

ANFPP

National Annual Data Report

1 July 2013 to 30 June 2014



CONTENTS

1	Executive Summary	2
2	Abbreviations	5
3	Explanatory Terms	6
4	Introduction	7
4.1	Scope and purpose	7
4.2	Report structure	8
4.3	Limitations to the data	8
5	Program summary.....	11
6	NFP Model fidelity	13
6.1	Referral Outcomes	13
6.2	Summary of fidelity measures	14
6.3	Dosage.....	15
6.4	Visit content.....	17
7	Program outcomes.....	19
7.1	Cigarettes, Alcohol & Other Drugs	19
7.2	Birth Weight and Gestational Age	23
7.3	Breastfeeding.....	25
7.4	Childhood injuries and ingestion	28
7.5	Immunisation.....	30
7.6	Life course development - subsequent pregnancies	31
7.7	Ages and Stages Questionnaires.....	32
7.8	English Language Assessment	35
8	Key Items for Discussion.....	36
9	Summary.....	36
10	References	38
11	Appendix	40
11.1	List of Tables	40
11.2	Feedback	43

1 EXECUTIVE SUMMARY

The National Annual Data Report 2013-2014 provides analysis and summary data of clients and infants from the Data Collection System for the Australian Nurse-Family Partnership Program. This program is delivered from three community controlled Aboriginal health services across Australia.

ANFPP 2013-2014 Program Outcomes

Client Engagement

- Incoming referrals to the program have increased substantially from 74 in 2013 to 217 in 2014
- Active client numbers are not achieving expected growth and remains at around 200 clients nationally
- Cumulative client attrition is 59%, well above the NFP objective of 40% or less though the child's second birthday
- At 77%, the ANFPP consistently exceeds the Nurse Family Partnership Objective of a 75% acceptance rate
- 92 clients have graduated from the program across Australia since 2009 with 43 graduations this year.

Health Outcomes

- A significant reduction in smoking was demonstrated by clients (smoking in the two days prior) from intake to 36 weeks of pregnancy
- Smoking has been steadily reducing at 36 weeks of pregnancy over the last 3 years, from 40% in 2012, 33% in 2013 to 23% in 2014 despite comparable smoking rates at intake for these years
- Sixty-four percent of clients reduced smoking whilst engaged with the program and 34% of clients identified as smoking anytime during pregnancy
- The percentage of full term infants of low birth weight has reduced from 11% last year to 3%; less than the national average for non-indigenous mothers
- There has been a progressive decline since 2012 in pre-term births (<37 weeks gestation) for clients of the program
- Nationally, 95% of babies born to clients of the program were initially breastfed which exceeds the rate of 75% identified in a 2008 national survey of Aboriginal and Torres Strait Islander children
- At one site, 68% of infants for clients of the program are still being breastfed at 6 months of age
- Approximately 92% of infants within the program are stated as fully immunised at 12 and 24 months of age.

Client Outcomes

- There has been a consistent decline over the last 3 years in subsequent pregnancies within 2 years of the referral pregnancy for clients in the program

Early Childhood Development

- The average scores for all age groups of children in the program for the Ages and Stages Questionnaires covering communication, gross and fine motor skills, personal social and problem solving were equivalent to standardised norms
- Average English Language Assessment scores for the boys within the program were equivalent to the 50th percentile and only 16% were concerning with scores under the 25th percentile
- Average English Language Assessment scores for the girls within the program were significantly less than the 50th percentile with 47% below the 25th percentile
- Infants within the program at 10 and 14 months scored higher than the norms for communication and at 14 months scored higher for the personal social section.

ANFPP 2013-2014 Program Summary and NFP Model Fidelity

The ANFPP in Australia continues to perform well and align with fidelity to the Nurse-Family Partnership program for most measures related to client data including eligibility and engagement. Whilst there is always potential for quality improvements across the various elements of the program; the retention of clients throughout the program and the gestational age at entry to the program are considered priorities toward improved growth and engagement.

The turnover of Nurse Home Visitors this reporting year has been very high with an average of 50% compared with 20% for 2013. A high turnover of nurse-home visitors may be a key contributing factor in client disengagement and attrition (O'Brien, Moritz, Luckey, McClatchey, Ingoldsby, & Olds, 2012).

There has been no change in client numbers over the last 2 years; remaining at around 200 active clients; despite a capacity for growth and increasing referral numbers. Since the program commenced in Australia, 59% of clients leave the program prior to completion. Maintaining client engagement after the birth of their baby and through infancy and toddlerhood should be a high priority for the program.

There has been a substantial improvement in data completion and validity this year and by most accounts data validity and completeness is at 95% or better for the forms used in this analysis. Of concern is the reduced numbers of Ages and Stages Questionnaires; Social and Emotional scores, Infant Health Care Forms and Maternal Health Assessments.

The encouraging outcomes reported in this summary are considered representative of the clients and infants within the program. Care should be taken however, in interpretation and comparison within local communities where equivalent information is not necessarily available. Pre term births and low birth weights are based on all 96 babies born to the clients this reporting year. Health habit comparisons between intake and 36 weeks are based on over 100 clients. Site based breastfeeding comparisons are based on 229 total responses but individual infant age groups vary from 21 to 59 individuals. The percentage of clients having a subsequent pregnancy within two years of the referral pregnancy are based on 153 clients. ASQ results are based on age groups ranging between 22 and 46 children in each individual group and English language assessments were conducted on 38 children, 88% of all children within the program reaching 21 months this reporting year.

Conclusion

This report has been able to capture very positive outcomes for clients and children within the ANFPP in Australia. The program in terms of data and reporting appears to have stabilised and this is evidenced by the type of analysis conducted to support program outcomes.

There are opportunities for improvement around the completion of forms and data entry as well as opportunities to further explore maternal health, antenatal care, and social and health outcomes for clients within the program.

Overall, the outcomes for the clients and children within the program in terms of subsequent pregnancies, breastfeeding, birth weight, prematurity, immunisation and development across ages and stages is very positive.

2 ABBREVIATIONS

ACW	Aboriginal Community Worker
ANFPP	Australian Nurse-Family Partnership Program
ASQ	Ages and Stages Questionnaire
ASQ-SE	Ages and Stages Questionnaire: Social and Emotional Well-being
DCS	Data Collection System
df	Degrees of Freedom
EL	English Language
FPW	Family Partnership Worker
FTE	Full Time Equivalent
GP	General Practitioner
N	The number of clients or infants in that group where results have been presented
NFP	Nurse-Family Partnership
NHV	Nurse Home Visitors
NS	Nurse Supervisor
SD	Standard Deviation
SS	Support Service (ANFPP)

3 EXPLANATORY TERMS

2012	In this report where 2012 data is referred to, this is the 2012 reporting year equivalent to the financial year of 1 July 2011 to 30 June 2012
2013 Last Year	In this report where 2013 data is referred to, this is the 2013 reporting year equivalent to the financial year of 1 July 2012 to 30 June 2013
Dosage	The number of visits a client receives from the Nurse Home Visitor during the program. Within the program, clients receive 14 visits during pregnancy, 28 during infancy and 22 during toddlerhood.
Fully Immunised	Completed by the Nurse-Home Visitor and according to DCS V2.1 'Based on the National Immunisation Program Schedule (0-4 years), is [child's name] up-to-date on all vaccinations'.
Fully Vaccinated as used in Naidu, Chiu, Habig, Lowbridge, Jayasinghe, Wang, & Menzies, R. (2012)	'Fully vaccinated' at 12 months of age is defined as receipt of 3 doses of diphtheria, tetanus, pertussis, Hib, hepatitis B and polio, but does not include rotavirus and pneumococcal vaccines, which are also due at the same schedule points. 'Fully vaccinated' at 24 months of age includes Hib and hepatitis B, and 1 dose of measles, mumps, rubella, but does not include meningococcal C or varicella vaccines.
Reporting Year This Year	Where this report refers to this reporting year, if not otherwise stated it is referring to 1 July 2013 to 30 June 2014.
Standard Deviation	This is reported whenever a mean is given to provide a measure of the variability of the sample in the same units of measurement, for example if the mean age is in months, the SD will also be in months.
NFP Model Fidelity	The extent to which the program aligns with the model elements of the Nurse-Family Partnership program
Program Elements	The eighteen elements of the program implementation that are essential to ensuring expected outcomes supported by evidence of effectiveness based on research, expert opinion, field lessons and/or theoretical rationales.
Program Domains	The six content areas or domains within the NFP Guidelines that should be apportioned based on the phase of the program. These domains are Personal Health, Environmental Health, Life Course, Maternal Role, Friends and Family and Health and Human Services.
Site A, B and C	The three community controlled Aboriginal Health Services are referred to as Site A, Site B and Site C within this report.

4 INTRODUCTION

4.1 Scope and purpose

The Australian Nurse-Family Partnership Program (ANFPP) National Annual Data Report ('this report') provides analysis and summary data from the ANFPP Data Collection System V2.2 (V2.1 Forms) and is presented predominantly in two ways.

- A summary of data from the commencement of the program on the 1 January 2009 to 30 June 2014 that provides information regarding the number of clients moving through the program and alignment with NFP model fidelity.
- Program outcomes are summarised for the reporting year 1 July 2013 to 30 June 2014.

