities across the health system.

Table 32: 2010 Medication Reconciliation on Admission - Supplementary Activities

	Yes	No	NA	Unknown	Total	Missing
Patient's Own Medication Bag	137 (10.8%)	433 (34.2%)	349 (27.6%)	344 (27.2%)	1263	14
Medication Profile consulted	177 (15.4%)	549 (47.9%)	248 (21.6%)	172 (15.0%)	1146	17
Discharge Summary consulted ^a	251 (19.9%)	567 (45.0%)	300 (23.8%)	140 (11.1%)	1258	17
Ambulance bracelet or card consulted	25 (1.9%)	472 (37.4%)	183 (14.5%)	580 (46.0%)	1260	11
Home Medicines Review report consulted	8 (0.06%)	645 (51.1%)	311 (24.6%)	296 (23.5%)	1260	16

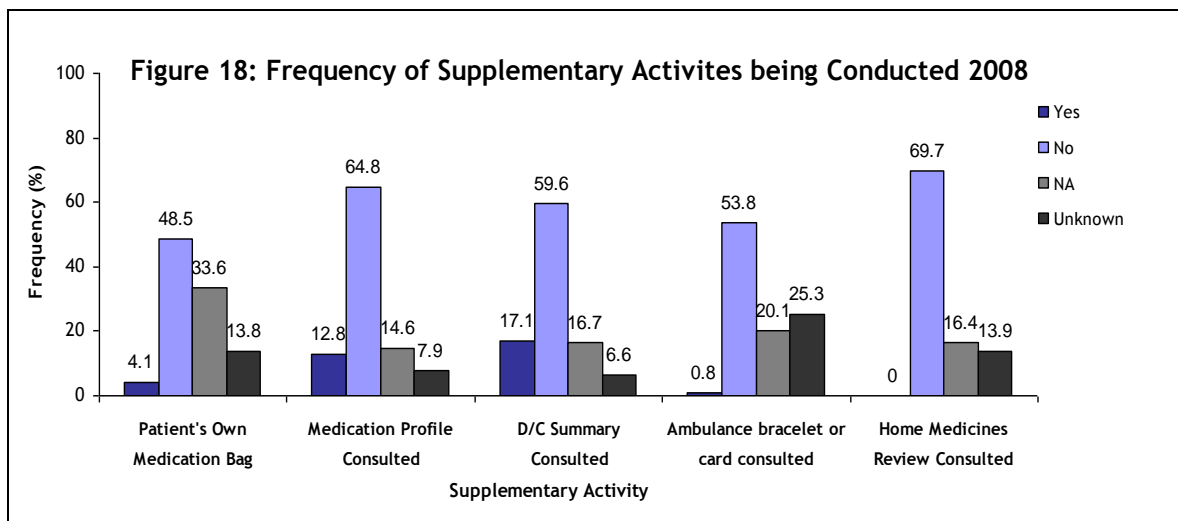
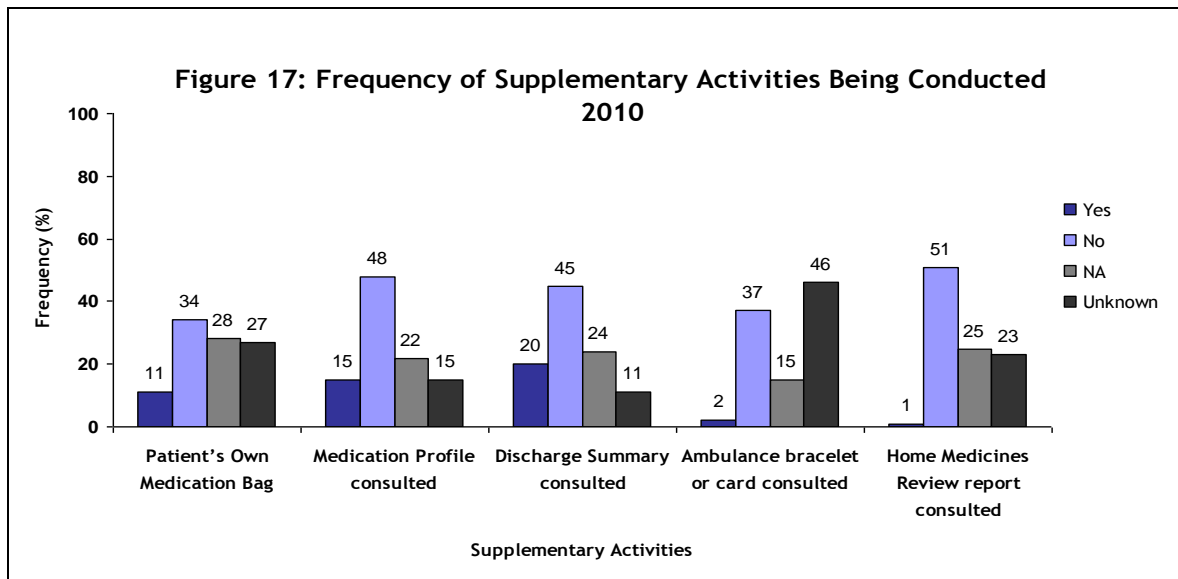
^aDischarge summary refers to a previous hospital discharge summary or nursing home summary being available on admission.

Table 33: 2008 Medication Reconciliation on Admission - Supplementary Activities

	Yes	No	NA	Unknown	Total	Missing
Patient's Own Medication Bag	60 (4.4%)	612 (45.2%)	482 (35.6%)	199 (14.7)	1353	12
Medication Profile consulted	185 (12.8%)	938 (64.8%)	211 (14.6%)	114 (7.9%)	1448	11
Discharge Summary consulted ^a	247 (17.1%)	861 (59.6%)	241 (16.7%)	95 (6.6%)	1444	15
Ambulance bracelet or card consulted	11 (0.8%)	779 (53.8%)	291 (20.1%)	367 (25.3%)	1448	11
Home Medicines Review report consulted	-	1008 (69.7%)	238 (16.4%)	201 (13.9%)	1447	12

^aDischarge summary refers to a previous hospital discharge summary or nursing home summary being available on admission.

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2.6. SQulRe Program - Medication Reconciliation Initiative

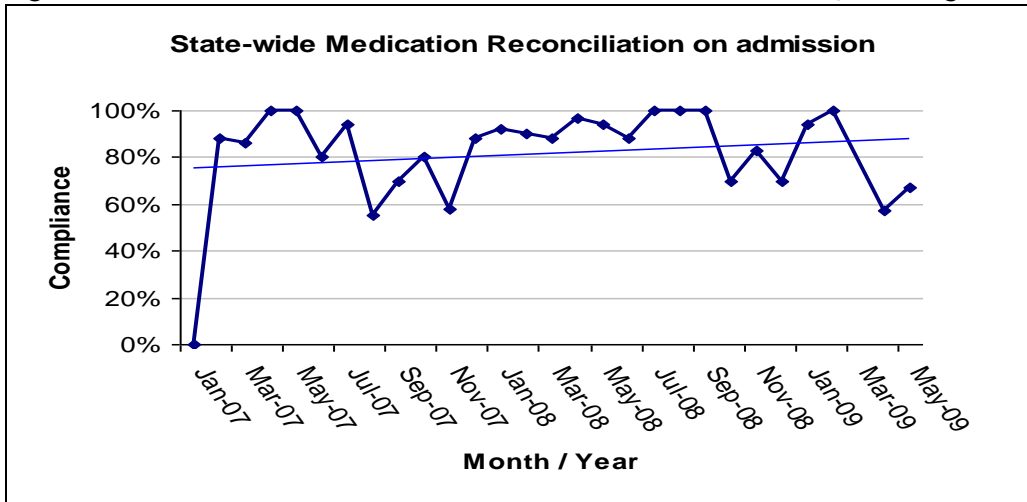
- The Safety and Quality Investment for Reform (SQulRe) Program has been supporting health services in performing medication reconciliation on admission and discharge or transfer.
- Figures 19 and 20 show the aggregated state-wide results attained by WA hospitals in implementing the SQulRe Medication Reconciliation initiative.
- An improvement is evident due to the progress made within hospitals on medication reconciliation on admission and discharge or transfer since this initiative started in January 2007.

There are two process measures associated with this initiative:

1. Medication reconciliation on admission.
2. Medication reconciliation on discharge or transfer.

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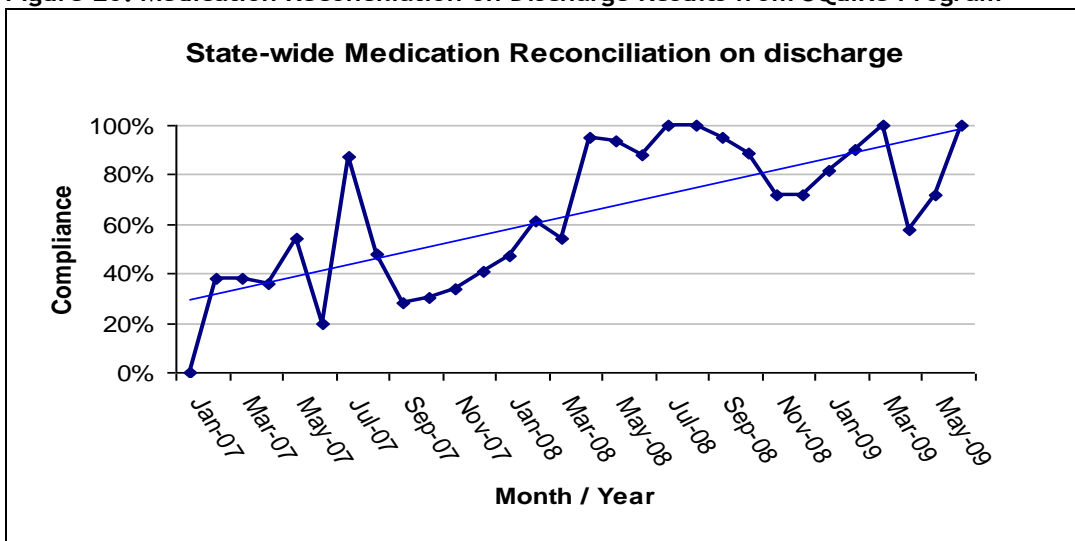
Figure 19: Medication Reconciliation on Admission Results from SQulRe Program^{1, 2}



¹ This figure shows aggregate compliance with medication reconciliation processes on admission between January 2007 to June 2009.

² A period of time elapsed between June 2009 and March 2011 where medication reconciliation data was not requested by the Quality and Safety Directorate.

Figure 20: Medication Reconciliation on Discharge Results from SQulRe Program^{1, 2}



¹ This figure shows aggregate compliance with medication reconciliation processes on discharge between January 2007 to June 2009.

² A period of time elapsed between June 2009 and March 2011 where medication reconciliation data was not requested by the Quality and Safety Directorate.

Section 3 - Medication Education during hospitalisation and on discharge

Patients and/or their carers are to be provided with medication education during their hospitalisation to ensure that they have an understanding of their medications and ideally be given a medication profile on discharge. Medication education is to be provided when additions, cessations or alterations are made to the dosage regime of the patient's medications during a hospital visit or for patients being prescribed high-risk drugs. Consumer Medicine Information (CMI) is to be provided with every new drug prescribed.

The audit assessed the documentation of medication education and did not examine if education was provided but not documented. This may produce an inaccurately low representation of this activity as provision of medication education is not routinely documented by all hospitals when given (with the exception of warfarin counselling).

The provision of medication counselling in conjunction with other written information has been demonstrated to increase compliance, and has the potential to reduce a readmission and hence healthcare costs with improved patient outcomes.²

Recommendations for Area Health Services:

- Undertake education and monitoring activities to ensure that health practitioners document the provision of medication education and CMI leaflets.
- Implement strategies to improve the timeliness of medication education and the provision of medication profiles to patients.
- Develop strategies and allocate resources to support the involvement of clinical pharmacists and other health practitioners in the discharge process, including provision of medication education to patients.
- Adaptation of the NIMC or a standardised Medication Management Plan to accommodate for documentation of medication education.

3.1. If changes were made to the patient's medication management, was the provision of education documented?

- In 2010 66% (861/1301), compared with 62% 2008, of patients had a change to their medication management (i.e. a documented addition, cessation or alteration in drug therapy).
- Of the patients with changes to their medication management, 27.8%, compared with 19% in 2008, had the provision of education documented.
- Of the patients that had a change in their medication that were high risk 32.3%, compared with 20% in 2008, had the provision of education documented.
- At the time of the audit there was only one official site to document provision of medication education, that being the WA Anticoagulant Chart. Some sites have a medication management plan which incorporates a tick box to indicate whether the patient has been provided education on all of their medications at discharge.

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Table 34: Documentation of the Provision of Medication Education - All Patients 2010

All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	202 (31.1%)	313 (48.2%)	32 (4.9%)	103 (15.8%)	650	1
Country	38 (18.0%)	93 (44.1%)	9 (4.3%)	71 (33.6%)	211	2
WA State	240 (27.9%)	406 (47.2%)	41 (4.7%)	174 (20.2%)	861	3

Table 35: Documentation of the Provision of Medication Education - All Patients 2008

All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	138 (21.5%)	424 (66.1%)	17 (2.7%)	62 (9.7%)	641	22
Country	24 (11.3%)	165 (77.5%)	9 (4.2%)	15 (7%)	213	4
WA State	162 (19%)	589 (69%)	26 (3%)	77 (9%)	854	26

Table 36: Documentation of the Provision of Medication Education - High-risk Patients 2010

High-risk Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	146 (35.1%)	191 (45.9%)	23 (5.5%)	56 (13.5%)	416	2
Country	25 (22.3%)	43 (38.4%)	4 (3.6%)	40 (35.7%)	112	2
WA State	171 (32.3%)	234 (44.3%)	27 (5.2%)	96 (18.2%)	528	4

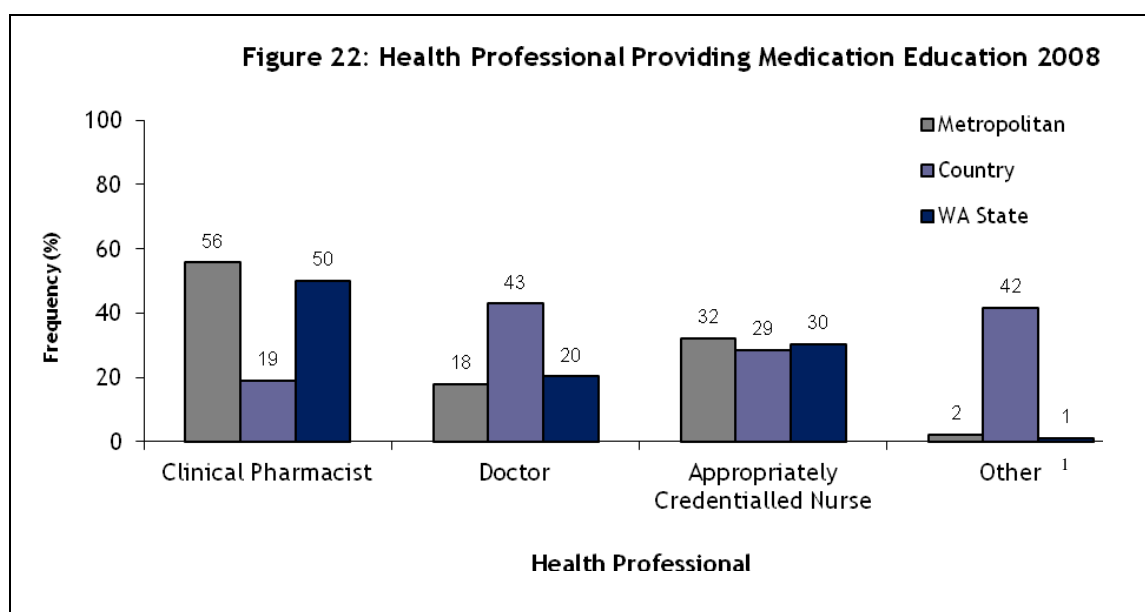
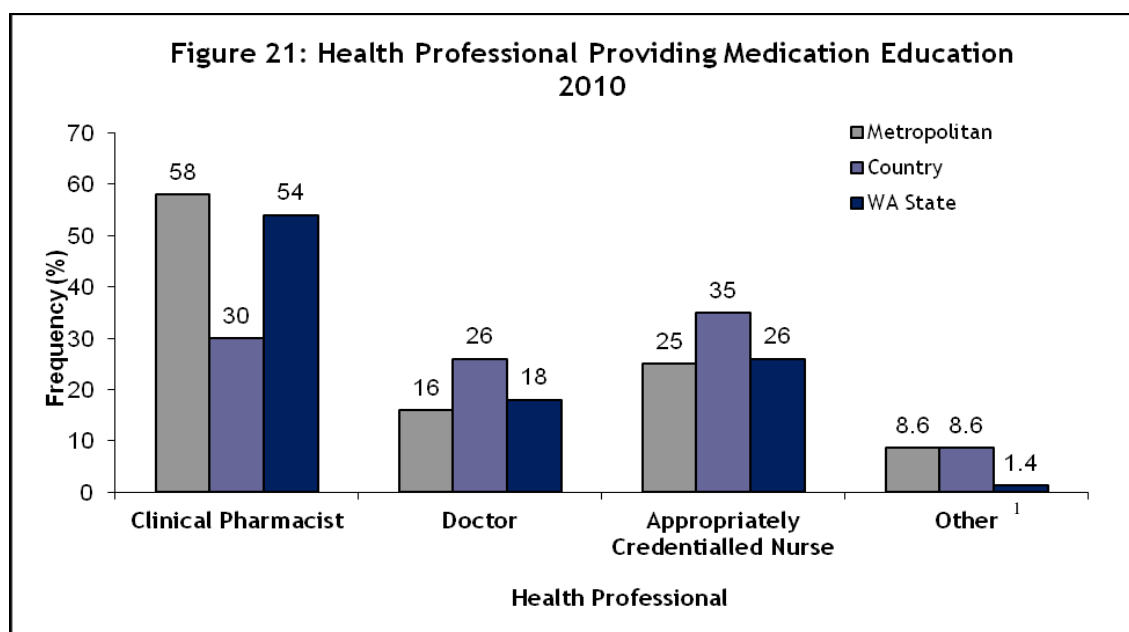
Table 37: Documentation of the Provision of Medication Education - High-risk Patients 2008

High-risk Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	83 (20.7%)	296 (67.1%)	13 (3.2%)	36 (9%)	401	9
Country	17 (18.7%)	63 (69.2%)	3 (3.3%)	8 (8.8%)	91	4
WA State	100 (20.3%)	332 (67.5%)	16 (3.3%)	44 (8.9%)	492	13

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3.2. Health professionals providing education for changes in medication management.

