



# **COMMONWEALTH GRANTS COMMISSION**

**DRAFT ASSESSMENT PAPER CGC 2003/30**

## **POPULATION AND PREVENTIVE HEALTH**

Prepared for the Commission's 2003 Conferences on Draft Assessments

**AUGUST 2003**

## **NOTE**

Included in this paper are the results of preliminary calculations based on the methods proposed throughout the paper and using the data currently available. Those results are indicative only and should be seen as work in progress. Ongoing changes are being made to standards and factor calculations as new data come to hand. Moreover, the calculations have been done using a prototype assessment system and are subject to ongoing revision as checking processes proceed.

Analyses of the Australian Bureau of Statistics' 2001 National Health Survey data included in this paper reflect the views of the Commonwealth Grants Commission, and not the Australian Bureau of Statistics.

*In this version of the paper State-specific expense data, and data referring to State-specific numbers have been removed for confidentiality reasons.*

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## INTRODUCTION

1. This paper presents a draft assessment for the Population and Preventive Health category for the 2004 Review. It builds on the staff proposals set out in *Discussion Paper 2002/31, Population and Preventive Health* and State comments on them provided at the 2002 Conferences and in the 2003 Rejoinder Submissions and bilateral discussions.

## BACKGROUND

### *Scope of the category*

2. **1999 Review.** The Public Health category comprised expenses on public health services, both population health programs and preventive health programs. Population health service programs were defined as those that aim to protect, promote and/or restore the collective health of whole or specific populations. Preventive health programs were defined as those aimed at preventing disease.

3. More specifically, the category included expenses on health promotion campaigns, occupational health and safety programs, food standards regulation, environmental health, nutrition services and epidemiology, communicable disease surveillance, immunisation programs, breast cancer screening and screening for childhood diseases, pharmaceuticals provided outside hospitals, aids and appliances used for health purposes and supplied in an ambulatory setting, glasses, hearing aids and wheel chairs, research into medical and health sciences undertaken outside acute care hospitals, and medical instrumentation undertaken in institutions other than acute care institutions.

4. The category also included outlays on administration, support and operation of health affairs and services that could not be assigned to other health categories.

5. Table 1 shows the standard expenses and user charges for 1996-97 to 2001-02. In 2001-02, this category represented 1.13 per cent of total gross standard expenses.

**Table 1** PUBLIC HEALTH — STANDARD EXPENSES, 2003 UPDATE

	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
Standard expenses (\$pc)	32.58	39.32	46.37	49.91	55.69	56.36
% of total standard expenses	0.89	1.02	1.02	1.08	1.15	1.13

6. Specific Purpose Payments (SPPs) from the Commonwealth relating to this category are shown in Table 2. They were treated by inclusion in the 1999 Review, meaning that they are included in the standard expenses shown in Table 1.

**Table 2** COMMONWEALTH PAYMENTS, 2002-03

Commonwealth Payment		NSW	Vic	Qld	WA	SA	Tas	ACT	NT
National Public Health and Essential Vaccines	\$m	88.01	57.49	44.53	24.69	19.17	8.27	5.41	4.56
	\$pc	13.54	11.98	12.38	13.01	12.78	17.59	17.31	23.21

### ***Structure of the assessment***

7. The assessment structure used in the 1999 Review is shown in Table 3.

8. In the 2003 Update, the category redistributed \$21.9 million in grants (\$1.14 per capita) from Victoria, Queensland and South Australia to the other States.

9. The factor with the greatest impact on grant shares was the socio-demographic composition factor. It redistributed \$19.6 million in the 2003 Update.

## **2004 REVIEW PROPOSED CATEGORY DEFINITION AND ASSESSMENT STRUCTURE**

10. ***Preliminary State Views.*** A number of States said that the structure of the assessment did not reflect current practice within the public health field.

11. ***Staff proposals.*** In *Discussion Papers 2002/31, Population and Preventive Health*, and *2003/2, The Treatment of Commonwealth Revenue Payments*, staff proposed that for the 2004 Review:

- (i) the scope of the category be maintained;
- (ii) it be renamed 'Population and Preventive Health' to better reflect the types of expenses included in it;
- (iii) the related SPPs continue to be treated by inclusion; and
- (iv) a new assessment structure be adopted because of State concerns that the old structure did not reflect the way States were providing services.

**Table 3** 1999 REVIEW ASSESSMENT STRUCTURE

Component	Component weight	Factors	Basis of calculation
<b>Expenses</b>	%		
Scale-affected expenses	24.01	Input costs	General method with weights of 80% for wages, 2% for accommodation and 1% for electricity.
		Administrative scale	General method.
Population health	44.75	Input costs	General method with weights of 80% for wages, 2% for accommodation and 1% for electricity.
		Cross-border	General method.
Preventive health	22.03	Input costs	General method with weights of 80% for wages, 2% for accommodation and 1% for electricity.
		Dispersion	General method.
		Socio-demographic composition	Covers age-sex and low English fluency. Based on target populations for each program (childhood immunisation, breast cancer screening and cervical screening) and a weight of 1.5 for people with low English fluency.
		Cross-border	General method.
HIV/AIDS	9.00	Input costs	General method with weights of 80% for wages, 2% for accommodation and 1% for electricity.
		Socio-demographic composition	Based on prevalence of HIV.
Isolation	0.21	Isolation	General method.
<b>User Charges</b>			
	100.00		EPC

12. Staff proposed that a fixed costs component and an isolation component be maintained but that the population, preventive health and HIV/AIDS expenses be split into breast cancer screening, communicable disease control and other public health components. It was proposed that component weights be determined using National Public Health Expenditure Report (NPHER) information, ABS GFS data and State budget information.

13. For each of the new components, staff proposed that the same range of factors would be assessed: socio-demographic composition, input costs, dispersion and

cross-border. Factors other than the socio-demographic composition factors would be the same in each component. Different socio-demographic composition factors would be assessed because services in each component are directed at different groups of people.

14. As an alternative, staff proposed that all service delivery expenses — breast cancer screening, communicable disease control and other public health — be assessed in a single component, with the three socio-demographic composition assessments combined into one factor. The advantage of this would be a simplified presentation, although the category factor would be the same. It was also proposed that the assessment itself could be simplified by having one general socio-demographic composition factor for all public health service delivery expenses, that is by not differentiating between public health programs.

15. **Further State views.** The merging of the population and preventive health and HIV/AIDS components and the creation of three new components was supported by all States. States made numerous comments in support of the proposed structure, including that it was more reflective of needs and of how States provide public health services.

16. **New South Wales** suggested that immunisation continue to be considered a separate component, given the very different age utilisation rates compared to other public health activities, the significant expenses under this component and the continued importance of reflecting the proportion of mothers with low-English fluency.

17. **Victoria** submitted that the proposed change was structural and should not result in a material variation to grant redistribution. It recommended that the Commission proceed with the merger of the population and preventive health expenditure components, but ensure that this merger did not result in a material variation in grants redistribution.

18. The **Northern Territory** said that relevant populations would differ between programs such that a simplified one component structure would not adequately reflect needs. It said that different population groups impacted on the cost of providing different public health programs. Hence, the socio-demographic composition factor should include a target population disability. The Northern Territory said that the proposed three component structure made this distinction. It acknowledged that a single component structure may be simpler to present but said it could result in a loss of transparency. Therefore, the Northern Territory supported the assessment of separate components. It also argued that a separate immunisation component should be continued

19. **South Australia** said that, in the interest of simplicity, the Commission should pursue the use of a single expense component and a single measure of socio-demographic composition.

20. **Tasmania** said that the use of a single socio-demographic composition factor across all expense components was an acceptable option. However, due to rapidly changing demographics, it said that a single socio-demographic composition assessment would not be applicable for the whole of a grant period. Appropriate review mechanisms would be required to ensure that the factor continued to reflect the relevant target populations.

21. Tasmania submitted that it would like some assurance that the impacts of any factor changes would be marginal. It said that, in principle, Commission staff were

proposing to extend the scope of factors currently applying only to the preventive health component to the merged components.

22. **Analysis.** On the whole, States supported the revised assessment structure and said that a number of service delivery functions should be separately assessed. In particular, New South Wales and the Northern Territory said that immunisation should be a separate component. We therefore propose to have separate components for breast cancer screening, communicable disease control, immunisation and other public health services. We accept that immunisation is an important function in the category and that the target population is different from that of other components. This structure will allow appropriate socio-demographic disabilities to be assessed for each relevant component.

23. The change in structure, by itself, should result in little or no change in grant share. However, the paper proposes more fundamental changes to the assessment of disabilities, which will result in some grant share changes.

24. **Commission decisions.** The Commission accepts that there is a conceptual case for assessing the most important services included in the category in separate components, particularly where target populations are different. This will allow the appropriate assessment of socio-demographic composition factors in a transparent way. Data are available to support the structure. We consider that the assessment undertaken in this way will allow State needs to be better recognised.

25. The component weights for the fixed costs and isolation components will be derived using general methods for those costs. The bulk of the category will be allocated to the breast cancer screening, organised immunisation, communicable disease control and other public health services components, using data from the NPHR. The Commission's decisions are summarised in Table 4.

**Table 4** COMMISSION DECISIONS – CATEGORY DEFINITION, ASSESSMENT STRUCTURE AND COMPONENT WEIGHTS

Decision	Reason
Definition. Unchanged from 2003 Update	Represents an important aspect of State services
Continue to treat the National Public Health and Essential Vaccines SPP by inclusion	Needs will be assessed in relation to this function which is a State responsibility.
Assessment structure and component weights: <ul style="list-style-type: none"> <li>• Fixed costs: 1.40%</li> <li>• Breast cancer screening: 14.78%</li> <li>• Organised immunisation: 15.76%</li> <li>• Communicable disease control: 19.71%</li> <li>• Other public health: 48.28%</li> <li>• Isolation: 0.07%</li> </ul>	The Commission has decided to break this category into these components because evidence available from the NPHER suggested these were the most important groups of services offered to people with different demand characteristics. NPHER data were used to determine the component weights.

