

IMMUNISATION COVERAGE IN CHILDREN ACCORDING TO LEAD MATERNITY CARER

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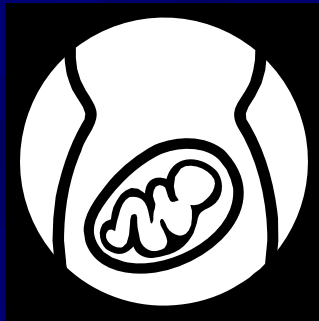


Maternity services in NZ

Midwife
Free

Obstetrician
\$ 3000

General
Practitioner
Free



Prenatal

Pregnancy

Birth

First 4 weeks

6 week check

Immunisation

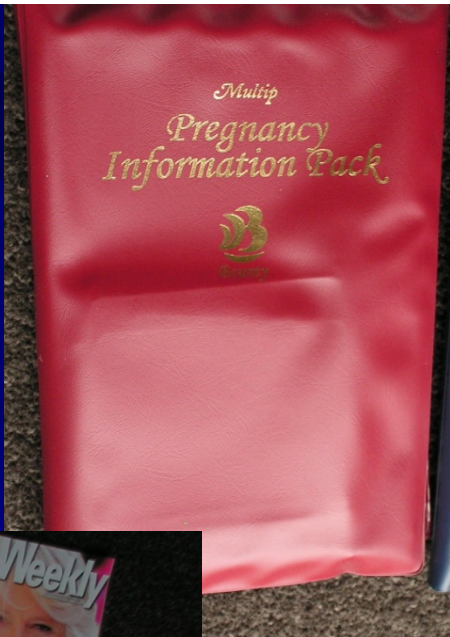
General
Practitioner

Lead Maternity Carer (LMC)

General
Practitioner and
Well Child Provider

Antenatal period

- Preparation for the unknown!
- Important decision making time for new parents
- Immunisation is one of these decisions
- LMC ideally placed to provide information for new parents



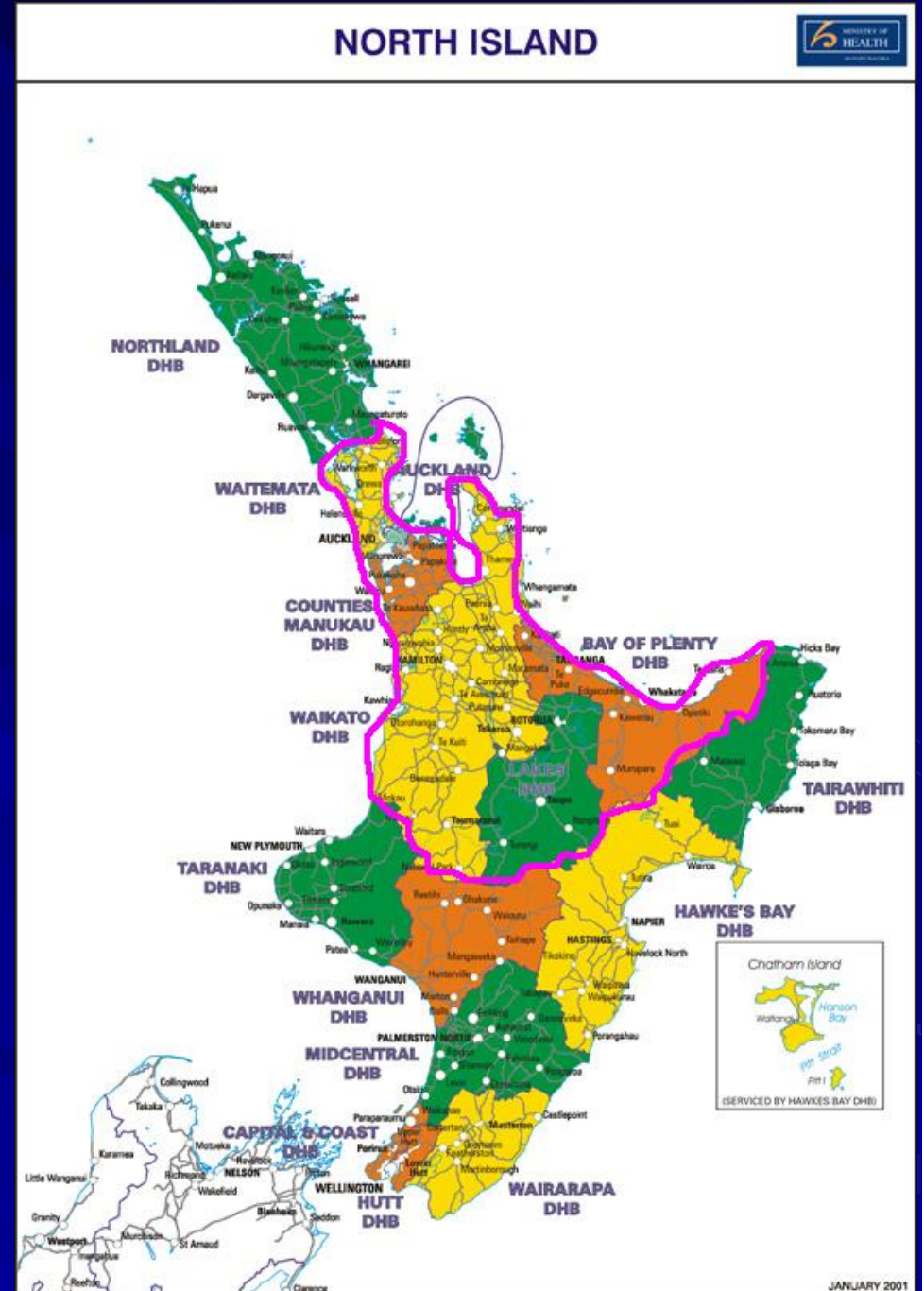
What did I seek to answer?

