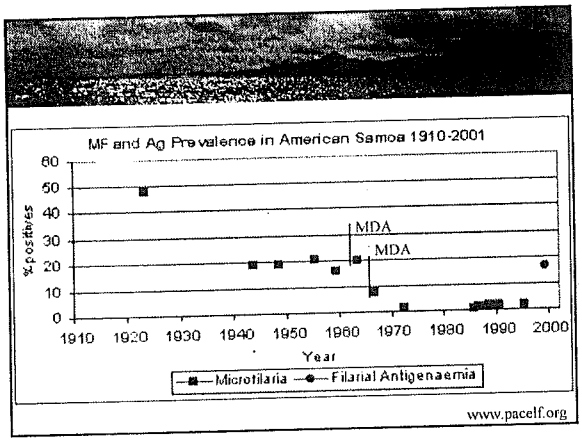
PacELF 'C Survey' for Lymphatic Filariasis

American Samoa 2007

LF in American Samoa

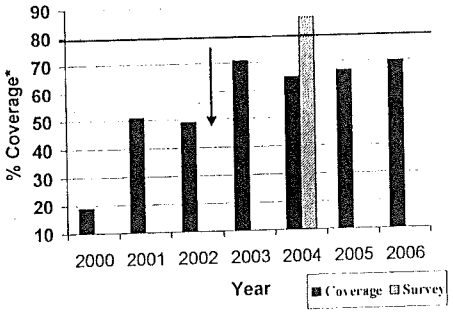
Parasite	***Wuchereria bancrofti***
Vectors	***Aedes polynesiensis*** *Ae. tutuilae* *Ae. upolensis* *Ochlerotatus samoanus*
Elimination Strategy	**Mass Drug Administration (MDA)** - Albendazole + DEC - directly observed

www.pacelf.org



www.pacelf.org

MDA Participation 2000-2006

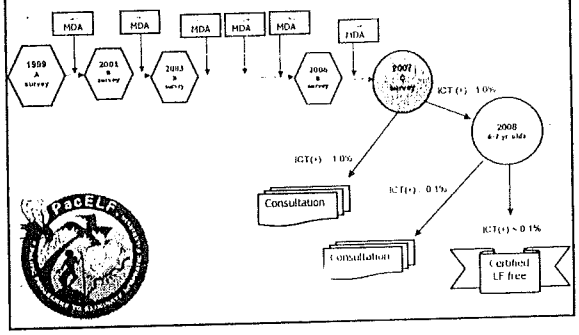


*Coverage = Proportion of 2000 National Census total population that were treated at distribution sites

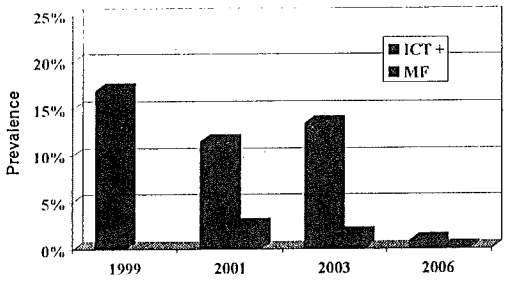
MDA Distribution Strategy

- Focus on Churches
- Schools
- Bingo and airport
- Major workplaces
- Collaboration with ASCC nursing program

PacELF Timeline of LF Elimination: AS



Results of 'B surveys'



C Survey Objectives

1. **Determine island-wide prevalence of filariasis**
   - Antigenemia
   - Microfilaremia
2. **Determine whether intervention should continue**

Methods

- Design: cross sectional, random cluster survey
  - Cluster = household (HH)
  - All individuals > 4 years of age in selected households were eligible for testing
- Random selection of households
  - Desired sample size of 1902 individuals based on assumptions
  - Selected 480 buildings from Tutuila; 40 from Manua
- Modified analysis
  - Stratified by island group and weighted according to selection probabilities
  - account for cluster design

