

Tobacco Smoke Exposure And Regular Cough In Hospitalized Children In Central Australia

*Lee Hudson¹, Andrew White², Rob
Roseby^{1,3}*

1: Alice Springs Hospital; 2: Remote Health;
3: Flinders University NT Clinical School



Background

- Exposure to tobacco smoke is bad for children

Lots of evidence!

- Rate of smoking in Indigenous Australian population higher than the national average

Australian Health Ministers' Advisory Council, 2006, Aboriginal and Torres Strait Islander Health Performance. Framework Report 2006, AHMAC, Canberra:84.

- Respiratory illness a large burden on health amongst indigenous children in NT

Anne B Chang, Keith Grimwood. Position Statement. Bronchiectasis in Indigenous children in remote Australian communities. MJA 2002 177 (4): 200-204

- Anecdotal experience : perception that children in Central Australia cough alot
- Studies elsewhere suggest up to 10% of pre-school and early school age children have regular cough at some time

Shahn F. How often do children cough? Lancet 1996;384:699-700

- Evidence that cessation of smoking in carers can reduce child cough

Brand PL, Duiverman EJ. Coughing and wheezing in children : improvement after parents stop smoking. New Tijdschr Geneeskd 1998;142:825-7

Aims

- To establish the proportion of children admitted to hospital who are exposed to tobacco
- To find carers' subjective impression of presence of regular cough and then association between tobacco exposure and regular cough in our patient group
- To identify the level of Interest in quitting amongst carers
- Improve education / training for incorporating smoking into medical assessment amongst medical staff

Alice Springs Hospital

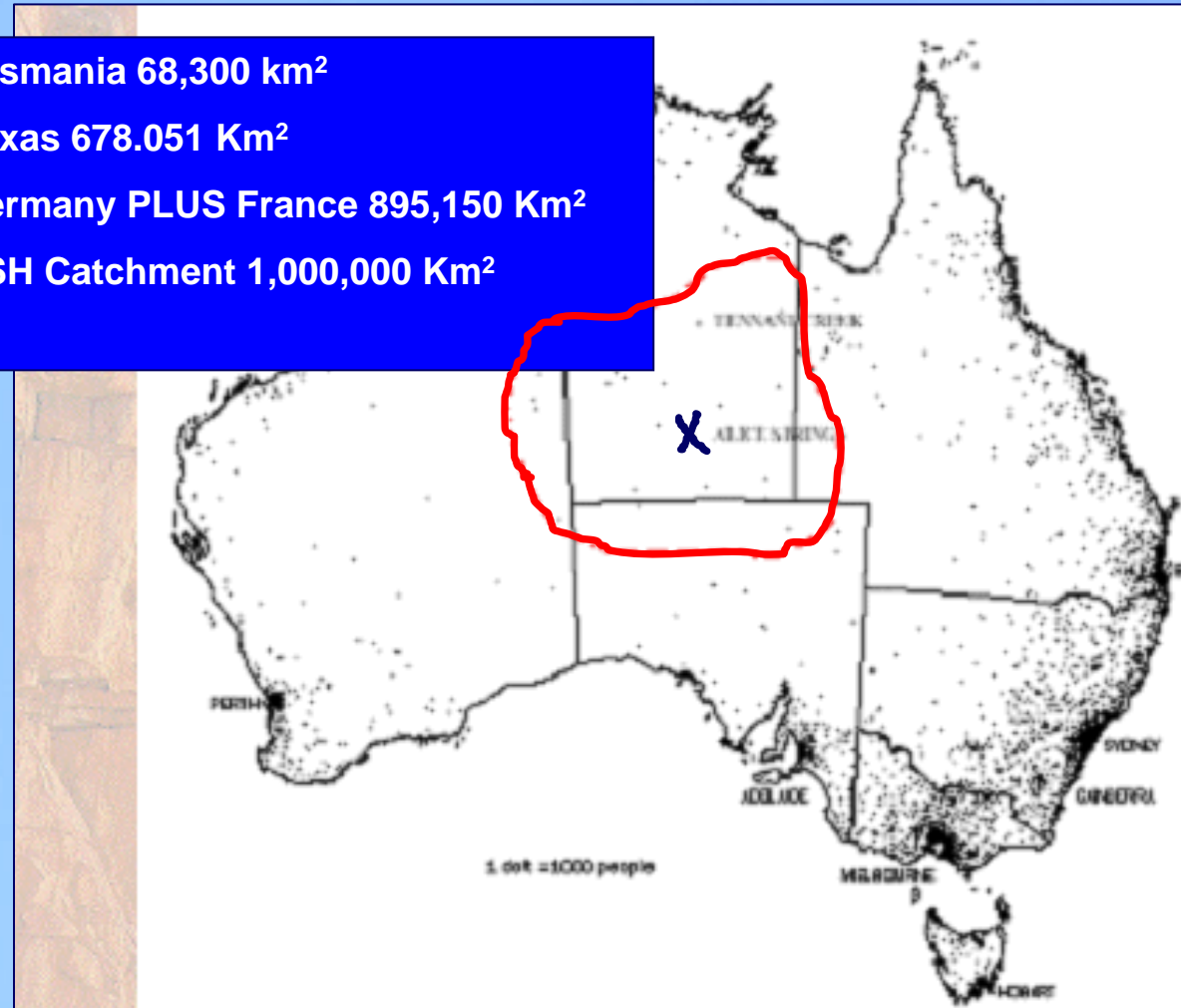
- Catchment over 1 million square kilometres
- Indigenous Australians 40% of the total population.
- Just under 12,000 children
- 40 bed paediatric ward
- Approximately 1800 admissions per year (about 90% Indigenous)