To determine:

- When do parents decide about immunisation?
- What kind of information do parents receive antenatally about immunisation?
- Is there any difference in immunisation coverage or timeliness according to the type of LMC?

Design

- 124 general practices recruited from Auckland and Midland including Waitemata, Auckland, Counties-Manukau, Waikato, Bay of Plenty, and Lakes DHBs
- Approx 50% NZ population in these DHBs
- April 2005 to October 2006.



Data collection process

Practice agrees
to participate

Electronic audit of
Immunisation data



All children under 2 years
identified



Random sample of 10
children < 2 years old



Computer Assisted Telephone Interview (CATI)
with consenting parents



Data Measurement

■ Immunisation

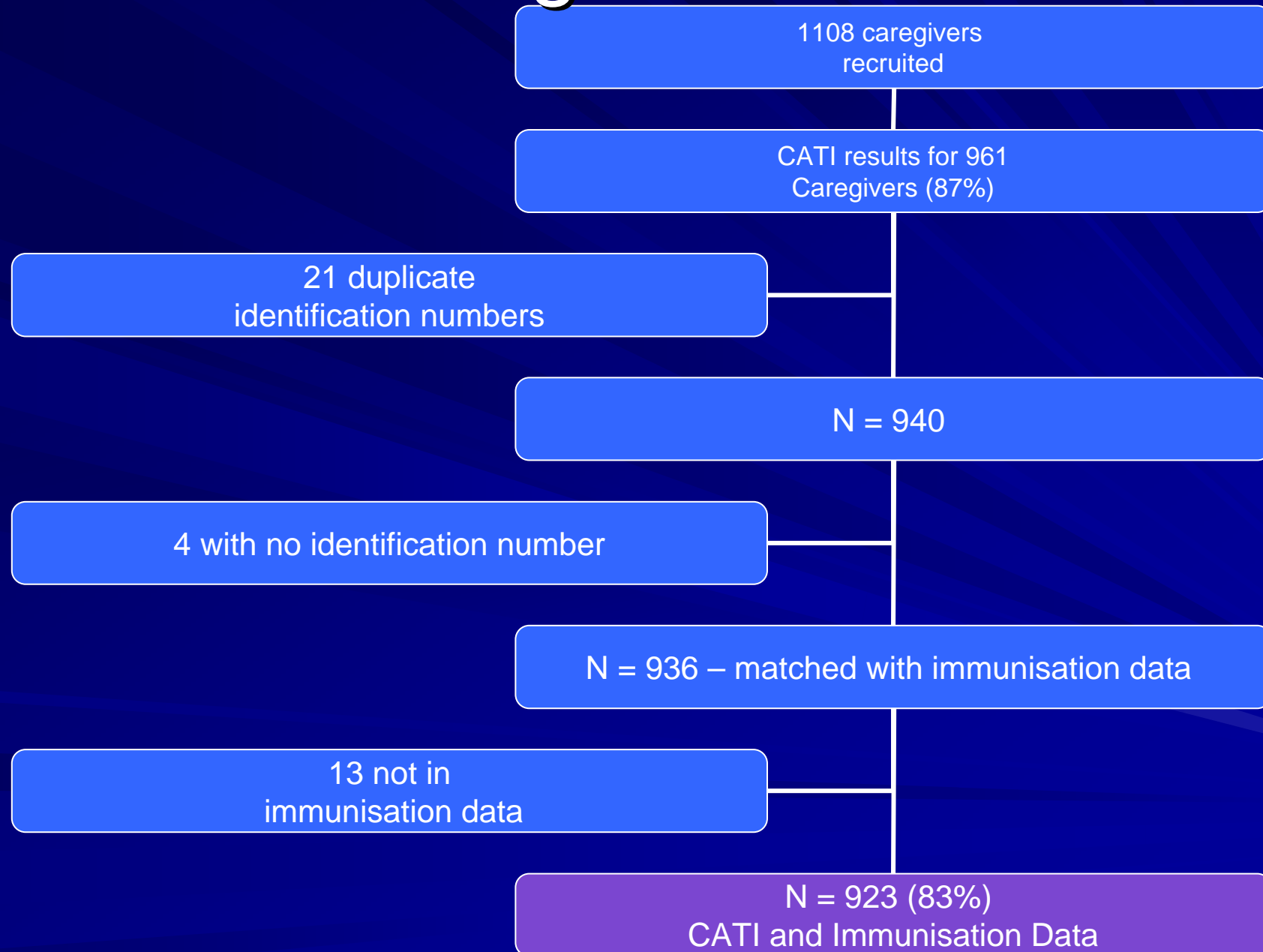
- coverage analysed using the “third dose assumption”*
- Immunisation delay defined according to National Immunisation Register definition

