

Appendix 1 Cost-effectiveness modelling input parameters

Table I: Uncertainty around parameters for evaluating health effects

<i>Parameter</i>	<i>Value Mean (SD)</i>	<i>Uncertainty distribution</i>	<i>Sources and assumptions</i>	<i>Intervention</i>
Mean reduction in body weight (kg) at 6 months	5.8 (0.11)*	Normal	Mean effect from PREMIER and Weight Loss Maintenance (WLM) trials; ^{1,2} standard error calculated from WLM trial. ²	DASH
Mean reduction in body weight (kg) at 12 months	3.91 (1.25)*	Normal	³	Low-fat diet
Rate of weight regain in maintenance phase (kg/month)	0.0309 (0.0084)	Normal	Meta-regression; ⁴ exact mean and SD personal communication with authors.	DASH, Low-fat diet
Relative risk (RR) of obesity related disease	See source	Normal (ln RR)	Relative risks by age from CRA project. ⁵	DASH, Low-fat diet

* The value in brackets is the standard error of the mean in the source data, but is used in the model as the standard deviation of the distribution around the change in the population mean of body weight.

CRA = WHO's Comparative Risk Assessment project; DASH = Dietary Approaches to Stop Hypertension

Table II: Uncertainty around costing and recruitment parameters

<i>Parameter</i>	<i>Value Mean/most likely (SD/min- max)**</i>	<i>Uncertainty distribution</i>	<i>Sources and assumptions</i>	<i>Intervention</i>
Number of participants per full time equivalent coordination	1000 (250)	Gamma	Estimate based on Stubbs 2004. ⁶	DASH, Low-fat diet
Project officer hourly rate	\$31.81 (\$3.18)	Gamma	PO3.4 to PO4.4 (i.e. min of 4 years experience) District Health Services Employees' Award - State, QLD Health Professional Stream Wage Rates (http://www.health.qld.gov.au/industrial_relations/wage_rates_professional.asp)	DASH, Low-fat diet
On-costs loading	1.6 (1.56-1.64)	Triangular	Includes office space, salary on-costs, admin assistance (e.g. with phone calls), stationery & travel.	DASH, Low-fat diet
Hours per year (project officer)	1596	–	Estimate based on 42 weeks, 38 hrs/wk.	DASH, Low-fat diet
Cost of mail delivery per respondent	\$43.47 (\$18.31)	Gamma	Mean and variance of cost in preventive health trials ⁷⁻¹⁰	DASH, Low-fat diet
Cost of mass media per respondent	\$52.48 (\$33.64)	Gamma	Mean and variance of cost in preventive health trials ⁷⁻¹⁰	DASH, Low-fat diet

Response rate from mail delivery	2.5% (2.0%)	Gamma	Mean and variance in response rate reported in preventive health trials ⁷⁻¹²	DASH, Low-fat diet
Response rate from mass media	1.8% (2.1%)	Gamma	Mean and variance in response rate reported in preventive health trials ⁷⁻¹²	DASH, Low-fat diet
Average group size group meetings	22 (18-25)	Triangular	From PREMIER study ¹ and personal correspondence with authors.	DASH
Average group size group meetings	8 (6-10)	Triangular	Personal correspondence B Swinburn.	Low-fat diet
Dropout rate	23%	Beta (N=66)	³	Low-fat diet
Dropout rate	7%	Beta (N=269)	% who attend 5 meetings or less ¹	DASH
Mean session attendance	86%	Beta (N=269)	¹	DASH
Number of Dietician group sessions	10	–	1, 13, 14	DASH
Number of Dietician group sessions	12	–	³	Low-fat diet
Number of Dietician initial individual sessions	1	–	1, 13, 14	DASH
Number of Dietician subsequent individual sessions (50% in person, 50% by phone)	1	–	1, 13, 14	DASH
Number of Exercise Physiologist group sessions	4	–	1, 13, 14	DASH
Number of Exercise Physiologist initial individual sessions	1	–	1, 13, 14	DASH
Number of Exercise Physiologist subsequent individual sessions (50% in person, 50% by phone)	1	–	1, 13, 14	DASH
Average number of days per week participants completed food and physical activity diary, over 26 weeks.	3.7 (2.7-4.7)	Triangular	¹	DASH
Number food diaries completed per week, over 52 weeks.	2	–	³	Low-fat diet
Number comprehensive food diaries completed over 52 weeks.	2	–	³	Low-fat diet
Duration of individual session (mins)	30 (27-33)	Triangular	Personal communication L. Appel, ²	DASH
Duration of group session (hrs)	1.75 (1.5-2.0)	Triangular	1, 13, 14	DASH
Duration of group session (hrs)	1 (0.75-1.25)	Triangular	Personal communication B. Swinburn	Low-fat diet
Duration of telephone consultation (mins)	15 (14-16)	Triangular	Assume 50% of personal consult	DASH
Time spent completing food and physical activity diary per day (mins)	35 (20-50)	Triangular	Personal communication L. Appel, ¹	DASH
Time spent completing twice weekly food diary (mins)	5 (3-7)	Triangular	Personal communication B. Swinburn	Low-fat diet