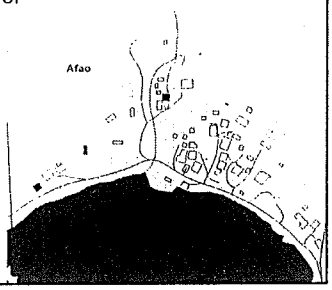
Sample selection – households

Used geographical data available from AS government

- Maps of Tutuila and Manua
- Village boundaries
- Roads
- Streams
- Buildings
  - Churches
  - Schools
  - Businesses
  - Houses
    - Graves
    - Piggeries
    - Umus

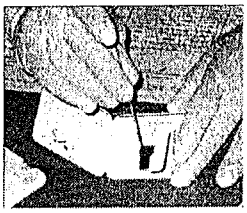
Household selection

- Used Microsoft Excel to select a random sample of buildings
- Identified the selected buildings in ArcGIS
  - Highlighted in red
  - Printed maps of villages with selected households
  - Used the maps to find the selected building structure

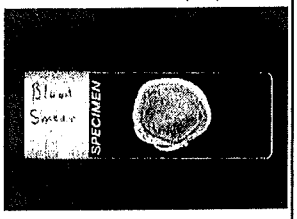


Survey Tools

Binax ICT ® Inverness
(immunochromatographic test)



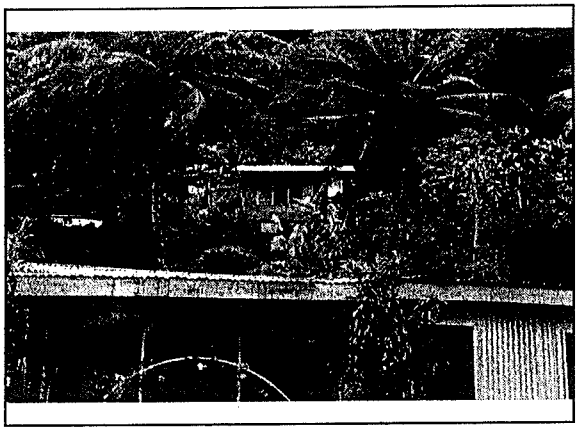
Blood Smear to detect microfilaria (Mf)

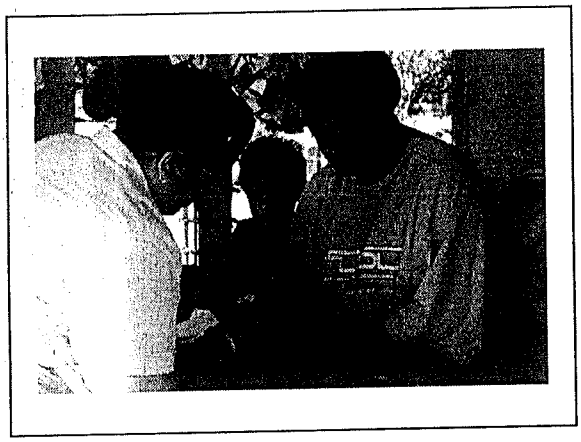


Survey Team Training

- Discuss purpose of survey
- Practice reading maps
- Standard safety precautions
- Sample collection
- Running ICT and mf smear
- Registration & Data collection
- Outline team member roles and responsibilities
- Discuss logistics