This report provides ANFPP stakeholders with the opportunity to:

- Review the data that is collected in the ANFPP as a part of continuous quality improvement.
- Analyse and interpret these items in terms of the program's outcomes for clients.
- Assess implementing sites' ability to deliver the program with fidelity to the program's model and standards.

The breadth of the data collection system with over 1000 data points and the potential for each client to have over 80 individual forms demonstrates the commitment of implementing sites to the program and the collection of data as outlined in the Data Collection System Forms and Manual. The commitment to continuous quality improvement by implementing sites has been demonstrated in the ongoing improvement and attention to the data collection systems and ensuring information collected within the program is accurate and up to date.

The structure and scope of this report was proposed at the ANFPP National Data Workshop in April 2013, and was the subject of on-going consultation. There have not been any major changes in the presentation of items related to program model elements this year. The format and presentation of program outcomes has been changed to enhance useability and meaning of the items reported.

At the ANFPP National Data Workshop in April 2014 a number of key strategies were proposed that included the formation of a new Data Group to enable priority actions identified from the Workshop to be progressed. One item of feedback on the reporting structure was the provision of information on visitation and dosage which has been the subject of further discussion and alternate mechanisms for reporting the number of visits clients receive in the program is being considered.

It is intended that the National Annual Data Report will assist implementing sites and the Commonwealth to interpret program data and develop strategies for improvement and assist data collectors and users to identify where data quality can be improved. It is also important that stakeholders are able to meet key external reporting requirements such as the Nurse-Family Partnership (NFP) International Site Replication Report.

This report will be circulated to implementing sites by 30th December 2014 and further considered by ANFPP stakeholders at the next National Data Workshop, which is proposed for April 2015. It is hoped there will be opportunity through the Data Group and the workshop to further explore aspects of the data collection system that have not received a large amount of attention to date. This report along with feedback and further discussion will inform the National Data Workshop and future National Annual Data Reports.

4.2 Report structure

The report is presented in three parts:

- **Program Summary**, which presents summary statistics on the size of the program in terms of client and staff numbers, clients completing the program and demographic information about the clients within the program.
- **NFP Model Fidelity**, which comprises data that indicates the extent to which the program is being delivered with fidelity to the program model elements as collected in the client DCS and provided to the Support Service. As more detailed analysis of these elements are provided quarterly by the ANFPP Support Service on a site by site basis in a quarterly fidelity report, this report aims simply to provide a national overview.
- **Program Outcomes**, which comprises the available data on outcomes of the ANFPP based on the available data and where this has previously been reported in the 2012-2013 report. Due to the cumulative nature of the program more information is now available to report program outcomes and this report provides further development on last year's data.

4.3 Limitations to the data

Data Completeness

In most cases there has been a significant improvement in data completeness since the 2012-2013 Annual Report and generally where a form has been completed, most items within the form are also complete. There are some exceptions to this where certain questions have a higher rate of missing values. Ideally, all items must be completed however there may be instances where an item or topic may be particularly sensitive and challenging to ensure an accurate answer is provided and this is expected in all data collections.

In the 2013 report, data completeness was provided on specific items as a percentage, however this was an estimate based on three different levels of completeness. In this report data completeness (or percentage missing data) has only been reported for trends over time and is calculated differently than the previous year. In the majority of forms, the data is complete to between 95% and 97% and so it has not been reported individually.

Having a completed set of forms for each client is more important for some data points than others in terms of program outcomes and data analysis. An example is that answering the breastfeeding questions once after breastfeeding is completed is adequate for analysis, despite these questions being asked on 4 occasions. In other cases, completing forms at specific milestones is critical such as the Health Habits Form at intake and 36 weeks, ASQ and ASQ:SE and the English Language Assessment. Addressing quality improvement around the completion of forms within the data collection is part of an ongoing data quality improvement process and can further be explored at QI site visits, monthly data quality cycle, the Data Group and the National Data Workshop in 2015. One of the outcomes of the 2014 National Data Workshop was the development of a Dashboard to provide real-time information on the program at local sites, including upcoming milestones where specific forms are required and the timely notice where data completeness requires focus. This innovation, expected to be in operation by March 2015 is expected to improve some of the form completion issues.

Cross sectional verses longitudinal analysis

The DCS collects time series information on individuals within the program since commencement in January 2009. Records are changing constantly and clients are leaving and joining the program at any time and this produces challenges for data management and analysis. Much of the data is analysed cross-sectionally within Australia and internationally and this loses the power statistically speaking of analysing changes over time in individuals.

In this report some repeated measures have been analysed for the Health Habits Forms and changes in individual habits from intake to 36 weeks pregnancy. To do this; a larger group of client's data from 1/1/13 to 28/8/14 was used where at least one health habits form was completed within the reporting year. This has resulted in direct evidence in the reduction of smoking between these two milestones. What this analysis cannot do is make attribution as to the mechanisms that caused this to occur.

Cohort or group numbers.

These vary greatly for a number of reasons, including data completeness and factors affecting the analysis. In each table N is the number of cases or clients within that group that has provided that result. These numbers do vary and this variation is

expected, although having complete data would limit the variation considerably and there would be similar numbers in each cohort across the report.

Program summary and fidelity items

The denominators may include all clients “active” in the program; all clients “enrolled” in the program; or all clients who have “graduated” from the program by 30 June 2014. For the respective tables, this is compared with the data for the same group as at 30 June 2013. At this point in time the number of graduated clients is still small and so it is deemed more useful to analyse data from all clients who have reached the relevant stage in the program.

Similarly, the analysis in this report includes all clients who have reached a specific stage for the duration of the program’s delivery, not only those clients who have reached that specific stage in a particular year. This means that the data for the 2013-2014 report includes the data for the 2012-2013 report. This should be taken into account when assessing the changes between the years reported.

International replication requirements

The NFP International Site Replication report has indicator definitions for reporting mean, standard deviation, range and percentage completeness. In many cases this format is used to report program outcomes, although additional information is provided in this report for readability and to provide context around the data.

Data contained in this report may be based on small client numbers depending on the item. Programs such as the ANFPP require a number of years to build clients and data to allow broader outcomes to be reported. For this reason this report has reported the cohort numbers (N) in each table to provide the reader more information when interpreting these results. Particularly care should be taken in the identification of any trends or attributions. Not all participants in the program, whether it is the client or infant has complete information and therefore unidentified sub groups may influence results.

5 PROGRAM SUMMARY

Table 1 - Summary of active clients, graduated clients, average age of clients and program staffing

Measure	As at 30 June 2013	As at 30 June 2014
Active clients	199	197
Graduated clients	49	92
ANFPP NHVs (Full Time Equivalent (FTE))	16.2	12.4*
Annual NHV turnover (Number and rate)	20.8% in one year (4 of 19.2 FTE NHVs)	50% in 2013-2104 reporting year (8 out of 16.2 FTE as at 30 June 2013)
Nurse Supervisors (NS) (FTE)	3	3
Mean active client age	22.8	22.8
Median active client age	21.3	21.7
NHV caseload	12.8	14.6*
NS caseload*	5.4 NHVs 3.6 FPWs	5 NHV + 3 FPW Max

*NHV FTE as at 30 June 2014. By 30 Sept 2014 this was 12.9. NHV Caseload at 30 Sept 2014 was 16.1. NS Caseload is reported at the maximum per Nurse Supervisor for 2014. Please note this is at 30 June 2014.

There have been 1186 pregnancies referred to the program since January 2009 (see Figure 1); an increase in incoming referrals from 2012-2013. Of these referrals, 908 clients were eligible for the program and a total of 699 clients have accepted entry to the program resulting in an acceptance rate of 77%. The ANFPP consistently exceeds the NFP Objective of an acceptance rate of 75% to reach the intended population. Four hundred and 10 women have declined the program despite being eligible. As of 30 June 2014 there were 197 active clients, a marginal reduction (n = 2) from last year.

Referrals to the program continue to grow, increasing 33% from 2013 to 2014 reporting years. This is only achieved by sustained local promotion of the program in the community and facilitated referral pathways. All implementing sites have achieved increases in referrals this year which is a recognised achievement. The high acceptance rate for the eligible clients is an acknowledgement to the program within the local communities where referrals are sourced.