### **FIXED COSTS COMPONENT**

26. The fixed costs component will include the following factors:
- (i) administrative scale; and
  - (ii) input costs.

### **ADMINISTRATIVE SCALE FACTOR**

27. **1999 Review.** The administrative scale factor was assessed to account for differences in per capita costs of providing central office functions and whole of State services. Scale-affected expenses for this category were assessed as \$17 million, of which \$2 million was considered as fixed cost and \$15 million as variable cost. The scale-affected expenses component represented 24.01 per cent of expenses in this category.

28. **2004 Review.** *Draft Assessment Paper 2003/60 Administrative Scale* discusses the issues raised by the States regarding the assessment of this factor. The paper sets out the Commission’s decisions on the general method of assessment adopted for the 2004 Review and on the size of the fixed cost component in each category.

29. The Northern Territory said that variable costs made up most of the scale-affected expenditure in the Population and Preventive Health category. It said the Commission's intention to discontinue its assessment of scale-affected variable costs would have a significant impact in this category. The Northern Territory said that it incurred administrative and developmental costs that were relevant to this factor, namely, the need to fund research, construct datasets and engage communities. It said the Commission did not indicate how it would address the Northern Territory's need in respect of this expense if the variable cost component were discontinued. For equalisation to occur, it said the Commission needed to account for this additional expense.

30. The Northern Territory recommended the introduction of a separate factor to account for the need to conduct original research and a disability factor to account for expenses incurred as a result of the Northern Territory's high rates of mortality and unique disease profile. The Territory noted that many of these additional costs were related to its Indigenous population, so an alternative option would be for the Commission to recognise these needs within an Indigeneity factor.

31. The Commission has decided that administrative scale will be assessed for this category to recognise the unavoidable costs each State would incur to have the policy and administrative infrastructure necessary to provide the service regardless of the size of the task.

32. The kinds of variable costs mentioned by the Northern Territory are not fixed costs. Rather, they are influenced by the socio-demographic composition of the population. Hence, these costs are accounted for in the service delivery components, to which socio-demographic composition factors are applied. As noted by the Northern Territory, many of the additional costs are related to the Indigenous population. The Indigeneity weighting in the socio-demographic composition factors is intended to take account of those costs.

33. The administrative scale factors, shown in Table 5, have been calculated using the 2004 Review general method. Fixed costs for this category have been estimated to be \$2 million per State. The Commission also assessed extra fixed costs of \$0.17 million for the Northern Territory to recognise the extra costs it incurs through the dual policy development tasks it must perform because of the high proportion of Indigenous people in its population. Fixed costs for the category represent 1.4 per cent of the category standard.

34. The factor, which is based on estimated residential population, and the component weight will be updated annually.

**Table 5** ADMINISTRATIVE SCALE FACTORS — FIXED COST COMPONENT

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
1997-98	0.33991	0.46342	0.63038	1.19186	1.43708	4.47717	6.86749	19.28352
1998-99	0.33982	0.46451	0.62720	1.18630	1.44578	4.54134	6.93619	19.05288
1999-2000	0.33978	0.46510	0.62480	1.18104	1.45485	4.60512	6.96784	18.94507
2000-01	0.33979	0.46540	0.62214	1.17863	1.46439	4.66324	6.98156	18.85992
2001-02	0.33971	0.46550	0.61921	1.17800	1.47650	4.72243	6.98609	18.83349

### INPUT COSTS FACTOR

35. **1999 Review.** The input costs factor was assessed to recognise differences between States in per capita costs of labour, office accommodation and electricity. A separate factor was calculated for each of those inputs. For the scale affected costs component, those factors were applied to the following proportions of standard expenses:

- (i) wages and salaries                      80 per cent;
- (ii) accommodation                              2 per cent; and
- (iii) electricity                                      1 per cent.

36. **2004 Review.** *Discussion Paper CGC 2003/04 Input Costs* sets out the issues raised by the States regarding the assessment of wages and salaries costs. The paper sets out the Commission's proposals for the general method of assessment to be adopted for the 2004 Review. *Draft Assessment Paper CGC 2003/79 Input Costs - Electricity and Accommodation* sets out the issues raised by the States regarding the assessment of input costs relating to accommodation and electricity. The paper sets out the Commission's decisions on the general method of assessment to be adopted for the 2004 Review and on the size of the standard expense proportions in each category for accommodation costs and electricity costs. The States did not raise issues specific to this category.

37. The Commission considered that the prices of labour, accommodation and electricity used in providing head office services related to population and preventive health differ across States for reasons beyond the control of individual States. It has therefore decided that input costs will be assessed for this component.

38. The input costs factors for the fixed cost component of this category, shown in Table 6, have been calculated according to the 2004 Review general methods. The standard expense proportions applied were 80 per cent for wages and salaries, 2 per cent for accommodation and 1 per cent for electricity.

**Table 6** INPUT COSTS FACTORS — FIXED COSTS COMPONENT

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
1997-98	1.03089	0.98779	0.98245	0.98232	0.97408	0.93227	1.00820	1.11442
1998-99	1.03086	0.98776	0.98243	0.98229	0.97405	0.93225	1.00817	1.11439
1999-2000	1.03267	0.98876	0.98050	0.97883	0.97213	0.92981	1.01243	1.10979
2000-01	1.03546	0.98791	0.97763	0.98082	0.96857	0.92317	1.01680	1.10513
2001-02	1.03603	0.98930	0.97573	0.98076	0.96738	0.92031	1.01603	1.10244

39. The factors will be updated annually. The proportions represented by wages and salaries, accommodation and electricity will not be re-examined until the next review.

### BREAST CANCER SCREENING COMPONENT

40. The breast cancer screening component will include the following factors:

- (i) socio demographic composition;
- (ii) input costs;
- (iii) dispersion; and
- (iv) cross-border.

### SOCIO-DEMOGRAPHIC COMPOSITION FACTOR

41. **1999 Review.** A socio-demographic composition factor was assessed to take account of differences in demand as measured by relevant (or target) population for the breast cancer screening program and the effects on the costs of providing the service to people with low English fluency. The relevant population used for breast cancer screening was women aged 40-70. A weight of 1.5 was given to people in this group with low English fluency to reflect the greater costs of providing services incurred when interpreters are used and/or the longer consultation times required. This weight also applied to Indigenous people who spoke languages other than English and had low English fluency.

42. Indigeneity, health status and socio-economic status were not considered in the assessment because breast cancer screening targeted all people who met the age and sex criteria and each person had the same need for the services, regardless of their health status

or other related factors. Also, no evidence was found that any of these factors affected the cost of providing screening services, other than the extra costs covered by the low English fluency weight.

43. **State views.** State views mainly related to the need to recognise the impact on costs of certain demographic groups, particularly low socio-economic status.

44. **Staff proposals.** Commission staff proposed that breast cancer screening be a separate component for the 2004 Review. Staff proposed that the factor recognise the need for breast cancer screening for women aged 40 to 70 years of age, and the impact of low English fluency and health status on costs (to account for low socio-economic status, Indigenous and other relevant 'at risk' groups).

45. **Further State views.** **New South Wales** noted that breast cancer screening was a comprehensive population based program targeting all women aged 50-69. Therefore an adjustment for health status was only applicable to women aged 40-49 and 70 years and over.

46. **Victoria** supported the assessment of breast cancer screening as a separate expense component. However, it said some aspects of the assessment of socio-demographic composition disabilities should be reviewed.

47. Victoria said the BreastScreen Australia policy was to target women without symptoms between the ages of 50 and 69. Although all women over 40 years of age were eligible for the program, all promotional and recruitment strategies were targeted at women aged 50 to 69 years. The National Health and Medical Research Council concluded that there was insufficient evidence to indicate that population based screening for all women less than 50 years was necessary. Data from BreastScreen Victoria also suggested that within the older age groups, 69 plus, there was higher complexity of diagnosis or treatment (higher percentage requiring core or open biopsy) when compared to other age groups.

48. Victoria stated that the BreastScreen Victoria 2000 Annual Statistical Report showed the participation rate for initial and follow up assessments for NESB populations was significantly higher for both the 50 to 69 and over 50 year old age groups. Participation for NESBs in the 50 to 79 age group was 55.0 per cent compared to 51.7 per cent for the general population.

49. Victoria said that the assessed population group for breast cancer screening should be changed to women aged 50 to 69 years old to correspond with the BreastScreen Australia policy. It also argued that a higher weighting for the 70 and over age group was necessary to account for the additional costs related to undergoing more complex analysis than other age groups. It said the low-English fluency weights should be increased to reflect the significantly higher participation rates of patients from a NESB.

50. **Western Australia** submitted that health status was not relevant to breast cancer screening, where the target population was an entire age-sex group. Health status was also not relevant to any other screening program where the national policy was to screen all members of a group (such as cervical cancer screening). However, some groups

were more costly to service. For example, Indigenous women required outreach and culturally appropriate services to encourage them to access services.

51. **Tasmania** said that within the breast screening component, the socio-demographic factor should reflect the additional costs of promoting screening services to persons from a low socio-economic background. This would reflect the extra costs involved in encouraging persons with low socio-economic status to utilise preventive health programs such as breast cancer screenings (there was a positive correlation between low income and breast cancer<sup>1</sup>). Actual and perceived costs involved in accessing these services, especially in rural areas, acted as a deterrent to persons from a low socio-economic background. The AIHW's publication, *Breast and Cervical Cancer Screening in Australia 1996-1997*, highlighted the lack of acceptance of the screening program among women of low socio-economic status, particularly in rural areas.