- At metropolitan sites, medication education was primarily provided by the clinical pharmacist (58% compared with 55% in 2008)
- At country sites, medication management was primarily provided by the nurse (35%), pharmacist (30%), doctor (26%), and the trainee pharmacist/pharmacy student (8.6%).
- It is of note that documentation of such processes is poor at most sites. There are no specified areas to document this information with exception of warfarin counselling/information on the anticoagulant chart. This may account for the low percentage education provided as alluded to in the audit results. Similarly with provision of CMI's to patients.



¹ Other category responses for health professionals providing medication information for country sites includes trainee pharmacists, nursing staff and pharmacy students.

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3.3. Was the provision of a Consumer Medicine Information (CMI) leaflet documented in the medical record?

- The data below refers to patients that had changes made to their medication management.
- The documentation of provision of a Consumer Medicine Information (CMI) leaflet to patients was 10% (up from 5% in 2008).
- Of the 68% (861 patients) in the 2010 audit who had a change to their medication therapy, only 95 (11%) were documented as receiving a CMI.
- Fremantle Hospital gives out CMI leaflets to all patients with discharge medications, if not given the reason is noted on the medication chart. However this routine distribution is not documented anywhere. There was no comment from other hospitals regarding routine provision of CMI, again there is no standardised method of documenting this information and it may be difficult to identify for the audit purpose.

Table 38: Documentation of the Provision of a Consumer Medicine Information Leaflet 2010

All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	92 (14.1%)	367 (56.4%)	40 (6.2%)	152 (23.3%)	651	2
Country	3 (1.4%)	163 (77.6%)	8 (3.8%)	36 (17.2%)	210	2
WA State	95 (11.0%)	530 (61.6%)	48 (5.6%)	188 (21.8%)	861	4

Table 39: Documentation of the Provision of a Consumer Medicine Information Leaflet 2008

All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	38 (5.9%)	513 (79%)	32 (4.9%)	66 (10.2%)	649	14
Country	4 (1.9%)	188 (88.7%)	14 (6.6%)	6 (2.8%)	212	5
WA State	42 (4.9%)	701 (81.4%)	46 (5.3%)	72 (8.4%)	861	19

3.4 Was the provision of a Patient First booklet documented in the medical record?

- The provision of Patient First booklet was documented for 1.5% of patients (compared with 6.5% of patients in 2008).
- Some hospitals offer or give the Patient First booklet at admission while some hospitals have the booklet located in patient areas such as waiting rooms or patient bedside drawers for the patient to take if wanted. In both situations the provision of the Patient First booklet would not necessarily be documented anywhere.
- Pharmacy is not involved in the distribution of these booklets and so the low rate of yes response is most likely due to lack of documentation and lack of auditor

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involvement. Compliance to this aspect is beyond the scope of Pharmaceutical Review Policy.

Table 40 :Documentation of the Provision of Patient First Booklets 2010

All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	12 (1.3%)	543 (60.1%)	72 (7.9%)	277 (30.7%)	904	12
Country	7 (2.2%)	193 (59.0%)	28 (8.5%)	99 (30.3%)	327	20
WA State	19 (1.5%)	736 (59.8%)	100 (8.1%)	376 (30.6%)	1231	32

Table 41: Documentation of the Provision of Patient First Booklets 2008

All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	4 (0.4%)	742 (76.6%)	87 (9%)	136 (14%)	969	58
Country	86 (20.7%)	309 (74.5%)	15 (3.6%)	5 (1.2%)	415	17
WA State	90 (6.5%)	1051 (75.9%)	102 (7.4%)	141 (10.2%)	1384	75

3.5. Was the patient provided with a medication profile on discharge?

- 24% of patients (compared with 16% in 2008) were provided with a medication profile on discharge.
- 36% of high risk patients (compared with 30% in 2008) were provided with a medication profile on discharge.
- Figure 13 highlights the prioritisation of high-risk patients in receiving a Medication Profile on discharge.
- Details of the provision of medication profile on discharge at each health service are provided in Appendix 10 and 11.
- Production of a medication profile is often prioritized for those patients whom have complex regimes, on high risk medications or have cognitive deficiencies.
- Most medication profiles are generated as a specialise word document and require extra time to prepare. Hospitals use different systems including MedProf[®], Medipal[®] and TEDS.
- Some hospitals are utilising the list of the patient's medications on the discharge summary as a medication profile given to the patient, especially in hospitals which have an increased pharmacy involvement in preparation of the discharge summary.
- A need has been identified for a standardised approach to the provision of medication information to the patient at discharge. An ICT solution should be requested with input from a pharmacy consultative committee.

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Table 42: Provision of Medication Profile on Discharge - All Patients 2010

All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	247 (27.7%)	307 (34.4%)	260 (29.1%)	77 (8.6%)	891	40
Country	41 (13.3%)	197 (63.5%)	56 (18%)	16 (5.2%)	310	34
WA State	288 (23.9%)	504 (41.9%)	316 (26.5%)	93 (7.7%)	1201	74

Table 43: Provision of Medication Profile on Discharge - All Patients 2008

All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	193 (21.4%)	503 (55.8%)	119 (13.2%)	86 (9.5%)	901	45
Country	12 (2.9%)	291 (70.1%)	89 (21.4%)	23 (5.5%)	415	16
WA State	205 (15.6%)	794 (60.3%)	208 (15.8%)	109 (8.3%)	1316	61

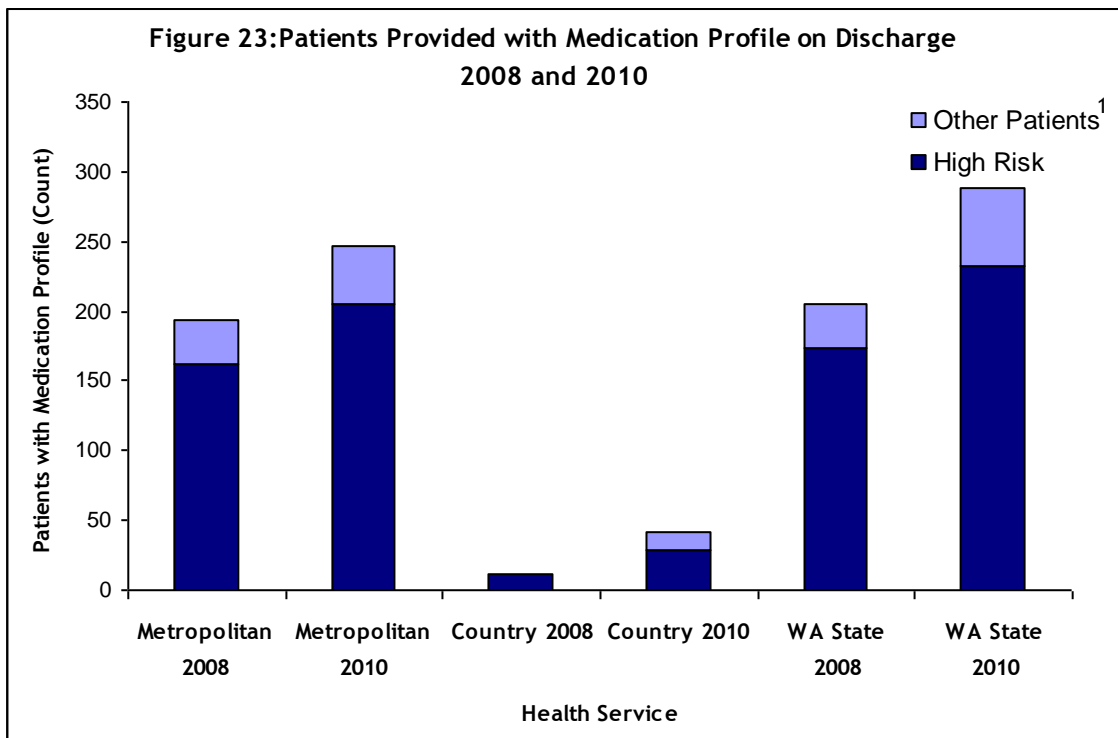
Table 44: Provision of Medication Profile on Discharge - High-risk Patients 2010

High-risk Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	205 (38.6%)	166 (31.2%)	108 (20.3%)	52 (9.7%)	531	26
Country	28 (21.9%)	75 (58.6%)	16 (12.5%)	9 (7.0%)	128	14
WA State	233 (35.4%)	241 (36.5%)	124 (18.8%)	61 (9.3%)	659	40

Table 45: Provision of Medication Profile on Discharge - High-risk Patients 2008

High-risk Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	162 (37.1%)	198 (45.3%)	27 (6.2%)	50 (11.4%)	437	16
Country	12 (10.2%)	82 (69.5%)	10 (8.5%)	14 (11.9%)	118	12
WA State	174 (31.4%)	280 (50.5%)	37 (6.7%)	64 (11.5%)	555	28

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¹ Other patients not identified to be high-risk patients

Section 4 - Discharge process: Communication with the general practitioner and other health professionals

A patient's medication related information is to be provided to his or her general practitioner and other health professionals upon discharge. Ideally, a pharmacist should be included in the medication component of the discharge summary. For patients using administration aids (such as Webster-Paks), information about the current medication regimen should be provided to the patient's preferred community pharmacist. This audit was limited to assessing the communication with community pharmacies that service patients discharged to Residential Aged-Care Facilities (RACF) patients.

The communication between the hospital and the general practitioner or other health professionals upon discharge may assist to improve post-discharge continuity of care which is a factor in determining readmission rates.²

Recommendation for Area Health Services:

- Implement strategies to increase the number of patients and general practitioners that are provided with a discharge summary in a timely manner and improve documentation of discharge summary provision.
- Implement strategies to review and reduce unintentional discrepancies between the NIMC, medication profile and discharge summary.
- Implement strategies, including provision of access by pharmacists to the electronic discharge summary, to improve information included in the discharge summary regarding medication changes, including rationale, monitoring requirements and expected outcomes.
- Review current resourcing and implement measures to increase clinical pharmacist involvement in the medication component of the discharge summary.
- Future auditing should include identification of discrepancies between the medication profile and the NIMC.

Table 46: Summary of Patients Discharged before the end of the Audit Period.

	2010	2008
Metropolitan	882 (92.7%)	946 (92.1%)
Country	331 (94.5%)	431 (99.8%)
WA State	1213 (93.3%)	1377 (94.4%)

4.1. If the patient was discharged before the end of the audit period, was a summary prepared within the one-month audit period?

- Of the patients discharged before the end of the audit period, 79% (compared with 70.5% in 2008) had a discharge summary prepared within the one-month audit period. This increased to 83% for high-risk patients (80% in 2008).
- Patients who were discharged towards the end of the audit period were probably less likely to have a discharge summary prepared during the audit period because of the lack of time between discharge and end of audit.
- Details of discharge summary preparation at each health service are provided in Appendix 12 and 13.

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- Although no detail was provided in the audit, it has been assumed that not applicable (NA) means that the patient was not on any regular medications or that the patient did not have a regular general practitioner.

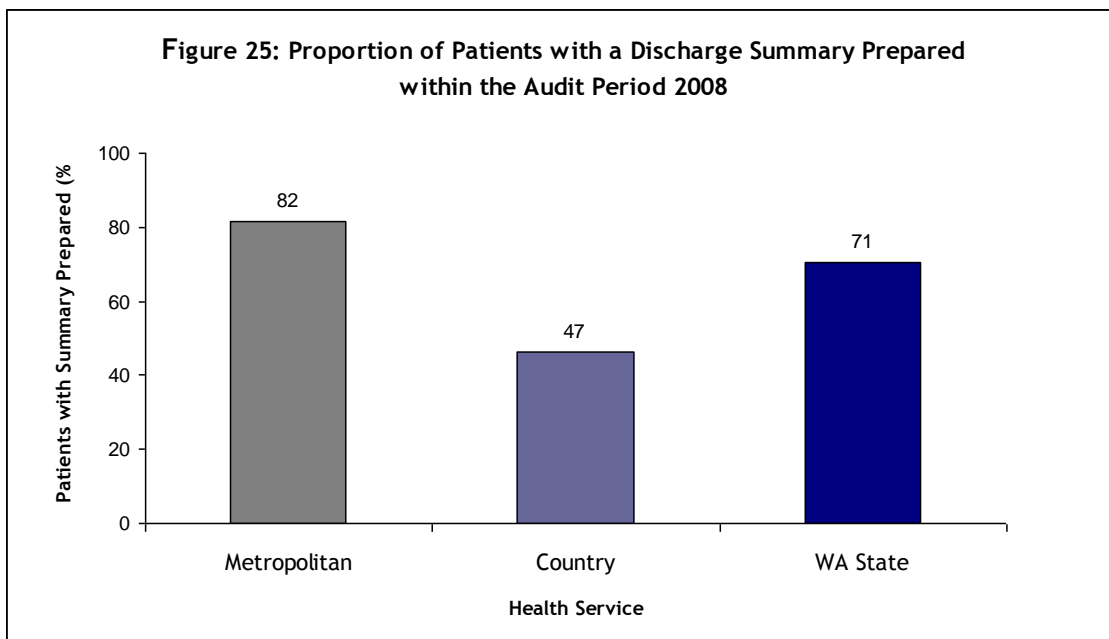
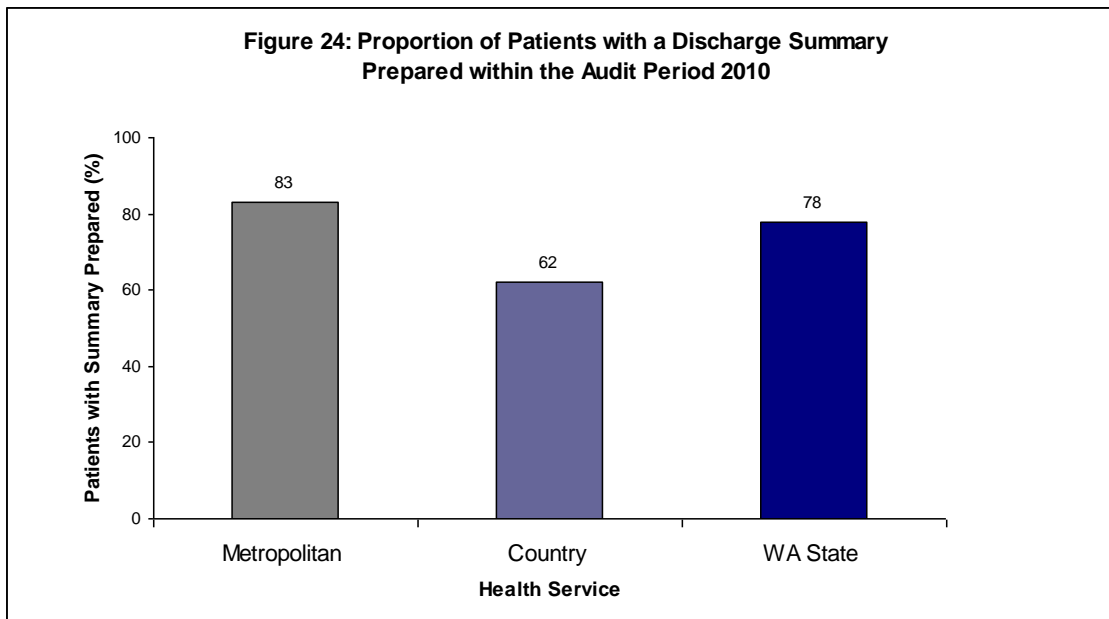
Table 47: Patients with a Discharge Summary Prepared within the Audit Period - All Patients 2010						
All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	751 (85.5%)	83 (9.5%)	22 (2.5%)	22 (2.5%)	878	9
Country	193 (59.9%)	72 (22.4%)	4 (1.2%)	53 (16.5%)	322	4
WA State	944 (78.6%)	155 (12.9%)	26 (2.2%)	75 (6.3%)	1200	13

Table 48: Patients with a Discharge Summary Prepared within the Audit Period - All Patients 2008						
All Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	751 (81.5%)	146 (15.9%)	9 (1%)	15 (1.6%)	921	25
Country	198 (46.5%)	98 (23%)	126 (29.6%)	4 (0.9%)	426	5
WA State	949 (70.5%)	244 (18.1%)	135 (10%)	19 (1.4%)	1347	30