Time spent completing comprehensive food diary (mins)	60 (30-90)	Triangular	Personal communication B. Swinburn	Low-fat diet
Food Diaries (per participant)	\$3.50 (2.80-4.20)	Triangular	¹⁵	DASH, Low-fat diet
Fat counter book (per participant)	\$5.10 (2.80-7.40)	Triangular	Based on data from 3 online booksellers in Australia	Low-fat diet
Telephone Costs (per call)	\$0.45	–	¹⁶	DASH
Dietician fee - initial consultation	\$51	–	MBS Item 10954 ¹⁷	DASH
Dietician fee - hourly rate	\$70 (41-100)	Triangular	DAA website	DASH, Low-fat diet
Exercise Physiologist fee - initial	\$51	–	MBS Item 10953 Full Fee	DASH
Exercise Physiologist fee - hourly rate	\$82	–	¹⁸	DASH
Time spent with GP during initial appt relating to referral or prescription (mins)	10 (9-11)	Triangular	¹⁶	DASH, Low-fat diet
Waiting time before individual appointment dietician / exercise physiologist (mins)	15	–	¹⁶	DASH, Low-fat diet
Average time to travel TO and FROM meetings (mins)	30 (24-36)	Triangular	Own estimate	DASH, Low-fat diet
Cost of patient time (per hour)	\$17.44	–	Derived from labour force participation ¹⁹ and average weekly earnings. ²⁰	DASH, Low-fat diet
Cost of patient travel (per trip)	\$7.45	–	Based on average distance travelled to GP for urban (estimate), regional ²¹ and remote ²² populations, and Royal Automobile Club Victoria private vehicle reimbursement rate for medium 2-3 L vehicles.	DASH, Low-fat diet

NB. DASH, Low-fat diet costs adjusted to 2003 Australian dollars using Australian health price deflators,²³ consumer price index ²⁴ and/or purchasing power parities ²⁵ where relevant.

** For gamma distributions, the value in brackets refers to the standard deviation. For triangular distributions the most likely values are given, with the minimum and maximum values in brackets. For beta distributions, the number of observations is given in the column labelled 'Uncertainty distribution'.

DASH = Dietary Approaches to Stop Hypertension; MBS = Australia's Medical Benefits Scheme