■ Caregivers

- Demographics
- Antenatal information about immunisation
- Lead maternity carer

*Hull et al Comm Dis Intell 2003

Caregiver results



Characteristics of Caregivers

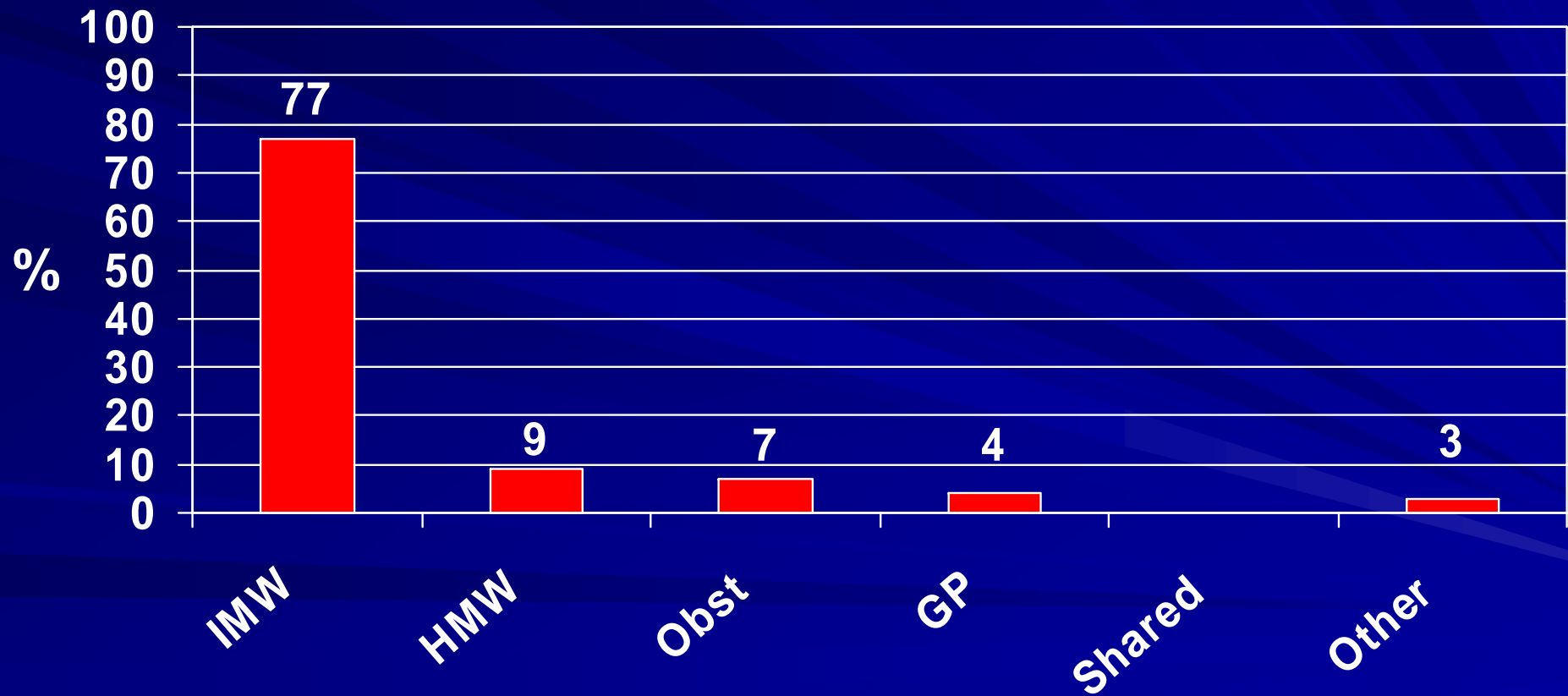
Relationship to child	Mother	97%	
Age	25 – 34 years	53%	
	35 – 44 years	36%	
	< 25 years	10%	
Ethnicity	NZ European/Other	81%	76%
	Maori	11%	14%
	Pacific	7%	7%
Accommodation type	Owner-occupied/mortgage	60%	51%
	Rented	28%	31%
Highest Qualification	Tertiary or higher	37%	14%