52. **The ACT** said that most preventive health activities, such as screening, had target groups that were age and/or sex related, not health status related. It said screening programs generally targeted specific groups of the community who were otherwise healthy. The ACT said that disabilities related to the composition of State populations should not be assessed in any component, and socio-demographic composition factors should not be applied to these expenses.

53. **The Northern Territory** said that, if a health status measure was used to assess socio-demographic composition disabilities, it would not capture the additional costs associated with delivering public health services to people with low English fluency and the Indigenous population because it would only be a measure of demand. Other factors would be necessary to account for these additional costs.

54. **Analysis.** We have re-considered the proposal to base the assessment of needs for breast cancer screening on a measure of health status. We agree with Western Australia that health programs targeted at an entire age-sex group are provided independently of the health status of the population. There is good evidence that extra costs in relation to breast cancer screening are driven by socio-demographic characteristics of the population, rather than health status.

55. **Age-sex.** By design the BreastScreen Australia program provides women aged 40 and over with free screening services. However, women aged 50 to 69 are the main target of the program. Because of this, the use of the service will vary by age group.

56. As shown in Table 7, data from Victoria indicate that use rates of breast screening services differ between age groups. We do not have detailed figures for Australia. National figures are only available for the 50-69 age group, because this is the group States are required to report on in their responses to the Public Health Outcome Funding Agreements. For the 50-69 age group, all States have similar use rates to that of Victoria. Therefore, we consider that the Victorian data can be used as a proxy for national non-sequitur use rates for the other age groups.

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<sup>1</sup> Jansen M, *Hospital Case Control* 1984.

**Table 7** BREAST SCREENING PARTICIPATION RATES BY AGE AND LANGUAGE SPOKEN AT HOME, JANUARY 1999 TO DECEMBER 2000, VICTORIA

	40-49	50-69	70-79	40-79
Estimated number of eligible women resident in Victoria	336 994	443 751	156 442	937 187
Number of women screened	33 410	261 281	49 263	343 954
Participation rate (%)	9.9	58.9	31.5	36.7
Estimated number of eligible NESB women resident in Victoria	65 633	91 004	23 420	180 057
Number of NESB women screened	6 177	55 395	7 520	69 092
Participation rate (%)	9.4	60.9	32.1	38.4
Estimated number of eligible women not from a NESB resident in Victoria	271 361	352 747	133 022	757 130
Number of women not from a NESB screened	27 233	205 886	41 743	274 862
Participation rate (%)	10.1	58.7	31.4	36.6

Source: BreastScreen Victoria 2000 Annual Statistical Report.

57. The different use of breast screening services by different age groups is well recognised and supported by data. The Commission is satisfied that the data on use of services are comparable and representative, and provide a strong basis for assessing an age-sex disability. The differences in the proportions of State populations in each age group mean that the different utilisation rates will have an impact on State budgets which the Commission considers to be material. The Commission therefore has decided to assess an age-sex disability

58. There is not enough evidence from Victoria to support a conceptual case that women over 70 are more costly to service. The Commission has therefore decided not to make an adjustment for this.

59. **Low English fluency.** That a proportion of people with low English fluency need interpreter services when dealing with medical professionals is well recognised and supported by data. The extra costs associated with the use of interpreters have a material impact on State budgets.

60. In the absence of information to the contrary, the Commission has decided to continue the 1999 Review approach of applying a weighting of 1.5 for low English fluency. This weight will be applied to non-Indigenous women aged over 40 with low English fluency. The weight will not apply to Indigenous people, because the Indigeneity weight already includes the costs associated with low English fluency.

61. Data in Table 7 do not support an increase in weight for higher use of services by women from a non-English speaking background. Use rates are similar between women from a non-English speaking background and women from an English speaking background.

62. **Indigeneity.** All States have promotional initiatives to encourage Indigenous women to increase their use of screening services. All States are required to do this under the Public Health Outcome Funding Agreements. One of the requirements specified by the Commonwealth in these agreements is that health departments should take steps to improve breast cancer screening among Aboriginal and Torres Strait Islander women. This includes collaboration and partnerships with Indigenous communities, with the aim of increasing breast screening rates among Aboriginal and Torres Strait Islander females aged 50-69 years.

63. The Commission accepts that there is a conceptual case for assessing additional costs associated with encouraging Indigenous women to increase their use of breast screening services. There is strong evidence that States spend more on Indigenous people for public health services. The AIHW Report on Indigenous Health Expenditure showed that the national average expenditure on providing public and community health services to Indigenous people was 3.6 times (after adjusting for the size of the Indigenous population used by the Commission) that on non-Indigenous people. This is the average cost difference for all public health expenditure. The Commission therefore decided to apply this weight to Indigenous people in all components of the Population and Preventive Health category where Indigenous people are part of the target population, including the breast screening component.

64. **Remoteness and socio-economic status.** There is no requirement under the Public Health Outcome Funding Agreements to pay particular attention to people living in remote areas. While there is limited anecdotal evidence to suggest rural and remote women and women with low socio-economic status are specifically targeted, we have no information from which to conclude this is a common policy across States. The Commission has therefore decided not to make an adjustment for these groups.

65. **Commission decisions.** In summary, the Commission has decided to assess breast cancer screening as a separate component in the 2004 Review. The relevant population used in the assessment will be the number of women aged 40 and over who use screening services, with cost weights applied for low English fluency and Indigeneity.

66. The Commission’s decisions are summarised in Table 8.

**Table 8** COMMISSION DECISION: SOCIO-DEMOGRAPHIC COMPOSITION FACTOR — BREAST CANCER SCREENING COMPONENT

PROPOSAL	Reason
A socio-demographic composition factor will be assessed using a target population, and low English fluency and Indigeneity weights.	We have good evidence that breast screening expenditure is influenced by socio-demographic characteristics.

67. **Proposed method and results.** Tables 9 to 11 show the derivation of the socio-demographic factor for the breast cancer screening component.

68. **Updateability.** Most data used in the calculation of this factor come from the Census. Therefore, the socio-demographic composition factor will not be updated.

69. **Reality check.** The results are consistent with expected outcomes, because New South Wales, Victoria, South Australia and Tasmania, who have greater proportions than average of women in older age groups, have factors above one.

**Table 9** RELEVANT POPULATIONS FOR BREAST CANCER SCREENING

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Non-Indigenous females aged 40 to 49, fluent * 0.1	43 549	33 032	25 195	13 358	10 698	3 396	2 408	1 021	132 656
Non-Indigenous females aged 40 to 49, not fluent * 0.1	2 429	1540	356	274	216	10	43	24	4 893
Indigenous females aged 40 to 49 * 0.1	703	143	630	335	135	97	21	288	2 353
Non-indigenous females aged 50 to 69, fluent * 0.6	345 458	254 574	197 838	97 797	88 186	28 395	16 495	4 971	1 033 715
Non-indigenous females aged 50 to 59 not fluent * 0.6	24 389	21 202	3 215	2 899	3 283	114	541	208	55 851
Indigenous females aged 50 to 69 * 0.6	3 754	763	3 304	1 730	688	430	61	1 515	12 245
Non-Indigenous females aged 70+, fluent * 0.3	97 241	70 079	48 674	23 051	26 279	7 853	3 001	397	276 575
Non-Indigenous females aged 70+, not fluent * 0.3	7 452	7 102	1 269	1 389	1 587	76	224	45	19 145
Indigenous females aged 70+ * 0.3	398	94	356	213	77	46	4	172	1 360

**Table 10** WEIGHTED RELEVANT POPULATIONS FOR BREAST CANCER SCREENING

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Non-Indigenous females aged 40 to 49, fluent * 1	43 549	33 032	25 195	13 358	10 698	3 396	2 408	1 021	132 656
Non-Indigenous females aged 40 to 49, not fluent * 1.5	3 643	2 310	534	411	325	15	65	36	7 339
Indigenous females aged 40 to 49 * 3.6	2 529	515	2 269	1 204	487	350	77	1 037	8 469
Non-indigenous females aged 50 to 69, fluent * 1	345 458	254 574	197 838	97 797	88 186	28 395	16 495	4 971	1 033 715
Non-indigenous females aged 50 to 59 not fluent * 1.5	36584	31 803	4 823	4 348	4 925	171	811	312	83 777
Indigenous females aged 50 to 69 * 3.6	13 515	2 745	11 893	6 229	2 478	1 549	220	5 454	44 083
Non-Indigenous females aged 70+, fluent * 1	97 241	70 079	48 674	23 051	26 279	7 853	3 001	397	276 575
Non-Indigenous females aged 70+, not fluent * 1.5	11 179	10 653	1 903	2 083	2 380	115	336	68	28 717
Indigenous females aged 70+ * 3.6	1 432	339	1283	767	279	164	13	618	4 895

**Table 11** DERIVATION OF SOCIO-DEMOGRAPHIC COMPOSITION FACTOR FOR BREAST CANCER SCREENING

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Total population	6 332 166	4 669 129	3 517 735	1 822 841	14 68 918	458 898	308 589	183 817	18 762 092
Total weighted population	555 130	406 051	294 412	149 248	136 036	42 007	23 427	13 914	1 620 225
Weighted population divided by total population	0.08767	0.08696	0.08369	0.08188	0.09261	0.09154	0.07592	0.07569	0.08636
Factor	1.01519	1.00705	0.96917	0.94813	1.07241	1.06001	0.87910	0.87654	1.00000

## ECONOMIC ENVIRONMENT FACTOR

70. **1999 Review.** An economic environment factor was not assessed.

