



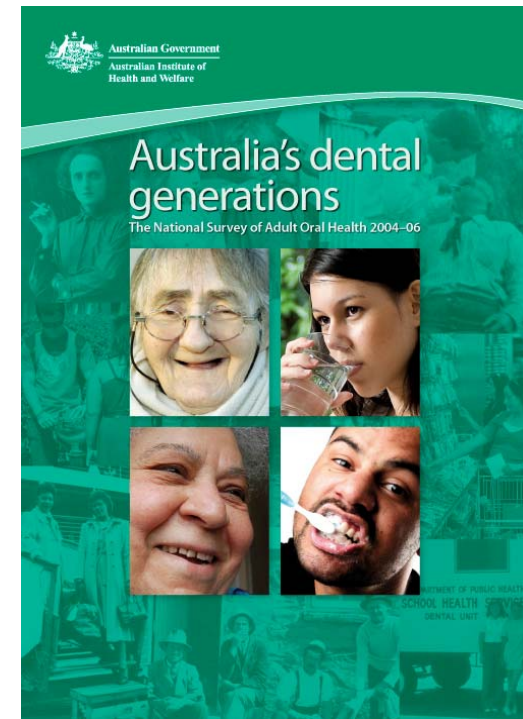
Overview and Objectives of the Workshop

Gary Slade

Presented at the workshop: "State and territory findings from the 2004–06 Australian National Survey of Adult Oral Health, February 25-26, 2008. Adelaide, SA.

Overview

- The 2004–06 National Survey of Adult Oral Health was Australia’s second oral examination survey of a nationally-representative sample of adults
 - It occurred 17 years after 1987–88 National Oral Health Survey of Australia
- National findings were reported in March 2007 in “Australia’s Dental Generations”



Survey aims

1. Describe prevalence and extent of tooth loss, dental caries, periodontal disease, plaque and oral mucosal lesions among adults in Australia
2. Evaluate changes since 1987/88
3. Compare regional- and socioeconomic- subgroups
4. Compare caries experience in adults with varying exposure to water fluoridation
5. Track incidence of cardiovascular disease to examine associations with periodontal disease

Aims of add-on studies

6. To assess contribution of inflammatory mediators to socioeconomic inequalities in periodontal health (NHMRC project grant)
7. Evaluate validity of self-reported periodontal disease (CDC contract)
8. Examine influence of oral health on diet and nutrition (ADRF project grant)
9. Assess impact of dental care on oral health related quality of life (ADRF project grant)

Planned output

- National report, including trends
- State/Territory reports
 - Drafts distributed to State/Territory dental directors
- State/Territory analytic datafiles
- Reports and scientific papers addressing other survey aims and additional investigator-initiated hypotheses

Collaborating organizations

- Australian Research Centre for Population Oral Health (ARCPOH)
 - Scientific direction, sampling, interviews, questionnaires
- State/Territory public dental health divisions
 - Oral epidemiological examinations
- Advisory committees
 - Scientific; Community and Professional
- Funding
 - Australian Government; NHMRC; Federal ADA; Colgate Oral Care

Objectives of this Workshop

- Present State/Territory findings for 29 measures of oral disease, dental care and oral health perceptions:
 - Comparisons between 8 States/Territories
 - Comparing within State/Territories of three age groups and six socio-demographic groups
- Obtain feedback on draft reports
- Distribute and explain analytic datafiles to State/Territory dental public health divisions
- Discuss policy implications of these findings

Outline of the program

- Monday
 - Survey methods and demographic snapshot
 - Seven presentations of descriptive findings
 - Tooth loss, dental decay, periodontal disease, dental attendance, barriers to dental care, perceptions of oral health, perceived treatment needs
 - National trends 1987-88 to 2004-06

Outline of the program

- Tuesday
 - Analytic datafiles and hands-on demonstration
 - Small group discussions to focus on three socio-demographic groups
 - Health Card Holders
 - Uninsured
 - Topic to be nominated by consensus on Monday
 - Plenary session – what's next?

Small group discussions

A problem-based learning approach

- Suppose your state was to receive its share of \$1b nationally in new federal funding
 - How should these findings influence your plans to spend those monies?
 - What programs would you devise to address the oral health problems of <health card holders, uninsured, nominated group>?