Tasmania 68,300 km²

Texas 678,051 Km²

Germany PLUS France 895,150 Km²

ASH Catchment 1,000,000 Km²



Methods

- Survey of carers of all children under 15 admitted to Alice Springs Hospital
- Verbal questionnaire
- Prospectively over 3 separate 2-week blocks within a 3 month period (November 2006-January 2007).
- The Central Australian Human Research Ethics Committee approval

Questions asked

- How many adults usually live in your house?
- How many children usually live in your house?
- Does anyone smoke?
- If so what is the relationship?
- Do they smoke inside?
- Are you interesting in quitting (if applicable)
- Do you think the others would be interested in quitting?
- Is there a cooking fire (not stove) inside your house?
- Does this child regularly have a cough?

Also documented

- Demographics of home location :
 - Urban : house address or town camp
 - Remote
- Reason for admission

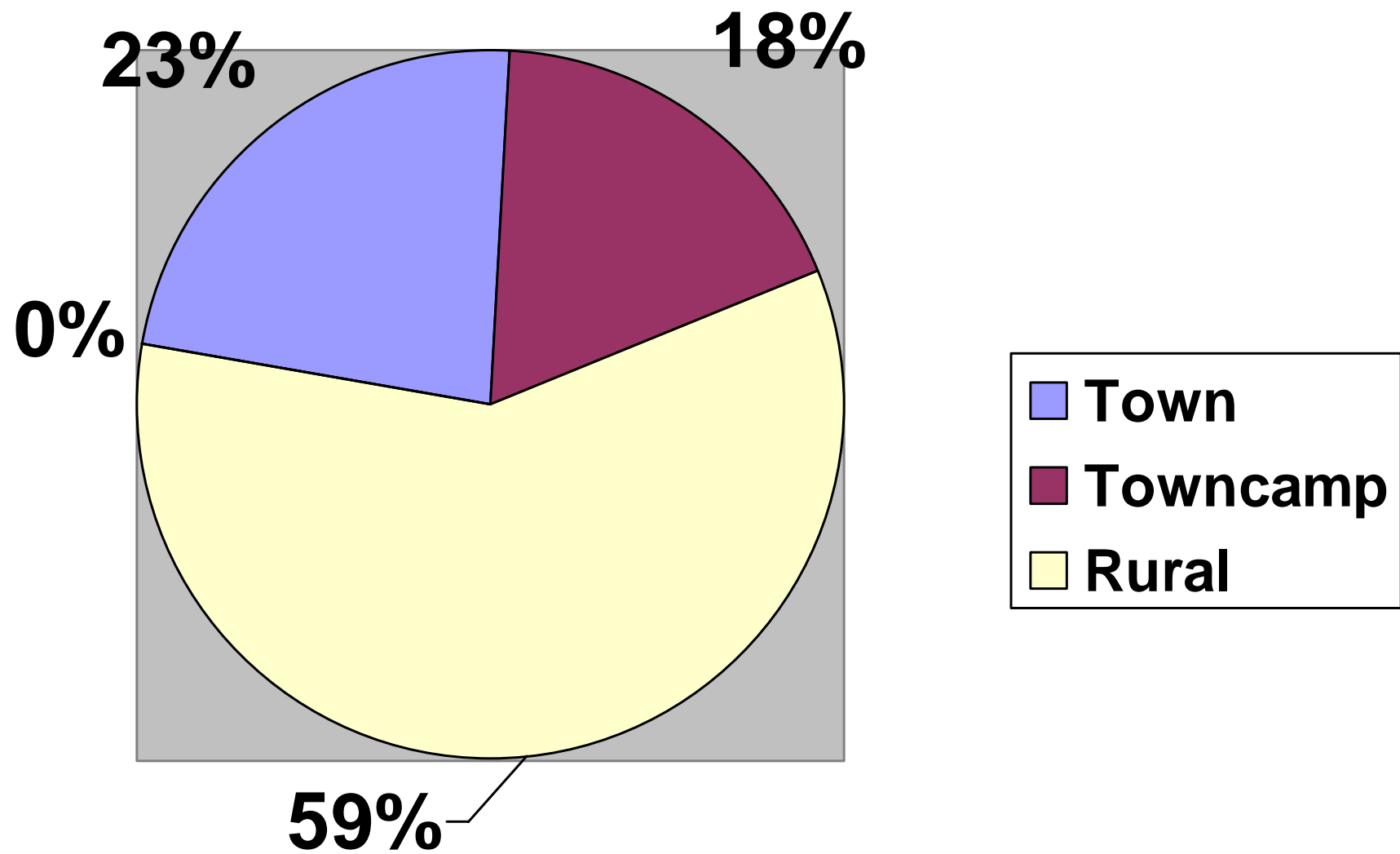
Obtaining information

- Verbal questionnaire
- Separate document from clinical notes
- Admitting or attending medical staff
- Viewed as part of the normal process
- Usual respectful and private manner
- Aboriginal interpreters / liaison officers
- Verbal consent and explanation