71. **State views.** Tasmania stated that an economic environment adjustment was needed to reflect the higher price small States must pay for services as a result of the lack of competition between service providers.

72. **Staff proposals.** Staff proposed not to assess an economic environment factor unless further evidence could be provided.

73. **Further State views.** Tasmania argued for the introduction of an economic environment disability to take account of the higher prices that must be paid to private service providers due to the absence of competition. It used breast screen services as an example. Breast screen services were contracted to a private provider who, over the period of the contract, became the sole private provider for these services. Upon entering the second tender round, the only submission received was from the same provider who sought a large increase in the price. The State had to pay a premium for the services and became a partial provider of services. The unit cost for screening increased from \$126.87 to \$150.41 — a 19 per cent increase between contract periods.

74. **Analysis and Commission decisions.** It is not clear to us that Tasmania had no choice but to contract out breast screening services in the first instance. As far as we are aware, it was a policy decision made by Tasmania. The Commission therefore does not consider that a conceptual case has been made for assessing additional costs for breast screening services due to a lack of private service provision.

## INPUT COSTS FACTOR

75. **1999 Review.** The input costs factors assessed for the preventive health component, which included breast cancer screening, were the same as those for the fixed costs component.

76. **2004 Review.** The Commission considers that approach remains appropriate for the 2004 Review because the proportion of standard expenses affected by the input costs factors in the fixed costs and breast cancer screening components would be similar. The input costs factors shown in Table 6 have also been applied in the breast cancer screening component.

## DISPERSION FACTOR

77. **1999 Review.** The dispersion factor was assessed to account for differences in per capita costs of providing services arising from differences between States in the

spread of their population. The factor reflects the effects of population dispersion on State expenses associated with telecommunication, freight, travel and staffing on-costs.

78. There were seven indexes within the dispersion factor, each reflecting the effect of interstate differences in population dispersion on a separate type of dispersion-affected cost. Each index was weighted by the proportions of standard expenses affected by each type of dispersion-affected cost. The indexes were combined to form the overall dispersion factor. The proportions of standard expenses estimated for the preventive health component, of which breast cancer screening was a part, are shown in Table 12.

**Table 12** DISPERSION COST WEIGHTS FOR PREVENTIVE HEALTH COMPONENT, 2003 UPDATE

Telephone	Freight	Air Travel	Road Travel		Remote Removals	Locality Allowances
			Inter Regional	Local		
0.00686	0.00234	0.00135	0.00850	0.0110	0.00250	0.00096

Source: 2003 Update Working Papers Volume 4, p273.

79. **2004 Review.** *Draft Assessment Paper 2003/63 Dispersion* discusses the issues raised by the States regarding the assessment of the dispersion factor. The paper sets out the Commission's decisions on the general method of assessment adopted for the 2004 Review and on the size of the standard expense proportions estimated for each of the nine elements of dispersion-affected expenses. The States did not raise issues specific to this category.

80. The Commission noted that the expenses incurred in providing breast screening services include costs that are affected by population dispersal. It has therefore decided that a dispersion disability will be assessed.

81. The dispersion factors for the breast screening component have been calculated according to the 2004 Review general method. There were nine indexes within the dispersion factor for the 2004 Review. Table 13 shows the proportions of standard expenses estimated for each of the nine elements of dispersion affected expenses for this component.

**Table 13** 2004 REVIEW DISPERSION COST WEIGHTS, BREAST CANCER SCREENING COMPONENT

Telecommunication		Freight, General	Air Travel	Road Travel		Repairs and Maintenance	Remote Staff Turnover	Locality Allowances
Voice	Non-voice			Inter Regional	Local			
0.00636	0.00071	0.00452	0.01616	0.00266	0.00387	0.00147	0.00114	0.00054

82. Table 14 shows the dispersion factors assessed for the breast cancer screening component for the 2004 Review.

**Table 14** 2004 REVIEW DISPERSION FACTORS — BREAST CANCER SCREENING COMPONENT

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
1996	0.99936	0.98196	1.02660	1.01042	0.98453	0.98388	0.96900	1.10045
1997	0.99929	0.98189	1.02653	1.01035	0.98446	0.98381	0.96893	1.10038
1998	0.99924	0.98184	1.02648	1.01030	0.98441	0.98376	0.96888	1.10032
1999	0.99920	0.98180	1.02643	1.01026	0.98437	0.98372	0.96884	1.10027
2000	0.99915	0.98176	1.02639	1.01021	0.98433	0.98368	0.96879	1.10023
2001	0.99912	0.98172	1.02635	1.01018	0.98429	0.98364	0.96876	1.10018

83. Neither the factor nor the dispersion costs weights will be updated before the next review.

### CROSS-BORDER FACTOR

84. **1999 Review.** A cross-border factor was assessed for the preventive health component, but applied only to the immunisation part of it.

85. **Preliminary State views.** New South Wales said that there was no firm evidence of cross-border flows for public health services and that cross-border factors were not warranted in the Population and Preventive Health assessment.

86. The ACT considered the assessment inadequate and asked that its modified general method, based predominantly on hospital separations, be applied.

87. **Staff proposals.** Commission staff were inclined to recommend that a cross-border factor be applied to all public health service delivery components, but noted that more evidence would be desirable.

88. **Further State views.** No further State views were received on whether a cross-border factor should be assessed in this component.

89. **Commission decisions.** *Draft Assessment Paper CGC 2003/68 Cross Border Factors* discusses the general arguments of the ACT and the other States on the assessment of cross border costs. It sets out the Commission's general decisions on cross-border assessments for the 2004 Review.

90. The Commission accepts that the location of the ACT within New South Wales results in it incurring net additional costs in providing some public health services to

New South Wales residents. There is, thus, a conceptual case for assessing cross-border factors to recognise the net additional costs incurred by the ACT as a result of the additional demand for ACT public health services. While there are no data on the actual cross-border use of ACT breast screening services, there is good evidence of cross-border use of community health and immunisation services. The Commission thinks it is likely that, because breast screening services are provided in similar ways to community health and immunisation services, there would be cross-border use of breast screening services, as there is of community health and immunisation services. The strength of the conceptual case and the indications provided by the evidence available, are sufficient for the Commission to conclude that equalisation would be improved by assessing cross-border influences for this component.

91. Table 15 summarises the Commission’s decision.

**Table 15** COMMISSION DECISION — CROSS-BORDER FACTORS, BREAST CANCER SCREENING COMPONENT

Decision	Reason
A cross-border factor was assessed for the breast screening component using the 2004 Review general method. The factors were based on 50 per cent of the female population aged 40 and over in Queanbeyan, Yass, Yarrowlumla and Gunning LGAs and 20 per cent of the female population aged 40 and over in the Bega Valley, Bombala, Boorowa, Cooma-Monaro, Crookwell, Eurobodalla, Goulburn, Harden, Mulwaree, Snowy River, Tallaganda and Young LGAs.	Gives the ACT the capacity to provide the average level of services by assessing the additional costs that it incurs in providing breast screening services to New South Wales residents.

92. **Proposed method and results.** The cross border factors for this component, shown in Table 16, have been calculated according to the 2004 Review general method. They used the same population proportions as the Non-inpatient and Community Health assessment, because these services are similar in the way they are provided. The populations used were 50 per cent of the female population aged 40 and over in the nearest LGAs and 20 per cent of the female population aged 40 and over in the rest of the LGAs, because cross-border demand is assumed to be stronger for LGAs closer to the ACT and weaker for LGAs further from the ACT. Use rates of breast screening services by women of different age groups were then applied to determine the number of women from New South Wales likely to use ACT breast screening services.

**Table 16** 2004 REVIEW CROSS-BORDER FACTORS — BREAST CANCER SCREENING COMPONENT

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
All years	0.99928	1.00000	1.00000	1.00000	1.00000	1.00000	1.01481	1.00000

93. **Updateability.** Annual estimates of LGA resident populations will be used to update the cross border factors.

## **ORGANISED IMMUNISATION COMPONENT**

94. The organised immunisation component will include the following disability assessments:

- (i) socio demographic composition;
- (ii) economic environment;
- (iii) input costs;
- (iv) dispersion; and
- (v) cross-border.

## **SOCIO-DEMOGRAPHIC COMPOSITION FACTOR**

95. **1999 Review.** A socio-demographic composition factor was assessed in the preventive health component to take account of the relevant (or target) population for childhood immunisation. The relevant population used for childhood immunisation was children aged 0 to 6 years. A weight of 1.5 was given to people with low English fluency. For childhood immunisation, the English fluency of the carers (females aged 15 to 49), rather than the children, was assessed because this was considered to be more relevant to the costs of the services.

96. **Staff proposals.** Because most of the population was targeted by at least one immunisation program, and in the interest of simplicity, Commission staff recommended that no relevant population assessment be made for expenses on immunisation. Staff recommended that the current low English fluency adjustment be retained, and that a health status factor be included. An assessment of input costs, dispersion and cross-border factors was also recommended.

97. Because the proposed assessment was the same as that proposed for the other public health expenditure component, Commission staff proposed to merge immunisation expenditure with expenditure on other public health services.

98. **Further State views.** New South Wales suggested that immunisation should continue to be a separate component, given the very different age utilisation rates compared to other public health activities, the significant expenses under this component and the continued importance of reflecting the proportion of mothers with low-English fluency.

99. Western Australia and the ACT said that health status should not be used to assess the need for preventive health services such as immunisation. They said that health status was not relevant to any program where the national policy was to screen all members of a group.