Characteristics of children

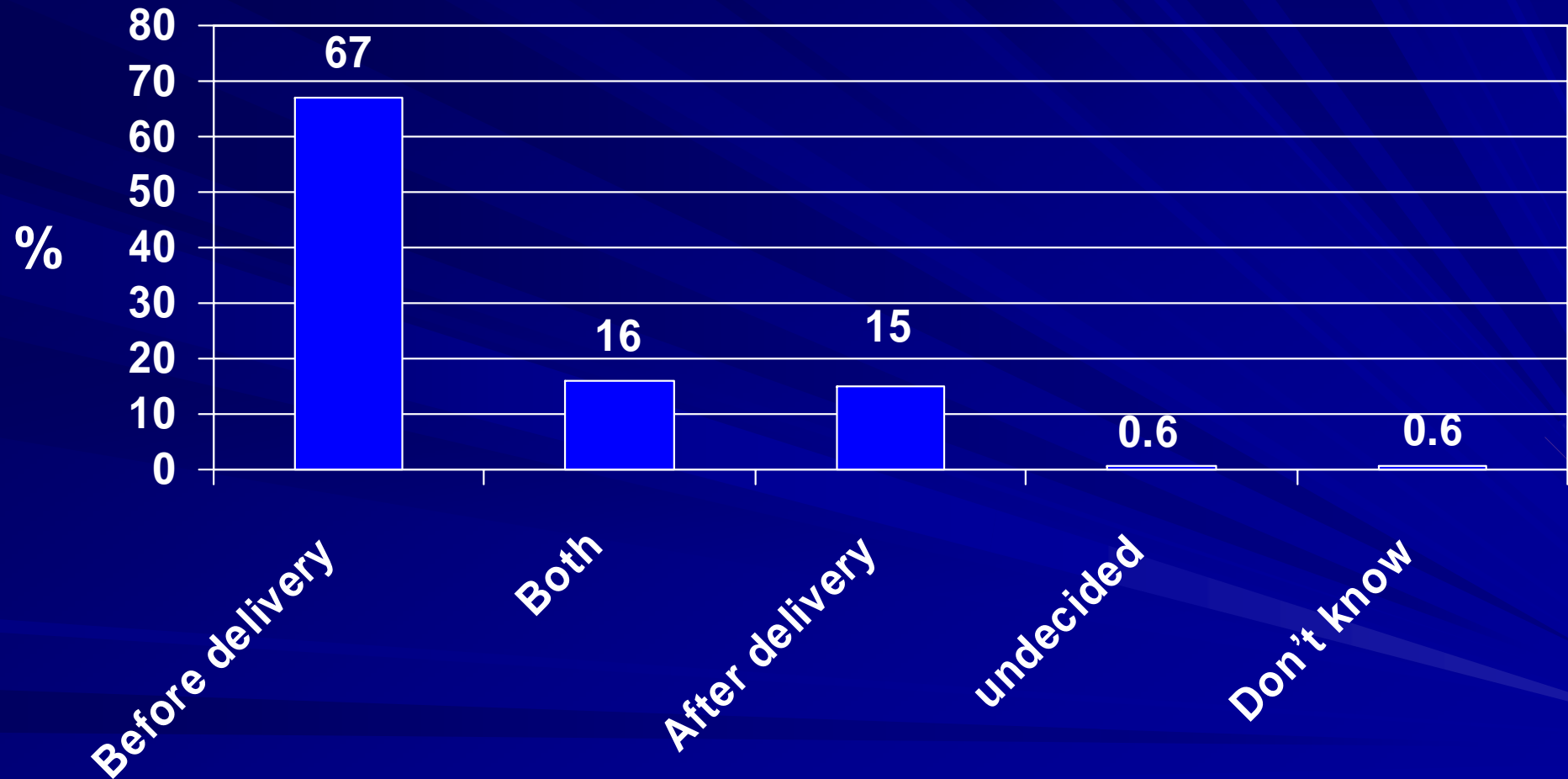
Age	Median 393 days 25 th to 75 th - 207 to 567 days
Status at GP	Registered or enrolled 95%
Long term illness	87% no 11% yes