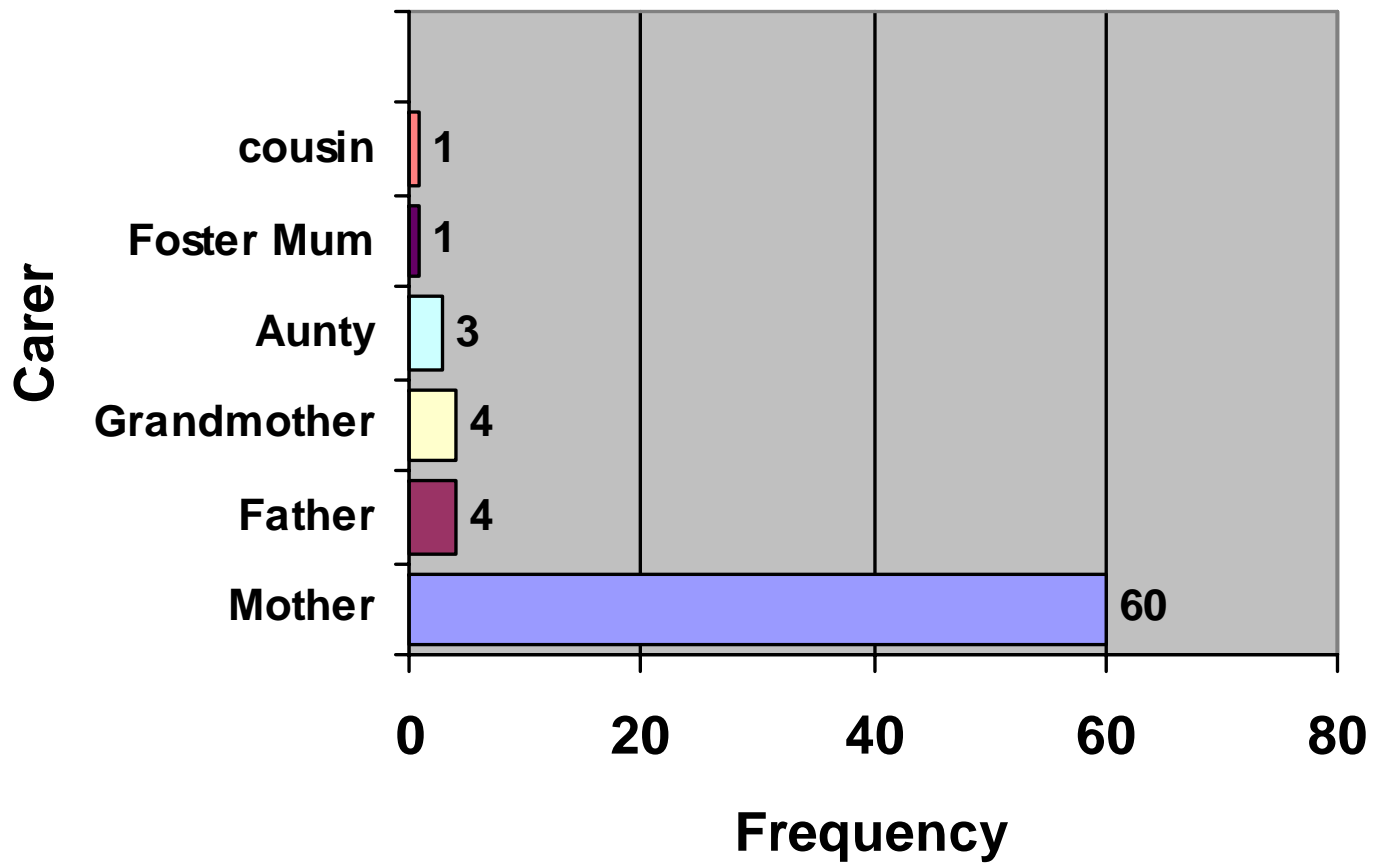
Results

- Admissions 136
- 82 questionnaires completed (60%).
- 73 of the children surveyed were aboriginal (89%)
- As so few non-aboriginal children only aboriginal children data analysed