100. South Australia said that the current weight of 1.5 for low English fluency was more than sufficient to account for the additional costs associated with NESB populations. It said that additional pressure had been placed on immunisation and preventive health programs by the Woomera and Baxter immigration detention centres, with additional costs estimated to be about half a million dollars annually. While the additional cost may not be significant enough to warrant a separate component, South Australia said the Commission must ensure that immigration centre detainees are incorporated into the relevant population measures and are subject to the NESB weighting.

101. The Northern Territory disagreed with the proposal not to differentially assess immunisation. It was concerned that it would be disadvantaged by the absence of such an assessment because it bore a significant amount of the cost of administering vaccinations and had a disproportionate amount of its population in the largest area of expense — childhood immunisation. It also noted the very high number of vaccinations administered by community health centres in the Northern Territory compared to other States where a high number of vaccinations are administered by GPs. The Northern Territory said that, to account for its needs, a childhood immunisation component should be assessed or an economic environment factor should be introduced.

102. *Analysis and Commission decisions.* The proposal in the 2002 discussion paper aimed at simplifying the assessment. In view of State comments and information from the Australian Standard Vaccination Schedule (ASVA), we will specifically recognise each population targeted for immunisation.

103. We have re-considered the staff proposal to base the assessment of needs for immunisation on a measure of health status. We agree that health programs targeted at an entire age-sex or ethnic group are provided independently of the health status of the population. There is good evidence that extra costs in relation to immunisation are driven by socio-demographic characteristics of the population, rather than health status.

104. **Age-sex.** While most age groups are targeted by at least one immunisation program, some require more immunisations than others. In accordance with the ASVA, children aged from 0 to 4 are required to have a total of six immunisations. Indigenous people aged over 50 and non-Indigenous people aged over 65 are required to have yearly immunisations. People in other age groups require fewer immunisations.

105. The Commission accepts that a conceptual basis exists for assessing the different costs incurred in providing immunisation services to different age groups. The conceptual case is supported by evidence, which the Commission is satisfied provides a strong basis for an assessment using different age groups. The evidence indicates that the effect of age in relation to immunisation services has an impact on State budgets which the Commission considers to be material. The Commission therefore decided to include weights for age in the organised immunisation component.

106. **Indigeneity.** The Commission accepts that a conceptual basis exists for recognising that higher costs are incurred in providing immunisation services to Indigenous people. The conceptual case is supported by evidence, which the Commission is satisfied provides a strong basis for an assessment of Indigeneity. The evidence indicates that the effect of Indigeneity on immunisation services has an impact on State budgets that is material. The Commission therefore decided to include an Indigenous weight in the organised immunisation component. The weight of 3.6 derived from the AIHW Report on Indigenous Health Expenditure, discussed in the breast screening component, will be applied to Indigenous people in the target age groups.

107. **Low English fluency.** The Commission does not consider that a conceptual case exists for making an adjustment for refugees in detention centres. It considers this is a matter best dealt with by direct negotiation between South Australia and the Commonwealth. Therefore, the Commission has decided not to include an assessment for the costs of refugees in the 2004 Review.

108. That a proportion of people with low English fluency need interpreter services when dealing with medical professionals is well recognised and supported by data. The extra costs associated with the use of interpreters have a material impact on State budgets.

109. In the absence of information to the contrary, the Commission has decided to continue the 1999 Review approach of applying a weighting of 1.5 for low English fluency. This weight will be applied to non-Indigenous people with low English fluency in the relevant age groups. The weight will not apply to Indigenous people, because the Indigeneity weight already includes the costs associated with low English fluency.

110. For children aged 0 to 4, we will apply the low English fluency weight to a proportion of the 0 to 4 age group based on each State’s proportion of women aged 15 to 49 (the age group likely to be mothers or carers) with low English fluency. This is because, for obvious reasons, the English fluency of the 0 to 4 age group is not recorded in the Census.

111. Table 17 summarises the Commission decisions.

**Table 17** COMMISSION DECISION: SOCIO-DEMOGRAPHIC COMPOSITION FACTOR — ORGANISED IMMUNISATION COMPONENT

PROPOSAL	Reason
A socio-demographic composition factor will be assessed using target populations, and low English fluency and Indigeneity weights.	We have good evidence that immunisation expenditure is influenced by socio-demographic characteristics.

112. **Proposed method and results.** Tables 18 to 21 show the derivation of the socio-demographic factor for the immunisation component.

113. **Updateability.** Most data used in the calculation of this factor come from the Census. Therefore, the socio-demographic composition factor will not be updated.

114. **Reality check.** Consistent with expected outcomes, States with greater than average proportions of population groups who use immunisation services the most (particularly Indigenous people and older people) have factors above one.

**Table 18** RELEVANT POPULATIONS FOR IMMUNISATION

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Indigenous children aged 0 to 4	18 192	3 593	17 089	8 515	3 215	2 194	509	6 869	6 0176
Non-Indigenous children aged 0 to 4	404 904	297 233	223 703	114 052	86 399	28 002	20 005	9 258	1 183 556
Indigenous people aged 50 to 64	10 626	2 162	8 915	4 665	1 885	1 331	200	4 076	33 860
Indigenous people aged 65+	3 893	852	3 459	2 011	709	461	40	1 617	13 042
Non-Indigenous people aged 65+, fluent	769 607	552 453	400 170	190 534	203 159	62 578	24 820	4 809	2 208 129
Non-Indigenous people aged 65+, not fluent	59 228	56 814	9 163	9 685	11 795	521	1 660	371	149 237

**Table 19** CALCULATION OF LOW-ENGLISH FLUENCY WEIGHTS FOR NON-INDIGENOUS CHILDREN AGED 0 TO 4

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Ratio of non-Indigenous women not fluent to fluent in English (a)	0.03416	0.02907	0.01013	0.01433	0.01381	0.00335	0.01173	0.01431	0.02362
State-specific weight (a * 1.5 + 1)	1.05	1.04	1.02	1.02	1.02	1.01	1.02	1.02	1.04

**Table 20** WEIGHTED RELEVANT POPULATIONS FOR IMMUNISATION

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Indigenous children aged 0 to 4 * 3.6	65 491	12 935	61 520	30 654	11 574	7 898	1 832	24 728	216 634
Non-Indigenous children aged 0 to 4 * weights from Table 14	425 650	310 196	227 103	116 503	88 189	28 143	20 357	9 457	1 225 492
Indigenous people aged 50 to 64 * 3.6	38 254	7 783	32 094	16 794	6 786	4 792	720	14 674	121 896
Indigenous people aged 65+ * 3.6	14 015	3 067	12 452	7240	2552	1 660	144	5 821	46 951
Non-Indigenous people aged 65+, fluent * 1	769 607	552 453	400 170	190 534	203 159	62 578	24 820	4 809	2 208 129
Non-Indigenous people aged 65+, not fluent * 1.5	88 843	85 221	13 744	14 528	17 692	782	2 490	556	223 856

**Table 21** DERIVATION OF SOCIO-DEMOGRAPHIC FACTOR FOR IMMUNISATION

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Total population	6 332 166	4 669 129	3 517 735	1 822 841	1 468 918	458 898	308 589	183 817	18 762 092
Total weighted population	1 401 860	971 655	747 084	376 252	329 952	105 852	50 363	60 045	4 042 958
Weighted population divided by total population	0.22139	0.20810	0.21238	0.20641	0.22462	0.23067	0.16321	0.32666	0.21549
Factor	1.02739	0.96574	0.98557	0.95788	1.04240	1.07045	0.75738	1.51591	1.00000

### ECONOMIC ENVIRONMENT FACTOR

115. **1999 Review.** An economic environment factor was not assessed.

116. **State views.** Tasmania stated that an economic environment adjustment was needed to reflect the higher price small States must pay for services as a result of the lack of competition between service providers.

117. The Northern Territory said that it was disadvantaged because most of its preventive health services, such as immunisation, were provided through State Government providers. This was different from other States where it was common for services such as immunisation to be provided by GPs.

118. **Staff proposals.** Staff proposed not to assess an economic environment factor unless further evidence could be provided. Staff thought that at least part of the Northern Territory's argument was addressed in the Non-Inpatient and Community Health Services category. The Northern Territory was asked to provide further evidence relating to the cost of vaccines and other public health services.

119. **Further State views.** South Australia submitted that, in general, there was a heavy reliance on public provision of population and preventive health services in South Australia. Private provision in these areas tended to be complementary rather than competitive, and as such had little impact on the need for, or cost of, State funded services.

120. Tasmania argued for the introduction of an economic environment disability to take account of the higher prices that must be paid to private service providers due to the absence of competition. It gave the example of breast screen services, discussed earlier, to show the problem for Tasmania.

121. The Northern Territory said it was difficult to obtain comparative data for public and private services, because there were few private providers and information was

not readily available. Furthermore, even in those areas where services might be contracted out, there would be limited choice in suppliers. It thought the problem highlighted by Tasmania of having to pay a higher price due to a lack of competition was relevant.

122. The Northern Territory said its greater reliance on the public sector was evident in Table 5 of *Discussion Paper 2002/31, Population and Preventive Health*, which showed the percentage of vaccinations supplied by different providers. Few vaccinations were provided by GPs with the bulk being administered in Northern Territory-funded community health centres. Similarly, other public health functions such as pap smears, sexually transmitted and other communicable disease services, alcohol and drug issues, information on nutrition and physical activity, and environmental health activities were delivered by Northern Territory-funded providers. In all States except the Northern Territory the majority of these services were provided by GPs.