Survey Methods

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NSAOH Methods

1. Sampling

- Multi-stage, probability sample of community-dwelling Australian population aged 15 years or more
- “Electronic white pages” used as sampling frame to identify private, residential dwellings

2. Telephone interview with 14,123 people

- ~15 min interview asking ~50 questions per person
- People who had natural teeth were asked to attend a local dental clinic for survey examination

NSAOH Methods

3. Oral epidemiological examinations (5,505 people)

- 30 examiners hired by State/Territory dental services trained & calibrated by ARCPOH
 - Reliability tested against ARCPOH gold standard examiner
- Examination protocol based on US and UK national surveys
 - Tooth loss, dental decay and restorations
 - Tooth wear, dental fluorosis
 - Dental plaque, gingival (gum) inflammation, calculus
 - Periodontal (gum) pocket depth and recession
- Gingival crevice fluid samples for laboratory analysis of inflammatory mediators

NSAOH Methods

4. Mailed questionnaire

- 16 page questionnaire mailed after examination and followed with up to three reminders

5. Additional data collection and measurements

- nutrition questionnaire
- height, weight and waist circumference (NSW, Qld)
- laboratory measurements of inflammatory mediators in gingival crevice fluid
- tracking of cardiovascular disease through AIHW national mortality and morbidity databases

Participation in NSAOH

Table 3: Number and percentage of people sampled, interviewed and examined^(a)

	No. of people sampled	No. of people interviewed	% of sampled people interviewed	No. of people eligible for exam	No. of people examined	% of eligible people examined
Australia	28812	14123	49.0	12606	5505	43.7
State/Territory						
NSW	8270	3630	43.9	3310	1099	33.2
Vic	6013	2667	44.4	2360	1181	50.0
Qld	4219	2052	48.6	1841	824	44.8
SA	2159	1335	61.8	1093	629	57.5
WA	2365	1290	54.5	1109	470	42.4
Tas	1745	1042	59.7	873	385	44.1
ACT	1892	1025	54.2	981	400	40.8
NT	2149	1082	50.3	1039	517	49.8

(a) Unweighted data

1987-88 National Oral Health Survey

- Multistage, probability sample of population aged ≥ 5 yrs in all states and ACT
- In-home interview and dental examination
 - hundreds of dentists organized by Australian Dental Association and State/Territory health departments
- 9,845 adults examined to measure
 - Complete tooth loss and prosthetic replacement
 - Experience of decay and related treatment needs
 - Periodontal treatment needs

Analysis and interpretation

- Surveys generate estimates of true levels in the population
 - Estimates necessarily have a margin of error
- In tables and graphs that follow, the margin of error is represented as the 95% confidence interval (95%CI) for the estimate
 - This represents the range within which there is a 95% probability that the true population level falls

An example of a 95%CI

Table 5: Percentage of adults with complete tooth loss

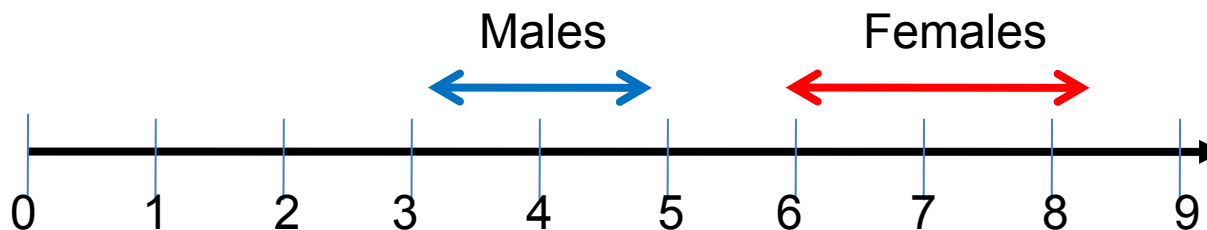
		All ages
All people	% of people	5.5
	95% CI	4.8–6.3

- In NSW, the survey estimated that 5.5% of adults were edentulous
 - 95%CI was 4.8 to 6.3
 - meaning there is 95% probability that population prevalence falls somewhere between 4.8% and 6.3%
 - and, conversely, there is less than 5% probability that prevalence is less than 4.8% or greater than 6.3%