Origins of children in study



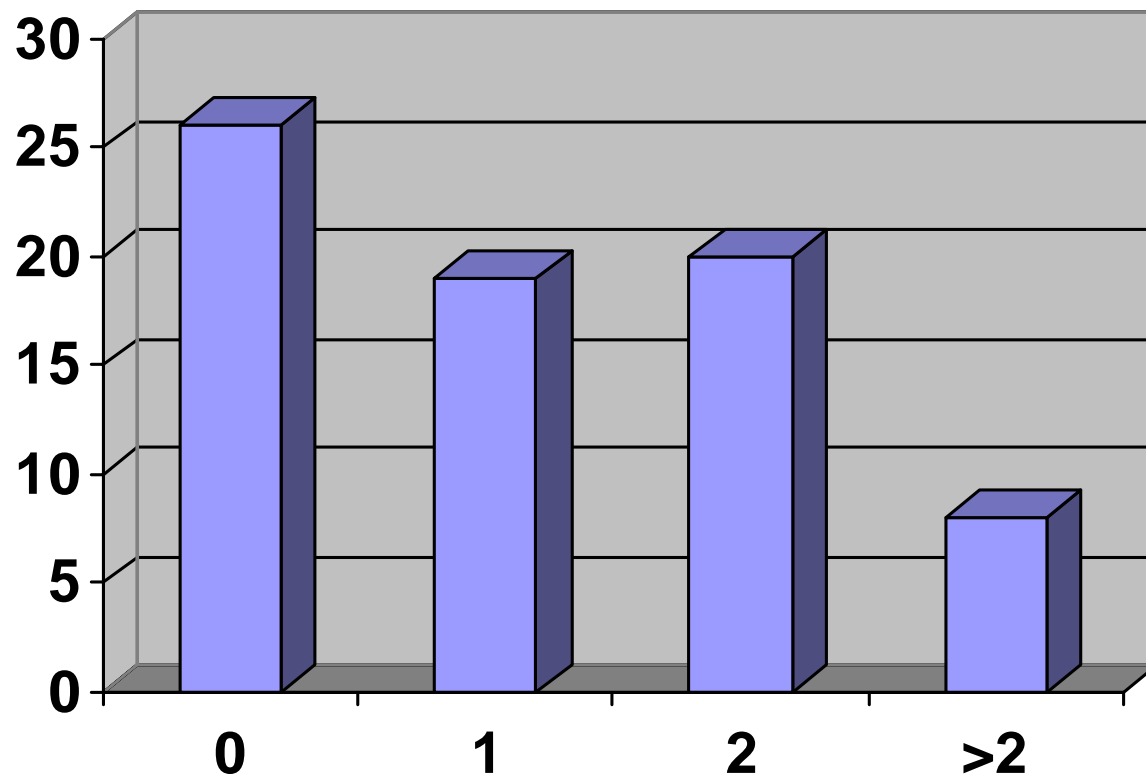
Frequencies of different presenting carers of children surveyed



Smokers in households

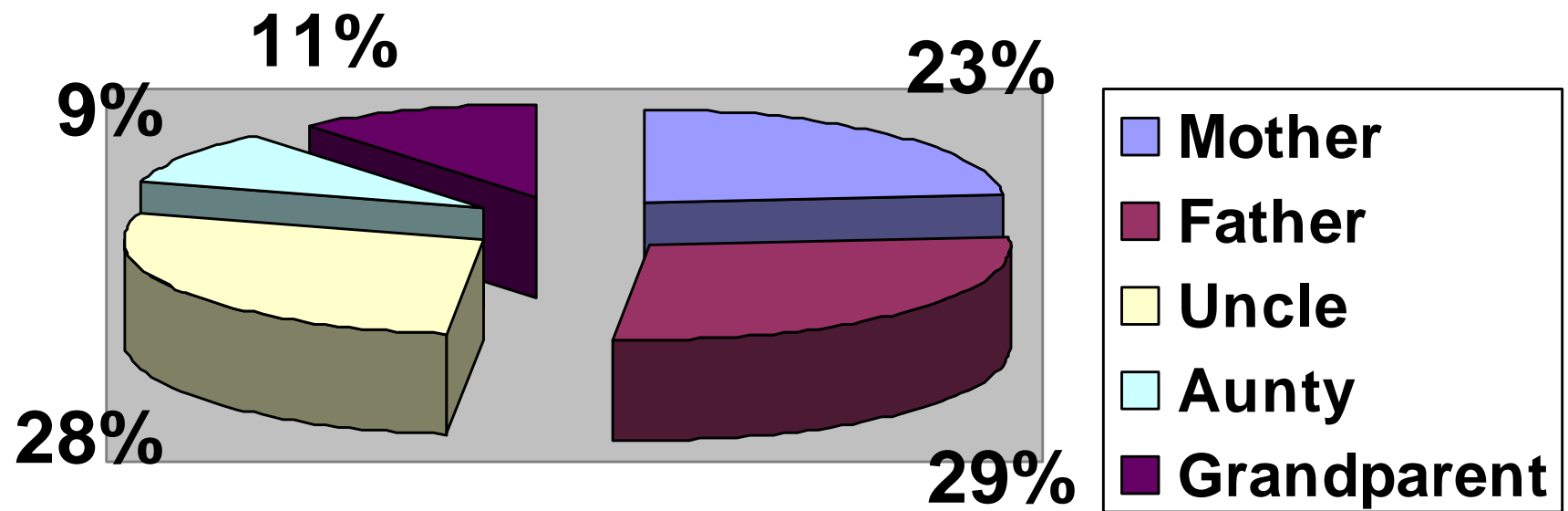
- 47 children (64%) lived in a house with at least one person who smoked
- In smoking households 26 (55%) had smoking inside the house

frequency



Number of smokers in household

Who are the smokers?