123. The Northern Territory did not agree with the Commission's observation that the economic environment factor in the Community Health category already adequately accounted for the greater need for public services in non-metropolitan areas including public health services. When a public health initiative was launched, such as the Commonwealth's initiative to administer the meningococcal C conjugate vaccine to all children aged 1-5 years in 2002-03, the usual immunisation provider would be a GP, so its administration would be funded by the MBS. In metropolitan areas there were a greater number of providers to deliver these services and GPs may be able to increase their number of consultations to accommodate the extra work. For at least 85 per cent of Northern Territory children, the usual provider was not a GP but the Department of Health and Community Services. The Commonwealth did not provide funding for public providers to administer the vaccine so this initiative placed an additional burden on public resources. To accommodate the initiative in the same timeframe, the Northern Territory said it would have to employ more staff or allocate existing resources to the task at the expense of addressing other health needs. The Northern Territory concluded the assessment of an economic environment factor in the Non-Inpatient and Community Health Services category did not fully account for the greater need for both primary and public health services in non-metropolitan areas. It said an economic environment factor should also be assessed in the Population and Preventive Health category.

124. ***Analysis and Commission decisions.*** The Commission accepts that there is a conceptual case that the demand for some public health type services is affected by the availability of substitute private sector services. The Commission considers that the conceptual argument relates mainly to immunisation services, because they are provided mainly by private sector GPs. We consider that there is little private sector equivalent for the services accounted for in the other expenditure components.

125. GPs are the main providers of immunisation services. The Commission has decided to assess an economic environment factor in the immunisation component using the method adopted in the Non-inpatient and Community Health Services category where a factor is assessed to allow for the effects on demand for State provided community health services because of differences in the availability of GP services.

126. ***Proposed method and results.*** The factor was calculated as follows:

- (i) A single average number of full time equivalent GPs and specialists per capita was calculated to cover inner regional areas and outer regional areas, all which were considered able to sustain adequate levels of GP and specialist services.
- (ii) The average number of full time equivalent GPs and specialists per capita was calculated separately for the 'major cities', 'remote' and 'very remote' regions.
- (iii) The number of GPs and specialists in each region was discounted by the proportion of services bulk-billed, to give the number of bulk-billing GPs and specialists in each region.
- (iv) Weights for each region were calculated by dividing the national average per capita number of bulk-billing GPs and specialists by the per capita average for that region.
- (v) These weights were applied to each State according to the number of people living in each region.
- (vi) The ratio of the State weighted population to unweighted population was calculated for each State and Australia.
- (vii) The factors were calculated by dividing the State ratios by the Australian ratio.

127. The numbers used for these calculations, and the resulting factors, are shown in Tables 22 to 26. The factors are based on the number of full-time equivalent bulk-billing GPs and specialists data for 2001-02. This is shown in Table 23. Table 24 shows the number of full-time equivalent bulk-billing GPs and specialists per 100 000 people for 2001-02.

**Table 22** STATE POPULATIONS BY ABS REMOTENESS REGION, 2001

ABS regions	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Major Cities of Australia	4 499 785	3 427 890	1 866 357	1 302 097	1 060 979	294 024	307 973		12 759 106
Inner Regional Australia	1 322 401	988 908	909 866	217 982	180 684		615		3 620 456
Outer Regional Australia	466 339	246 349	608 381	173 652	170 857	154 387		96 044	1 916 008
Remote Australia	36 663	5 981	84 780	82 863	43 325	8 001		38 285	299 899
Very Remote Australia	6 978		48 352	46 247	13 074	2 485		49 488	166 623
<b>Total</b>	<b>6 332 166</b>	<b>4 669 129</b>	<b>3 517 735</b>	<b>1 822 841</b>	<b>1 468 918</b>	<b>458 898</b>	<b>308 589</b>	<b>183 817</b>	<b>18 762 092</b>

Source: 2001 Census of Population and Housing.

**Table 23** FULL-TIME EQUIVALENT BULK-BILLING GENERAL PRACTITIONER AND SPECIALIST NUMBERS BY ABS REMOTENESS REGION

ABS Regions	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Major Cities of Australia	x	x	x	x	x	x	x	x	12 166
Inner Regional Australia	x	x	x	x	x	x	x	x	2 667
Outer Regional Australia	x	x	x	x	x	x	x	x	1 109
Remote Australia	x	x	x	x	x	x	x	x	122
Very Remote Australia	x	x	x	x	x	x	x	x	52
Total	x	x	x	x	x	x	x	x	16 116

Source: Medicare data 2001-02, Health Insurance Commission; Productivity Commission data on proportion of services bulk-billed.

X = Data have been suppressed for confidentiality reasons.

**Table 24** FULL-TIME EQUIVALENT BULK-BILLING GENERAL PRACTITIONER AND SPECIALIST NUMBERS PER 100 000 PEOPLE, BY ABS REMOTENESS REGION

ABS Regions	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Major Cities of Australia	x	x	x	x	x	x	x	x	98
Inner Regional Australia	x	x	x	x	x	x	x	x	66
Outer Regional Australia	x	x	x	x	x	x	x	x	58
Remote Australia	x	x	x	x	x	x	x	x	41
Very Remote Australia	x	x	x	x	x	x	x	x	31
Total	x	x	x	x	x	x	x	x	86

Source: Medicare data 2001-02, Health Insurance Commission; Productivity Commission data on proportion of services bulk-billed.

X = Data have been suppressed for confidentiality reasons.

128. The number of GPs and specialists per 1000 people, based on the numbers above, is 0.8590. Weights to be applied for each of the regions were calculated by dividing the numbers of GPs and specialists per 1000 people for the whole of Australia (0.8590) by the number for the whole region.

129. The weights calculated for each of the regions are shown below.

**Table 25** WEIGHTS FOR DIFFERENT REGIONS BASED ON GP AND SPECIALIST NUMBERS

Region	Weight Applied
Major Cities of Australia	1.0000
Inner Regional Australia	1.0000
Outer Regional Australia	1.0000
Remote Australia	1.5440
Very Remote Australia	2.0284

**Table 26** ECONOMIC ENVIRONMENT FACTORS — IMMUNISATION COMPONENT

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	AUS
Population	6 332 166	4 669 129	3 517 735	1 822 841	1 468 918	458 898	308 589	183 817	18 762 092
Weighted population	8 662 428	6 364 579	4 922 307	2 609 204	2 051 333	634 506	420 350	348 086	26 012 794
Ratio	1.36800	1.36312	1.39928	1.43139	1.39649	1.38268	1.36217	1.89365	1.38645
Factors	0.98669	0.98317	1.00925	1.03241	1.00724	0.99727	0.98248	1.36582	1.00000

130. **Updateability.** The factor was updated annually in the updates following the 1999 Review. The data are available to continue that process and the Commission proposes to do so.

131. **Reality Check.** The factor shows that Queensland, Western Australia, South Australia and the Northern Territory are assessed as having greater needs than the other States. This is consistent with expected results. These States have greater than average population in remote areas. The weights for remote populations are higher than for non-remote, because there is a lower provision of private sector services in remote areas. This in turn means that States with a relatively higher proportion of their population living in remote areas should be assessed as having greater needs.

## INPUT COSTS FACTOR

132. **1999 Review.** In the 1999 Review, the input costs factors assessed for the preventive health component, which included immunisation, were the same as those for the fixed costs component.

133. **2004 Review.** The Commission considers that approach remains appropriate for the 2004 Review because the proportion of standard expenses affected by the input costs factors in the fixed costs and organised immunisation components would be similar. The input costs factors shown in Table 6 have also been applied in the organised immunisation component.

## DISPERSION FACTOR

134. **1999 Review.** In the 1999 Review, the dispersion factors assessed for organised immunisation were the same as those for breast cancer screening, as both were included in the preventive health component.

135. **2004 Review.** The Commission considers that approach remains appropriate for the 2004 Review because the proportion of dispersion-affected costs in the organised immunisation and breast cancer screening components would be similar. The dispersion factors shown in Table 12 have also been applied in the organised immunisation component.

## CROSS-BORDER FACTOR

136. **1999 Review.** In the 1999 Review, a cross-border factor was applied to the childhood immunisation part of the preventive health component to recognise the additional costs the ACT incurred in providing immunisation services to New South Wales residents. The factor was assessed using a general method. It was based on 50 per cent of the population aged four to six in the Queanbeyan, Yass, Yarrowlunla and Gunning LGAs.

137. **Preliminary State views.** New South Wales said that there was no firm evidence of cross-border flows for public health services and that cross-border factors were therefore not warranted in the Population and Preventive Health category.

138. The ACT considered the assessment inadequate and asked that its modified general method, based predominantly on hospital separations, be applied in this assessment.

139. **Staff proposals.** Commission staff were inclined to recommend that a cross-border factor be applied to all public health service delivery components, but noted that more evidence would be desirable.

140. **Further State views.** New South Wales provided data from the Australian Childhood Immunisation Register which indicated that, in 2000-01, 15.4 per cent of immunisations for New South Wales' children aged zero to six, living in the LGAs accounted for by the cross-border assessment, were provided by ACT providers. Because these data included children aged zero to six, whereas the target population for this component is now zero to four, New South Wales said its figures should be discounted.

141. **Commission decisions.** *Draft Assessment Paper CGC 2003/68 Cross Border Factors* discusses the general arguments of the ACT and the other States on the assessment of cross border costs. It sets out the Commission's general decisions on cross-border assessments for the 2004 Review.

142. The Commission accepts that the location of the ACT within New South Wales results in it incurring net additional costs in providing immunisation services to New South Wales residents. There is, thus, a conceptual case for assessing cross-border factors to recognise the net additional costs incurred by the ACT as a result of the additional demand for ACT immunisation services. The conceptual case is supported by data which the Commission is satisfied are comparable and representative and provide a strong basis for a cross-border assessment. The strength of the conceptual case and the indications provided by the data, are sufficient for the Commission to conclude that equalisation would be improved by continuing to assess cross-border influences for this component.