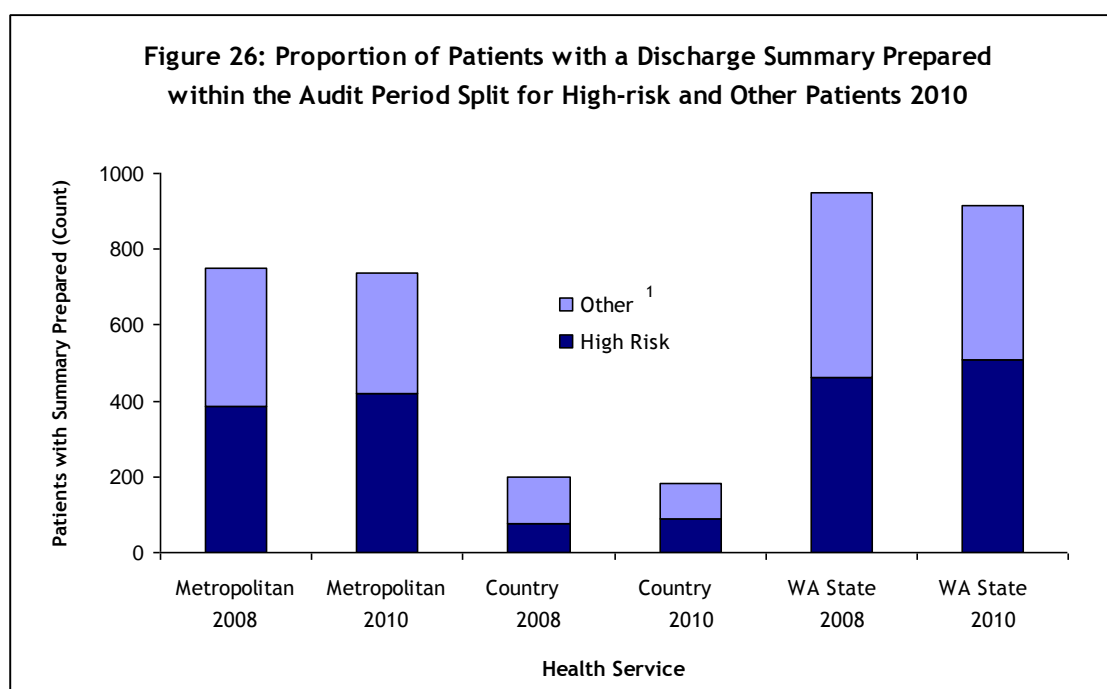
Table 49: Patients with a Discharge Summary Prepared within the Audit Period - High-risk Patients 2010						
High-risk Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	431 (85.7%)	47 (9.3%)	13 (2.6%)	12 (2.4%)	503	2
Country	93 (71.5%)	17 (13.1%)	-	20 (15.4%)	130	2
WA State	524 (82.8%)	64 (10.2%)	13 (2.0%)	32 (5.0%)	633	4

Table 50: Patients with a Discharge Summary Prepared within the Audit Period - High-risk Patients 2008						
High-risk Patients	Yes	No	NA	Unknown	Total	Missing
Metropolitan	387 (85.8%)	56 (12.4%)	3 (0.7%)	5 (1.1%)	451	2
Country	75 (58.6%)	26 (20.3%)	25 (19.5%)	2 (1.6%)	128	2
WA State	462 (79.8%)	82 (14.2%)	28 (4.8%)	7 (1.2%)	579	4

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¹ Other patients - not identified to be high-risk patients

4.2. If a discharge summary was prepared, were there any discrepancies between the NIMC and the discharge summary?

- In both audits 39% of patients overall had a discrepancy between the medications on the NIMC and the discharge summary - 38% (compared with 43% in 2008) at metropolitan sites and 46% (compared with 24%) at country sites.
- The audit did not give any indication of the potential consequences of these discrepancies. Some of these could have been intentional discrepancies while others could have been unintentional, potentially dangerous discrepancies.

Table 51: Discrepancies Between the NIMC and The Discharge Summary 2010

	Yes	No	NA	Unknown	Total	Missing
Metropolitan	276 (38.2%)	358 (49.4%)	44 (6%)	46 (6.4%)	724	27
Country	84 (43.3%)	91 (46.9%)	8 (4.1%)	11 (5.7%)	194	1
WA State	360 (39.3%)	449 (48.9%)	52 (5.6%)	57 (6.2%)	918	26

Table 52: Discrepancies Between the NIMC and The Discharge Summary 2008

	Yes	No	NA	Unknown	Total	Missing
Metropolitan	316 (42.9%)	340 (46.2%)	72 (9.8%)	8 (1.1%)	736	15
Country	46 (24%)	130 (67.7%)	11 (5.7%)	5 (2.6%)	192	6
WA State	362 (39%)	470 (50.6%)	83 (8.9%)	13 (1.4%)	928	21

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4.3. If a medication profile and discharge summary were prepared, were there any discrepancies between the patient's medication profile and discharge summary?

- 13% (compared with 43% in 2008) of metropolitan patients had a discrepancy between the medications on the medication profile and the discharge summary.
- 22% (compared with 24% in 2008) of country patients had a discrepancy between the medications on the medication profile and the discharge summary.
- The audit did not assess if there were any discrepancies between the medication profile and the NIMC.

Table 53: Discrepancies Between the MedProf and the Discharge Summary 2010

	Yes	No	NA	Unknown	Total	Missing
Metropolitan	91 (13%)	203 (29%)	350 (50%)	56 (8%)	700	51
Country	40 (21.6%)	58 (31.4%)	75 (40.5%)	12 (6.5%)	185	8
WA State	131 (14.8%)	261 (29.5%)	425 (48.0%)	68 (7.7%)	885	59

Table 54: Discrepancies Between the MedProf and the Discharge Summary 2008

	Yes	No	NA	Unknown	Total	Missing
Metropolitan	316 (42.9%)	340 (46.2%)	72 (9.8%)	8 (1.1%)	736	15
Country	46 (24%)	130 (67.7%)	11 (5.7%)	5 (2.6%)	192	6
WA State	362 (39%)	470 (50.6%)	83 (8.9%)	13 (1.4%)	928	21

4.4. If a discharge summary was prepared, was the involvement of a clinical pharmacist in the medication component documented in the medical record?

- Overall 17% of patients had the involvement of a clinical pharmacist in the medication component of the discharge summary documented in the medical record (compared with 3.8% in 2008).
- In metropolitan hospitals 18.7% of discharge summaries had pharmacy involvement compared with 10.9% in country hospitals.
- At the time of the audit, not all hospital pharmacists had been approved access to the medical electronic discharge summary.

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Table 55: Clinical Pharmacist Involvement in Discharge Summary Preparation 2010

	Yes	No	NA	Unknown	Total	Missing
Metropolitan	137 (18.7%)	438 (60.0%)	115 (15.8%)	40 (5.5%)	730	6
Country	21 (10.9%)	144 (74.6%)	12 (6.2%)	16 (8.3%)	193	0
WA State	158 (16.9%)	582 (62.4%)	137 (14.7%)	56 (6.0%)	933	6

Table 56: Clinical Pharmacist Involvement in Discharge Summary Preparation 2008

	Yes	No	NA	Unknown	Total	Missing
Metropolitan	34 (4.6%)	509 (68.2%)	124 (16.6%)	79 (10.6%)	746	5
Country	2 (1%)	141 (71.9%)	52 (26.5%)	1 (0.5%)	196	2
WA State	36 (3.8%)	650 (69%)	176 (18.7%)	80 (8.5%)	942	7

4.5. If a discharge summary was prepared, did the patient receive a copy within the audit period?

- 53% (compared with 39% in 2008) of patients who had a discharge summary prepared received a copy of the discharge summary with the audit period.
- Details of this measure at each health service are provided in Appendix 14 and 15.

Table 57: Did the Patient Receive a copy of the discharge summary? 2010

	Yes	No	NA	Unknown	Total	Missing
Metropolitan	423 (58.2%)	151 (20.7%)	55 (7.5%)	97 (13.3%)	726	25
Country	53 (29.3%)	72 (39.8%)	12 (6.6%)	44 (24.3%)	181	12
WA State	476 (52.5%)	223 (24.5%)	67 (7.5%)	141 (15.5%)	907	37

Table 58: Did the Patient Receive a copy of the discharge summary? 2008

	Yes	No	NA	Unknown	Total	Missing
Metropolitan	316 (42.9%)	340 (46.2%)	72 (9.8%)	8 (1.1%)	736	15
Country	46 (24%)	130 (67.7%)	11 (5.7%)	5 (2.6%)	192	6
WA State	362 (39%)	470 (50.6%)	83 (8.9%)	13 (1.4%)	928	21

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4.6. If a discharge summary was prepared, was the patient's general practitioner provided with a copy?

- 77% (compared with 67% in 2008) of general practitioners were provided with a copy of the patient's discharge summary, this was generally provided via fax or mail. However, it was out of the scope of the audit to confirm whether the general practitioner received and reviewed the discharge summary.
- Details of this measure at each health service are provided in Appendix 16 and 17.

Table 59: Copy of the Discharge Summary Provided to the Patient's General Practitioner 2010

	Yes	No	NA	Unknown	Total	Missing
Metropolitan	580 (79.8%)	43 (5.9%)	32 (4.4%)	71 (9.7%)	726	25
Country	123 (66.8%)	41 (22.3%)	4 (2.2%)	16 (8.7%)	184	9
WA State	703 (77.3%)	84 (9.2%)	36 (3.9%)	87 (9.6%)	910	34

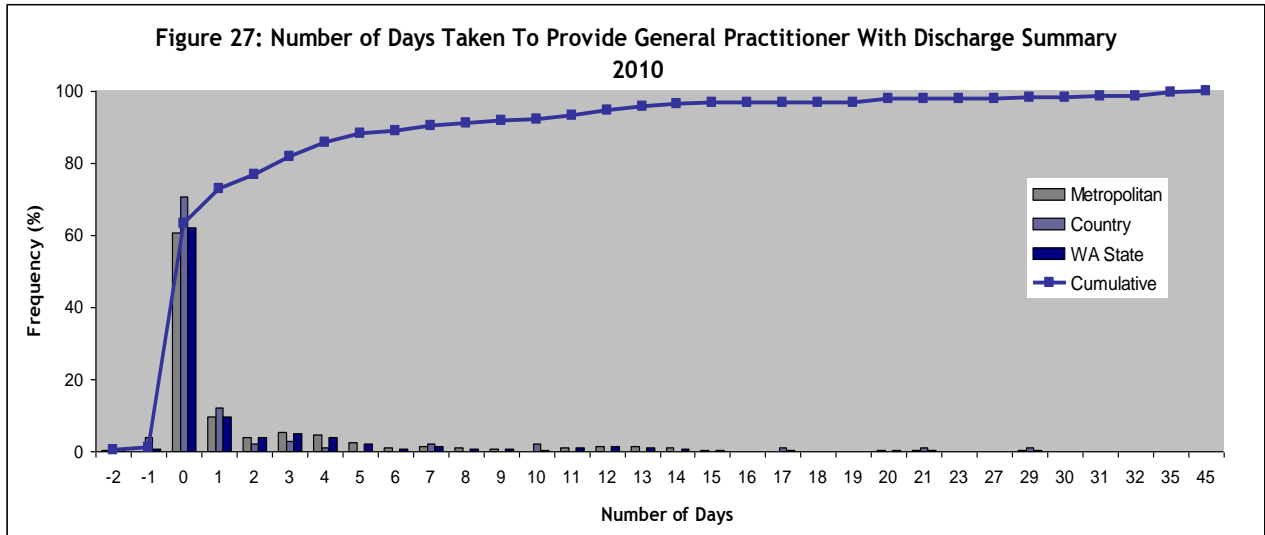
Table 60: Copy of the Discharge Summary Provided to the Patient's General Practitioner 2008

	Yes	No	NA	Unknown	Total	Missing
Metropolitan	506 (68.5%)	78 (10.6%)	13 (1.8%)	142 (19.2%)	739	12
Country	116 (59.5%)	38 (19.5%)	5 (2.6%)	36 (18.5%)	195	3
WA State	622 (66.6%)	116 (12.4%)	18 (1.9%)	178 (19.1%)	934	15

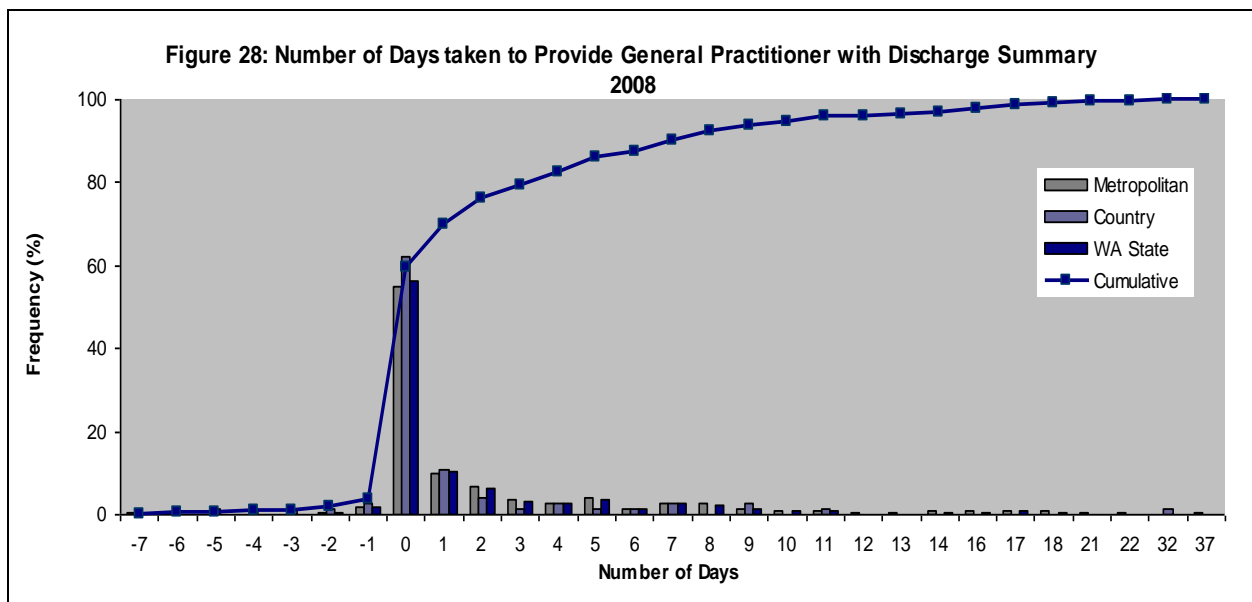
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4.7. Number of days taken to provide general practitioner with a copy of the patient's discharge summary

- The majority of discharge summaries (71%) were provided to the general practitioner on the day of discharge.
- The data indicates that discharge summaries were provided to the general practitioner up to 2 days prior to discharge and one-month post discharge.



NOTE: 6 entries that indicated that the general practitioner was provided with a discharge summary did not provide a date.



NOTE: 171 entries that indicated that the general practitioner was provided with a discharge summary did not provide a date.

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4.8. Documented Residential Care Facility liaison and Community Pharmacy Liaison for Residential Care Facility patients

- Of the audit sample population in 2010, 53(3.2%) patients were discharged to Residential Care Facilities (RCF) compared with 52 patients (3.6%) in 2008
- In 2010 the RCF was provided with the patient's discharge medication list for 72% of patients and contacted to discuss patient's medications for 26% of patients compared with 60% provided with discharge medication lists and 41% contacted to discuss patient's medication in 2008.
- In 2010 the community pharmacy was provided with the patient's discharge medication list for 49% of patients and contacted to discuss patient's medications for 35% of patients compared with 28% provided with a discharge medication list and 20% contacted to discuss patient's medication in 2008.
- In 2010 only 3 patients (5%) discharged to RCF had "no" reported for liaison with other health professionals (RCF or community pharmacist) on discharge compared with 2 patients (4%) in 2008.

Table 61: If the patient resides in a Residential Care Facility, were the following tasks completed?

2010	Yes	No	NA	Unknown	Total	Missing
Was the RCF provided with patient's discharge medication list	36 (72%)	3 (6%)	2 (4%)	9 (18%)	50	3
Was the RCF contacted to discuss patient's medications	10 (26%)	4 (11%)	8 (21%)	16 (42%)	38	5
Was the patient's community pharmacist provided with discharge medication list	26 (50%)	14 (26.9%)	4 (7.6%)	8 (15.5%)	52	1
Was the patient's community pharmacist contacted to discuss patient's medications	17 (34.6%)	12 (24.3%)	10 (20.4%)	10 (20.4%)	49	4

Table 62: If the patient resides in a Residential Care Facility, were the following tasks completed?