Regular cough

- The point prevalence of a regular cough the children surveyed was 33%.

Relationship between smoke exposure and regular cough

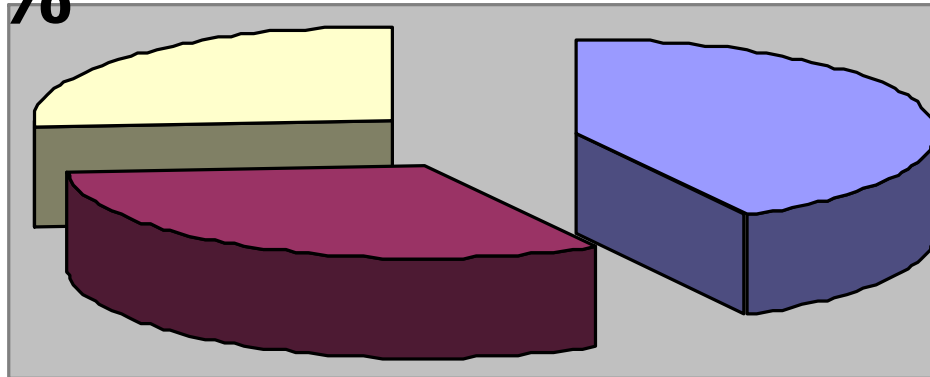
	Smokers in household n=47	No smoker in household n=26
Frequency	20	4
Rate	40% (p=0.036)	15%
Relative risk (95% CI)	2.77 (1.06-7.23)	

Children with reported smokers in household : Relationship between smoking in or outside house and regular cough.

	Smoker in house n= 26	Smoker outside the house n=21
Frequency	10	10
Rate	38%	48%
Relative Risk (95% CI)	0.81(0.42-1.57)	