143. If 15 per cent of children aged zero to six from LGAs surrounding the ACT use ACT services, it seems likely that 15 per cent of children aged zero to four also use ACT services. Therefore, we do not think the discounting of the figures suggested by New South Wales is necessary.

144. Table 27 summarises the Commission's decision.

**Table 27** COMMISSION DECISION — CROSS-BORDER FACTORS, ORGANISED IMMUNISATION COMPONENT

Decision	Reason
A cross-border factor was assessed for the organised immunisation component using the 2004 Review general method. The factors were based on 15 per cent of the population aged zero to four in the Queanbeyan, Yass, Yarrowlumla and Gunning LGAs.	Gives the ACT the capacity to provide the average level of services by assessing the additional costs that it incurs in providing immunisation services to New South Wales residents.

145. **Proposed method and results.** The cross-border factors for this component, shown in Table 28, have been calculated according to the 2004 Review general method. They used 15 per cent of the population aged zero to four in the Queanbeyan, Yass, Yarrowlumla and Gunning LGAs, because data from the Australian Childhood Immunisation Register indicated this is the proportion of the New South Wales population who use ACT immunisation services.

**Table 28** 2004 REVIEW CROSS-BORDER FACTORS — ORGANISED IMMUNISATION COMPONENT

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
All years	0.99991	1.00000	1.00000	1.00000	1.00000	1.00000	1.00184	1.00000

146. **Updateability.** Annual estimates of LGA resident populations will be used to update the cross-border factors.

## COMMUNICABLE DISEASE CONTROL COMPONENT

147. The proposed component will include expenses on:

- (i) needle and syringe programs; and
- (ii) other communicable disease control, which includes expenditure on blood borne diseases, gastrointestinal diseases, quarantinable diseases, sexually transmitted infections, vaccine-preventable diseases, vectorborne diseases, zoonoses and other bacterial infections.

148. The communicable disease control component will include:

- (i) socio demographic composition;
- (ii) input costs;
- (iii) dispersion; and
- (iv) cross-border factors.

## SOCIO-DEMOGRAPHIC COMPOSITION FACTOR

149. **1999 Review.** Communicable disease control was not a separate component in the 1999 Review. A socio-demographic composition factor was assessed in the HIV/AIDS component using the number of people with HIV/AIDS as an indicator of differences in demand.

150. **State views.** New South Wales provided data that indicated that the relatively high level of drug use in New South Wales imposed significant costs on its health system. In the area of preventive health, this was largely reflected in expenses on needle

and syringe programs, aimed at preventing the spread of HIV and other diseases contracted from unhygienic needle use.

151. **Staff proposals.** Commission staff proposed an assessment of needs based on the number of people with HIV/AIDS and hepatitis C, similar to the current assessment for HIV/AIDS related expenses. An assessment based on the drug using population was proposed for expenses on needle and syringe programs. Adjustments for costs relating to low English fluency and health status to account for low socio-economic status, Indigenous and other relevant 'at risk' groups were also proposed for expenses on other communicable disease control.

152. **Further State views. HIV/AIDS, hepatitis C and STI.** New South Wales supported the inclusion of a relevant population assessment for the assessment of HIV/AIDS related expenses. New South Wales recommended using the number of people with HIV/AIDS as the relevant population.

153. Queensland said the evidence provided in the Commission's discussion paper indicated that the separate identification of the HIV/AIDS component was not warranted.

154. Tasmania noted that the proposed three component structure removed HIV/AIDS as a separate service delivery expense component from the current assessment but proposed to include it as an identified sub-component of the proposed communicable disease control component. Consistent with the (in principle) view that assessment of public health expenditure must reflect the broader issues in relation to public health rather than specific programs, Tasmania supported the view that HIV/AIDS expenses should cease to be separately identified.

155. **Needle and syringe programs.** New South Wales submitted that an assessment for expenses on needle and syringe programs should be based on the number of new hepatitis C diagnoses, because studies in hepatitis C risk factors indicated that around 80 per cent of people diagnosed with hepatitis C were infected through injecting drug use.

156. Victoria supported expenses on needle and syringe programs being assessed based on the drug using population. As a proxy for the drug using population, Victoria supported the use of the number of hepatitis C diagnoses and opioid overdoses. It said the use of methadone clients was not an accurate proxy for the drug using population. Data collection methods varied between States, resulting in a lack of comparability of data. The measure was policy contaminated as State policies could affect the number of methadone users. For example, in Victoria some alternative treatments were used instead of methadone. If the number of methadone users were used in the assessment, Victoria submitted appropriate adjustments would be required to also include users of alternative treatments.

157. Western Australia said that New South Wales' measures of drug users were not reliable. It said the number of methadone clients had two problems:

- (i) not all injecting drug users were treated with methadone and the availability of methadone treatment varied between States, partly because of alternative treatments and State policy decisions; and
- (ii) some people being treated with methadone were taking heroin by means other than injection.

158. Western Australia said the number of hepatitis C diagnoses had similar problems:

- (i) not all injecting drug users had hepatitis C; and
- (ii) not all people diagnosed with hepatitis C had been injecting drug users.

159. Western Australia said the number of opioid deaths was dependent in part on policy affected factors, such as the treatment options available and the availability of heroin. It cited alternative data from the AIHW's 2001 National Drug Strategy Household Survey that showed Western Australia as having 19 300 injecting drug users in 2002 — a higher absolute number than any other State.

160. The ACT said a large component of communicable disease control related to HIV/AIDS, Hepatitis C, sexually transmitted infections, and needle and syringe programs. These programs generally targeted young people, who were otherwise healthy. Therefore, it did not consider health status to be a good measure of the presence of target populations for these activities.

161. *Other communicable disease control.* New South Wales said the tuberculosis rate among overseas born people was 15 times higher than Australian born people. It cited a New South Wales epidemiological review which identified that between 1995 and 2000, 80 per cent of the total notifications for tuberculosis were in people who were born overseas.

162. To control tuberculosis and provide specialised health services, New South Wales Health was operating chest clinics. This care was provided regardless of residency status or Medicare eligibility. In 2002, there were about 10 000 people registered with chest clinics, which was 25 per cent more than the previous year. This trend was expected to continue because of amendments to immigration regulations.

163. New South Wales said the low-English fluency adjustment should be retained.

164. The Northern Territory supported the separate assessment of communicable diseases because they had a significant impact on its budget. It said the Commission had not made clear what diseases would be included in the communicable disease component. The Northern Territory said that the key diseases listed in its submission should be included.

165. *Analysis and Commission decisions.* *HIV/AIDS, hepatitis C and STI.* We have re-considered the proposal to separately assess expenditure on HIV/AIDS, hepatitis C

and STI. It is not clear to us that the kinds of public health services provided in relation to communicable disease control (such as surveillance systems, screenings, recording, notification and reporting systems, contact tracing, prevention and education programs) differ significantly for those for HIV/AIDS, hepatitis C and STI. Therefore, we will assess expenditure on HIV/AIDS, hepatitis C and STI together with all other communicable diseases.

166. It appears that the provision of services related to communicable disease control are largely driven by rates of infection, whereas treatment services are driven more by the number of people living with disease. As treatment services are not accounted for in this category, the assessment will be based on rates of infection for all communicable diseases in total. These come from the National Notifiable Diseases Surveillance System and the HIV/AIDS, Viral Hepatitis and Sexually Transmissible Infections in Australia Annual Surveillance Report, and are shown in Table 29.

167. Table 29 shows that Queensland, Western Australia, South Australia and, particularly, the Northern Territory have an above average rate of communicable disease.

**Table 29** COMMUNICABLE DISEASE, RATES PER 100 000

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
2001	471.89	471.82	678.70	637.30	614.74	442.58	433.91	2789.18	655.80

Source: 2001 Annual report of the National Notifiable Diseases Surveillance System, Department of Health and Aged Care; 2002 HIV/AIDS, Viral Hepatitis and Sexually Transmissible Infections in Australia Annual Surveillance Report.

168. Because we now have actual rates of disease, we no longer intend to use health status as a proxy for the need for communicable disease control expenditure. Also, disease rates are largely driven by socio-demographic characteristics of the population, such as Indigeneity. Therefore, we will not make adjustments for such characteristics, because to do so could involve double counting.

169. New South Wales' needs in relation to tuberculosis will be accounted for because tuberculosis is included in the total rate of communicable disease.

170. The Commission accepts that a conceptual basis exists for the assessment of costs related to communicable disease control. The conceptual case is supported by data. The Commission is satisfied those data are comparable and representative and provide a strong basis for an assessment. The Commission thinks that separately assessing particular diseases would not improve equalisation, and has decided to assess communicable disease control costs using rates of all diseases in total.

171. **Low English fluency.** That a proportion of people with low English fluency need interpreter services when dealing with medical professionals is well recognised and supported by data. The extra costs associated with the use of interpreters have a material impact on State budgets.

172. In the absence of information to the contrary, the Commission has decided to continue the 1999 Review approach of applying a weighting of 1.5 for low English fluency. This weight will be applied to all people with low English fluency in the relevant age groups.

173. *Needle and syringe programs.* We accept that a conceptual case exists for recognising needs relating to needle and syringe programs. Data on the size of the drug injecting population are available as an indicator of the size of the problem in each State. We note that there are material differences in the proportion of injecting drug users in each State's population. Therefore, the Commission has decided to assess needs for expenses on needle and syringe programs based on the size of the drug injecting population in each State.