Identifying group-differences

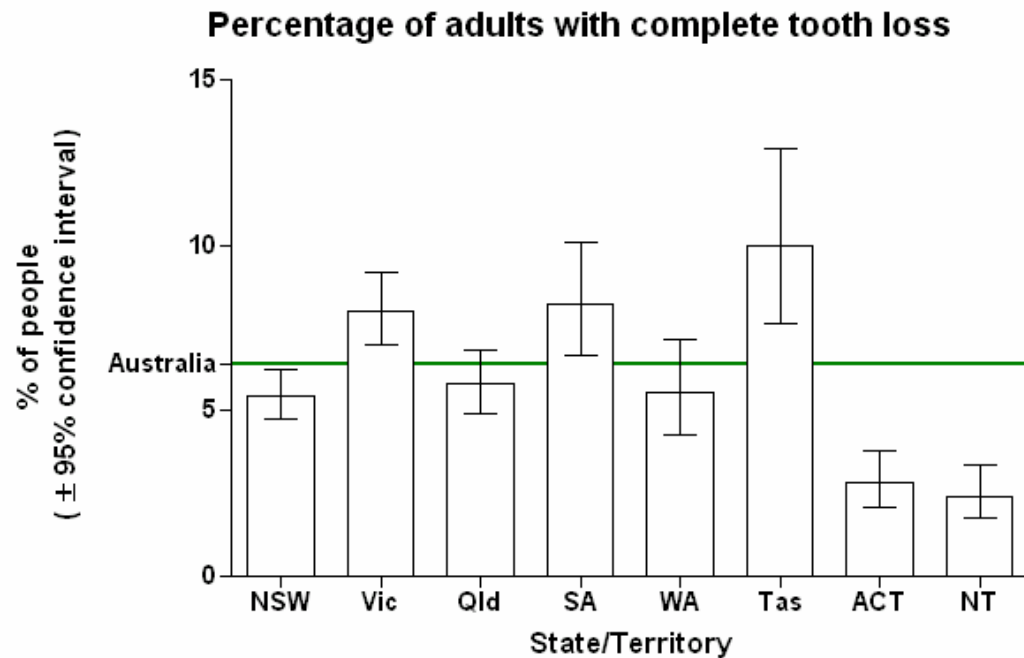
Table 5: Percentage of adults with complete tooth loss

		All ages
All people	% of people	5.5
	95% CI	4.8–6.3
Sex		
Males	% of people	3.9
	95% CI	3.1–4.9
Females	% of people	7.0
	95% CI	6.0–8.2



- If 95% CIs for two groups do not overlap, their estimated levels can be said to differ to a statistically significant degree
 - ie. the difference is unlikely due to sampling variability alone
 - As occurs here for males vs. females