Lead Maternity Carer

% caregivers with each LMC type (n = 723)



Timing of immunisation decision



What kind of information?

- Encouraging information (n= 724)
 - 450 (62%) Yes
 - 217 (30%) No
- Discouraging information (n = 718)
 - 123 (17%) Yes
 - 589 (82%) No

Source of information

Source of information	Encouraging vaccination (n = 451) n (%)	Discouraging vaccination (n = 129) n (%)
GP	41 (9)	3 (2)
IMW	226 (50)	23 (18)
HMW	34 (8)	2 (2)
Obstetrician	13 (3)	0
Antenatal class	35 (8)	16 (12)
Others	102 (23)	85 (66)

Coverage according to LMC

- 69% of 15 month olds were fully immunised
- No difference in immunisation coverage when each type of LMC was compared to the rest
- For all immunisations:

LMC type	p value
GP	0.71
IMW	0.41
HMW	0.87
OBST	0.10
SHARED	0.97

Immunisation delay according to LMC

LMC type	Delay in immunisation - p value				
	Any	6 week	3 month	5 month	15 month
GP	0.54	-	0.19	0.23	0.34
IMW	0.04 (36% vs 27%)	0.21	0.60	0.07	0.01 (59% vs 39%)
HMW	0.14	0.21	0.19	0.79	0.07
OBST	0.28	-	0.33	0.02 (5% vs 24%)	0.38
SHARED	0.79	-	0.39	0.50	0.90

Multivariate analysis

IMW		Odds Ratio	95 % CI
Delay in any		1.55	(1.02, 2.37)
	Adjusted*	1.46	(0.96, 2.21)
Delay in 15 months		2.25	(1.27, 3.98)
	Adjusted*	2.14	(1.21, 3.79)