2008	Yes	No	NA	Unknown	Total	Missing
Was the RCF provided with patient's discharge medication list	28 (59.6%)	6 (12.8%)	3 (6.4%)	10 (21.3%)	47	5
Was the RCF contacted to discuss patient's medications	17 (40.5%)	11 (26.2%)	3 (7.1%)	11 (26.2%)	42	10
Was the patient's community pharmacist provided with discharge medication list	14 (28%)	24 (48%)	4 (8%)	8 (16%)	50	2
Was the patient's community pharmacist contacted to discuss patient's medications	10 (20.4%)	23 (46.9%)	6 (12.2%)	10 (20.4%)	49	3

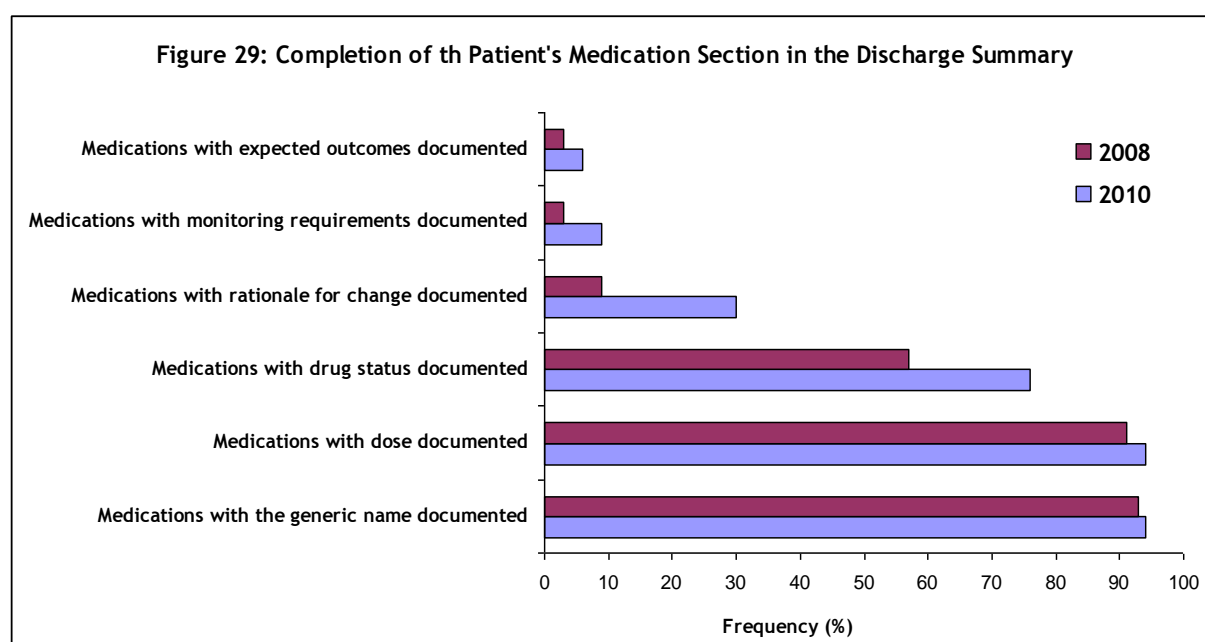
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4.9. Completion of the patient's discharge summary

- 94% of medications in the discharge summary had the generic name documented compared to 93% in 2008.
- 94% of medications in the discharge summary had the drug dose documented compared to 91% in 2008.
- 76% of medications in the discharge summary had the drug status documented compared to 57% in 2008.
- 30% of medications in the discharge summary had the rationale for change documented compared to 9% in 2008.
- 9% of medications in the discharge summary had the monitoring requirements documented compared to 3% in 2008.
- 6% of medications in the discharge summary had the expected outcomes documented compared to 2.5% in 2008.

Table 63: Completion of the Patient's Medication Section in the Discharge Summary

	2010		2008	
	Number of Patients	Sum of Responses	Number of Patients	Sum of Responses
Total Number of Medications	657	3903	900	3270
Medications with the generic name documented	631	3652 (94%)	696	3050 (93%)
Medications with dose documented	600	3655 (94%)	676	2989 (91%)
Medications with drug status documented	506	2945 (76%)	641	1871 (57%)
Medications with rationale for change documented	340	1158 (30%)	610	300 (9%)
Medications with monitoring requirements documented	156	350 (9%)	587	112 (3%)
Medications with expected outcomes documented	88	226 (6%)	585	82 (3%)



Section 5 - Quality activities promoting medication safety

Health services are to be involved in medication related safety and quality activities.

Recommendation for Area Health Services:

- Develop a standardised process for documenting adverse drug reactions for all hospitals.
- Implement strategies to increase reporting of adverse drug reactions to the Therapeutic Goods Administration's Adverse Drug Reaction Advisory Committee.
- Ensure any adverse drug reactions occurring during an admission are reported on the medication chart and in the patient's medical notes and discharge summary.
- Develop education and promotional strategies to increase participation by health practitioners in hospital-based Quality Use of Medicine activities.
- Encourage hospitals to conduct routine review/audits of medication charts and ensure compliance in the following areas: standardised abbreviations and terminology, legibility, errors on charts, dose administration times and dose admissions.

5.1. If the patient experienced an adverse drug reaction during their admission, was the reaction life threatening or non-life threatening?

- Of the audit sample population, 27 patients (2.1%) had experienced an adverse drug reaction during this admission (compared with 2.2% in 2008)
- 40.7% of adverse drug reactions in 2010 were classified by health practitioners as being life-threatening (Compared with 6.5% in 2008).
- 55% of adverse drug reactions in 2010 were classified by health practitioners as being non life-threatening (Compared with 90% in 2008)
- The severity of the adverse drug reaction was unknown for 3.8% of patients (3.2% in 2008).

Table 64: Patients Experiencing a Life Threatening Adverse Drug Reaction

2010 Patients experiencing ADR = 27	Yes	No	Unknown	Total	Missing
Life threatening	11 (40.7%)	15 (55.5%)	1 (3.8%)	27	
2008 Patients experiencing ADR = 32	Yes	No	Unknown	Total	Missing
Life threatening	2 (6.5%)	28 (90.3%)	1 (3.2%)	31	1

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5.2. If the patient experienced an adverse drug reaction, where was the reaction documented?

- In both 2010 and 2008 audits, 97% of patients experiencing an ADR had the ADR documented in the patient's notes.
- The ADR was documented in the patient's discharge summary (85% in 2010 compared with 30% in 2008)
- There was an improvement observed with 57% of ADRs documented on the patient's medication chart (compared with 21% in 2008).
- An improvement in documentation was observed in 2010 compared with 2008; however the ADRs should have been documented in all three areas assessed. The correct method for documentation of adverse drug reactions was outlined in a WAMSG Medication Safety Alert (30 APRIL 2009)⁷.

Table 65: Adverse Drug Reaction Documentation 2010

Patients experiencing ADR = 27	Yes	No	NA	Unknown	Total	Missing
In the patient's notes	26 (96.3%)	1 (3.7%)	-	-	27	
On the patient's medication chart	15 (55.6%)	11 (40.7%)	1 (3.7%)	-	27	
In the discharge summary	23 (85.2%)	1 (3.7%)	-	3 (11.1%)	26	

Table 66: Adverse Drug Reaction Documentation 2008

Patients experiencing ADR = 32	Yes	No	NA	Unknown	Total	Missing
In the patient's notes	28 (96.6%)	1 (3.4%)	-	-	29	3
On the patient's medication chart	6 (20.7%)	22 (75.9%)	1 (3.4%)	-	29	3
In the discharge summary	8 (30.8%)	9 (34.6%)	9 (34.6%)	-	26	6

Note: ADRs were recorded in more than one place

5.3. If the patient experienced an adverse drug reaction, was the reaction reported via the hospital's clinical incident management system?

- No adverse drug reactions are documented to have been reported via the hospital's clinical incident management system. (AIMS) as they were assessed as unpredictable allergies / adverse drug reactions and not an adverse drug event.

Table 67: Reporting of Adverse Drug Reactions via a Clinical Incident Management System

2010 Patients experiencing ADR = 27	Yes	No	NA	Unknown	Total	Missing
WA State	-	17 (63%)	2 (7.4%)	8 (29.6%)	27	
2008 Patients experiencing ADR = 32	Yes	No	NA	Unknown	Total	Missing
WA State	-	26 (86.7%)	2 (6.7%)	2 (6.7%)	30	2

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5.4. If the patient experienced an adverse drug reaction, was the reaction reported to the Adverse Drug Reaction Advisory Committee?

- No adverse drug reactions are documented to have been reported to the national Adverse Drug Reaction Advisory Committee, a subcommittee of the Therapeutic Goods Administration.

Table 68: Reporting of Adverse Drug Reactions to ADRAC

Patients experiencing ADR = 32	Yes	No	NA	Unknown	Total	Missing
2010	-	15 (55.6%)	2 (7.4%)	10 (37%)	27	-
2008	-	25 (80.6%)	2 (6.5%)	4 (12.9%)	31	1

Section 5.5 to 5.10 refer to the information collated in Table 5.

5.5. Does the hospital have a committee that is responsible for the oversight and coordination of initiatives relating to the Quality Use of Medicines?

- 12 of the 17 hospitals (70.5%) have a committee responsible for the oversight and coordination of initiatives relating to the Quality Use of Medicines.

Table 69: Quality Use of Medicines Committee

WA State	Yes	No	NA	Unknown	Total	Missing
2010	12 (70.5%)	5 (29.5%)	-	-	17	1 ^a
2008	13 (72.2%)	5 (27.8%)	-	-	18	

^a Narrogin Hospital did not report any information

5.6. Does the hospital promote participation in Quality Use of Medicine activities?

- 15 of the 17 hospitals (88.2%) with responses recorded for this question promoted participation in Quality Use of Medicine activities.

Table 70: Quality Use of Medicines Activities

WA State	Yes	No	NA	Unknown	Total	Missing
2010	15 (88.2%)	2 (11.8%)	-	-	17	1 ^a
2008	16 (94.1%)	1 (5.9%)	-	-	17	1

^a Narrogin Hospital did not report any information

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5.7. Does the hospital participate in drug use evaluations?

- 12 of the 17 hospitals (70.5%) participate in drug use evaluations.

Table 71: Drug Use Evaluations

WA State	Yes	No	NA	Unknown	Total	Missing
2010	12 (70.5%)	5 (29.5%)	-	-	17	1 ^a
2008	8 (44.4%)	10 (55.6%)	-	-	18	

^a Narrogin Hospital did not report any information

5.8. Does the hospital conduct routine review/audits of charts for features such as legibility, errors on charts, dose administration times and dose admissions?

- 15 of the 17 hospitals (88.2%) stated that they conduct routine review/audits of charts.

Table 72: Routine Reviews/Audits Conducted

WA State	Yes	No	NA	Unknown	Total	Missing
2010	15 (88.2%)	2 (11.8%)	-	-	15	1 ^a
2008	15 (83.3%)	3 (16.7%)	-	-	18	

^a Narrogin Hospital did not report any information

5.9. If the hospital conducts routine review/audits of charts, are the audit tools endorsed and consistent with the aims of an appropriate QA committee?

- Of the 15 hospitals that conduct regular chart reviews in 2010, nine (52.9%) have audit tools that are endorsed and consistent with the aims of an appropriate QA committee.

Table 73: Are Audit Tools Endorsed by and Consistent with the Aims of an appropriate QA Committee?

WA State	Yes	No	NA	Unknown	Total	Missing
2010	9 (52.9%)	6 (35.3%)	2 (11.8%)	-	17	1 ^a
2008	7 (46.7%)	8 (53.3%)	-	-	15	

^a Narrogin Hospital did not report any information

5.10. Are hospital staff involved with other hospital and state medication safety working groups and email distribution networks, such as the WA Medication Safety Group?

- 15 of the 17 hospitals (88.2%) have staff involved with other hospital and state medication safety working groups.

Table 74: Hospital Staff Involvement with Medication Safety Groups						
WA State	Yes	No	NA	Unknown	Total	Missing
2010	15 (88.2%)	2 (11.8%)	-	-	17	1^a
2008	17 (94.4%)	1 (5.7%)	-	-	18	

^a Narrogin Hospital did not report any information

DISCUSSION

Chart Review

Two thirds of the sample group had at least one chart review conducted, 82% for metropolitan patients and 19% for country patients during the audit period. This number increased for high-risk patients overall to 78%, 90% for metropolitan patients and 33% for country patients. A marked increase in chart review was noted in the metropolitan hospitals due to increased staffing resources as a consequence of PBS reform.

The Pharmaceutical Review Policy recommends that high-risk patients receive daily chart review. While this is not occurring for all such patients, high risk patients appear to be prioritised. The reduced rate of chart review in country hospitals is reflective of the lack of authorised FTE clinical pharmacist positions in these hospitals at the time of the audit. This has been rectified in some country hospital since the audit period. Further auditing of country sites is warranted to reflect increased pharmacist workforce.

The data shows that when a chart review is occurring, it is usually performed within one day of admission, either on the day of admission or the day following. The maximum number of days for chart review to occur was longer for patients at country sites than patients at metropolitan sites. This again is reflective of the limited clinical pharmacists in country areas.

When activity was examined for days of the week that chart review was occurring, there was significantly less chart review activity occurring on weekends. This is indicative of the lack of clinical pharmacists working on the weekend to perform such functions.

Length of stay could also influence the rate of timely chart review and other pharmaceutical review activities. Patients who have a short length of stay (e.g. 2 days only) are potentially less likely to be reviewed by a clinical pharmacist or appropriate credentialed professional, especially if the short stay was over the weekend as most hospitals do not provide clinical pharmacy services over the weekend. The average length of stay for each hospital is included in Appendix 4.

Allergies and Adverse Drug Reactions (ADR)

Completion of the ADR section significantly improved with an increase from 35% in 2008 to 73% in 2010 of the sample group having this section appropriately completed. Appropriate completion of the ADR section involves:

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- the documenting clinician ticking the 'nil known/unknown' allergy box and dating and signing the ADR section, if the patient is not known to have an allergy; or
- an ADR sticker being placed on all relevant sections of the chart, drug/allergen documented, reaction details documented and initialled and the ADR box signed and dated by documenting clinician, if the patient is known to have an allergy.

Of the 53% of patients with an incomplete ADR section, all charts had some form of ADR information documented compared with 8% having no documentation recorded in 2008. Although this is a considerable improvement compared with 2008 data, there is still room for improvement.

Prescription Entries

The number of prescription entries that could potentially cause medication errors was predominantly reduced after the completion of a chart review by a pharmacist or appropriately credentialed professional. The general improvement observed in areas of generic drug name, legal prescriptions, appropriate indications, unintentional dosage discrepancies, and drug form or route discrepancies, indicates the process of chart review may reduce medication error and improve patient safety and compliance with policy/laws (Refer to Tables 11-22).

However the following areas reviewed including use of approved abbreviations, compliance with hospital policy and guidelines, restrictions on use, and legible prescriptions did not improve. The most notable difference with 2008 data was the decline in use of approved abbreviations.

The process of chart review resulted in a decrease in the number of drug interactions identified, an activity which can improve patient safety. The potential for reducing errors and improving patient safety through chart reviews can be greatly increased if the proportion of charts being reviewed is increased as part of routine hospital medication safety programs.

There are various limitations that should be kept in mind when interpreting the data from this section. Firstly, the results must be viewed with some caution as the pre-post sample size was not equivalent, limiting direct comparison.

Secondly, the interactions could have been drug-drug or drug-disease interactions, detrimental or beneficial to the patient, depending on how the question was interpreted by the person completing the questionnaire. Thirdly, there are currently no standard

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guidelines indicating which drugs can be acceptably prescribed using their non-generic names. Different hospitals accept different brand names which can include but are not limited to drugs such as Seretide[®] or Oxynorm[®]. Discussion is required as to the need to develop a list of acceptable non-generic names that can be applied across the State.

Medication History and Reconciliation on Admission

Three quarters (77%) of the sample group had their medication history documented in 2010 compared with 68% in 2008, this activity being higher for patients at metropolitan hospitals. Half of the patients in country hospitals had a medication history documented in 2010 (similar results were observed in 2008). This is perhaps reflective of the lack of clinical pharmacists; however the figure is considerably low considering that admitting doctors generally take medication histories as part of the standard history.

Medication histories were documented prior to admission for some patients, potentially at a pre-admission clinic visit or as part of a pre-admission consultation. The majority (90%) of medication histories taken were documented to be within one day of admission, either on the day of admission or the day following.

While doctors and pharmacists were the primary professionals recording medication history in metropolitan areas, within country areas, 2010 data indicated pharmacists documenting medication histories increased from 3% to 23%, doctors to 38% and appropriately credentialled nurses decreased to 33%.

In all areas the primary source of medication history information was the patient. In 2008 only a quarter of medication histories were confirmed by a second source where in 2010 this increased to 43%. This demonstrates that the confirmation process of medication reconciliation on admission is occurring. The process of confirmation is recommended in the Pharmaceutical Review Policy and efforts must be made to understand barriers (e.g. time constraints) and address these barriers to improve compliance with this step in the medication reconciliation process. At times the patient may be confused or uneducated about their medication and medication histories taken from the patient alone may have errors, which would not be detected unless a second source is consulted.

Medication reconciliation on admission and discharge is one of the eight clinical practice improvement (CPI) activities occurring through the SQuIRe initiative. This involves obtaining a medication history for the patient and confirmation of such, as well as reconciliation of the medication history against the medication chart and resolution of

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any discrepancies noted. The funding for participation in the SQulRe program is additional to the annual baseline operational budget that WA hospitals receive from the WA Government. At the time of the audit hospitals have used their SQulRe funds in various ways including setting up intensive systems affecting a small area within the hospital or systems which cover the whole hospital.

The data indicates significant improvements were evident in each of the areas of the medication reconciliation CPI initiative. The extent of spread is dependant upon PBS Reform, size of hospital and acuteness of care. The results indicate that given the appropriate resources, medication reconciliation on admission can potentially be provided to all patients in all WA hospitals.

Supplementary activities to medication reconciliation are encouraged and should be undertaken if the activity concurs with current practice and availability of resources. These activities include the use of patients own medication bags (POMB), patient medication profiles, patients presenting with previous hospital discharge summaries or nursing home summaries, reports from home medication reviews and the use of St Johns Ambulance 'MedicAlert' bracelets or cards. Low compliance with supplementary activities when audited can be attributed to a number of factors, including a lack of documentation of activity being conducted as there is no official section of the patient's medical notes where this is to be documented. There may also be no need for any supplementary activities if an accurate medication history was already obtained from other sources. Activities such as an education campaign to encourage patients to bring documentation (such as medications profiles, previous discharge summaries and home medication reviews) and their medications with them to hospital should be considered to improve compliance with these supplementary activities. There is scope to document some of these activities on a standardised Medication Management Plan. Work is currently being undertaken to develop a state version for use in West Australian hospitals.