References

1. Appel L. Effects of Comprehensive Lifestyle Modification on Blood Pressure Control: Main Results of the PREMIER Clinical Trial. *JAMA* 2003; **289**(16): 2083-2093.
2. Hollis JF, Gullion CM, Stevens VJ, Brantley PJ, Appel LJ, Ard JD *et al.* Weight Loss During the Intensive Intervention Phase of the Weight-Loss Maintenance Trial. *American Journal of Preventive Medicine* 2008; **35**(2): 118-126.
3. Swinburn BA, Metcalf PA, Ley SJ. Long-Term (5-Year) Effects of a Reduced-Fat Diet Intervention in Individuals With Glucose Intolerance. *Diabetes Care* 2001; **24**(4): 619-624.
4. Dansinger ML, Tatsioni A, Wong JB, Mei C, Balk EM. Meta-analysis: The Effect of Dietary Counseling for Weight Loss. *Annals of Internal Medicine* 2007; **147**(1): 41-W7.
5. Ezzati M, Lopez AD, Rogers A, Murray CJL. *Comparative Quantification of Health Risks*, World Health Organisation: Geneva, 2003.
6. Stubbs C. *Statewide impact evaluation of the Queensland Health Lighten Up to a Healthy Lifestyle Program*. The University of Queensland: Brisbane, 2004.
7. Garrett SK, Thomas AP, Cicuttini F, Silagy C, Taylor HR, McNeil JJ. Community-based recruitment strategies for a longitudinal interventional study: the VECAT experience. *J Clin Epidemiol* 2000; **53**(5): 541-8.
8. Bjornson-Benson WM, Stibolt TB, Manske KA, Zavela KJ, Youtsey DJ, Buist AS. Monitoring recruitment effectiveness and cost in a clinical trial. *Control Clin Trials* 1993; **14**(2 Suppl): 52S-67S.
9. Gren L, Broski K, Childs J, Cordes J, Engelhard D, Gahagan B *et al.* Recruitment methods employed in the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial. *Clin Trials* 2009; **6**(1): 52-9.
10. Robinson JL, Fuerch JH, Winiewicz DD, Salvy SJ, Roemmich JN, Epstein LH. Cost effectiveness of recruitment methods in an obesity prevention trial for young children. *Prev Med* 2007; **44**(6): 499-503.
11. Whelton PK, Babnson J, Appel LJ, Charleston J, Cosgrove N, Espeland MA *et al.* Recruitment in the Trial of Nonpharmacologic Intervention in the Elderly (TONE). *J Am Geriatr Soc* 1997; **45**(2): 185-93.
12. Rudick C, Anthonisen NR, Manfreda J. Recruiting healthy participants for a large clinical trial. *Control Clin Trials* 1993; **14**(2 Suppl): 68S-79S.
13. Sacks FM, Obarzanek E, Windhauser MM, Svetkey LP, Vollmer WM, McCullough M *et al.* Rationale and design of the Dietary Approaches to Stop Hypertension trial (DASH) : A multicenter controlled-feeding study of dietary patterns to lower blood pressure. *Annals of Epidemiology* 1995; **5**(2): 108-118.
14. Svetkey LP, Harsha DW, Vollmer WM, Stevens VJ, Obarzanek E, Elmer PJ *et al.* Premier: a clinical trial of comprehensive lifestyle modification for blood pressure control: rationale, design and baseline characteristics. *Annals of Epidemiology* 2003; **13**(6): 462-471.

15. Eastern Ranges GP Association. Food and Exercise Diary. In. Lilydale VIC, 2009.
16. Carter R, Rankin B. *Economic assessment of the NHFA proposal for a national CHD initiative in general practice. Report submitted to the National Heart Foundation of Australia and its CHD-GP Working Group.* Program Evaluation Unit, School of Population Health, The University of Melbourne, 2006.
17. Department of Health and Ageing. *Medicare Benefits Schedule Book* Commonwealth of Australia 2003.
18. The Workers' Compensation Regulatory Authority (QCOMP). *Allied Health Tables of Costs:* Brisbane QLD, 2008.
19. Australia Bureau of Statistics. *Labour Force, Australia*, vol. Cat No. 6203.0. Australian Bureau of Statistics: Canberra, 2003.
20. Australia Bureau of Statistics. *Average Weekly Earnings*, vol. Cat No. 6302.0. Australian Bureau of Statistics: Canberra, 2003.
21. Rankin S, Hughes-Anderson W, House J, Aitken J, Heath D, Mitchell A *et al.* Rural residents' utilisation of health and visiting specialist health services. *Rural and Remote Health* 2002; **2**(1): 119.
22. Bamford E, Dunne L, Taylor D, Symon B, Hugo G, Wilkinson D. Accessibility to general practitioners in rural South Australia. A case study using geographic information system technology. *Medical Journal of Australia* 1999; **171**: 614-616.
23. Australian Institute of Health and Welfare. *Health Expenditure Australia*, Australian Institute of Health and Welfare: Canberra, 2008.
24. Australia Bureau of Statistics. *Consumer Price Index*, vol. Cat No. 6401.0. Australian Bureau of Statistics: Canberra.
25. Organisation for Economic Cooperation and Development. *Purchasing Power Parities (PPPs) for OECD Countries 1980-2006*, 2006 [cited February 2006].