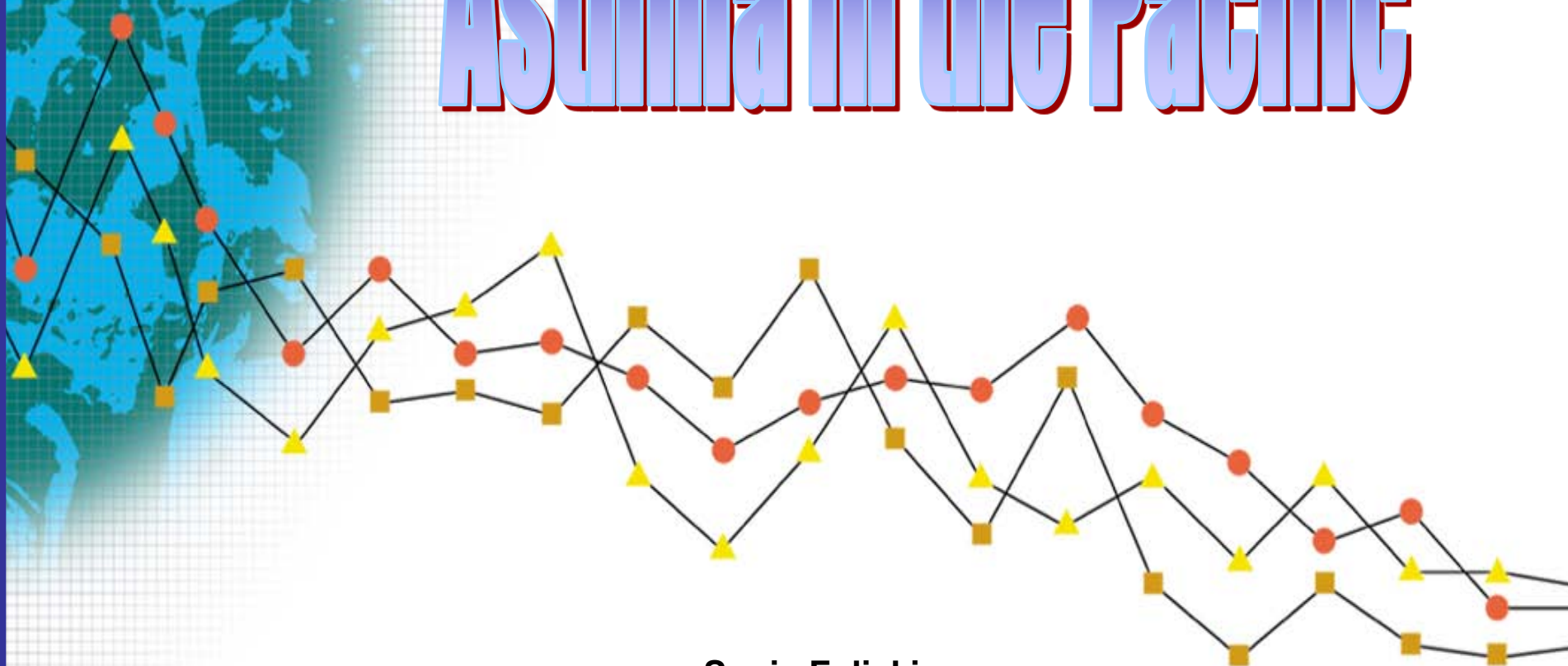


Asthma in the Pacific



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Two studies

- **Asthma in six Pacific islands**
- **Tonga Asthma Self Management Intervention**

Asthma in the Pacific

- **very little is known about the prevalence of asthma and asthma patterns throughout the Pacific.**
- **a number of asthma studies have been conducted in the Pacific but the methodologies differ and not standardised.**
- **increase asthma prevalence among Tahiti teenage school children between 1979 (11.5%) and 1984 (14.3%) (*Liard et al. 1988*).**
- **asthma admission rates (and other markers of asthma prevalence) to be three times higher in Fiji Indians than in Melanesian Fijians (*Flynn 1994*) although the prevalence of wheeze in the previous 12 months among 2,173 Suva City school children was identical in both Indian and Fijian ethnic groups (20.6%).**

Asthma in the Pacific

- **Of 706 children examined in Tokelau, 11% were classified as asthmatic compared to 25% of 1,160 Tokelauan children living in New Zealand (*Waite 1990*).**
- **A changing environment were areas identified for further investigation.**
- **Tokelau's natural low allergen environment and a higher bed endotoxin levels as possible explanations for the lower prevalence of asthma and atopy in Tokelau compared to New Zealand (*Lane et al. 2005*).**