Medication Education during Hospitalisation and on Discharge

Patients who have changes made to their medication regimen during hospitalisation should be provided with medication education during hospitalisation and be given a medication profile on discharge. Although there was an improvement in 2010, documented compliance with this activity remained low. Medication education was documented as being provided to 28% (19% in 2008) of all patients (32% [20% in 2008] for high-risk patients) when the patient was reviewed.

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At the time of the audit there was only one official site to document provision of medication education, that being the WA Anticoagulant Chart. Some sites have a medication management plan which incorporates a tick box to indicate whether the patient has been provided with education on all of their medications at discharge.

When medication education was provided to patients, clinical pharmacists were the most likely to provide the education for patients within the metropolitan area but doctors, nurses or other health professionals (trainee pharmacist, pharmacy student or nurses) were most likely to provide the information in country areas.

The rate of provision of Consumer Medicine Information (CMI) leaflets was very low with 10% of patients documented as having received a CMI leaflet. Results for medication education given by a health professional and the provision of a CMI leaflet may be falsely low if these activities are occurring and not being documented in the patient notes or on medication charts. This is the situation in one hospital where CMI leaflets are routinely given out to all patients although no documentation is kept for this activity. Further investigation is required to review the need for documentation of medication counselling, and if required, where it would be most appropriate to document.

The provision of the Patient First booklet was documented for 1.5% of patients. Compliance with this initiative was slightly greater in country areas (2.2%) than in metropolitan areas (1.3%). While this audit reviewed the level of documented provision of this booklet, much of the distribution is not documented. The expected outcome of the provision of the Patient First booklet to patients is increased discussion about patient issues. Whether this discussion took place was beyond the scope of the Pharmaceutical Review Audit.

The provision of a patient medication profile occurred for 24% of patients (increased from 16% in 2008), this improved to 35% for high-risk patients (31% in 2008), indicating some prioritisation of these patients. The level of provision to high risk patients was higher in metropolitan areas (38%) than country areas (22%) perhaps reflecting the increased numbers of pharmacists and thus a capacity to prepare medication profiles. The data relating to this requirement must be interpreted with caution as some hospitals classify a medication profile provided to the patient as the medication list incorporated within the discharge summary, while other hospitals supply a separate medication profile in addition to the discharge summary. Hospitals that do not prepare a separate medication profile may still have a pharmacist involved in preparing or checking the

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discharge summary medication section. The need for documentation of this process should be reviewed and Information Communication Technology (ICT) solutions addressed to standardise practice across all sites.

Discharge process: Communication with the General Practitioner and Other Health Professionals

Only 79% of patients that were discharged had a discharge summary prepared during the audit period, this increased to 83% for high-risk patients. Part of this discrepancy can be attributed to patients who were discharged towards the end of the audit period, for whom the discharge summary was still in process at the end of the audit period. Patients in country facilities were less likely to have a discharge summary prepared than metropolitan patients indicating a difference in the discharge process between country and metropolitan areas. The majority of metropolitan sites have one of two versions of electronic discharge summary programs, and country sites predominantly use hand-written discharge summaries. A discharge summary should be prepared for every patient discharged from hospital, regardless of whether they have a regular general practitioner or not. The patient should also receive a copy of the discharge letter unless deemed inappropriate by the treating clinician (ie mental health or paediatric services)

For patients who had a discharge summary prepared there was a similar rate of discrepancy between the discharge summary and the NIMC in both audits. There was a notable decrease in discrepancies observed in 2010 between the discharge summary and the medication profile when both were prepared. It was beyond the scope of the audit to differentiate between the causes of these discrepancies; the discrepancies could have been intentional changes or unintentional errors.

Discharge summaries were not prepared for patients at some country hospitals. One reason being the patient's general practitioner was also responsible for the care of the patient in the hospital and therefore the preparation of a discharge summary is considered unnecessary.

The percentage of patient discharge summaries that were provided to general practitioners increased from 66% to 77%. Patients who were discharged at the end of the audit period could have influenced this data as the information may not have been transmitted by the end of the audit period. Although this report states that the patient's general practitioner was provided with a discharge summary, it was out of the scope of this audit to measure the number of general practitioners that actually received and

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reviewed the patient discharge summaries. Some patients may not have a general practitioner, a factor that was not captured in the audit.

The maximum number of days to provide the general practitioner with a discharge summary was from 2 days prior to and up to 30 days post-discharge. This was an improvement compared 2008 data of 7 days prior to and up to 32 days post-discharge.

Patients who have dosage aids (such as Webster-Paks) prepared by their community pharmacy should have greater involvement of that pharmacy in the discharge process, to facilitate the continuation of medication changes on discharge. The audit results indicated that communication by the hospital with Residential Care Facilities and community pharmacies has increased since the baseline audit in 2008; however strategies should be reviewed to ensure that communication with other health professionals in a timely manner continues to increase.

In 2010, 29% of patients discharged from country hospitals and 58% of patients discharged from metropolitan sites received a copy of the discharge summary. It is important that patients receive a copy of their discharge summary so that they are informed, empowered, and have a resource to provide at future health-related appointments such as subsequent hospital admissions. Again, these results may be falsely represented due to lack of documentation.

Medication reconciliation on discharge or transfer involves reconciliation of the discharge summary against the medication chart and resolution of any discrepancies noted, as well as confirmation of liaison between the hospital and all members involved in the patient's care upon discharge. An improvement in medication reconciliation processes on discharge has been observed in this audit which demonstrates the benefits of the SQLRe initiative.

Although provision of the discharge summary has traditionally been the sole responsibility of the doctor, an increased involvement of a clinical pharmacist (17%) in the discharge process was observed in 2010. As expected, this was lower in country areas. The result is still quite low and this could be attributed to the limited time and specified role of the clinical pharmacist or inclusion of the clinical pharmacist in the discharge process due to the lack of permission to enter information into the electronic discharge summary. All three areas highlighted should be addressed to improve the quality of the discharge process.

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The discharge summary was in most cases completed with the generic name of the medication and the dose of the medication. Improvement of medication management information including medication status, rationale for changes, monitoring requirements and expected outcomes was observed. This information if included in the discharge summary assists the general practitioner and patient to understand any medication changes and what to monitor and expect after discharge.

Quality Activities Promoting Medication Safety

A small proportion of patients (27 patients in 2010) experienced an adverse drug reaction during their admission, and of these only 11 reactions were classified as life-threatening. The majority of these adverse drug reactions were documented in the patients' notes (97%) and in the discharge summary (85%), however completion of the reaction information on the medication chart (55%) was lower than expected. This lack of documentation on the medication chart increases the risk of re-exposure such that the same or a more severe adverse drug reaction could re-occur in the future.

None of the adverse drug reactions were documented as being reported through the hospital's clinical incident management system or to the Adverse Drug Reaction Advisory Committee (ADRAC). The reactions may have been deemed unpredictable allergies and not clinical incidents as such. An ADR that is not due to re-exposure of the medication resulting from lack of documentation or error is not considered a clinical incident. However it is recommended that ADRs which occur during the hospital admission should be reported to ADRAC. The appropriateness of documenting ADRs into the hospital clinical incident management system requires review and the process of ADR documentation and reporting requires standardisation of practice across sites.

There continues to be a good level of participation of hospitals and their staff in medication-related safety and quality activities. Improvement in participation of drug-use evaluations and routine reviews/audits by sites has been observed to ensure patients are provided with high-quality, best-practice, safe care.

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Overall Issues

- There is still a lack of common understanding and definition within hospitals of an appropriately credentialed professional for conducting pharmaceutical review activities.
- The clinical pharmacist: bed ratio ranges from 1:12 to 1:123 (as shown in Table 5) which is an improvement on ratios existing in 2008 (1:38 to 1:178). This does not take into account that many of the clinical pharmacists have some of their time diverted to attend to non-clinical activities. These levels are lower than recommended by the Society of Hospital Pharmacists of Australia (SHPA). SHPA recommends that clinical pharmacist: bed ratios range between 1:10 and 1:110 depending on the patient case mix.
- Table 75 outlines the recommended clinical pharmacy staffing for different service groups based on a clinical pharmacy service to support the Australian Pharmaceutical Advisory Council (APAC) Guidelines and facilitate the requirements of the Pharmaceutical Review Policy. However if additional activities (e.g. dispensing, ensuring compliance with PBS requirements, liaison with community care providers or provision of dose administration aids) are included in a pharmacist's job description the number of patients/beds they could cover would be reduced.

Table 75: SHPA Clinical pharmacist staffing levels for provision of clinical pharmacy services for a five day period

Category	Service related group /bed type	Beds to one FTE pharmacist for clinical pharmacy services
Critical Care Units	All critical care units, extensive burns, tracheostomy and ECMO	10
Specialist units, high dependence on medicines	Haematology, Immunology and Infections, Medical Oncology, Renal Medicine, Transplantation, Qualified Neonates	15
Medical Bed Types	General Medical Units and Cardiology, Dermatology, Endocrinology, Gastroenterology, Neurology, Respiratory Medicine, Rheumatology, Pain Management, Paediatric Medicine, Acute Psychiatry, Palliative Care, Acute Definitive Geriatrics	20
Surgical Bed Types	General surgical units and Breast Surgery, Cardiothoracic surgery, Colorectal surgery, upper GIT surgery, Head and Neck Surgery, Neurosurgery, Orthopaedics, Plastic and Reconstructive surgery, Urology, Vascular surgery	25
Minimal Change to medicines anticipated	Ear, Nose and Throat, Gynaecology, Obstetrics, Unqualified Neonates, Perinatology	30
Day Surgery	Day surgery beds, Diagnostic GI Endoscopy, Renal dialysis, Dentistry, Ophthalmology	110 patients per week
Longer stay admissions	Rehabilitation, Drug and Alcohol, Non-acute Geriatrics	30

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- The implementation of the Commonwealth Pharmaceutical Benefit Scheme Reform Program in WA hospitals will impact on pharmaceutical review activities being conducted. At the time of the audit 7 of the 11 metropolitan hospitals had achieved PBS Reform, Royal Perth Hospital and Sir Charles Gardner Hospitals were still recruiting staff at the time of the audit. The country sites had been approved PBS funding but had yet to formalise staff positions through the Health Corporate Network (HCN) or initiate the recruitment process. Recruitment to rural areas is also identified as a problem.

Commonwealth Pharmaceutical Benefit Scheme Reform Program

The Commonwealth Pharmaceutical Benefit Scheme (PBS) Reform Program is part of a strategy to improve the continuum of care for patients moving between the hospital and community setting, and aims to improve the way patients access their medications.

The PBS Reform Program is an initiative between the Commonwealth and State Governments, and for hospitals to access additional funding for pharmacy services, they are required to implement a set of best-practice guidelines (the APAC Guidelines⁴). When the WA Pharmaceutical Review Policy was developed, the APAC Guidelines were incorporated into each standard. Therefore, by implementing the PBS Reform Program, WA hospitals are anticipated to increase their compliance with the standards of the Pharmaceutical Review Policy.

The process for implementing the PBS Reform Program requires hospitals to outline resource requirements to be able to comply with the APAC Guidelines. An increase in pharmacist numbers has had a positive impact on the implementation of the Pharmaceutical Review Policy, and the extent to which pharmaceutical review activities are conducted in WA hospitals. Improvements have been seen but there is still room for further development of pharmaceutical review practices to improve patient care.

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Appendix 1 - Hospital Demographic Information Sheet



Pharmaceutical Review Baseline Data Collection

Hospital Demographic Information Collection
One sheet to be completed per hospital.

-
1. Hospital Name: _____
 2. Total number of hospital beds (as at 01 July 2007): _____
 3. Total number of patients admitted to hospital between 01 July and 08 July 2007: _____
 4. Total number of patients with Pharmaceutical Review Baseline Audit Tool attached to patient file between 01 July and 08 July 2007: _____
 5. Total number of COMPLETED Pharmaceutical Review Baseline Audit Tools collected at the end of the audit period (this includes patients that weren't discharged, but have the 'Not discharged prior to audit completion date' box ticked): _____
 6. Total number of INCOMPLETE Pharmaceutical Review Baseline Audit Tools collected at the end of the audit period: _____
 7. Total number of authorised full-time equivalent (FTE) Pharmacist positions: _____
 8. Total number of filled full-time equivalent (FTE) Pharmacist positions: _____
 9. Total number of Pharmacists (count the number of Pharmacists including full-time, part-time and casual staff): _____
 10. Total number of authorised full-time equivalent (FTE) Clinical Pharmacist positions: _____
 11. Total number of filled full-time equivalent (FTE) Clinical Pharmacist positions: _____
 12. Total number of Clinical Pharmacists (count the number of Clinical Pharmacists including full-time, part-time and casual staff): _____
 13. Total number of Clinical Technicians (support staff working in a clinical capacity): _____
 14. Average Clinical Pharmacist to patient ratio during the audit period: _____
 15. Does the hospital have a committee that is responsible for the oversight and coordination of initiatives relating to the Quality Use of Medicines? YES NO
 16. Does the hospital promote participation in Quality Use of Medicine activities? YES NO
 17. Does the hospital participate in drug use evaluations? YES NO
 18. Does the hospital conduct routine review/audit of charts for features such as legibility, errors on charts, dose administration times and dose omissions? YES NO
 19. If 'YES' are the above review/audit of charts endorsed by an appropriate QA committee (i.e. audit tools are endorsed and consistent with the aims of the QA committee) YES NO
 20. Are hospital staff involved with other hospital and state medication safety working groups and email discussion networks, such as the WA Medication Safety Group? YES NO