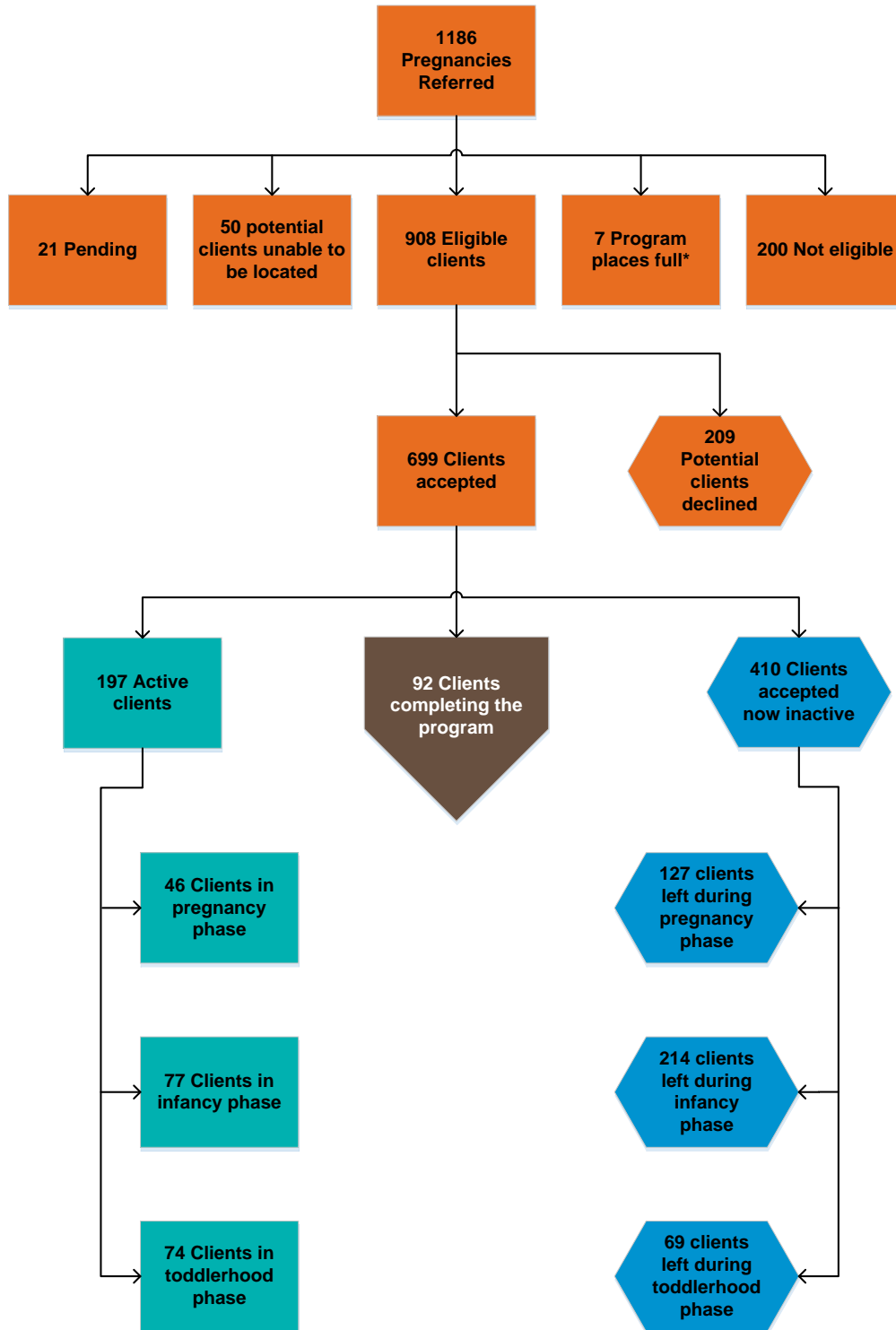
Forty three clients graduated from the program this year and 92 clients have graduated since 2009 (see Table 1). The average age of clients is 22 years which has remained fairly consistent over the last 2 years. In 2012, the majority of clients were under 19 years of age.

The Nurse-Home Visitor caseload is at 12.4 as at 30 June 2014, however there has been new nurse-home visitors commencing this year that have not yet been allocated a caseload due to training requirements. At 30 September 2014 this has increased to 16.1 per NHV. In the ANFPP, Nurse Supervisors also manage Family Partnership Workers/ Aboriginal Community Workers and in two sites this means the Nurse Supervisor manages 8 staff; the maximum recommended by the NFP.

6 NFP MODEL FIDELITY

6.1 Referral Outcomes

Figure 1 - Pregnancy referrals outcomes flowchart as of 30 June 2014



6.2 Summary of fidelity measures

Table 2 - Summary of key fidelity measures of eligibility, parity, home visiting and client retention for 2014 and 2013

Measure	Definition	Reporting year 2014	Previous Year 2013	NFP Objective
Client is a first-time mother (E2)	% Clients without previous children (excluding Site A)	98%	98%	100% (excluding eligibility variations)
Client engagement	% of those offered the program who enrol	77.0%	77.3%	75%
	% of those enrolled by end of 16th week gestation	42.3%	43.7%	60%
	% of those enrolled by 28th week gestation	92.7%	92.5%	-
	Mean gestational age in weeks at enrolment on program.	18.7	18.5	-
Visited in her home (E6)	% completed visits conducted in client's home	62.6%	62.3%	-
Client Eligibility Indigenous Status	% of clients who are Indigenous	99.5% (child) 92.0% (client)	99.7% (child) 91.2% (client)	-
Client Retention*	Pregnancy	82%	83%	≥90%
	Infancy	59%	60%	≥80%
	Toddlerhood	71%	63%	≥90%

- *% of those entered each phase, who either had completed the phase or were still active in the phase at the reporting date.
- First time mother and indigenous status excludes missing/unknown status

The ANFPP enrolls multiparous women in one site and therefore it is not expected that the objective of 100% of clients are a first time mother is reached. The program will also accept clients for a second pregnancy who have had a miscarriage or lost custody of a child, therefore 98% of clients as a first time mother is a good result and this has been stable across the last 3 reporting years.

There appears to be a tendency to enrol clients later in their pregnancy than would be desirable with an average gestational age at enrolment of over 18 weeks and 42% of accepted clients enrolling by their 16th week of pregnancy. The NFP Objective is 60% of clients are enrolled by the 16th week of gestation. This is part of the objectives for the program to reach the intended population; allow time for the relationship to develop; influence health behaviours and stressors during pregnancy and to positively influence retention into the infancy phase. Whilst there may be variations (for example unknown or incorrect due dates) or special circumstances at the discretion of the Nurse Supervisor; the goal is for all clients to be enrolled by the 28th week of pregnancy and the ANFPP achieves 93%.

The majority of visits are conducted in the client's home (63%) however there is no NFP benchmark for this measure. It is suggested that conducting visits at home are highly desirable, however there are many valid reasons for visits to occur elsewhere.

Overall, cumulative client attrition rates have been steadily increasing since 2011 from 48%, 50% in 2012, 55% in 2013 and this year the cumulative client attrition rate is 59%. This is well above the NFP objective of 40% or less though the child's second birthday and a very concerning trend.

Retention rates (Table 2) at highest in pregnancy at 82%, although less than the Nurse-Family Partnership objective of greater than or equal to 90%. Infancy retention rates are lowest at 59%; lower than the NFP objective of 80%. Whilst pregnancy and infancy retention has remained fairly stable over the last 2 years, there has been an increase in retention rates in 2014 in toddlerhood to 71%, which is somewhat encouraging. Retaining clients is a key factor in increasing active client numbers and improved local program reach.

6.3 Dosage

The Nurse-Family Partnership objective is 80% of clients in the pregnancy phase receive the dosage of expected visits, compared with 19% for clients of the ANFPP. Nationally, approximately half of the program's clients receive the suggested number of visits during pregnancy.

Whilst dosage of visits is important across all clients, there is a recognition that flexibility is required to meet individual needs. The number of visits required for a threshold effect for subgroups is not yet clear (Korfmacher, Kitzman, & Olds, 1998), although the dosage effect on pregnancy outcomes appears to increase with the number of completed visits (Goyal, Hall, Meinen-Derr, Kahn, Short, Van Ginkel and Ammerman, 2013). The Nurse-Family Partnership program achieved 50% of expected visits in the Elmira trial across all phases (MacDonald, Moore & Goldfeld, 2012) and the Nurse-Family Partnership program was classified as having the best outcome of sustained home visiting programs in a literature review completed in 2012 for the Australian Research Alliance for Children & Youth (ARACY) (McDonald, et al., 2012).

Successes for improving visitation rates have been recorded as making sure the client understands at consent the time commitment, flexibility in locations, times and spacing of visits and ongoing activities that build on previous experiences such as including group activities. Further exploration of the number of visits clients receive both in each phase and cumulatively whilst they are in the program would inform future discussion and the potential development of target strategies.

Table 3 - Visit completion percentages for pregnancy phase

Reporting year	Mean % expected visits achieved (all active / completed clients) (a)	Mean % expected visits achieved using 14 expected visits (Clients who have completed pregnancy) (b)	% clients getting 80% or more of expected visits, that is 11 plus visits (Clients who have completed pregnancy) (c)
2014	79%	52%	19%
2013	77%	51%	19%

Table 4 - Visit completion percentages for infancy phase

Reporting year	Mean % expected visits achieved (all active clients) (a)	Mean % expected visits achieved using 28 expected visits (Clients who have completed infancy) (b)	% clients getting 65% or more of expected visits, that is 18 plus visits (Clients who have completed infancy) (c)
2014	62%	58%	44%
2013	65%	58%	46%

Table 5 - Visit completion percentages for toddlerhood phase

Reporting Year	Mean % expected visits achieved (all active clients) (a)	Mean % expected visits achieved using 22 expected visits (Clients who have completed toddlerhood) (b)	% clients getting 60% or more of expected visits, that is 13 plus visits (Clients who have completed toddlerhood) (c)
2014	62%	62%	54%
2013	61%	63%	56%

- Completed visits for active clients who had their first phase visit by 30 June 2014 and 30 June 2013 respectively. Telephone encounters have not been included. Calculation period to date of last visit in the phase.
- Completed visits for clients who have completed their phase by 30 June 2014 and 2013 respectively. Telephone encounters have not been included.
- Percentage of clients who have completed their phase by 30 June 2014 and 2013 respectively, and who have had at least two (2) visits within the phase. Telephone encounters have not been included.