Fieldwork





Results

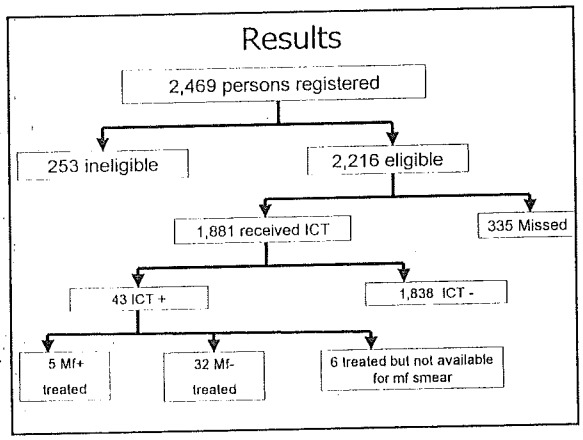


Table 1: Characteristics of the sample

		SAMPLE N=1881	ELIGIBLE N=2216	MISSED* N=335
SEX				
	%FEMALE	53.4	52.1	44.6
	%MALE	46.6	47.9	55.4
AGE				
	%1-9	14.4	13.3	7.2
	%10-19	27.0	26.9	26.6
	%20-29	14.3	14.8	17.8
	%30-39	14.6	14.9	16.9
	%40-49	12.4	13.3	18.2
	%50-59	9.0	8.4	4.9
	%60+	8.3	8.3	8.4
	MEAN AGE	29.3 (SD 0.4748)	29.6 (SD 0.4276)	31.1 (SD 1.053)
MDA HISTORY				
	%EVER TAKEN	94.1	93.8	91.6
	MEAN YR TAKEN	3.9 (SD 0.0757)	3.9 (SD 0.0737)	3.8 (SD 0.1431)

*eligible persons registered but not tested

REASONS ELIGIBLE PERSONS WERE NOT TESTED (n=335)

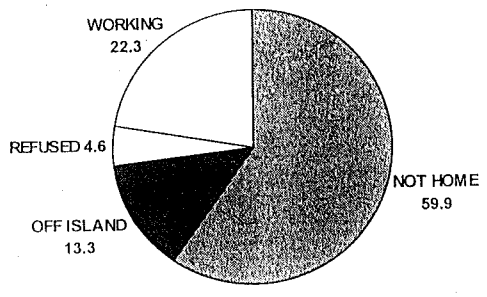
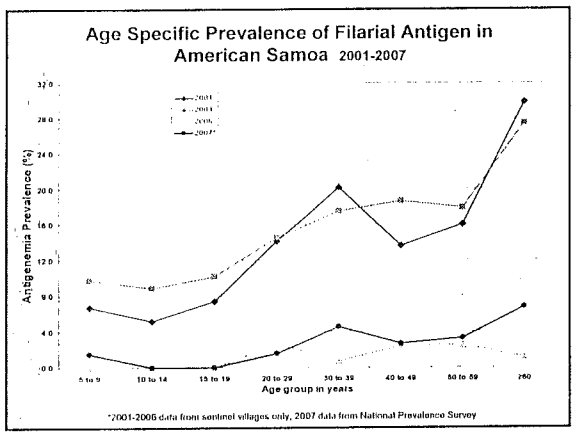
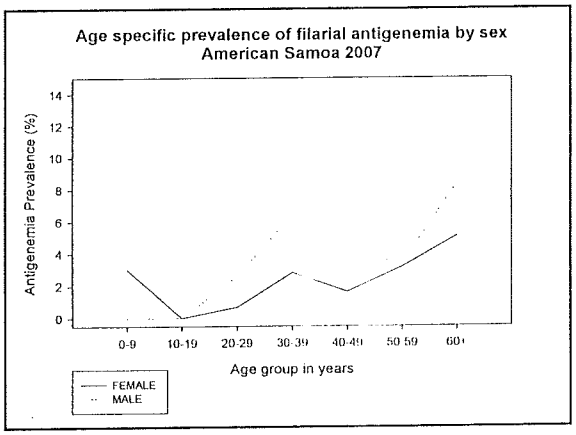


Table 2: Diagnostic Results

		Antigenemic (ICT+)	Microfilaremic (Mf+)
FEMALE	n	18	1
MALE	n	25	4
Total	n	43	5
Prevalence Estimate	%	2.26 (1.60-2.93)	0.27 (0.03-0.51)*

*assume all ICT- are Mf- and all 6 ICT+ without smears are negative





Conclusions

- MDA has effectively reduced antigenemia and microfilaremia prevalence to low levels
- Antigen levels have not declined below target thresholds to warrant stopping MDA
- Antigen detected in four children 4-6 years of age indicates transmission has occurred in the last 5 years

Next Steps

- AS DOH should carry out at least two additional rounds of MDA starting in 2008
- AS DOH should consider introducing policy in the Fono to require all working individuals to take annual treatment as part of a healthy workplace
- CDC should analyze and interpret additional data from 2006 to provide critical information on transmission dynamics
  - ICT, blood smear, serology, PCR in mosquitoes and GIS

Fa'afetai tele 'Thank you'

ASCC Dept of Nursing
DOH
DOC
Office of Samoan Affairs
All individual participants of the survey
ASCC Land Grant
CDC DPD
PacELF