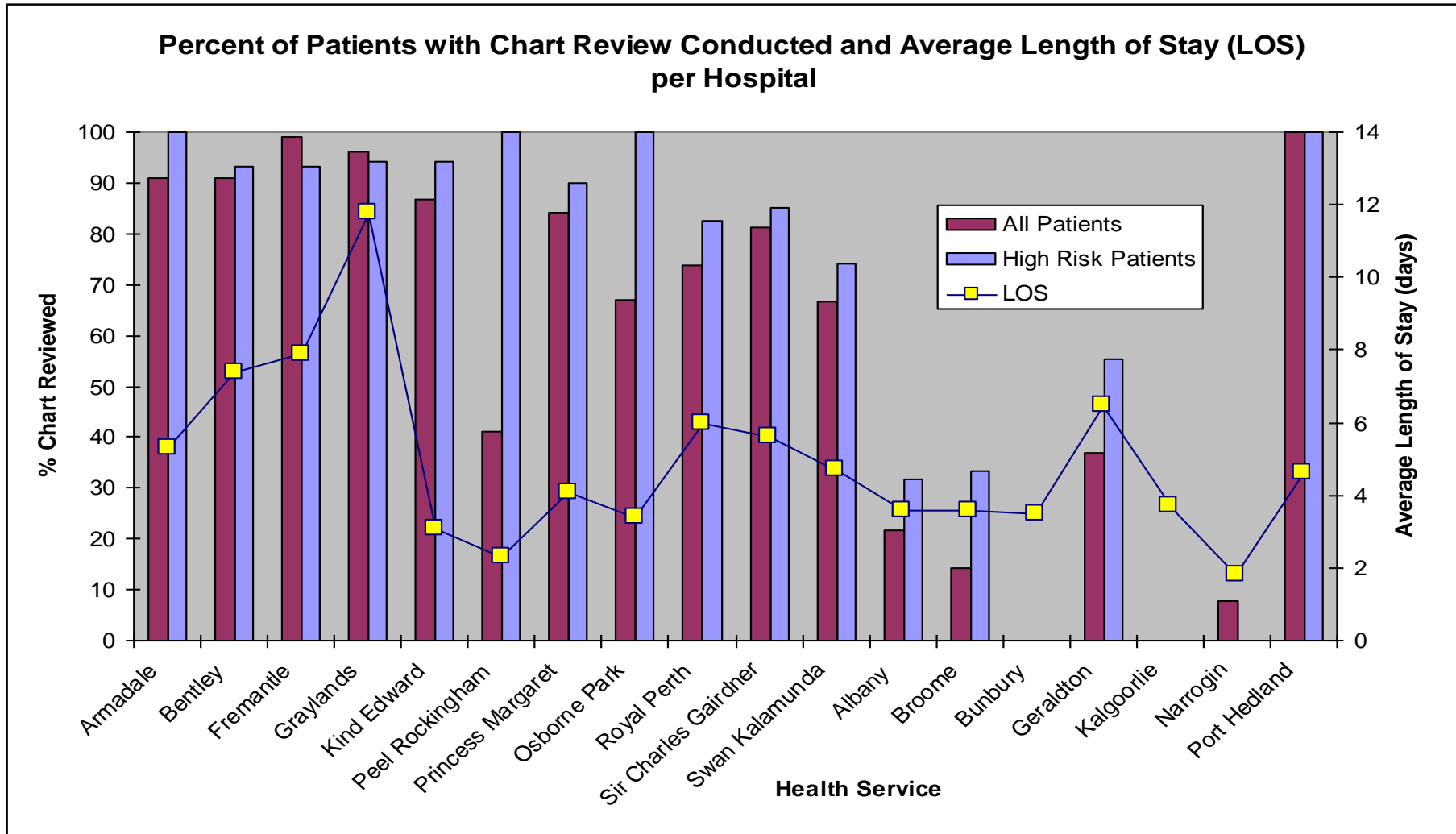
PHARMACEUTICAL REVIEW 2010 AUDIT REPORT

Appendix 2 - Was a Chart Review Conducted?							
	Year	Yes	No	NA	Unknown	Total	Missing
Armadale	2010	50 (91%)	5 (9%)	-	-	55	
	2008	39 (81.3%)	9 (18.8%)	-	-	48	
Bentley	2010	39 (95.1%)	2 (4.9%)	-	-	41	2
	2008	32 (91.4%)	2 (5.7%)	1 (2.9%)	-	35	
Fremantle	2010	112 (99.1%)	1 (0.9%)		-	113	
	2008	57 (90.5%)	3 (4.8%)	3 (4.8%)	-	63	
Graylands	2010	25 (96.2%)	1 (3.8%)	-	-	26	
	2008	21 (100%)	-	-	-	21	
King Edward	2010	98 (86.7%)	15 (13.3%)			113	
	2008	108 (82.4%)	18 (13.7%)	4 (3.1%)	1 (0.8)	131	1
Peel Rockingham	2010	14 (41.2%)	20 (58.8%)	-	-	34	
	2008	-	105 (100%)	-	-	105	1
Princess Margaret	2010	89 (84%)	16 (15.1%)	1(0.9%)	-	106	
	2008	45 (47.9%)	42 (44.7%)	7	-	94	
Osborne Park	2010	53 (67.1%)	26 (32.9%)		-	79	
	2008	39 (44.8%)	43 (49.4%)	5 (5.7%)	-	87	
Royal Perth	2010	93 (75%)	31 (25%)			124	2
	2008	50 (32.1%)	101(64.7%)	4 (2.6%)	1 (0.6%)	156	
Sir Charles Gairdner	2010	148 (83.7%)	28 (15.8%)	1(0.5%)	-	177	5
	2008	186 (98.9%)	2 (1.1%)	-	-	188	
Swan Kalamunda	2010	50 (66.7%)	23 (30.7%)		2 (2.6%)	75	
	2008	64 (66%)	32 (33%)	1 (1%)	-	97	
Albany	2010	24 (22%)	79 (72.5%)	6(5.5%)	-	109	1
	2008	36 (28.8%)	83 (66.4%)	6 (4.8%)	-	125	2
Broome	2010	4 (14.3%)	24 (85.7%)	-	-	28	
	2008	10 (18.9%)	43 (81.1%)	-	-	53	1
Bunbury	2010	0 (0%)	79 (100%)	-	-	79	
	2008	1 (1%)	98 (99%)	-	-	99	
Geraldton	2010	23 (37.7%)	38 (62.3%)		-	61	1
	2008	18 (26.1%)	50 (72.5%)	1 (1.4%)	-	69	
Kalgoorlie	2010	0 (0%)	4 (10%)	1 (2.5%)	35(87.5%)	40	0
	2008	16 (28.6%)	40 (71.4%)	-	-	56	1
Narrogin	2010	1 (11.1%)	5 (55.6%)	2 (22.2%)	1 (11.1%)	9	4
	2008	18 (26.1%)	50 (72.5%)	1 (1.4%)	-	69	
Port Hedland	2010	17 (100%)	0 (0%)			17	
	2008	No Information					

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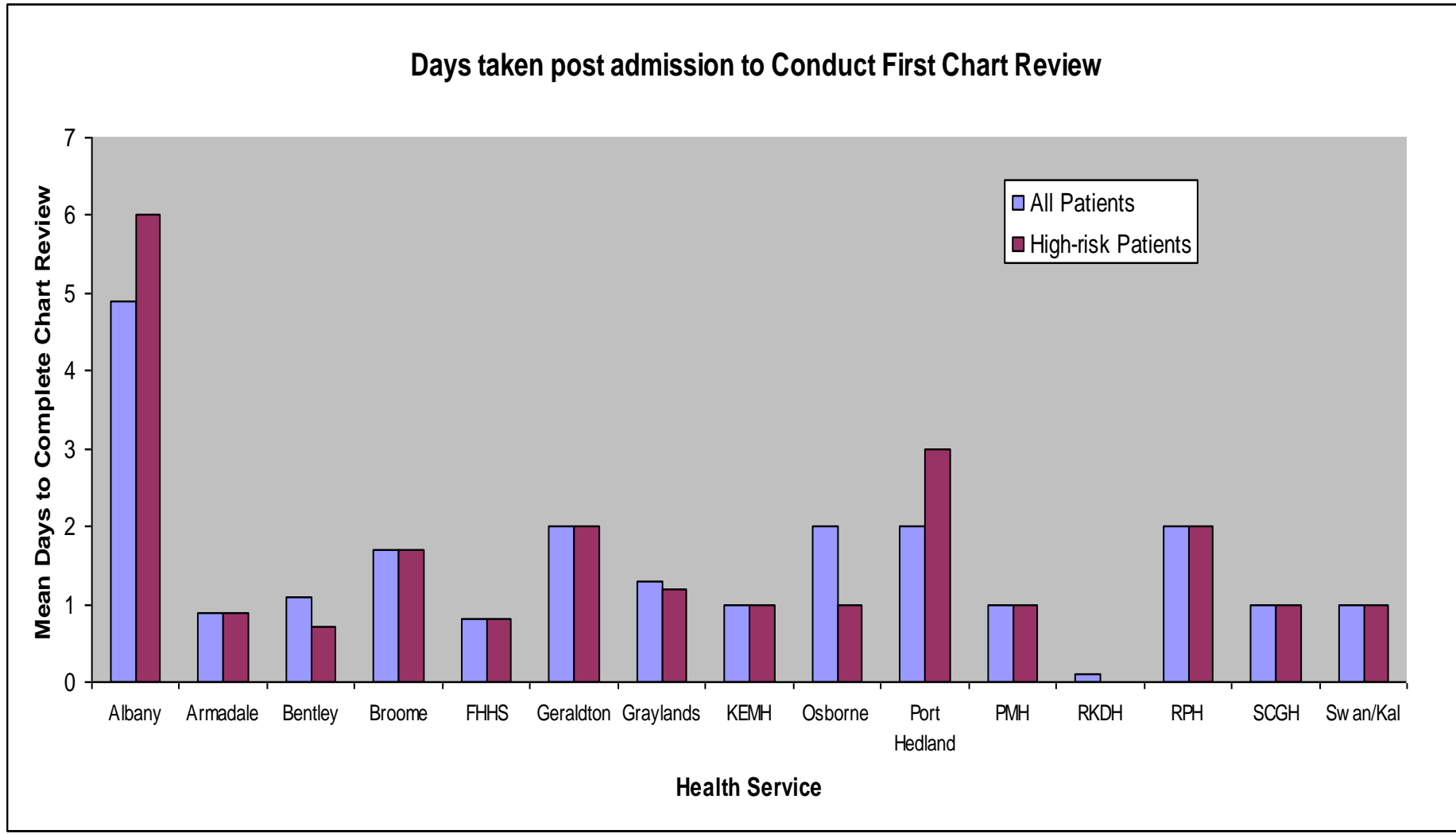
Appendix 3 - Was a Chart Review Conducted if the Patient was a High Risk Patient?							
	Year	Yes	No	NA	Unknown	Total	Missing
Armadale	2010	34 (100%)	0 (0%)	-	-	34	
	2008	25 (92.6%)	2 (7.4%)	-	-	27	
Bentley	2010	28 (93.3%)	2 (6.7%)	-	-	30	
	2008	19 (90.5%)	2 (9.5%)	-	-	21	
Fremantle	2010	82 (98.8%)	1 (1.2%)	-	-	83	
	2008	38 (90.5%)	1 (2.4%)	-	3 (7.1%)	42	
Graylands	2010	16 (94.1%)	1 (5.9%)	-	-	17	
	2008	21 (100%)	-	-	-	21	
King Edward	2010	16 (94.1%)	1 (5.9%)	-	-	17	
	2008	4 (80%)	1 (20%)	-	-	5	
Peel Rockingham	2010	18 (100%)		-	-	18	
	2008	-	33 (100%)	-	-	33	
Princess Margaret	2010	64 (90.1%)	7 (9.9%)	-	-	71	
	2008	28 (75.7%)	9 (24.3%)	-	-	37	
Osborne Park	2010	18 (100%)			-	18	
	2008	28 (87.5%)	4 (12.5%)		-	32	
Royal Perth	2010	70 (84.3%)	13 (15.7%)	-		83	2
	2008	47 (39.8%)	70 (59.3%)	-	1 (0.8%)	118	
Sir Charles Gairdner	2010	121 (87%)	18 (13%)	-	-	139	3
	2008	146 (100%)	-	-	-	146	
Swan Kalamunda	2010	40 (74.1%)	14 (25.9%)	-	-	54	
	2008	29 (85.3%)	5 (14.7%)	-	-	34	
Albany	2010	18 (31.6%)	39 (68.4%)	-	-	57	
	2008	18 (69.2%)	8 (30.8%)	-	-	26	1
Broome	2010	4 (33.3%)	8 (66.7%)	-	-	12	1
	2008	6 (25%)	18 (75%)	-	-	24	
Bunbury	2010	-	29 (100%)	-	-	29	
	2008	-	31 (100%)	-	-	31	
Geraldton	2010	16 (55.2%)	13 (44.8%)	-	-	29	
	2008	10 (34.5%)	19 (65.5%)	-	-	29	
Kalgoorlie	2010	0 (0%)	1 (100%)	0	-	1	7
	2008	3 (60%)	2 (40%)	-	-	5	
Narrogin	2010	-	15 (100%)	-	-	15	
	2008	-	15 (100%)	-	-	15	
Port Hedland	2010	8 (88.9%)	1 (11.1%)			9	
	2008	No information					

Appendix 4 - Percent of Patients with Chart Review Conducted and LOS per Hospital



Note: No data from Bunbury or Kalgoorlie on the Number of Charts Reviewed

Appendix 5 - Days taken to Conduct First Chart Review



Note: no data from Bunbury, Kalgoorlie or Narrogin

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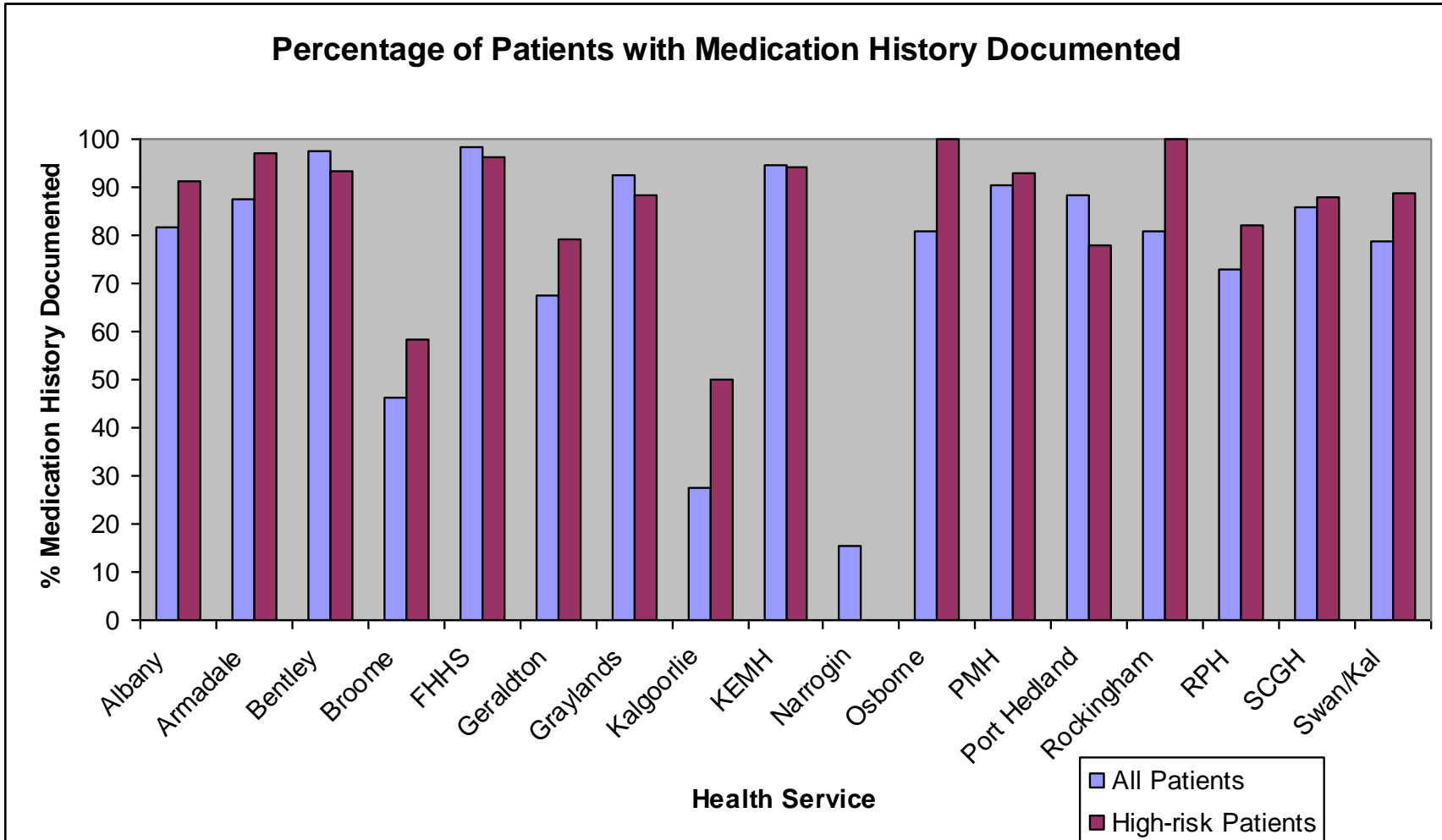
Appendix 6 - Was a Medication History Documented?

Armadale	2010	48 (90.5%)	5 (9.5%)			53	2
	2008	33 (68.8%)	15 (31.3%)	-	-	48	
Bentley	2010	42 (97.7%)	1 (2.3%)	-	-	43	
	2008	31 (88.6%)	4 (11.4%)	-	-	35	
Fremantle	2010	112(98.2%)	2 (1.8%)	-	-	114	
	2008	46 (74.2%)	16 (25.8%)	-	-	62	1
Graylands	2010	24 (92.3%)	2 (7.7%)	-	-	26	
	2008	19 (90.5%)	2 (9.5%)	-	-	21	
King Edward	2010	107(94.7%)	6 (5.3%)			113	
	2008	54 (41.9%)	14 (10.9%)	56(43.4%)	5 (3.9%)	129	3
Peel Rockingham	2010	64 (81%)	15 (19%)			79	
	2008	65 (61.3%)	30 (28.3%)	2 (1.9%)	9 (8.5%)	106	
Princess Margaret	2010	96 (91.4%)	7 (6.7%)	2 (1.9%)	-	105	1
	2008	72 (76.6%)	18 (19.1%)	4 (4.3%)	-	94	
Osborne Park	2010	64 (81%)	15 (19%)		-	79	
	2008	53 (60.9%)	33 (37.9%)	1 (1.1%)	-	87	
Royal Perth	2010	92 (73%)	33 (26.2%)		1 (0.79%)	126	
	2008	146(94.2%)	8 (5.2%)	1 (0.6%)	-	155	1
Sir Charles Gairdner	2010	157(86.3%)	18 (9.9%)	1 (0.5%)	6 (3.3%)	182	
	2008	171(93.4%)	8 (4.4%)	2 (1.1%)	2 (1.1%)	183	5
Swan Kalamunda	2010	59 (78.7%)	16 (21.3%)	-	-	75	
	2008	90 (95.7%)	4 (4.3%)	-	-	94	3
Albany	2010	90 (83.3%)	9 (8.3%)	3 (2.8%)	6 (5.6%)	108	2
	2008	84 (66.7%)	28 (22.2%)	14 (11.1%)	-	126	1
Broome	2010	13 (46.4%)	15 (53.6%)		-	28	
	2008	13 (24.5%)	31 (58.5%)	9 (17%)	-	53	1
Bunbury	2010	-	76 (97.4%)	2 (2.6%)	-	78	1
	2008	47 (48%)	39 (39.8%)	12 (12.2%)	-	98	1
Geraldton	2010	42 (67.7%)	20 (32.3%)	-		62	
	2008	41 (1.2%)	24 (35.8%)	-	2 (3%)	67	2
Kalgoorlie	2010	11 (27.5%)	24 (60%)	1 (2.5%)	4 (10%)	40	
	2008	6 (10.5%)	51 (89.5%)	-	-	57	
Narrogin	2010	2 (15.4%)	7 (53.8%)	4 (30.8%)	-	13	
	2008	8 (30.8%)	18 (69.2%)	-	-	26	
Port Hedland	2010	15 (88.2%)	2 (11.8%)			17	
	2008	No Information					