6.4 Visit content

Overall, the average time spent within the six program domains are close to program targets and expectations. The domains of environmental health and maternal role are not within targets across any phase, ie: the maternal role is over-represented in the pregnancy phase and under-represented in both infancy and toddlerhood. Whilst the work in the maternal domain is slightly under in the toddlerhood phase, it is the infancy phase where this is most disparate.

This may indicate an aspect of the client group requires a greater or lesser emphasis in this area or there is an unbalanced focus. The time spent in each of the program domains within toddlerhood do not meet the target in any domain except of family and friends. It may be that this might be an area to explore in terms of contributing factors to client attrition and maintaining expected visits.

Time apportioned to the Maternal Role domain has implications for child rearing practices, child health and development and influences attachment. This domain contributes specifically to model fidelity and the achievement of one of the program goals for improved child health and development.

Table 6 - Average percent of time spent on the program domains in the pregnancy phase

Domain	Pregnancy			Comment
	2013	2014	Target	
Personal health	36%	35%	35-40%	
Environmental health	9%	9%	5-7%	Over target
Life course development	9%	10%	10-15%	
Maternal role	26%	26%	23-25%	Over target
Family and friends	14%	14%	10-15%	
Health and human services	6%	6%	-	-

Table 7 - Average percent of time spent on the program domains in the infancy phase

Domain	Infancy			Comment
	2013	2014	Target	
Personal health	21%	20%	14-20%	
Environmental health	10%	11%	7-10%	Over target
Life course development	11%	11%	10-15%	
Maternal role	39%	39%	45-50%	Under target
Family and friends	13%	14%	10-15%	
Health and human services	6%	5%	-	-

Table 8 - Average percent of time spent on the program domains in the toddlerhood phase

Domain	Toddlerhood			Comment
	2013	2014	Target	
Personal health	17%	17%	10-15%	Over target
Environmental health	12%	12%	7-10%	Over target
Life course development	17%	16%	18-20%	Under target
Maternal role	40%	38%	40-45%	Under target
Family and friends	12%	13%	10-15%	
Health and human services	2%	4%	No target	-

7 PROGRAM OUTCOMES

7.1 Cigarettes, Alcohol & Other Drugs

7.1.1 Smoking

Source: Health Habits Form at Intake, 36 weeks pregnancy and Infancy 12 months. Items HH01 through HH04

The number of clients reporting smoking in the previous 48 hours again reduced from 39% at intake to 23% at 36 weeks of pregnancy. This aligns with a decline of smoking in the last 48 hours in both the 2012 and 2013 reporting years.

There was a significant reduction in the number of cigarettes smoked in the previous 2 days from intake to 36 weeks of pregnancy (see Table 10) for over 100 clients with both an intake and 36 weeks of pregnancy form completed (where at least one of these forms was completed between 1/7/2013 and 30/6/2014). This is a key outcome of the Nurse-Family Partnership program in the United States and a very encouraging result for the ANFPP.

Table 13 outlines whether the clients smoked at all during pregnancy. This question is asked at intake, 36 week pregnancy and infancy 12 months, however it is at infancy 12 months when the answer will indicate whether the client smoked at all during pregnancy. Thirty four percent of clients identify as smoking at any time during the pregnancy.

Overall, smoking rates are lower at 36 weeks of pregnancy than 2013 and 64% of clients indicate that they have reduced smoking since they knew they were pregnant (when asked at intake).

The Health Habits Form also asks the questions ‘In the last month did you smoke from anyone else’s cigarette?’ to identify if clients who may not have cigarettes of their own, share other people’s cigarettes. The results in Table 14 show that this does occur, but more often in early pregnancy and infancy. This would also support smoking reduction from intake to 36 weeks of pregnancy.

Table 9 - Proportion of clients smoking in the last 2 days at intake and 36 weeks by reporting year.

Reporting year	Intake Percent (N)	36weeks Percent (N)	Infancy 12 months Percent (N)
2014 (a)	39%(100)	23% (69)	35% (65)
2013 (b)	35%	33%	
2012 (c)	41%	40%	

a) 2014 reporting year includes any health habits form completed between 1/7/13 and 30/6/14 where question was complete and stage identified. There was no missing data for forms that indicated stage.

- b) 2013 reporting year includes all clients who have had an intake and a 36 week Health Habits form before 30 June 2013.
- c) 2012 reporting year includes all clients who have had an intake and a 36 week Health Habits form before 30 June 2012.

Table 10 - Change in mean number of cigarettes smoked in previous 48 hours from intake to 36 weeks as matched pairs (individual clients)

Reporting year	Intake			36 weeks			Change	t (df)	Sig	95% Confidence Intervals	
	Mean	SD	N	Mean	SD	N					
2014	2.46	4.68	104	1.89	3.889	104	0.567	3.4 (101)	.001	0.237	0.898

Note: Paired samples t-test (two-tailed) using SPSS

Table 11 - Mean and standard deviation of number cigarettes over last two days by stage for health habits forms received from 1 July 2013 and 30 June 2014

Stage	Mean cigarettes over last 2 days	SD	N	Range	
Intake	2.9	5.13	100	0	20
36 weeks	1.2	2.81	69	0	14
Infancy 12 months	3.91	7.68	65	0	30
No stage given	2.48	5.60	25	0	25

Table 12 - Number of clients (percent) reported to have reduced smoking during pregnancy by stage for health habits forms received from 1 July 2013 and 30 June 2014

Stage	Yes (%)	No (%)	N	% Missing
Intake	59 (64%)	33 (36%)	100	8 (8%)
36 weeks	25 (36%)	39 (61%)	69	5 (7%)
Infancy 12 mths	12 (22%)	43 (78%)	65	10(15%)
No stage given	7 (29%)	17 (71%)	27	3 (11%)

Table 13 - Self reported smoking during pregnancy as asked when the infant is 12 months of age.

Smoking during pregnancy	Yes (%)	No (%)	N	% Missing
Infancy 12 mths*	21 (34%)	40 (66%)	65	4 (6%)

*Only results from infancy 12 months stage has been reported as all other stages are during the pregnancy.

Table 14 - Proportion of clients smoking from other peoples cigarettes at intake, 36 weeks and infancy 12 months of age

Stage	Yes (%)	No (%)	N	% Missing
Intake	29 (29%)	71 (71%)	100	0 (0%)
36 weeks	12 (17%)	55 (80%)	69	2 (3%)
Infancy 12 mths	17 (27%)	45 (73%)	65	3 (5%)
No stage given	5 (22%)	18 (78%)	27	4 (15%)

7.1.2 Alcohol

Source: Health Habits Form at Intake, 36 weeks pregnancy and Infancy 12 months. Items HH05 and HH06

There was no significant reduction in the number of alcoholic drinks consumed in the prior two weeks between intake and 36 weeks of pregnancy for individual clients who consumed alcohol. This is moderated by the very small number of clients and the small number of drinks consumed making an effect difficult to determine.

Overall, across the health habit forms there was a reduction in days over the last two weeks where the client drank alcohol (see Table 15). Consistent with the 2013 report, the clients reported consuming alcohol is generally very small. In Table 16 there are adequate numbers with consecutive health habits forms at both intake and 36 weeks pregnancy for analysis; however there were only 3 clients with both forms that drank in the prior 2 weeks.

Both the number of days in the previous 2 weeks and the mean number of drinks per day have reduced over the last 3 years, although these haven't been compared statistically. Drinks per day in 2012 averaged 1.3 drinks and this has reduced consecutively from 0.88 in 2013 to 0.33 in 2014. The number of days over the last 2 weeks where the client consumed alcohol was 0.30 in 2012, thru 0.221 to 0.04 in 2014.

Alcohol intake seems to reduce from intake to 36 weeks of pregnancy, and then increase when the infant is 12 months of age (see Table 17). It should be noted that only a small number of individual clients consume alcohol during pregnancy i.e. 7% of individual clients at intake (N = 4/55) and less than 2% of individual clients at 36 weeks of pregnancy (N = 1/65). By the time the infant is 12 months old, alcohol intake increases but only 31% of these clients have consumed alcohol in the previous 2 weeks.

The DCS version 2.4 to be implemented in 2014-2015 will collect health habit information at more frequent time periods such as when the infant reaches 6 months, 18 months and 24 months of age.

Table 15 - Mean and standard deviation different days over the last two weeks the client drank alcohol at intake and 36 weeks pregnant.

Reporting year	Intake				36 weeks				% Complete Data
	Mean	Range	SD	N	Mean	Range	SD	N	
2014	0.04	0-1	0.20	100	0.13	0-7	0.873	69	>99%*
2013	0.21	0-6	0.81	-	0.11	0-6	0.58	-	51%
2012	0.30	0-6	0.99	-	0.18	0-6	0.74	-	45%

*The percentage of complete data for 2014 is the percentage of completed Health Habits Forms within the reporting year where HH05 is complete.

Table 16 - Comparison of alcoholic drinks per day over the last 2 weeks at intake and 36 weeks pregnancy for as matched pairs (individual clients).