* Adjusted for Maori ethnicity, tertiary qualification, caregiver age group

Conclusions

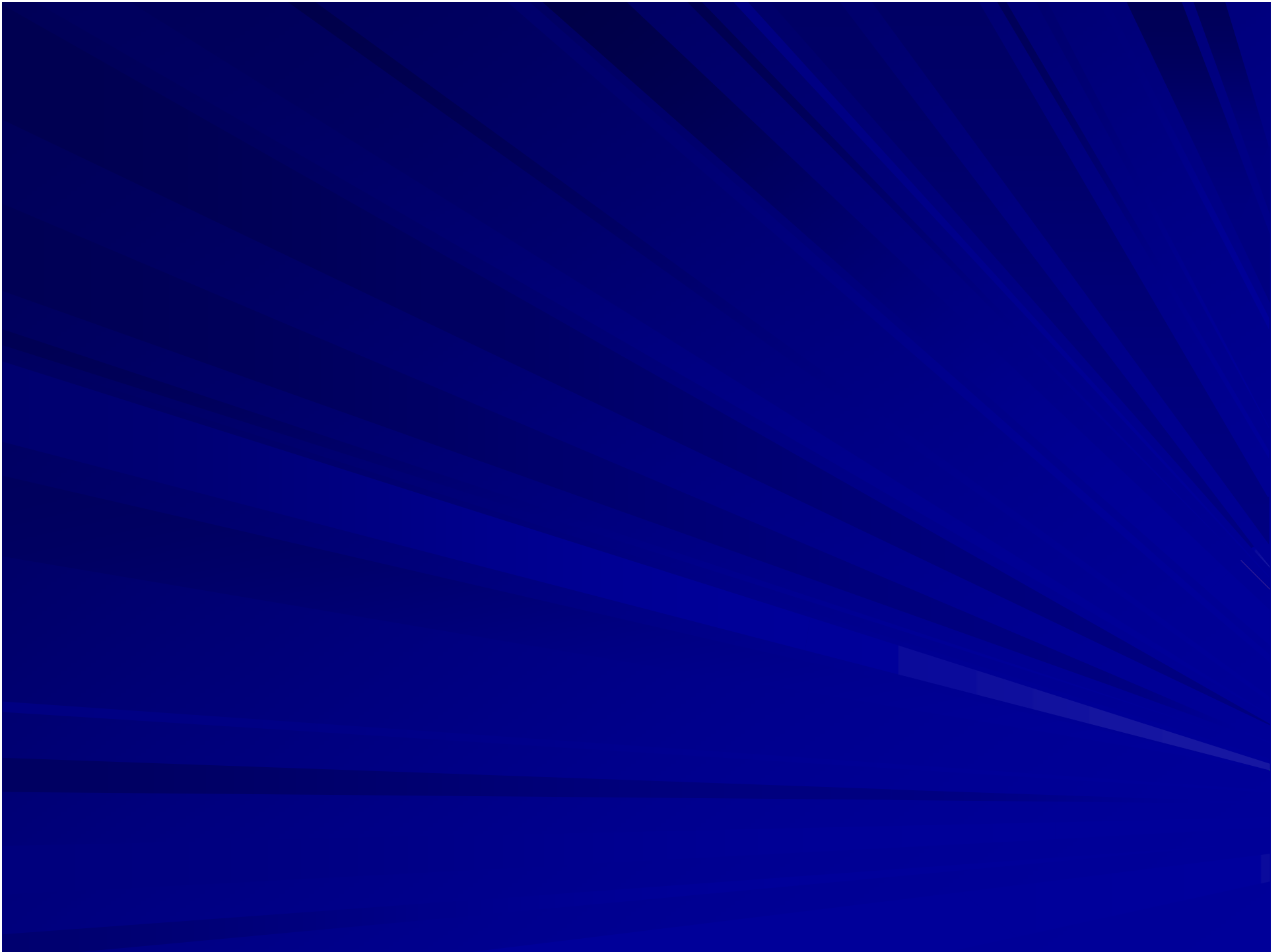
- Most parents decide whether or not to immunise their baby during the antenatal period
- There was no difference in immunisation coverage according to LMC
- Those with an independent midwife as LMC were more likely to be delayed with their child's 15 month immunisations
- Only 69% of 15 month old children were fully immunised

Recommendations

- Every women should receive information encouraging immunisation during the antenatal period
- LMCs are ideally placed to discuss immunisation
- Education may help LMCs with their important role in this.

Acknowledgements

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- Project Team: Cameron Grant, Helen Petousis-Harris, Nikki Turner, Felicity Goodyear-Smith, Ngaire Kerse, Rhys Jones, Vili Nosa, Jackie Copp, Deon York, Nan MacKenzie, Jim Ross, Elizabeth Plumridge Elizabeth Cunningham, Natalie Desmond, Luisa Ape-Esera, Naidu Madupuri, Mildred Lee, Shireen Nanayakkara-McDonald