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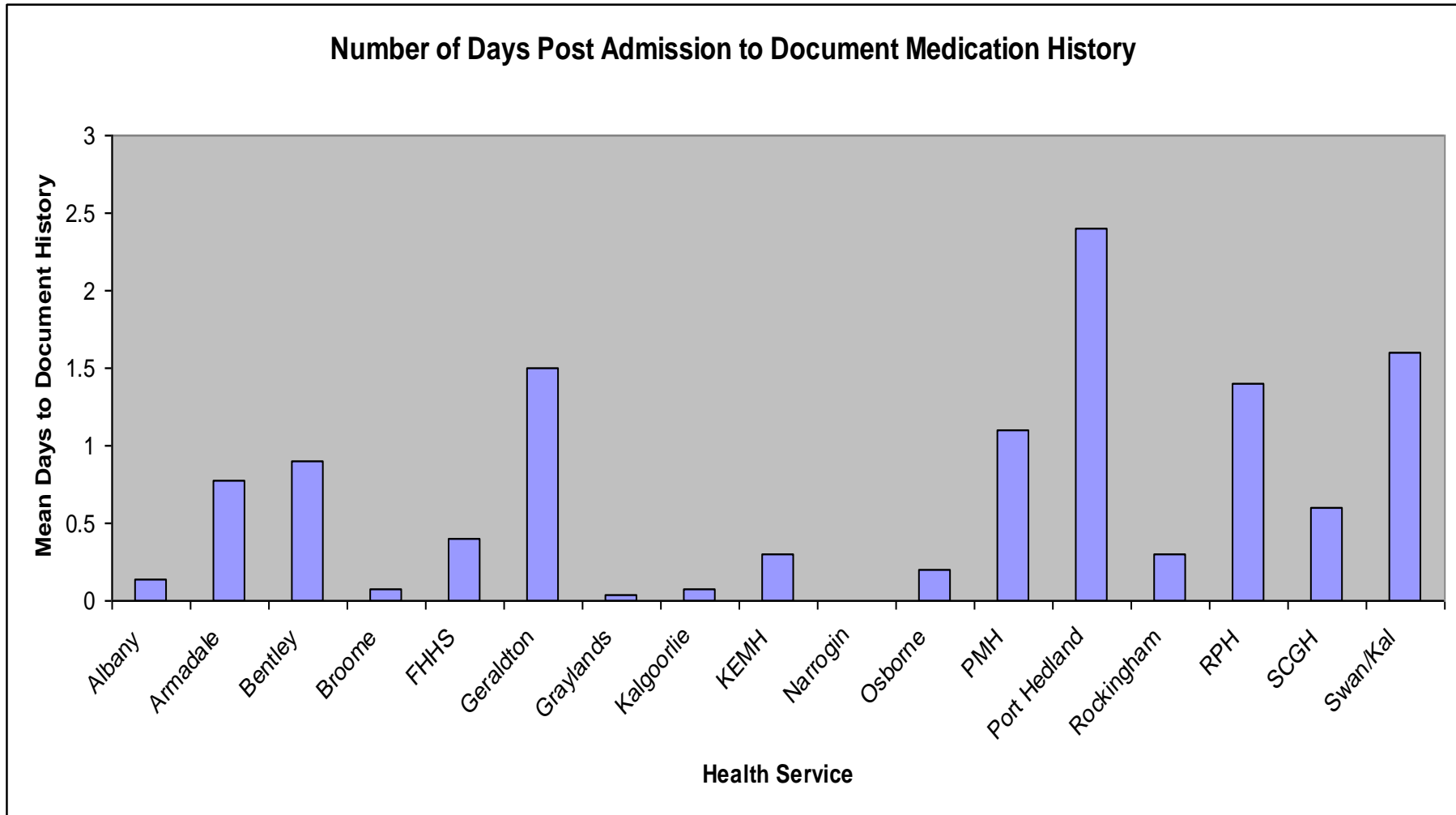
Appendix 7 - Was a Medication History Documented if the Patient was a High Risk Patient?							
	Year	Yes	No	NA	Unknown	Total	Missing
Armadale	2010	33 (97.1%)	1 (2.9%)	-	-	34	
	2008	23 (85.2%)	4 (14.8%)	-	-	27	
Bentley	2010	28 (96.5%)	1 (3.5%)	-	-	29	1
	2008	19 (90.5%)	2 (9.5%)	-	-	21	
Fremantle	2010	80 (96.4%)	3 (3.6%)	-	-	83	
	2008	33 (78.6%)	9 (21.4%)	-	-	42	
Graylands	2010	15 (88.2%)	2 (11.8%)	-	-	17	
	2008	19 (90.5%)	2 (9.5%)	-	-	21	
King Edward	2010	16 (94.1%)	1 (5.9%)	-	-	17	
	2008	3 (60%)	1 (20%)	1 (20%)	-	5	
Peel Rockingham	2010	4 (100%)	-	-	-	4	
	2008	14 (42.4%)	18 (52.5%)	-	1 (3%)	33	
Princess Margaret	2010	66 (94.3%)	4 (5.7%)	-	-	70	1
	2008	26 (70.3%)	9 (21.6%)	3 (8.1%)	-	37	
Osborne Park	2010	18 (100%)	-	-	-	18	
	2008	31 (96.9%)	1 (3.1%)	-	-	32	
Royal Perth	2010	69 (82.1%)	14 (16.7%)	-	1 (1.2%)	84	
	2008	114 (96.6%)	3 (2.5%)	1 (0.8%)	-	118	
Sir Charles Gairdner	2010	126 (90.6%)	9 (6.5%)	-	4 (2.9%)	139	3
	2008	136 (94.4%)	7 (4.9%)	-	1 (0.7%)	144	2
Swan Kalamunda	2010	48 (88.9%)	6 (11.1%)	-	-	54	
	2008	33 (100%)	-	-	-	33	1
Albany	2010	52 (92.8%)	2 (3.6%)	2 (3.6%)	-	56	1
	2008	18 (66.7%)	7 (25.9%)	2 (7.4%)	-	27	
Broome	2010	7 (58.3%)	5 (41.7%)	-	-	12	
	2008	6 (26.1%)	16 (69.6%)	1 (4.3%)	-	23	1
Bunbury	2010	-	29 (100%)	-	-	29	
	2008	17 (54.8%)	8 (25.8%)	6 (19.4%)	-	31	
Geraldton	2010	23 (79.3%)	6 (20.7%)	-	-	29	
	2008	21 (77.8%)	5 (18.5%)	-	1 (3.7%)	27	2
Kalgoorlie	2010	4 (50%)	2 (25%)	0	2 (25%)	8	
	2008	3 (60%)	2 (40%)	-	-	5	
Narrogin	2010	0 (0%)	0 (0%)	-	-	0	
	2008	4 (26.7%)	11 (73.3%)	-	-	15	
Port Hedland	2010	7 (77.8%)	2 (22.2%)	-	-	9	
	2008	No information					

Appendix 8- Percentage of Patients with Medication History Documented



Note: No data from Bunbury

Appendix 9 - Number of Days to a Documented Medication History

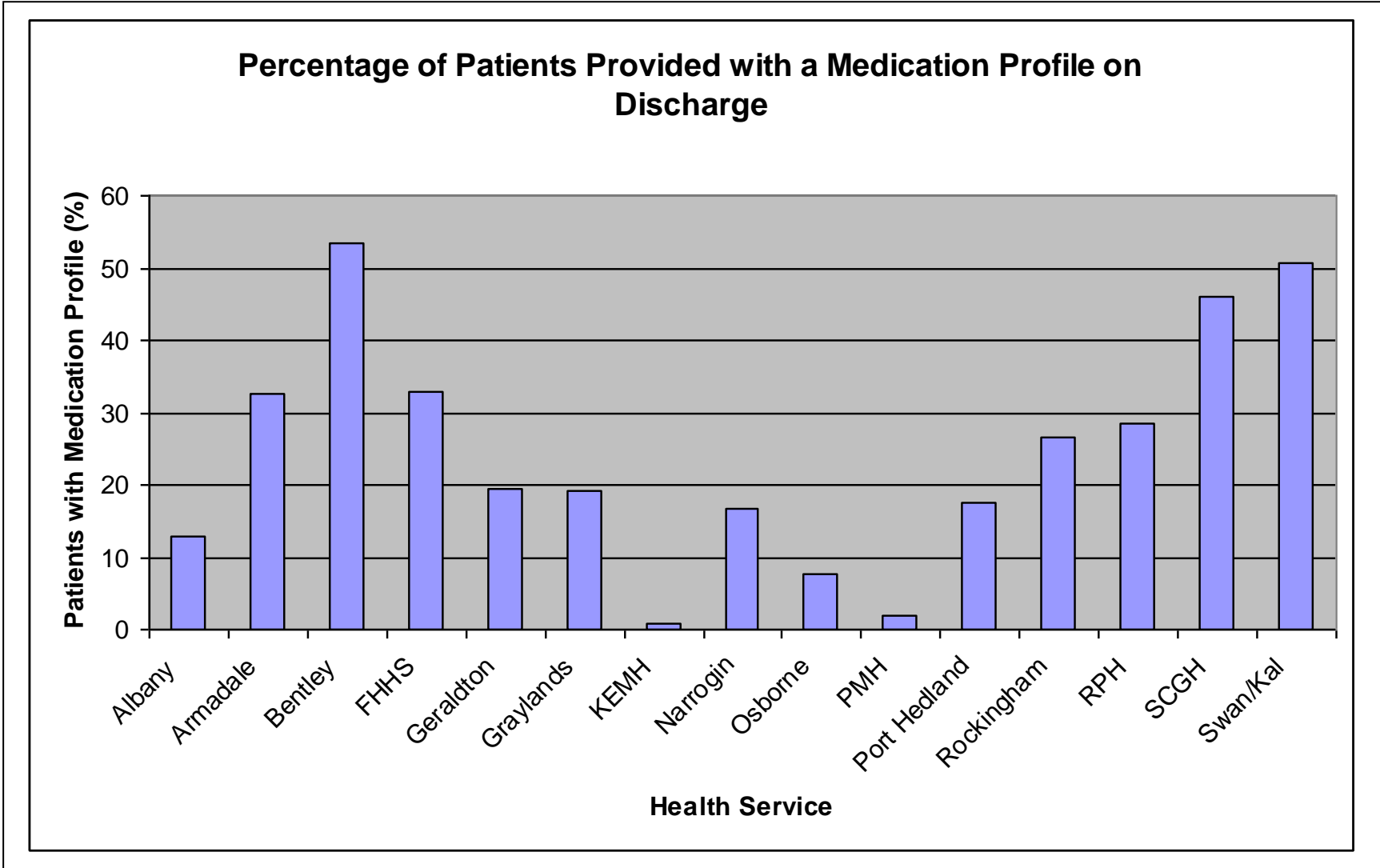


Note: No data from Bunbury or Narrogin

PHARMACEUTICAL REVIEW 2010 AUDIT REPORT

Appendix 10 - Was the Patient Provided with a Medication Profile on Discharge?							
	Year	Yes	No	NA	Unknown	Total	Missing
Armadale	2010	18 (33.9%)	20 (37.8%)	12 (22.6%)	3 (5.7%)	53	2
	2008	5 (11.1%)	38 (84.4%)	2 (4.4%)	-	45	
Bentley	2010	23 (54.8%)	8 (19.0%)	10 (23.8%)	1 (2.4%)	42	3
	2008	12 (54.5%)	9 (40.9%)	-	1 (4.9%)	22	1
Fremantle	2010	35 (33.0%)	55 (51.9%)	16 (15.1%)	-	106	7
	2008	11 (21.2%)	36 (69.2%)	5 (9.6%)	-	52	2
Graylands	2010	5 (20.8%)	-	19 (79.2%)	-	24	2
	2008	8 (66.7%)	2 (16.7%)	-	2 (16.7%)	12	
King Edward	2010	1 (0.9%)	8 (7.2%)	94 (84.7%)	8 (7.2%)	111	2
	2008	2 (1.8%)	63 (56.3%)	38 (33.9%)	9 (8%)	112	20
Peel Rockingham	2010	9 (32.1%)	9 (32.1%)	7 (25%)	3 (10.8%)	28	6
	2008	1 (1%)	51 (48.6%)	12 (11.4%)	41 (39%)	105	
Princess Margaret	2010	2 (1.9%)	66 (62.3%)	37 (34.9%)	1 (0.9%)	106	
	2008	-	53 (56.4%)	41 (43.6%)	-	94	
Osborne Park	2010	6 (7.7%)	44 (56.4%)	28 (35.9%)	-	78	1
	2008	15 (18.3%)	63 (76.8%)	1 (1.2%)	3 (3.7%)	82	
Royal Perth	2010	36 (29.5%)	50 (41%)	13 (10.8%)	23(18.7%)	122	4
	2008	24 (16.7%)	97 (67.4%)	-	23 (16%)	144	1
Sir Charles Gairdner	2010	82 (50.3%)	33 (20.2%)	13 (8.0%)	35(21.5%)	163	15
	2008	104(70.7%)	29 (19.7%)	7 (4.8%)	7 (4.8%)	147	20
Swan Kalamunda	2010	30 (52.6%)	14 (24.6%)	10 (17.5%)	3 (5.3%)	57	2
	2008	11 (12.8%)	64 (74.4%)	11 (12.8%)	-	86	1
Albany	2010	14 (13.7%)	67 (65.7%)	10 (9.8%)	11(10.8%)	102	6
	2008	3 (2.4%)	48 (39%)	70 (59.9%)	2 (1.6%)	123	3
Broome	2010	-	40 (78.4%)	9 (17.7%)	2 (3.9%)	51	3
	2008	-	40 (78.4%)	9 (17.6%)	2 (3.9%)	51	3
Bunbury	2010	-	21 (87.5%)	3 (12.5%)	-	24	4
	2008	-	83 (85.6%)	5 (5.2%)	9 (9.3%)	97	2
Geraldton	2010	12 (19.7%)	41 (67.2%)	8 (13.1%)	-	61	1
	2008	9 (13.4%)	54 (80.6%)	4 (6%)	-	67	2
Kalgoorlie	2010	0 (0%)	33 (82.5%)	3 (7.5%)	4 (10%)	40	
	2008	-	54 (100%)	-	-	54	3
Narrogin	2010	2 (40%)	2 (40%)	1 (20%)	-	5	7
	2008	-	12 (52.2%)	1 (4.3%)	10(43.5%)	23	3
Port Hedland	2010	3 (37.5%)	4 (50%)	-	1 (12.5%)	8	9
	2008	No Information					

Appendix 11 - Percent of Patients Provided with a Medication Profile on Discharge