Reporting year	Intake			36 weeks			Change	t	Sig	95% Confidence Intervals	
	Mean	SD	N	Mean	SD	N					
2014	0.07	0.451	102	0.01	0.099	102	0.06	1.28	.202	-0.032	0.150

Note: Paired samples t-test using SPSS

Table 17 – Mean, standard deviation number and range of the number of drinks taken per day over the last two weeks by stage

Stage	Mean drinks per day	SD	N	Range	
Intake	0.33	1.941	98	0	16
36 weeks	0.06	0.385	67	0	3
Infancy 12 months	1.72	3.373	64	0	22
No stage given	1.29	3.043	24	0	10

Table 18 - Comparison of mean number of drinks per day between intake and 36 weeks of pregnancy

Reporting year	Intake				36 weeks				% Data complete
	Mean	Range	SD	N	Mean	Range	SD	N	
2014	0.33	0-16	3.043	98	0.06	0-3	0.385	67	>99%*
2013	0.88	0-30	4.0	-	0.38	0-32	2.5	-	51%
2012	1.3	0-30	4.9	-	0.6	0-32	3.1	-	55%

*Data was missing for the stage of the form, not for the number of drinks per day.

7.1.3 Use of Marijuana and Other Drugs

Source: Health Habits Form at Intake, 36 weeks pregnancy and Infancy 12 months. Items HH0, HH08, HH09 and HH10

Less than 3% of forms (N = 7/258) indicated the use of marijuana during pregnancy. It would seem from the responses that marijuana use is very small and there was no demonstrated variation between intake, 36 week pregnancy or

infancy 12 months (see Table 21). The use of marijuana for the small numbers of clients that self-report seemed fairly consistent over time.

There were no self-reported instances of using any other drugs with the exception of one record. For various reasons, this record was considered erroneous and was excluded from analysis.

Table 19 - Mean number of days over the last two weeks where marijuana was used by the client

Number of different days marijuana was used*	Mean	SD	Range	N	% Missing
	0.35	1.893	0-14	258	3 (1%)

*Due to the very small number of days this was not analysed by stage.

Table 20 - Percentage of clients indicating the use of marijuana

Stage	None (%)	1 or more (joint, cone or bong per day (%)*	N	N Missing (%)
Intake	88 (96%)	4 (4%)	92	0 (0%)
36 weeks	60 (92%)	5 (8%)	65	2 (3%)
Infancy 12 mths	57 (95%)	3 (5%)	60	3 (5%)
Total	205 (95%)	12 (6%)	217	23 (9%)

*Due to the variable nature of the responses, this item was recoded to 1 or more joints, cones or bongs per day

Table 21 - Comparison of marijuana use in the last 2 weeks between intake and 36 weeks pregnancy for individual clients

Reporting year	Intake			36 weeks			Change	t	Sig	95% Confidence Intervals	
	Mean	SD	N	Mean	SD	N					
2014	0.07	0.263	95	0.05	0.224	95	0.02	1.42	.158	-0.008	0.050

Note: Paired samples t-test using SPSS

7.2 Birth Weight and Gestational Age

Source: *Infant Birth Form IB02 IB03*

7.2.1 Percentage of low birth weight infants

A baby's birth weight is a key indicator of health status. Premature birth before 37 weeks gestation is associated with neonatal problems which can cause significant morbidity and mortality outcomes in these babies. Factors such as socioeconomic disadvantage, size and age of the mother, the mother's nutritional status, smoking and other risk factors such as alcohol consumption, illness in pregnancy and multiple births are known to contribute to the risk of preterm birth and/ or fetal growth restriction (Li, Zeki, Hilder, & Sullivan, 2011).

A study by Law & Sullivan (2005) showed that Indigenous mothers have twice the rate of preterm birth (gestational age of less than 37 weeks) as non-Indigenous mothers. This research has been reconfirmed in the Australian Mothers and Babies Report (2011) which showed that 13.8% of babies of Aboriginal and Torres Strait Islander mothers were born preterm, compared with 8.1% of babies of non-Indigenous mothers (Li, et al., 2011).

Table 22 below reflects the percentage of babies born within the last reporting year less than 2500gms and below 37 weeks.

Table 22 - Percentage of singleton babies born between 1 July 2013 and 30 June 2014 at full term (>37 weeks) with a birth weight less than 2500 grams

Reporting Year	SITE A	SITE B	SITE C	ALL
	% (N)	% (N)	% (N)	% (N)
2014	5.6 (2/36)	0 (0/28)	3.8 (1/28)	3.3 (3/90)
2013	13.1	11.5	9.5	11.4
2012	11.6	11.8	8.8	10.5

Note: Data completeness are not individually reported as there are no missing values for 2012 and 2014 and <1% of missing data in 2013.

Our highest number of low birth weight and preterm births were seen at SITE A, with 2 of our 36 clients birthing babies less than 2500gm below 37 weeks gestation. Site C, had the only other low birth weight, premature birth within the reporting period. A reduction in the percentage of low birth weight infants born across all three sites was seen in 2014, with Site B reporting the first 0% since 2012. This is a very positive result.

7.2.2 Mean birth weight for full-term births

Table 23 outlines the average birth weight seen for all infants born at each site between 1 July 2013 and 30 June 2014.

Table 23 - Mean birth weight for full term babies born between 1 July 2013 and 30 June 2014 by site

Reporting Year	SITE A		SITE B		SITE C		ALL	
	Mean g (N)	SD	Mean g (N)	SD	Mean g (N)	SD	Mean g (N)	SD
2014	3,404 (28)	574	3,289 (26)	457	3,297 (36)	505	3,337 (90)	517
2013	3,292	507	3,327	494	3,303	494	3,306	497
2012	3,286	509	3,291	488	3,298	501	3,292	500

Note: Data completeness is not reported individually as there are no missing values for 2012 and 2014 and <1% of missing data in 2013.

In 2014, the combined mean birth weight across all three sites is 3337gms. Nationally the mean birth weight for non-Indigenous live born singleton infant is 3398gms and 3187 grams for infants born to Indigenous mothers. Therefore across all sites the average birth weight seen is comparable and only slightly less

to the national average of 3398gms. Additionally, the mean birth weight across all three sites is 150gms more than the average birth weight of infants born to Indigenous mothers.

At Site A, the birth weight average is 3404 gm, which is 217gms higher than the benchmark national average for Indigenous mothers. Both Site B and Site C are within 110 grams above the national benchmark average of 3187gms.

7.2.3 Premature births/gestation age

Sources: Infant Birth Form IB03 Gestational age at birth. Percentage of singleton infants born prematurely less than 37 weeks gestation.

In Australia in 2011, 13.8% of all babies born to Aboriginal or Torres Strait Islander mothers (inclusive of multiple births) were born prematurely, compared to 8.1% of non-Indigenous mothers.

Table 24 below identifies the reported babies born prematurely (<37 weeks) within the last reporting year at each site.

Table 24 - Proportion of babies born between 1 July 2013 and 30 June 2014 born prematurely (<37 weeks gestation) by site

Reporting Year	SITE A	SITE B	SITE C	ALL
	% (N)	% (N)	% (N)	% (N)
2014	2.7 (1/37)	9.7 (3/31)	7.1 (2/28)	6.3 (6/96)
2013	14.4	9.7	11.6	12.1
2012	12.4	9.8	11.4	11.5

Progressively since 2012, all sites have seen a reduction in premature births with 2014 being the lowest percentage overall (6.3% = 6 babies of a total of 96 born prematurely) compared to 12.1% overall in 2013. This reflects positively on the long term health outcomes for the vast majority of infants born to mothers involved in the Program.

7.3 Breastfeeding

Sources: Infant Birth Form and Infant Health Care Form at Infancy 6 months, 12 months and Toddlerhood 12 month and 24 months. IB09, HC12, HC13, HC14 and HC15

Breastfeeding is one of the most positively impacting health behaviours for the survival, health, growth and development of our Indigenous children (National Health and Medical Research Council, 2012). One of the opportunities this Program brings is the time to promote breastfeeding in partnership with each client.

The most recent guidelines released by the National Health and Medical Research Council (2012) recommends exclusive breastfeeding for the first six months of life.

With the benefits of breastfeeding now well researched and known, including protection against:

- Sudden infant death syndrome (SIDS)
- Development of diabetes later in life
- Diarrhoea
- Middle ear infections
- Respiratory infections

(National Health and Medical Research Council, 2012)

It is important that healthcare professionals support and encourage this method of feeding (as appropriate and available), to allow the positive long term health outcomes associated. According to the Aboriginal & Torres Strait Islander Health Performance Framework (Department of Health & Ageing, 2012), 59% of Aboriginal and Torres Strait Islander infants and 61% of non-Indigenous infants less than one month of age were exclusively breastfed. At less than 3months, 33% of Indigenous infants were exclusively breastfed compared to 48% of non-Indigenous infants. At less than 6 months, 7% of Indigenous infants were exclusively breastfed compared to 16% of non-Indigenous infants (Department of Health and Ageing 2012; Australian Institute of Health and Welfare 2010).

Table 25 below reflects the percentages of infants' breastfed at each site, itemised into the significant and measured milestones within the first two years of life – 6 months, 12months, 18 months and 24 months.