Pacific people in NZ

- **some evidence that asthma may be higher in Pacific children in New Zealand than in the Pacific.**
- **available evidence also indicates that asthma is more severe in Pacific people (than in Pakeha) in New Zealand, and that this may be due to problems of access to culturally appropriate asthma health care and asthma education.**
- **It is likely that asthma prevalence is increasing and will eventually reach the same levels throughout the Pacific as are currently seen in New Zealand.**

Objectives of ISAAC Phase Three

- **To examine time trends in the prevalence of asthma, allergic rhinoconjunctivitis and atopic eczema in centres which participated in ISAAC Phase One (Phase Three A centres).**
- *To describe the prevalence and severity of asthma, allergic rhinoconjunctivitis and atopic eczema in new centres that did not participate in Phase One (Phase Three B centres).*
- **To examine hypotheses at an individual level which have been suggested by findings of Phase One, subsequent ecological analysis and recent advances in knowledge.**

Rationale for ISAAC Pacific

- **No Pacific countries participated in ISAAC Phase I.**
- **Participation in a systematic standardised prevalence study, such as ISAAC valuable in assessing and comparing for the first time the burden from asthma in and among Pacific countries.**
- **A basis for more detailed study of asthma including biomedical and assess effective management and preventive protocols for asthma in the Pacific**
- **The potential for further encouraging the development of other health research projects throughout the region**

ISAAC Pacific participating centres and response rates for 13-14 year olds

Country	Period of data collection	Sampling frame	No. of schools	No. of participants (response rate)
Tonga	April-October 2002	All schools in except for two schools in two remote islands	31	2671/3082 (87%)
Samoa	October 2003	All schools in Urban Apia	41	2986/3110 (96%)
Fiji	November 2002	All schools in Suva Subdivision and some schools from Rewa and Tailevu Subdivision	69	3093/3317 (93%)
Cook Islands	February 2003	All schools	8	445/472 (94%)
Niue	October 2002	All schools	3	79/85 (93%)
Tokelau	June 2003	All schools	3	66/66 (100%)
New Caledonia	May-June 1998	All schools	47	7247/8312 (87%)
French Polynesia	February-March 2000	All schools	28	4289/4339 (99%)