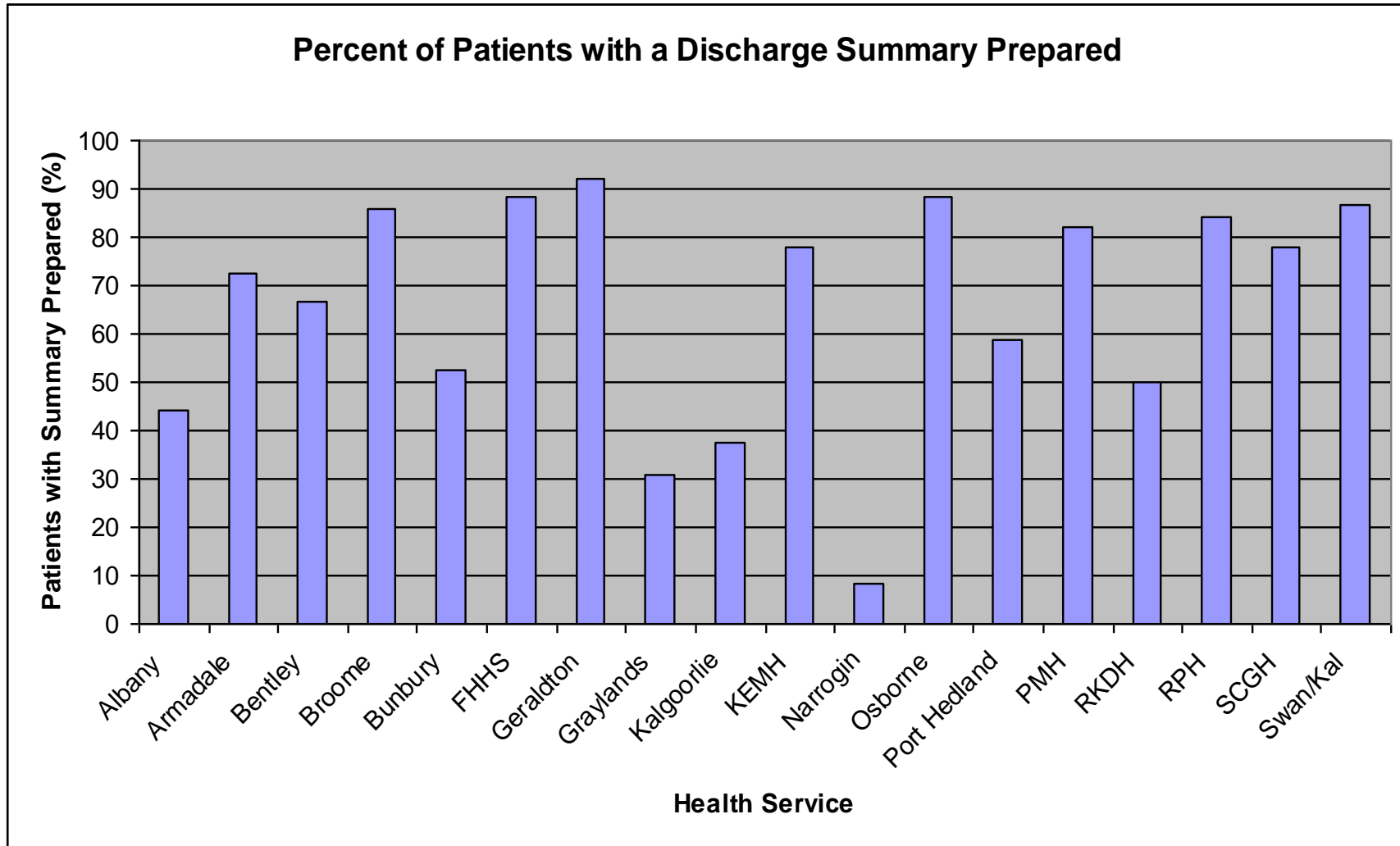


Note: No data from Broome, Bunbury or Kalgoorlie

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Appendix 12 - If the Patient was Discharged Before the End of the Audit Period, was a Summary Prepared Within the One Month Audit Period?							
	Year	Yes	No	NA	Unknown	Total	Missing
Armadale	2010	42 (77.8%)	4 (7.4%)	7 (12.9%)	1 (1.9%)	54	4
	2008	29 (64.4%)	15 (33.3%)	1 (2.2%)	-	45	
Bentley	2010	28 (66.7%)	3 (7.1%)	11 (26.2%)		42	
	2008	21 (95.5%)	-	-	1 (4.5%)	22	1
Fremantle	2010	100 (88.5%)	4 (3.6%)	9 (7.9%)		113	
	2008	38 (71.1%)	15 (28.3%)	-	-	53	1
Graylands	2010	8 (30.8%)		18 (69.2%)		26	
	2008	11 (91.7%)	1 (8.3%)	-	-	12	
King Edward	2010	88 (77.9%)	11 (9.7%)	10 (8.8%)	4 (3.6%)	113	
	2008	93 (81.6%)	12 (10.5%)	6 (5.3%)	3 (2.6%)	114	18
Peel Rockingham	2010	17 (50%)	10 (29.4%)	-	7 (20.6%)	34	
	2008	81 (77.1%)	23 (21.9%)	1 (1%)	-	105	
Princess Margaret	2010	87 (82.1%)	17 (16%)	2 (1.9%)	-	106	
	2008	59 (63.4%)	34 (36.6%)	-	-	93	1
Osborne Park	2010	69 (88.5%)	1 (1.3%)	8 (10.2%)	-	78	
	2008	68 (82.9%)	13 (15.9%)	1 (1.2%)	-	82	
Royal Perth	2010	106 (84.8%)	12 (9.6%)	3 (2.4%)	4 (3.2%)	125	1
	2008	134 (92.4%)	11 (7.6%)	-	-	145	
Sir Charles Gairdner	2010	139 (78.9%)	13 (7.4%)	19 (10.8%)	5 (2.9%)	176	3
	2008	152 (92.7%)	7 (4.3%)	-	5 (3%)	164	3
Swan Kalamunda	2010	52 (86.7%)	2 (3.3%)	6 (10%)		60	
	2008	65 (75.6%)	15 (17.4%)	-	6 (7%)	86	1
Albany	2010	48 (45.7%)	4 (3.8%)	4 (3.8%)	49 (46.7%)	105	4
	2008	2 (1.6%)	2 (1.6%)	122 (96.8%)	-	126	
Broome	2010	24 (85.8%)	2 (7.1%)	2 (7.1%)		28	
	2008	51 (98.1%)	1 (1.9%)	-	-	52	2
Bunbury	2010	41 (52.6%)	34 (43.6%)	2 (2.5%)	1 (1.3%)	78	
	2008	57 (57.6%)	38 (38.4%)	3 (3%)	1 (1%)	99	
Geraldton	2010	57 (91.9%)	5 (8.1%)			62	
	2008	50 (72.5%)	19 (27.5%)	-	-	69	
Kalgoorlie	2010	15 (39.5%)	21 (55.3%)	1 (2.6%)	1 (2.6%)	38	2
	2008	33 (57.9%)	23 (40.7%)	-	1 (1.8%)	57	
Narrogin	2010	1 (9.1%)	6 (54.5%)	4 (36.4%)		11	1
	2008	5 (21.7%)	15 (65.2%)	1 (4.3%)	2 (8.7%)	23	3
Port Hedland	2010	10 (58.8%)		6 (35.3%)	1 (5.9%)	17	
	2008	No Information					

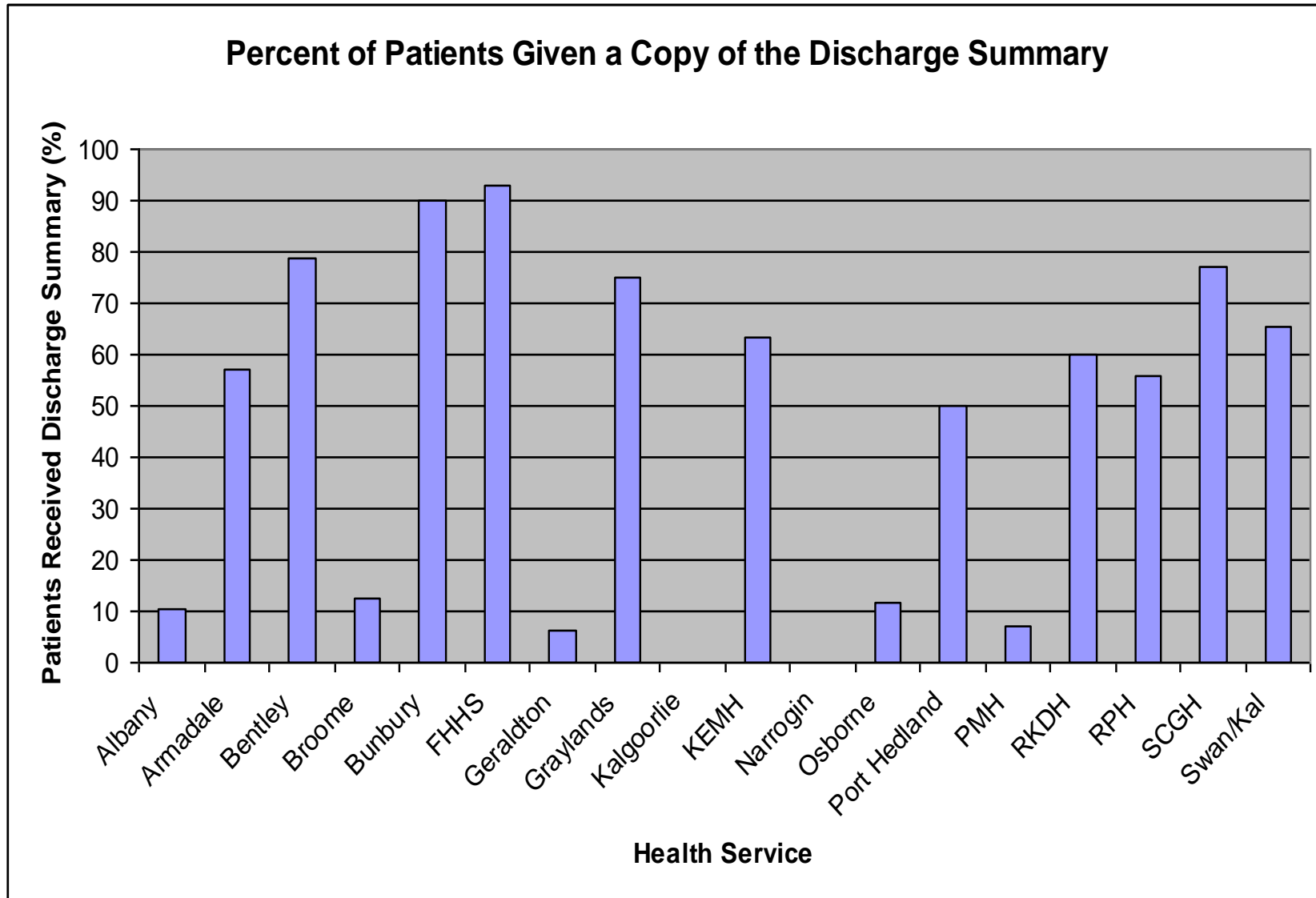
Appendix 13 - Percent of Patients with a Discharge Summary Prepared



PHARMACEUTICAL REVIEW 2010 AUDIT REPORT

Appendix 14 - If a Discharge Summary was Prepared did the Patient Receive a Copy Within the Audit Period?							
	Year	Yes	No	NA	Unknown	Total	Missing
Armadale	2010	24 (57.1%)	6 (14.3%)	2 (4.8%)	10(23.8%)	42	
	2008	11 (39.3%)	17 (60.7%)	-	-	28	1
Bentley	2010	22 (78.6%)	3 (10.7%)	1 (3.6%)	2 (7.1%)	28	
	2008	21 (100%)	-	-	-	21	
Fremantle	2010	93 (93%)	7 (7%)	-	-	100	
	2008	22 (71.1%)	12 (28.3%)	3	-	37	1
Graylands	2010	6 (100%)	-	-	-	6	2
	2008	2 (59.5%)	2 (32.4%)	-	7 (8.1%)	11	
King Edward	2010	55 (63.3%)	3 (3.4%)	2 (2.3%)	27 (31%)	87	
	2008	39 (41.9%)	20 (21.5%)	1 (1.1%)	33(35.5%)	93	
Peel Rockingham	2010	9 (60%)	1 (6.7%)	2 (13.3%)	3 (20%)	15	
	2008	23 (29.1%)	4 (5.1%)	3 (3.8%)	49 (62)	79	2
Princess Margaret	2010	6 (6.9%)	79 (90.8%)	2 (2.3%)	-	87	
	2008	4 (6.8%)	55 (93.2%)	-	-	59	
Osborne Park	2010	8 (11.6%)	30 (43.5%)	31 (44.9%)	-	69	
	2008	11 (16.2%)	57 (83.8%)	-	-	68	
Royal Perth	2010	59 (56.8%)	1 (0.9%)	8 (7.7%)	36 (34.6%)	104	2
	2008	25 (18.8%)	102 (76.7%)	-	6 (4.5%)	133	1
Sir Charles Gairdner	2010	107 (78.1%)	8 (5.8%)	5 (3.6%)	17 (12.5%)	137	2
	2008	139 (92.7%)	8 (5.3%)	1 (0.7%)	2 (1.3%)	150	2
Swan Kalamunda	2010	34 (66.7%)	13 (25.5%)	2 (3.9%)	2 (3.9%)	51	1
	2008	43 (67.2%)	7 (10.9%)	1 (1.6%)	13 (20.3%)	64	1
Albany	2010	5 (10.4%)	1 (2.0%)	3 (6.3%)	39 (81.3%)	48	
	2008	1 (50%)	-	-	1 (50%)	2	
Broome	2010	3 (16.7%)	9 (50%)	6 (33.3%)		18	6
	2008	8 (15.7%)	24 (47.1%)	4 (7.8%)	15(29.4%)	51	
Bunbury	2010	37 (90.2%)	4 (9.8%)			41	
	2008	7 (13%)	27 (50%)	1 (1.9%)	19(35.2%)	54	3
Geraldton	2010	3 (6.1%)	44 (89.7%)	1 (2%)	1 (2%)	49	
	2008	2 (4%)	26 (52%)	-	22 (44%)	50	
Kalgoorlie	2010	0 (0%)	11 (73.4%)	2 (13.3%)	2 (13.3%)	15	
	2008	-	29 (90.6%)	3 (9.4%)	-	32	1
Narrogin	2010	No information		-	-		
	2008	-	-	-	5 (100%)	5	
Port Hedland	2010	5 (50%)	3 (30%)		2 (20%)	10	
	2008	No information					

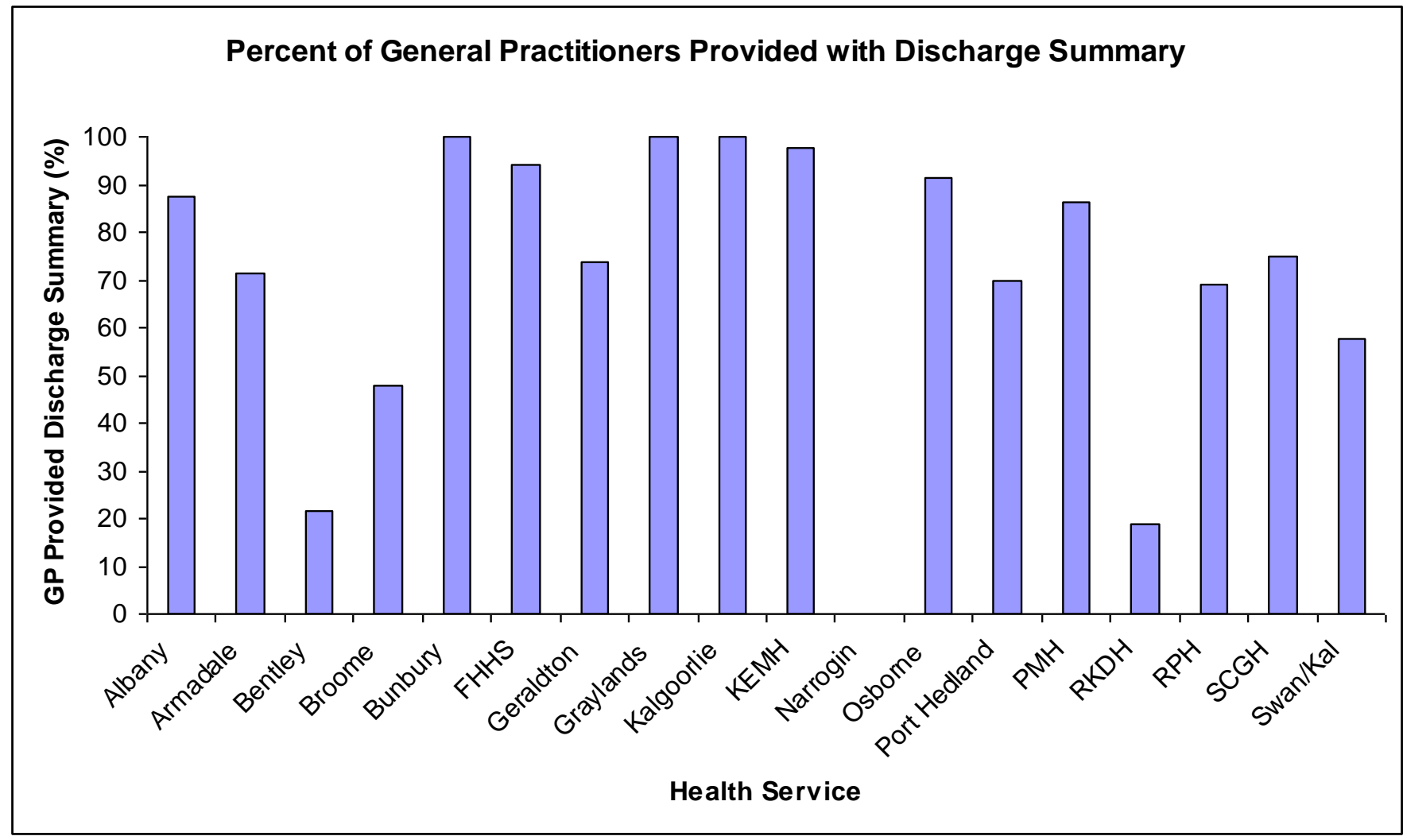
Appendix 15 - Percent of Patients Given a Copy of the Discharge Summary



PHARMACEUTICAL REVIEW 2010 AUDIT REPORT

Appendix 16 - If a Discharge Summary was Prepared was a Copy Sent to the Patient's General Practitioner?							
	Year	Yes	No	NA	Unknown	Total	Missing
Armadale	2010	30 (71.4%)	-	1 (2.4%)	11 (26.2%)	42	
	2008	29 (100%)	-	-	-	29	
Bentley	2010	6 (22.2%)	6 (22.2%)	7 (25.9%)	8 (29.7%)	27	1
	2008	5 (23.8%)	-	1 (4.8%)	15 (71.4%)	21	
Fremantle	2010	94 (94%)	6 (6%)	-	-	100	
	2008	34 (97.1%)	1 (2.9%)	-	-	35	3
Graylands	2010	8 (100%)				8	
	2008	-	8 (72.7%)	2 (18.2%)	1 (19.1%)	11	
King Edward	2010	85 (97.8%)	1 (1.1%)	1 (1.1%)		87	
	2008	21 (22.6%)	26 (28%)	3 (3.2%)	43 (46.2%)	93	
Peel Rockingham	2010	12 (18.8%)	2 (3.1%)	3 (4.7%)	47 (73.4%)	64	
	2008	25 (32.1%)	2 (2.6%)	4 (5.1%)	47 (60.3)	78	3
Princess Margaret	2010	75 (87.2%)	3 (3.5%)	8 (9.3%)	-	86	1
	2008	50 (84.7%)	8 (13.6%)	1 (1.7%)	-	59	
Osborne Park	2010	64 (91.4%)	4 (5.7%)	1 (1.4%)	1 (1.4%)	70	
	2008	66 (97.1%)	-	-	2 (2.9%)	68	
Royal Perth	2010	73 (70.9%)	4 (3.9%)	3 (2.9%)	23 (22.3%)	103	3
	2008	112 (83.6%)	18 (13.4%)	1 (0.4%)	3 (2.2%)	134	
Sir Charles Gairdner	2010	104 (77.0%)	1 (0.8%)	8 (5.9%)	22 (16.3%)	135	4
	2008	134 (91.8%)	8 (5.5%)	1 (0.7%)	3 (2.1%)	146	6
Swan Kalamunda	2010	30 (57.7%)	16 (30.8%)	-	6 (11.5%)	52	
	2008	30 (46.2%)	7 (10.8%)	-	28 (43.1%)	65	
Albany	2010	42 (87.5%)	-	-	6 (12.5%)	48	
	2008	1 (50%)	-	-	1 (50%)	2	
Broome	2010	12 (70.5%)	2 (11.7%)	3 (17.6%)		17	7
	2008	32 (64%)	10 (20%)	3 (6%)	5 (10%)	51	1
Bunbury	2010	38 (100%)	-	-		38	
	2008	22 (39.3%)	14 (25%)	-	20 (35.7%)	56	1
Geraldton	2010	42 (75.0%)	1 (1.8%)	1 (1.8%)	12 (21.4%)	56	1
	2008	27 (55.1%)	11 (22.4%)	-	11 (22.4%)	49	1
Kalgoorlie	2010	15 (100%)	-	-	-	15	-
	2008	29 (87.9%)	3 (9.1%)	1 (3%)	-	33	
Narrogin	2010	NO INFORMATION PROVIDED			-		
	2008	5 (100%)	-	-	-	5	
Port Hedland	2010	7 (70%)	1 (10%)		2 (20%)	10	
	2008	NO INFORMATION PROVIDED					

Appendix 17 - Percent of General Practitioners Provided with Discharge Summary



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