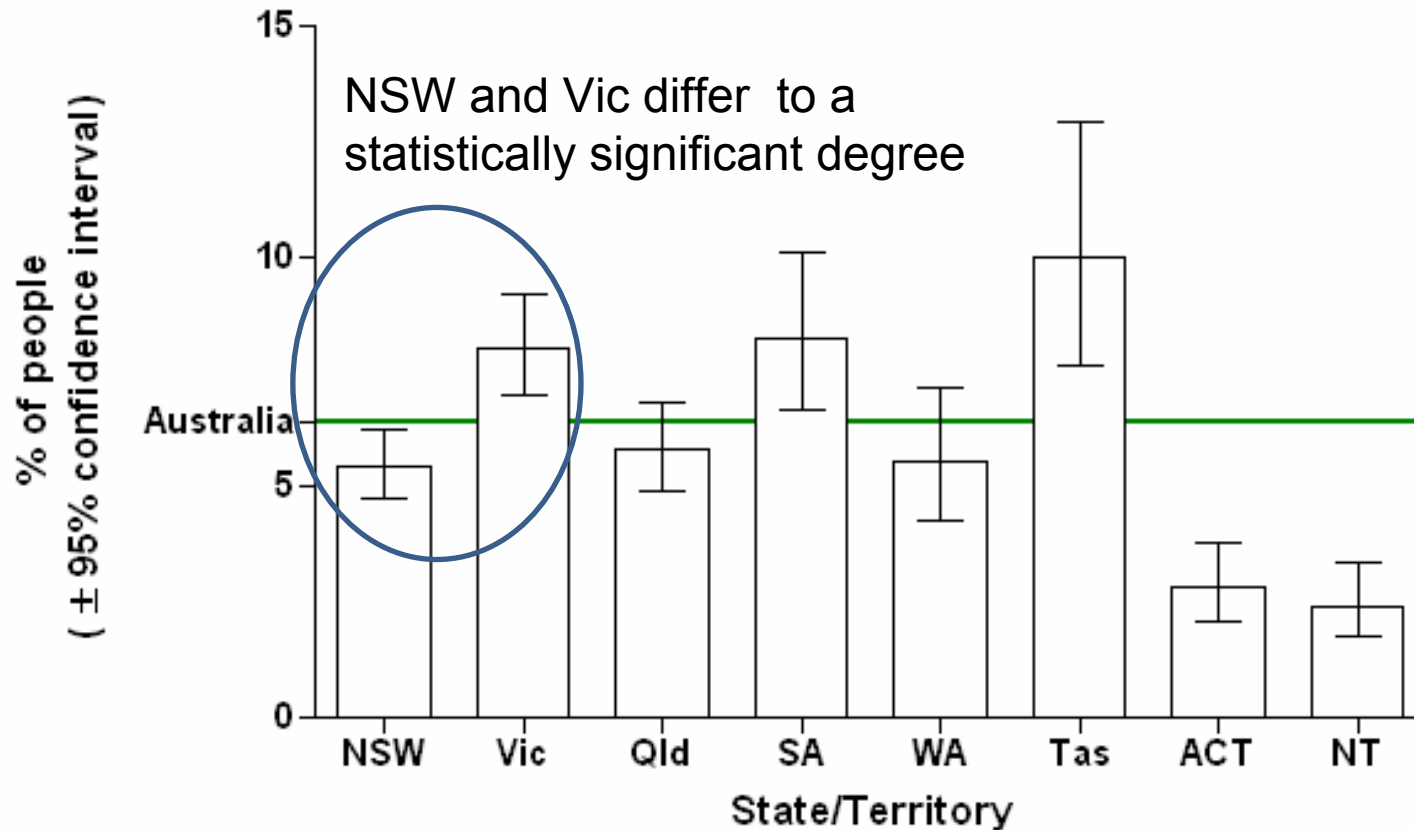
Identifying group-differences



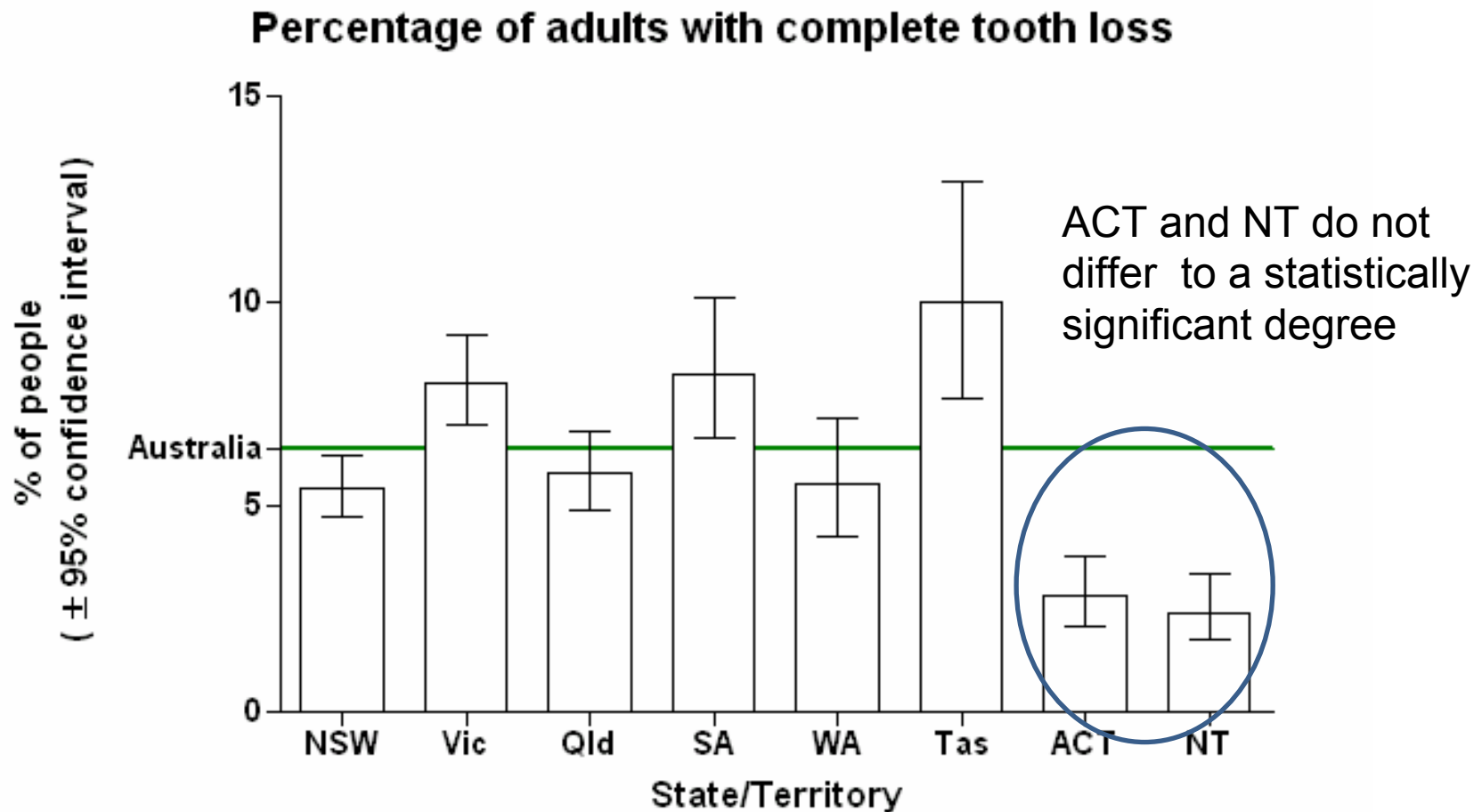
- In graphs, 95% CIs are depicted with error bars
- Non-overlapping lines signifying groups that differ to a statistically significant degree

Identifying group-differences

Percentage of adults with complete tooth loss



Identifying group-differences



Identifying vs. explaining differences

- The “non-overlapping 95%CI” criterion does not explain why differences exist
 - Differences in demographics and other factors often exist between comparison groups, and they may contribute to oral health differences
- Findings presented in this workshop have not attempted to account for such effects
 - instead, the purpose of comparisons (eg. between States/Territories) is to identify population subgroup differences, not to explain the reasons for differences



Demographic snapshot

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Three age groups – national distribution

15-34 years	37.2%
35-54 years	37.3%
≥55 years	25.5%

Sex and residential location