Table 25 - Proportion of infants continuing to get breast milk by stage and site

Reporting Year	Stage	SITE A	SITE C	SITE B	ALL
		% (N)	% (N)	% (N)	% (N)
2014	6 months	68% (31)	56% (16)	16% (32)	44% (79)
	12 months	70%(27)	18% (11)	9% (32)	33% (71)
	18 months	59% (17)	11% (9)	0% (18)	25% (44)
	24 months	61% (23)	20% (10)	0% (7)	40% (40)
	Total	65% (98)	30% (46)	9% (85)	38% (229)
Reporting Year		% (% Incomplete)	% (% Incomplete)	% (% Incomplete)	% (% Incomplete)
2013	6 months	75% (44%)	52% (43%)	15% (55%)	57% (46%)
	12 months	67% (39%)	43% (38%)	6% (24%)	48% (36%)
2012	6 months	77% (43%)	63% (52%)	27% (56%)	66% (48%)
	12 months	64% (30%)	44% (50%)	20% (17%)	54% 36%)

- Incomplete breastfeeding records ≈ 5% overall and not individually reported
- Overall, ≈ 5% of records did not have a stage completed.

At Site A, the proportion of clients’ breastfeeding is the highest of all three sites. The percentage of breastfed infants is 68% at 6 months which is well above the national benchmark of 16% breastfeeding rates across Australia, inclusive of non-Indigenous mothers.

At Site C, we have seen a small increase in our breastfeeding rates at the 6 month benchmark from 2013, however this has not been maintained as the 12 month benchmark for 2014 is 18%, compared to 43% in 2013. The site however still remain higher than the national benchmark of 16% used in our report.

At Site B, the overall number of breastfeeding clients has remained consistently low with a very small decrease of at 6 months (16% for 2014 vs 15% for 2013), counterbalanced by a small increase seen at our 12 month benchmark since 2013 (9% 2014 vs 6% 2013). There is an opportunity here for improvement in breastfeeding rates for clients and further investigation of contributing factors to the consistently low breastfeeding rates may contribute to sustainable positive initiatives to increase these figures in future.

Table 26 below outlines the percentage of clients at each site who ever breastfed or offered expressed breast milk to their child.

Table 26 - Number of clients who have breastfed or expressed milk for their infant

Ever Breastfed	SITE A	SITE C	SITE B	ALL
Yes	37 (100%)	31 (100%)	21 (81%)	89 (95%)
No	0 (0%)	0 (0%)	5 (19%)	5 (5%)
Mean age of infant when form completed	3.1 (6.38)	1.8 (1.59)	0.68 (1.33)	2.0 (4.21)

At Site A and Site C, this is 100% of clients and demonstrates a complete initial uptake of breastfeeding by clients. This indicates that strategies and opportunities to support and promote breastfeeding are maintained.

At Site B, the percentage of clients who never breastfed are reported as high as 19%. Further review of the 5 infants that never received breast milk did not identify any potential medical or circumstantial reasons within the information available. Identifying the barriers to breastfeeding and supporting clients to initiate breast feeding wherever possible is a priority going forward.

Table 27 identifying the age in weeks when breastfeeding was stopped and also the age in weeks when exclusive breastfeeding was stopped at each site.

Table 27 - Age in weeks by site when breastfeeding either stopped or was no longer exclusive in 2014

Site	Age in weeks when breastfeeding stopped*				Age in weeks when exclusive breastfeeding stopped*			
	Mean	SD	Range	N	Mean	SD	Range	N
SITE A	28.0	29.13	0-100	21	14.0	7.785	0-24	59
SITE C	17.9	21.857	2-84	22	10.0	6.792	1-24	31
SITE B	7.9	7.657	0-22	54	7.98	7.657	0-22	54
ALL	15.0	21.342	0-100	97	10.9	7.956	0-24	144

*Calculated on individual clients and the mean age in weeks on the last completed infant health care form completed during this reporting period

At Site A, the mean age when breastfeeding stopped was 28 weeks, which is equivalent to 6.5 months. The mean age for exclusive breastfeeding is 14 weeks, equal to 3.2 months. This information matched with the 68% of mothers breastfeeding at 6 months at Site A, means this site is significantly higher than our benchmark average of 7%, for Indigenous infants being breastfed at 6 months of age (Australian Institute of Health and Welfare 2010).

At Site C, the mean age when breastfeeding ceased was 17.9 weeks, which is equivalent to 4.1 months. The mean age exclusive breastfeeding ceased is 10 weeks, which is equal to 2.3 months. Mapping this data with the 56% of infants still breastfeeding at 6 months at this site, Site C remains well above the benchmark of 33% of Indigenous infants' breastfed at less than 3 months (Australian Institute of Health and Welfare 2010).

At Site B, the mean age client ceased exclusive and non-exclusive breastfeeding ceased was 7.9 weeks, equal to 1.8 months. With only 16% of mothers' breastfeeding their infants at this site at 6 months, this site is well behind the statistical benchmark of 33% Indigenous infants remaining exclusively breastfed at less than 3 months of age (Australian Institute of Health and Welfare 2010).

7.4 Childhood injuries and ingestion

Source: Infant Health Care Form HC08 HC09.

The proportion of children presenting at GP surgeries and accident and emergency clinics for concern of swallowing something harmful or injuries has been steadily reducing in the 6-12 months age group since 2012 and does not appear to be cause for specific further attention.

Presentations for injury or suspected ingestions are slightly higher this year than in 2013, but not enough to be the cause of any major concern.

Comparisons with injury surveillance data or local hospital data are difficult due to the age groups used within the program and difficulties comparing with the 0-4 year age group. Suggestions have been to source local hospital data for comparisons as part of a wide study on program outcomes.

There has been no client reported infant admission to hospital for injury or suspected ingestion in 2014 and this is a very favourable result. Admissions in the 0-6 month age group have been declining each year since 2012.

Table 28 - Percentage of infant presentations for injury or ingestion for 2014, 2013 and 2012 reporting years

Reporting year	Birth to 6 months		6 to 12 months	
	%	% Data complete	%	% Data complete
2014	3.8	99	4.3	97
2013	2.7	61	5.5	68
2012	2.2	59	8.9	72

Table 29 - Mean number of infant presentations to clinics* for injury or ingestion for birth to 6 months and 6 to 12 months for 2014, 2013 and 2012 reporting years

Reporting year	6 month stage (equivalent to birth to 6 months)					12 month stage (equivalent to 6 to 12 months)				
	Mean	SD	N	Max	% Data complete	Mean	SD	N	Max	% Data complete
2014	0.08	0.417	79	3	99	0.04	0.205	69	1	97
2013	0.05	0.32	-	3	61	0.05	0.22	-	1	68
2012	0.04	0.33	-	3	59	0.09	-	-	1	72

*Clinics represent general practitioner, medical centre or hospital emergency department.

Table 30 - Mean number of infant presentations to clinics* for injury or ingestion for 12 to 18 months and 18 to 24 months

Reporting year	18 month stage (equivalent to 12 to 18 months)					24 month stage (equivalent to 18 to 24 months)				
	Mean	SD	N	Max	% Data complete	Mean	SD	N	Max	% Data complete
2014	0.14	0.462	44	2	100	0.13	0.335	40	1	100

*Clinics represent general practitioner, medical centre or hospital emergency department.

Table 31 - Proportion of infants admitted to hospital as a result of injury or ingestion for 2014, 2013 and 2012 reporting years

Reporting year	Birth to 6 months		6 to 12 months	
	%	% Data complete	%	% Data complete
2014	0.0	96	0	96
2013	2.1	59	0	68
2012	3.4	56	0	71

Table 32 - Mean infant admissions to hospital for injury or ingestion for 2014, 2013 and 2012 reporting years

Reporting year	6 month stage (equivalent to birth to 6 months)					12 month stage (equivalent to 6 to 12 months)				
	Mean	SD	N	Max	% Data complete	Mean	SD	N	Max	% Data complete
2014	0.00	0.00	77	3	96	0	0	68	0	96
2013	0.04	0.36	-	4	59	0	0	-	0	68
2012	0.07	0.45	-	4	56	0	0	-	0	71

7.5 Immunisation

Source: Infant Health Care Form HC03 and HC04

For the infants within the program, 91.5% of infants are stated to be fully immunised at 12 months and 92.5% at 24 months; which are both really positive outcomes for the program.

In June 2014, rates of children fully immunised were reported as 90.4% at 12 to <15mths for all children and 86.26% for Aboriginal and Torres Strait Islander Children. Rates for the 24 to <27 months age group were 92.4% for all children and 92.3 % for Aboriginal and Torres Strait Islander Children (Immunise Australian Program, 2014).

It is important for comparison purposes to note the variable age groups and how the data is entered within the program. Depending on when the Infant Health Care Form was completed, this question can be subject to interpretation so caution should be taken with direct comparisons with national immunisation rates. As a comparison with equivalent age groups, the national average for fully vaccinated Aboriginal and Torres Strait Islander and other children was 85% at 12 months and 92% at 24 months in 2010 (Naidu, Chiu, Habig, Lowbridge, Jayasinghe, Wang, & Menzies 2012).

As shown in Table 33, the vaccination status is provided to Nurse-Home Visitors in most cases by mother's self-report, although this decreases as the child gets older. There are requirements around immunisation and access to care

options/activities and this may contribute to the provision of other methods of reporting in the later age group.

To improve the ability to compare immunisation rates for infants within the program with national immunisation data, a strategy is being implemented to enhance vaccination information that is collected within the Infant Health Care Form. This is expected to be implemented in 2014-2015.