Results: Caregiver recruitment



Results: Recruitment of practices

Total practices available
in sample 517
Auckland 346
Midland 171

Randomly selected 213
Auckland 108
Midland 105

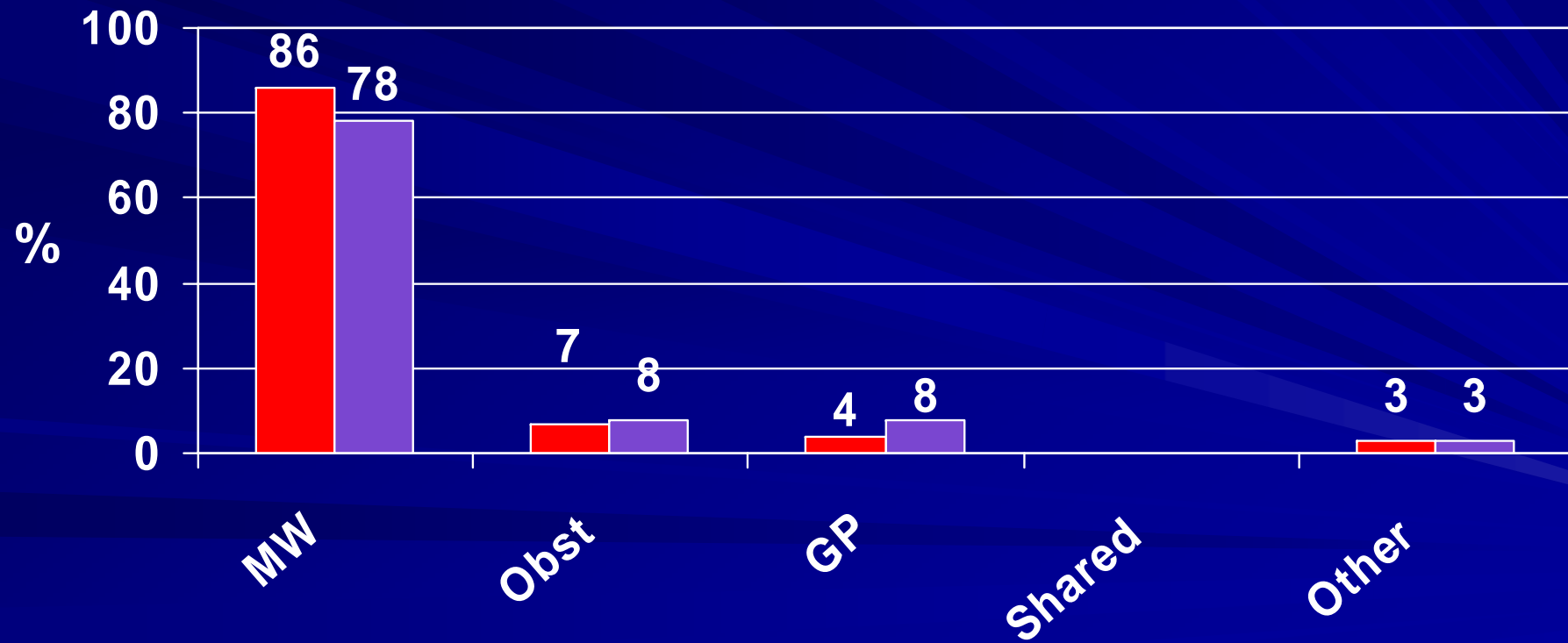
Declined 81 (38%)
Auckland 35 (32%)
Midland 46 (44%)

Enrolled 124 (58%)
Auckland 70 (65%)
Midland 54 (51%)

Not Eligible 8 (4%)
Auckland 3 (3%)
Midland 5 (5%)