% with socio-demographic characteristic in all ages and three age groups

<u>Characteristic</u>	Age group (years)			
	All ages	15-34	35-54	55+
Sex				
Male	50.0	50.7	49.8	49.4
Female	50.0	49.3	50.3	50.6
Residential location				
Capital city	65.1	67.4	64.5	62.7
Other places	34.9	32.6	35.5	37.3

Dental insurance and postcode socioeconomic status

% with socio-demographic characteristic in all ages and three age groups

<u>Characteristic</u>	Age group (years)			
	All ages	15-34	35-54	55+
Dental insurance				
Insured	47.0	42.6	49.8	48.9
Uninsured	53.0	57.4	50.2	51.1
Postcode socioeconomic status				
Lowest	31.1	29.3	32.1	32.5
Middle	33.4	34.3	33.2	32.2
Highest	35.5	36.4	34.7	35.4

Eligibility for public dental care and location of last dental visit

% with socio-demographic characteristic in all ages and three age groups

<u>Characteristic</u>	Age group (years)			
	All ages	15-34	35-54	55+
Eligibility for public dental care				
Eligible	25.6	20.4	16.4	46.7
Ineligible	74.4	79.6	83.6	53.3
Eligibility and place of last dental visit				
Eligible/Public	9.1	8.9	7.0	12.7
Eligible/Non-public	16.5	11.6	9.5	33.9
Ineligible	74.4	79.6	83.6	53.3