Table 33 - Proportion of infants up to date on all vaccinations for the stage for this reporting year

Stage	Yes (%)	No (%)	N	Percent of responses based on mother's self-report
at 6 Months	74 (92.5%)	6 (7.5%)	80	69%
at 12 Months	65 (91.5%)	6 (8.5%)	71	64%
at 18 Months	41 (95.3%)	2 (4.7%)	43	68%
at 24 Months	37 (92.5%)	3 (7.5%)	40	55%

Note: Data completeness is not reported individually. Less than 3% of data was missing for this item.

Table 34 - Completion rates from 2012-2013 Annual Data Report

Reporting year	Vaccine completion rate	% Data complete
2013	93%	76%
2012	88%	89%

7.6 Life course development - subsequent pregnancies

Source: Demographic Details Update Form DM24

Within the NFP, less than 25% of clients have subsequent pregnancies within 2 years of the referred infant's birth. There continues to be a major decline in the numbers of clients having a second pregnancy within 2 years after the birth of the referred pregnancy from 50% in 2012, to 33% in 2013 and in 2014 this has again reduced to 20%. This is an impressive result over the last three years of the program. There are slight difference in numbers of clients having a subsequent pregnancy with Site B having the highest percentage and Site A having the lowest percentage.

Table 35 - Percentage of clients with at least one pregnancy within 24 months after the birth of the referred pregnancy for 2014, 2013 and 2012 reporting years.

Reporting year	% with pregnancy	% Data complete
2014	20%	99.6%
2013	33%	73%
2012	50%	67%

Table 36 - Percentage of clients with at least one pregnancy within 24 months after the birth of the referred pregnancy by site.

Site	Yes (%)	No (%)	N
SITE A	10 (17%)	49 (83%)	59
SITE B	14 (23%)	47 (77%)	61
SITE C	7 (21%)	26 (79%)	33

7.7 Ages and Stages Questionnaires

Source: Infant Health Care Form HC21, HC22, HC23, HC16

The following tables outline the scores for infants within the program across the Ages and Stages questionnaires. (see Table 37, Table 38, Table 39, Table 40 and Table 41). These questionnaires were completed for infants within the program and cover communication; gross and fine motor skills; problem solving and personal social areas at 4, 10, 14 and 20 months. Averages for each age group were compared to equivalent standardised norms for each area. Most age groups within the program scored at least equivalent to these norms without statistical variation (see Table 42). This is really a very positive result in that infants within the program at these age groups are developing equivalent to the norms. Significantly higher scores were achieved by the infants within the program for the 10 and 14 month age groups in communication, and at 14 months in the personal social area which indicates that in some cases children within the program are consistently doing better than average.

Table 37 - Ages and stages questionnaire results for communication by age group for the reporting year

Age in months	Mean	SD	Range	N	Referral cut-off score	N (%) over cut-off score
4	53.4	6.329	35-60	46	34.6	0 (0%)
10	51.7	9.913	15-60	41	22.9	1 (2.4%)
14	50.6	9.309	30-60	26	17.4	0 (0%)
20	47.7	13.249	15-60	22	20.5	1 (4.5%)

Table 38 - Ages and stages questionnaire results for gross motor skills by age group for the reporting year

Age in months	Mean	SD	Range	N	Referral cut-off score	N (%) over cut-off score
4	52.6	8.866	30-60	46	38.4	5 (10.9%)
10	49.6	11.853	20-60	41	30.1	4 (9.8%)
14	53.7	9.226	20-60	26	25.8	1 (3.8%)
20	55.0	6.901	40-60	22	39.9	0 (0%)

Table 39 - Ages and stages questionnaire results for fine motor skills by age group for the reporting year

Age in months	Mean	SD	Range	N	Referral cut-off score	N (%) over cut-off score
4	51.0	9.523	25-60	46	29.6	1 (2.8%)
10	52.7	6.810	40-60	41	38.0	0 (0%)
14	50.0	9.798	25-60	26	23.1	0 (0%)
20	50.0	7.868	30-60	22	36.0	1 (4.5%)

Table 40 - Ages and stages questionnaire results for problem solving by age group for the reporting year

Age in months	Mean	SD	Range	N	Referral cut-off score	N (%) over cut-off score
4	54.6	7.588	35-60	46	35.0	2 (4.3%)
10	49.2	10.118	25-60	41	32.5	4 (9.8%)
14	48.5	7.179	40-60	26	22.6	0 (0%)
20	46.4	8.191	30-60	22	28.8	0 (0%)

Table 41 - Ages and stages questionnaire results for personal-social by age group for the reporting year

Age in months	Mean	SD	Range	N	Referral cut-off score	N (%) over cut-off score
4	53.5	7.139	35-60	46	33.7	0 (0%)
10	50.9	7.237	35-60	41	28.3	0 (0%)
14	53.1	7.082	40-60	26	23.2	0 (0%)
20	51.6	7.462	40-60	22	33.4	0 (0%)

Table 42 - Comparison of ASQ mean scores from program infants with standardised means from ASQ 3 for reporting year

Age	N	Mean	SD	t	df	Sig. (2-tailed)	Mean Diff	95% Confidence Interval of the difference	
								Lower	Upper
Communication									
4	46	53.37	6.329	1.168	45	.249	1.090	-.79	2.97
10	41	51.71	9.913	2.285	40	.028*	3.537	.41	6.67
14	26	50.58	9.309	2.589	25	.016*	4.727	.97	8.49
20	22	47.73	13.249	-.146	21	.885	-.413	-6.29	5.46
Gross Motor Skills									
4	46	52.61	8.866	-1.546	45	.129	-2.021	-4.65	.61
10	41	49.63	11.853	-1.829	40	.075	-3.386	-7.13	.36
14	26	53.65	9.226	.312	25	.758	.564	-3.16	4.29
20	22	55.00	6.901	-.557	21	.583	-.820	-3.88	2.24
Fine Motor Skills									
4	46	50.98	9.523	-.429	45	.670	-.602	-3.43	2.23
10	41	52.68	6.810	-1.915	40	.063	-2.037	-4.19	.11
14	26	50.00	9.798	1.629	25	.116	3.130	-.83	7.09
20	22	50.00	7.868	-1.627	21	.119	-2.730	-6.22	.76
Problem Solving									
4	46	54.57	7.588	.693	45	.492	.775	-1.48	3.03
10	41	49.15	10.118	-1.926	40	.061	-3.044	-6.24	.15
14	26	48.46	7.179	.981	25	.336	1.382	-1.52	4.28
20	22	46.36	8.191	-1.074	21	.295	-1.876	-5.51	1.76
Personal Social									
4	46	53.48	7.139	1.480	45	.146	1.558	-.56	3.68
10	41	50.85	7.237	1.206	40	.235	1.364	-.92	3.65
14	26	53.08	7.082	3.411	25	.002*	4.737	1.88	7.6
20	22	51.59	7.462	-.282	21	.780	-.449	-3.76	2.86

*Significant difference from standardised mean at $p < .05$

A total of 77 ASQ:SE scores were entered in the DCS for the infants within the program. This is approximately a quarter of the expected number of questionnaires undertaken in 2014. As the reason so few scores have been entered is unknown, caution must be undertaken in interpreting the results. Table 43 outlines the results for these scores, however further analysis has not been undertaken at this time.

Table 43 - Ages and Stages Social and Emotional scores for infants within the program in 2014 by age group

Age group (months)	Mean	SD	Range	N	Cut-off	Above cut-off N (%)
6	14.4	13.469	0-60	27	45	1 (3.7%)
12	26.1	33.910	0-160	23	48	3 (13.0%)
18	15.0	9.608	0-40	14	50	0 (0%)
24	10.4	13.611	0-45	13	50	0 (0%)

7.8 English Language Assessment

Source: *English Language Assessment EL01*

The Macarthur CDI Form B English Language Assessment scores were completed for 88% of infants from 19 to 24 months within 2014. The adjusted scores at 21 months was comparable to the 50th percentile score for boys within the program, with only 16% achieving under the 25th percentile in number of words. The average adjusted score for girls within the program was significantly below the 50th percentile and 47% were below the 25th percentile. This is similar to results provided at the National Data Workshop in 2014 where the boys are doing better than the girls in the program in relation to vocabulary.

Table 44 - Mean words identified in English language assessment at 21 months for reporting year 2014, 2013 and 2012

Reporting year	Mean	Range	SD	% Data complete
2014* Adjusted	36.7	0-100	23.705	91%
2014 Raw	39.9	1-100	23.266	91%
2013	49.4	1-99	25.6	67%
2012	49.4	16-95	20.1	81%

*Mean EI scores have been adjusted to 21 months for 2014

Table 45 - Mean and range of English language scores (adjusted for age in months) for reporting year by sex

Group	Mean	SD	N	Range
Girls	36.5	24.453	19	1-90
Boys	36.92	23.602	19	0-100

Note: Adjustments were made to scores undertaken at other age groups to the numbers of words at 21 months based on the number of words at the age group the assessment was conducted.