Lead Maternity Carer

Study Population

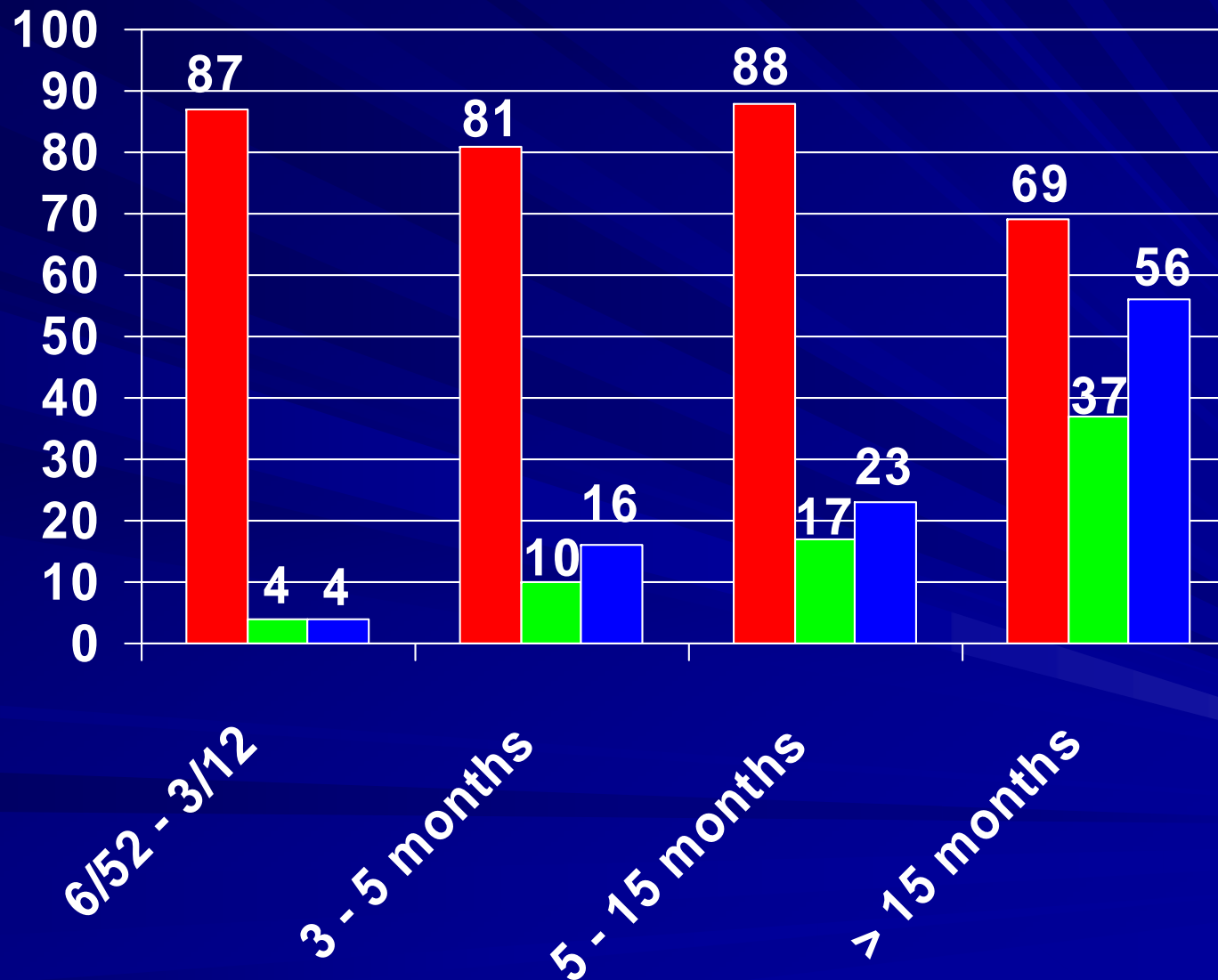


Immunisation Coverage and Delay

■ % fully immunised

■ % delayed

■ % Cumulative delay



Type of LMC

- No difference between 723 caregivers for whom LMC was known, and the 200 for whom LMC not known with respect to:
 - Immunisation Coverage ($p = 0.09$)
 - Delay in any immunisation ($p = 0.23$)
 - Age, gender, ethnicity, accommodation type or highest qualification.
- Those for whom LMC not known were more likely to be “other relative” ($p=0.004$)

Power

- A sample size of 900* is sufficient to show statistical significance for an odds ratio of 2.00 or more assuming an expected frequency of disease in the unexposed group of between 10% and 80% i.e. adequate power for a wide range of exposures

* Epi info

LMC type and information

- No difference in whether encouraging or discouraging information received according to LMC type
- Timing of decision varied with LMC type:

LMC type	Immunisation decision					
	Before birth		Before and after birth		After birth	
	%	P value	%	P value	%	P value
IMW vs other	67% vs 66%	0.81	18% vs 11%	0.038	14% vs 22%	0.009
HMW vs other	60% vs 66%	0.22	8% vs 17%	0.044	31% vs 14%	<0.001