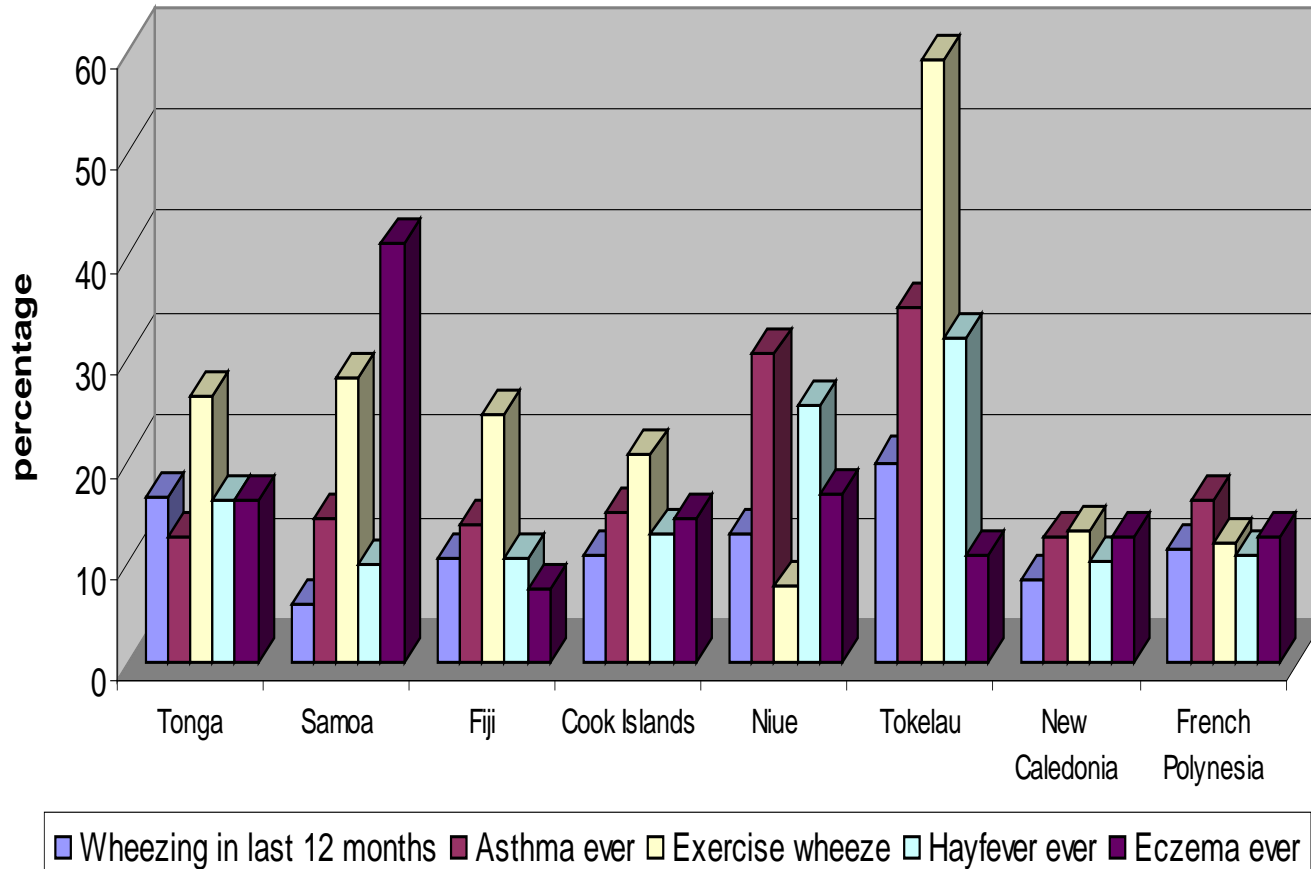


The Findings

- **Of the larger centres, Tonga showed the highest prevalence for current wheeze (16.2%).**
- **considerable variation: Tokelau Islands (19.7%), Tonga (16.2%), Niue (12.7%), French Polynesia (11.3%), Cook Islands (10.6%), Fiji Islands (10.4%), New Caledonia (8.2%), and Samoa (5.8%).**
- **considerably lower than have been observed in Pacific children, Maori and Pakeha in New Zealand .**
- **Asthma severity assessed by written questionnaire similarly lower among Pacific Islands than those for Maori, Pacific Islanders in New Zealand and Pakeha.**



Wheezing in Last 12 Months (Written Questionnaire)



Prevalence of Asthma Symptoms 13-14 yr. olds in Pacific and New Zealand ISAAC

	Pacific Is ¹	Pacific (NZ) ²	Maori ²	Pakeha ²
Wheeze in last 12 months	9.9%	20.8%	29.9%	28.6%
≥ 1 night woken due to Wheeze in last 12 months	5.5%	12.9%	15.9%	9.9%
Ever had asthma	13.8%	24.7%	37.6%	34.2%

¹ Foliaki S. Epidemiology of asthma in selected pacific countries. Wellington: Centre for Public Health Research, 2008.

² Ellison-Loschmann L, *et al.* Int J Tuberc Lung Dis 2009; 13: 775-82



Pacific Issues III

- **A strong community/school rapport must be established for continuing support and acceptance of school surveys .**
- **One such strategy is the strengthening of school health programmes and utilisation of school health staff for surveys whereby schools feel they are “getting” something in return as well as responding to more questionnaires.**

Is this the island that launched a thousand ships...







ISAAC Pacific Issues

- **A community partnership/oriented approach is essential as Pacific populations are increasing viewing research as “yet another survey”.**
- **A genuine effort for an intervention component to be linked to the research.**
- **Capacity building.**

Summary

- **Despite half a century of intense contact with researchers and being researched, the discipline is still struggling to be formally integrated into most Pacific national health institutions.**
- **The initial enthusiasm for ISAAC easily and unintentionally buried among other equally important health programmes.**
- **Keeping contacts with counterparts in remote atolls always a challenge and expensive.**
- **Implement ISAAC in other Pacific countries interested.**



Peak Flow Exercise with no pollution



Asthma Self Management Plans

- **Intended to be simple and easily taught to asthma patients, who are thereby equipped to adequately manage their own asthma medication and care.**
- **Needs very little medical supervision .**
- **Empowerment of adequate therapeutic intervention at individual level.**
- **Customised self-mx plans routinely recommended and improves morbidity from asthma (Beasley et al. 1989; D'Souza et al. 2000, Osman et al. 2002).**

The Tonga Asthma Self-management Project: a clinic based intervention

- **despite its success in other countries, asthma self-management plans have not been trialed in most Pacific islands (? or guidelines).**
- **a vehicle for community participation and education on asthma management.**
- **the project is a “follow-up” to the ISAAC study with the intention of returning benefits to the communities that participated in the study.**



Aims of Project

- **To assess whether the introduction of asthma education, including asthma self-management plans, will reduce morbidity from asthma.**
- **To assess whether any reduction in morbidity will be sustained beyond the end of the intervention programme.**
- *Specifically*
To trial the clinical efficacy of a self-management plan among moderate to severe outpatient asthma clients.