Table 46 - Number and percent of infants according to percentiles from CDI Toddler Form B

Group	Under 25 th percentile	Between 25 th and 50 th percentile	Between 50 th and 75 th percentile	Over 75 th percentile
Girls	9 (47%)	5 (26%)	2 (11%)	3 (16%)
Boys	3 (16%)	10 (53%)	1 (5%)	5 (26%)
Total	12 (32%)	15(39%)	3 (8%)	8 (21%)

8 KEY ITEMS FOR DISCUSSION

- Ongoing data quality improvement and strategies for improving alignment with model fidelity could be explored at the National Data Workshop in April 2015
- Strategies are being pursued by the Support Service with assistance from the ANFPP Data Group that will support local management of the program and improvement in data completeness
- The implementation of the Communicare Dashboard to provide a real time program data management tool is expected to enhance data quality and completeness
- The implementation of version 2.2 of the DCS Forms will be the first major revision of the DCS since 2011 and is expected to resolve some identified difficulties with data entry and collection at a local level.
- The addition of summary non-client data to contextualise and inform alignment with the program elements in areas such as staff turnover, client attrition and maintaining clinical supervision across areas such as the program domains.
- The expansion of analysis to include additional aspects of maternal health and wellbeing.

9 SUMMARY

This report has been able to capture very positive outcomes for clients and children within the ANFPP in Australia. The outcomes for the children of clients in the program in terms of breastfeeding, birth weight, prematurity, immunisation and development across ages and stages provide a very sound basis for their future. The delay of subsequent pregnancies, the reduction in pre-term births and low birth weights, and the reduction of smoking and alcohol use are very positive outcomes for the clients of the program. There are opportunities for expanding the analysis to include social and health determinants and outcomes for mothers in the program including antenatal care, maternal health and participation in employment and education.

The ability to capture these outcomes is partly due to the stabilisation of the data collection, overall improvements in data completeness and the length of time the program has been implemented therefore expanding the data available through the various phases of the program. Ongoing maintenance and quality improvement of the data collection system will ensure the information about the outcomes for all clients and infants within the program is accurate, unbiased and adequately reflect the achievements of the program.

10 REFERENCES

4704.0 - *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples*, Oct 2010 Latest ISSUE Released at 11:30 AM (CANBERRA TIME) 29/10/2010

Australian Institute of Health and Welfare 2010, *Australian National Infant Feeding Survey*, Canberra: Australian Government.

Department of Health and Ageing 2012 Report, *Aboriginal and Torres Strait Islander Health Performance Framework*, Canberra: Australian Government.

Goyal, N. K., Hall, E. S., Meinzen-Derr, J. K., Kahn, R. S., Short, J. A., Van Ginkel, J. B., & Ammerman, R. T. (2013). Dosage Effect of Prenatal Home Visiting on Pregnancy Outcomes in At-Risk, First-Time Mothers. *Pediatrics*, 132(Supplement 2), S118-S125.

Immunise Australia Program, Australian Government, Department of Health. (2014) Retrieved from <http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/acir-curr-data-atsi-child.htm>

Korfmacher, J., Kitzman, H., & Olds, D. (1998). Intervention processes as predictors of outcomes in a preventive home-visitation program. *Journal of Community Psychology*, 26(1), 49-64.

Laws PJ & Sullivan EA 2005. *Australia's mothers and babies 2003*. Perinatal Statistics Series. No. 16. AIHW cat. no. PER 29. Sydney: AIHW National Perinatal Statistics Unit.

Li, Z., Zeki, R., Hilder, L. & Sullivan, E.A. (2011) *Australia's mothers and Babies 2011*. Canberra: Australian Institute of Health and Welfare.

McDonald, M., Moore, T.G. and Goldfeld, S. (2012). *Sustained home visiting for vulnerable families and children: A literature review of effective programs*. Prepared for Australian Research Alliance for Children and Youth. Parkville, Victoria: The Royal Children's Hospital Centre for Community Child Health, Murdoch Childrens Research Institute.

Naidu, L., Chiu, C., Habig, A., Lowbridge, C., Jayasinghe, S., Wang, H. & Menzies, R. (2012). Vaccine preventable diseases and vaccination coverage in Aboriginal and Torres Strait Islander people, Australia 2006-2010. *Communicable diseases intelligence quarterly report*, 37, S1-95.

National Health and Medical Research Council 2012, *Infant Feeding Guidelines*, Canberra: National Health and Medical Research Council.

O'Brien, R. A., Moritz, P., Luckey, D. W., McClatchey, M. W., Ingoldsby, E. M., & Olds, D. L. (2012). Mixed methods analysis of participant attrition in the nurse-family partnership. *Prevention Science*, 13(3), 219-228.

Olds, D. L. (2006). The nurse-family partnership: An evidence-based preventive intervention. *Infant Mental Health Journal*, 27(1), 5-25.

11 APPENDIX

11.1 List of Tables

Table 1 - Summary of active clients, graduated clients, average age of clients and program staffing	11
Table 2 - Summary of key fidelity measures of eligibility, parity, home visiting and client retention for 2014 and 2013	14
Table 3 - Visit completion percentages for pregnancy phase	16
Table 4 - Visit completion percentages for infancy phase	16
Table 5 - Visit completion percentages for toddlerhood phase.....	16
Table 6 - Average percent of time spent on the program domains in the pregnancy phase	17
Table 7 - Average percent of time spent on the program domains in the infancy phase	18
Table 8 - Average percent of time spent on the program domains in the toddlerhood phase	18
Table 9 - Proportion of clients smoking in the last 2 days at intake and 36 weeks by reporting year.	19
Table 10 - Change in mean number of cigarettes smoked in previous 48 hours from intake to 36 weeks as matched pairs (individual clients).....	20
Table 11 - Mean and standard deviation of number cigarettes over last two days by stage for health habits forms received from 1 July 2013 and 30 June 2014	20
Table 12 - Number of clients (percent) reported to have reduced smoking during pregnancy by stage for health habits forms received from 1 July 2013 and 30 June 2014	20
Table 13 - Self reported smoking during pregnancy as asked when the infant is 12 months of age.	20
Table 14 - Proportion of clients smoking from other peoples cigarettes at intake, 36 weeks and infancy 12 months of age	21
Table 15 - Mean and standard deviation different days over the last two weeks the client drank alcohol at intake and 36 weeks pregnant.	22
Table 16 - Comparison of alcoholic drinks per day over the last 2 weeks at intake and 36 weeks pregnancy for as matched pairs (individual clients).....	22
Table 17 – Mean, standard deviation number and range of the number of drinks taken per day over the last two weeks by stage.....	22
Table 18 - Comparison of mean number of drinks per day between intake and 36 weeks of pregnancy	22
Table 19 - Mean number of days over the last two weeks where marijuana was used by the client	23
Table 20 - Percentage of clients indicating the use of marijuana	23
Table 21 - Comparison of marijuana use in the last 2 weeks between intake and 36 weeks pregnancy for individual clients	23

Table 22 - Percentage of singleton babies born between 1 July 2013 and 30 June 2014 at full term (>37 weeks) with a birth weight less than 2500 grams 24

Table 23 - Mean birth weight for full term babies born between 1 July 2013 and 30 June 2014 by site 24

Table 24 - Proportion of babies born between 1 July 2013 and 30 June 2014 born prematurely (<37 weeks gestation) by site 25

Table 25 - Proportion of infants continuing to get breast milk by stage and site... 26

Table 26 - Number of clients who have breastfed or expressed milk for their infant 27

Table 27 - Age in weeks by site when breastfeeding either stopped or was no longer exclusive in 2014 28

Table 28 - Percentage of infant presentations for injury or ingestion for 2014, 2013 and 2014 reporting years 29

Table 29 - Mean number of infant presentations to clinics* for injury or ingestion for birth to 6 months and 6 to 12 months for 2014, 2013 and 2012 reporting years 29

Table 30 - Mean number of infant presentations to clinics* for injury or ingestion for 12 to 18 months and 18 to 24 months 29

Table 31 - Proportion of infants admitted to hospital as a result of injury or ingestion for 2014, 2013 and 2012 reporting years 30

Table 32 - Mean infant admissions to hospital for injury or ingestion for 2014, 2013 and 2014 reporting years 30

Table 33 - Proportion of infants up to date on all vaccinations for the stage for this reporting year 31

Table 34 - Completion rates from 2012-2013 Annual Data Report 31

Table 35 - Percentage of clients with at least one pregnancy within 24 months after the birth of the referred pregnancy for 2014, 2013 and 2012 reporting years. 31

Table 36 - Percentage of clients with at least one pregnancy within 24 months after the birth of the referred pregnancy by site..... 32

Table 37 - Ages and stages questionnaire results for communication by age group for the reporting year 32

Table 38 - Ages and stages questionnaire results for gross motor skills by age group for the reporting year 32

Table 39 - Ages and stages questionnaire results for fine motor skills by age group for the reporting year 33

Table 40 - Ages and stages questionnaire results for problem solving by age group for the reporting year 33

Table 41 - Ages and stages questionnaire results for personal-social by age group for the reporting year 33

Table 42 - Comparison of ASQ mean scores from program infants with standardised means from ASQ 3 for reporting year 34

Table 43 - Ages and Stages Social and Emotional scores for infants within the program in 2014 by age group 35

Table 44 - Mean words identified in English language assessment at 21 months for reporting year 2014, 2013 and 2012 35

Table 45 - Mean and range of English language scores (adjusted for age in months) for reporting year by sex..... 35

Table 46 - Number and percent of infants according to percentiles from CDI Toddler Form B 36

11.2 Feedback

Comments and feedback on this report can be submitted by email to info@anfpp.com.au or addressed to the ANFPPSS, PO Box 1874 Milton Q 4064.