Numbers of individual smoking carers' interest in quitting smoking

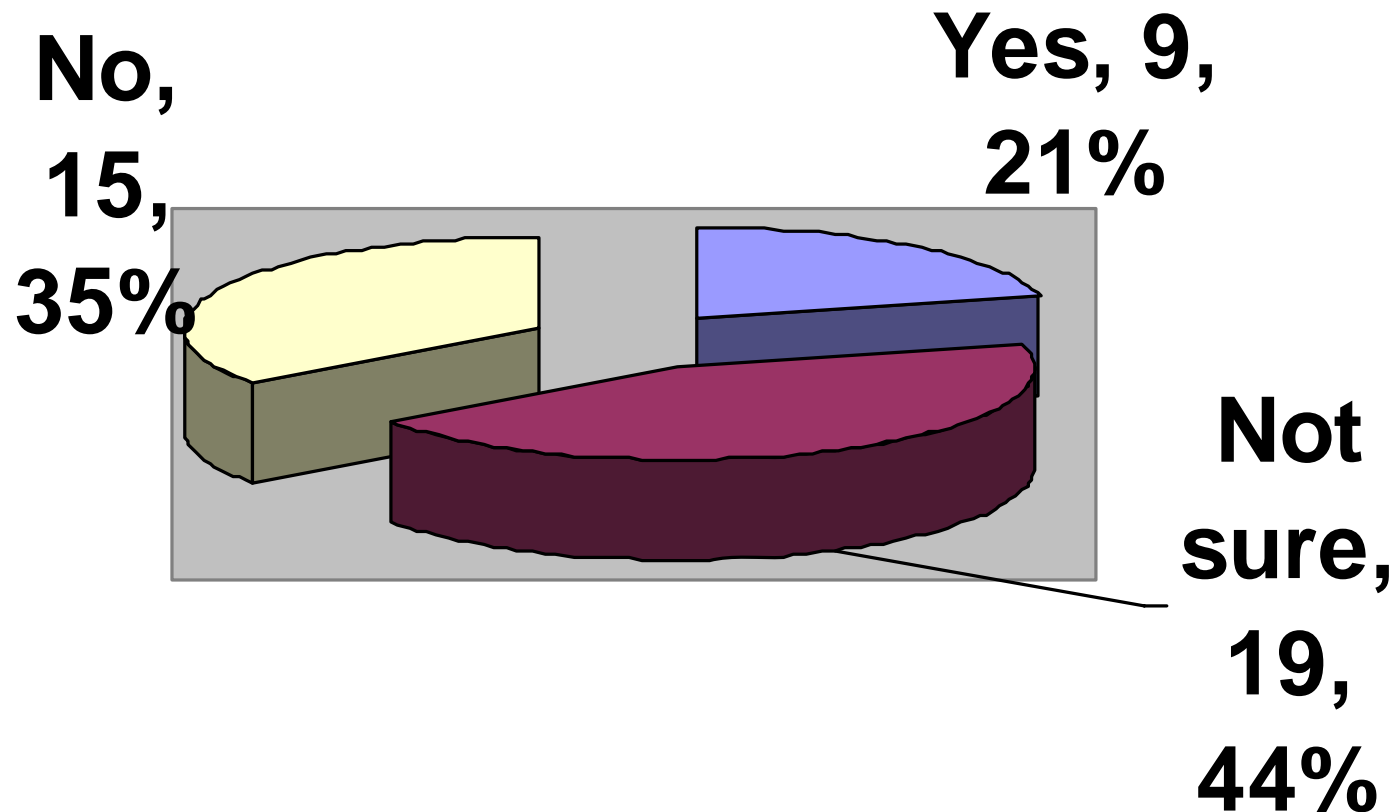
**No, 5,
26%**



**Yes, 8,
42%**

**Not
sure,
6, 32%**

Speculated interest of other family members in quitting smoking



Discussion

- Low interest in quitting amongst carers
- Not interested or unsure : Stages of change model
53% in pre-contemplative stage of change

Prochaska J, DiClemente C. Stages and processes of self-change of smoking: toward an integrative model of change. J Consult Clin Psychol. 1983;51(3):390-5.

- Compared to 43% community based survey elsewhere non-indigenous

Borland R, Balmford J. Understanding how mass media campaigns impact on smokers Tobacco Control. 2003 Sept;12(Suppl 2):ii45-52.

Limitations

- Smaller numbers than planned (60%)
- Admitted population doesn't equate to background population.
- Non-anonymous (vs cotinine): social stigma
- Smokers tend to under-report cough in their children. *Dales R, White J, Bhungara C, McMullen E. Parental reporting of children's coughing is biased. . Eur J Epidemiol 1997;13:541-5.*

Successful quitting smoking in Aboriginal people

- Widespread literature
- Little on aboriginal populations



Current evidence based approach to smoking cessation (Cochrane database)

Good Evidence

- Nicotine replacement therapy and receptor partial agonists
- Antidepressant bupropion
- Reducing direct costs of cessation treatments
- Hospital intervention especially with follow-up
- Doctor counseling
- Nursing advice and support especially inpatient setting
- Written information as adjunct
- Telephone counseling as adjunct
- Media

No convincing evidence

- Community interventions
- Written information alone
- Training health care workers
- School based programmes : long term
- Codeine based drugs
- Direct financial incentives

Lessons for our hospital

- Person most likely to present with child most likely to be a smoker
- 1200 children admitted will have a smoker at home
- 200 will be interested in quitting

Routine care changes

- Priority in medical assessment
- Training of medical staff
- Further audit
- Communication back to primary care

Summary

- High level of exposure for children
- Low level of interest in quitting
- The challenge is how to do this successfully for families of Aboriginal children, particularly in our region.

Questions or comments?