Specific objectives

- **Education of asthma patients to recognise early signs of unstable or deteriorating asthma by monitoring peak flow rate and/or symptoms.**
- **Enabling clients through individualised written guidelines based on PEFR and/or symptoms to determine and adjust their medication safely or obtain medical help and recognising degree of urgency in executing such steps.**
- **Establishment of an ‘asthma clinic’ at Vaiola Hospital.**



The Study

- **Intervention without non-intervention ‘control’ group nor randomisation due to:**
 - **The study getting community and political support due to likelihood of all participants getting benefit.**
 - **Randomisation in relatively small population with close social and family ties not feasible.**
 - **Focus was on practicality of implementing as such intervention shown to be successful in various other settings.**



The Intervention

- **A baseline questionnaire to determine asthma morbidity, health service access and asthma medication use in the previous 12 months.**
- **Instruction on use of peak flow meters, spacers.**
- **how to do a daily recording of the best value from three morning pre-bronchodilator peak expiratory flow rates (PEFR).**
- **“credit card” plan (translated into Tongan) from the study by D’Souza et al. (Journal of Allergy and Clinical Immunology 1996;97:1085-1092), customized to individuals according to their personal best PEFR.**



The Intervention

- **Detailed asthma management instructions in accordance with PEFR readings and/or symptoms.**
- **The personal best PEFR was taken as the higher of either the maximum consistent pre-bronchodilator PEFR recorded in the daily asthma diaries, or the predicted value taken from standard tables.**
- **The “best” PEFR was revised, where appropriate, if increases in PEFR occurred following changes in the patient’s treatment.**



ASTHMA ACTION PLAN

Name: _____ Predicted PEFr value _____

	Peak Flow	TREATMENT
1	BEST = <input type="text"/>	→ Continue regular treatment
2	<80% = <input type="text"/>	→ Double dose of steroid inhaler or begin if not on steroid inhaler
3	<60% = <input type="text"/>	→ Start prednisone & ring Doctor
4	<40% = <input type="text"/>	→ Call emergency Dr or Dial 933 or 23-200 for help

Morbidity and Management findings

- **All measures of asthma morbidity, requirements for emergency services and management practices showed improvements between the commencement of the trial and the second review at 12 months of follow-up.**
- **the majority of the participants (94%) reported that the instructions on the self-management plan were easy to follow, with 76% having used the plan to help with their asthma in the previous 12 months.**
- **most (87%) did not feel the need for more details in the plan.**

Morbidity measures and medication use for enrolled participants at baseline and for “completed” participants at baseline and at 12 months of follow-up .

	Enrolled participants	“Completed” participants		p-value#
	Baseline (n=110)	Baseline (n=92)	12 months (n=92)	
Use of Medical Services in previous				
Visit to doctor	85% (93)	85% (78)	23% (21)	<0.001
Emergency visits	68% (75)	71% (65)	18% (17)	<0.001
Hospital admission	19% (21)	20% (18)	3% (3)	0.001
Asthma management in previous 12 months				
Peak flow meter	3% (3)	3% (3)	100% (92)	<0.001
Written management plan	2% (2)	1% (1)	96% (88)	<0.001
Prescribed inhaled steroid	48% (53)	58% (53)	98% (90)	<0.001
Oral Ventolin	21% (23)	21% (19)	10% (9)	p=0.41
Oral Prednisone	10% (11)	11% (10)	16% (15)	p=0.28
Asthma morbidity in previous 12 months				
Days “out of action”				
- None	15% (16)	13% (12)	65% (60)	<0.001
- 6 – 13 days	48% (53)	46% (43)	28% (26)	
- 14 days or more	37% (41)	29% (27)	5% (5)	
Woken most nights with asthma	21% (23)	24% (22)	2% (2)	<0.001
Severe asthma attack	54% (59)	53% (49)	18% (17)	<0.001
PEFR (l/min)	353	341	417	<0.001

Conclusion

- **indicates applicability in developing country settings lacking standard guidelines for outpatient management of asthma.**
- **In particular, to avoid ‘wastage’ of limited health resources (single brand of steroid and beta-agonist) and serious morbidity through inappropriate management for common illnesses.**
- **this study gives us some understanding of how people with asthma are able to achieve a level of self-care at the community and individual level.**
- **The marked decrease in emergency visits and hospital admissions consistent with findings from New Zealand and other international studies.**

Conclusion

- **teaching patients the importance of their symptoms and the appropriate action to take when their asthma deteriorates is the key to effective management of asthma.**
- **simply prescribing peak flow meters without regular review and asthma education will be unlikely to improve asthma management³.**
- **study participants who, upon achieving better asthma control, voiced their concerns as to why inhaled steroids had not been available or prescribed in the past, or why there had been inadequate information given to patients on its use (health education).**
- **Health education for staff (oral ventolin prescription, role of steroids).**

³Ratima et al. *Aust N Z J Public Health* 1999;23:601-5.



Other things in addition to lemon and raw fish?

- **Improving access to appropriate asthma medication for socioeconomically disadvantaged (Pacific and elsewhere).**
- **Cost of asthma medication**
- **Cost of no National guidelines (has moved on?)**
- **Advocacy and collaboration for other health research**