174. We accept that there are good reasons for not using the measures suggested by New South Wales. We will use statistics from the 2001 National Drug Strategy Household Survey (NDSHS) conducted by the AIHW for the assessment, as shown in Table 30. The 2001 NDSHS is the most comprehensive survey concerning legal and illicit drug use undertaken in Australia. Almost 27 000 people aged 14 years and over provided information on their drug use patterns, attitudes and behaviours. In the context of a household survey, drug use is likely to be under-reported because it is an illegal and stigmatised behaviour, and because many drug users do not reside in households.<sup>2</sup> However, we have no reason to consider that the underestimation of the number of drug users due to these reasons would differ significantly between States.

**Table 30** RECENT<sup>(a)</sup> INJECTED DRUG USE: ESTIMATE OF THE POPULATION AGED 14 YEARS AND OVER

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Injecting drug users aged 14 years and over	18 000	17 700	18 700	19 300	9 600	3 700	800	2 700	90 800
Proportion of population aged 14 years and over who are injecting drug users (%)	0.3	0.5	0.6	1.3	0.8	1.0	0.3	1.8	0.6

(a) Used in past 12 months.

Source: AIHW, 2001 National Drug Strategy Household Survey, State and Territory Supplement.

175. **Low English fluency.** That a proportion of people with low English fluency need interpreter services when dealing with medical professionals is well recognised and supported by data. The extra costs associated with the use of interpreters have a material impact on State budgets.

<sup>2</sup> *Estimating the number of dependent opioid users in Australia*, National Drug and Alcohol Research Centre.

176. In the absence of information to the contrary, the Commission has decided to continue the 1999 Review approach of applying a weighting of 1.5 for low English fluency. This weight will be applied to all people with low English fluency.

**Table 31** COMMISSION DECISIONS: SOCIO-DEMOGRAPHIC COMPOSITION FACTOR — COMMUNICABLE DISEASE CONTROL COMPONENT

Decision	Reason
The factor will be assessed using actual rates of disease and numbers of injecting drug users, weighted for low English fluency.	Expenditure is driven largely by rates of disease and numbers of injecting drug users. We have good data on rates of communicable disease and numbers of injecting drug users.

177. *Proposed method and results. Needle and syringe programs.* Table 32 shows the derivation of the socio-demographic composition factor for needle and syringe programs.

**Table 32** DERIVATION OF SOCIO-DEMOGRAPHIC COMPOSITION FACTOR FOR NEEDLE AND SYRINGE PROGRAMS

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Total number of injecting drug users aged 14 and over, 2001	18 000	17 700	18 700	19 300	9 600	3 700	800	2 700	90 500
Weighted for low English fluency	18 109	17 784	18 802	19 417.6	9 632	3 711	803	2 766	90 987
Proportion of population who are injecting drug users	0.36	0.48	0.68	1.36	0.82	1.03	0.33	2.04	0.61
Factor (State proportion/Aust proportion)	0.58914	0.77982	1.11248	2.21531	1.33045	1.67521	0.53761	3.33045	1.00000

178. *Other communicable disease control.* Table 33 shows the derivation of the socio-demographic composition factor for other communicable disease control.

**Table 33** DERIVATION OF SOCIO-DEMOGRAPHIC COMPOSITION FACTOR FOR OTHER COMMUNICABLE DISEASE CONTROL

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Rates of communicable disease per 100 000, 2001	471.89	471.82	678.70	637.30	614.74	442.58	433.91	2789.18	655.80
Rates weighted for low English fluency	481.09	481.38	682.77	643.48	621.50	443.50	437.86	2 894.79	665.71
Factor (State rate/Aust rate)	0.72267	0.72311	1.02563	0.96661	0.93359	0.66621	0.65774	4.34841	1.00000

179. Each of the two factors will be applied to the relevant proportion of State expenditure in this component, as shown in Table 34. From the table, the expenditure weights would be:

- (i) needle and syringe exchange – 12.9 per cent; and
- (ii) other communicable disease control – 87.1 per cent.

**Table 34** STATE EXPENDITURE ON COMMUNICABLE DISEASE

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
HIV/AIDS, hep C and STI	32.7	11.8	6.1	n/a	7.3	1.3	1.5	2.4	63.1
Needle & syringe exchange	11	0.3	2.5	n/a	0.9	0.4	0.4	0.0	15.5
Other communicable disease	10.5	11.5	8.7	n/a	3.3	0.6	0.7	6.2	41.5
Total	54.2	23.6	17.3	n/a	11.5	2.3	2.6	8.6	120.1

Source: National Public Health Expenditure Report, 1999-2000, AIHW.

Note: n/a means not available

180. Table 35 shows the combined factor.

**Table 35** COMBINED SOCIO-DEMOGRAPHIC COMPOSITION FACTOR FOR THE COMMUNICABLE DISEASE COMPONENT

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Factor	0.70512	0.72999	1.03621	1.12646	0.98405	0.79544	0.64194	4.21525	1.00000

181. **Updateability.** Most data used in the calculation of these factors are available annually. We therefore propose to update the socio-demographic composition factors each year.

182. **Reality check.** Consistent with expected results, Queensland, Western Australia and the Northern Territory, who have greater than average rates of communicable disease, have factors above one.

### **INPUT COSTS FACTOR**

183. **1999 Review.** The input costs factors assessed for the population health component, which included communicable disease control, were the same as those for the fixed costs component.

184. **2004 Review.** The Commission considers that approach remains appropriate for the 2004 Review because the proportion of standard expenses affected by the input costs factors in the fixed costs and communicable disease control components would be similar. The input costs factors shown in Table 6 have also been applied in the communicable disease control component.

### **DISPERSION FACTOR**

185. **1999 Review.** The dispersion factors assessed for communicable disease control were the same as those for breast cancer screening.

186. **2004 Review.** The Commission considers that approach remains appropriate for the 2004 Review because the proportion of dispersion-affected costs in the communicable disease control and breast cancer screening components would be similar. The dispersion factors shown in Table 12 have also been applied in the communicable disease control component.

### **CROSS-BORDER FACTOR**

187. **1999 Review.** A cross-border factor was applied to the population health component (which included communicable disease control expenditure) to recognise the additional costs the ACT incurred in providing population health services to residents of New South Wales. The factor was assessed using the general method. It was based on 25 per cent of the total population in the Queanbeyan, Yass, Yarrowlumla and Gunning LGAs, and 10 per cent of the total population in the Bega Valley, Bombala, Boorowa, Cooma-Monaro, Crookwell, Eurobodalla, Goulburn, Harden, Mulwaree, Snowy River, Tallaganda and Young LGAs.

188. **Preliminary State views.** New South Wales said that there was no firm evidence of cross-border flows for public health services and that cross-border factors were therefore not warranted in any component in the Population and Preventive Health category.

189. The ACT considered the assessment inadequate and asked that its modified general method, based predominantly on hospital separations, be applied in this category.

190. **Staff proposals.** Commission staff were inclined to recommend that a cross-border factor be applied to all public health service delivery components, but noted that more evidence would be desirable.

191. **Further State views.** No further State views were received on whether a cross-border factor should be assessed in this component.

192. **Commission decisions.** *Draft Assessment Paper CGC 2003/68 Cross Border Factors* discusses the general arguments of the ACT and the other States on the assessment of cross-border costs. It sets out the Commission’s general decisions on cross-border assessments for the 2004 Review.

193. The Commission accepts that the location of the ACT within New South Wales results in it incurring net additional costs in providing communicable disease control services to New South Wales residents. There is, thus, a conceptual case for assessing cross-border factors to recognise the net additional costs incurred by the ACT as a result of the additional demand for ACT communicable disease control services. Data on the actual net cross-border use of ACT services are not available to assess these influences. However, the evidence indicates that cross-border influences have an impact on the ACT’s budget which the Commission considers to be material. The strength of the conceptual case and the indications provided by the evidence available are sufficient for the Commission to conclude that equalisation would be improved by assessing cross-border influences for this component. In the absence of information to the contrary, the Commission has decided to retain the 1999 Review populations used in the calculation of this factor.

194. Table 36 summarises the Commission’s decision.

**Table 36** COMMISSION DECISION — CROSS-BORDER FACTORS, ORGANISED IMMUNISATION COMPONENT

Decision	Reason
A cross-border factor was assessed for the communicable disease control component using the 2004 Review general method. The factors were based on 25 per cent of the total population in the Queanbeyan, Yass, Yarrowlunla and Gunning LGAs and 10 per cent of the population in the Bega Valley, Bombala, Boorowa, Cooma-Monaro, Crookwell, Eurobodalla, Goulburn, Harden, Mulwaree, Snowy River, Tallaganda and Young LGAs.	Gives the ACT the capacity to provide the average level of services by assessing the additional costs that it incurs in providing communicable disease control services to New South Wales residents.

195. **Proposed method and results.** The cross-border factors for this component, shown in Table 37, have been calculated according to the 2004 Review general method. They used 25 per cent of the total population in the Queanbeyan, Yass, Yarrowlumla and Gunning LGAs and 10 per cent of the population in the Bega Valley, Bombala, Boorowa, Cooma-Monaro, Crookwell, Eurobodalla, Goulburn, Harden, Mulwaree, Snowy River, Tallaganda and Young LGAs.

**Table 37** 2004 REVIEW CROSS-BORDER FACTORS — COMMUNICABLE DISEASE CONTROL COMPONENT

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
All years	0.99576	1.00000	1.00000	1.00000	1.00000	1.00000	1.08739	1.00000

196. **Updateability.** Annual estimates of LGA resident populations will be used to update the cross-border factors.

## OTHER PUBLIC HEALTH SERVICES COMPONENT

197. The proposed other public health services component will cover:

- (i) selected health promotion activities (including activities fostering healthy lifestyle and a healthy social environment overall, and health promotion activities targeted at health risk factors. Such programs include health planning, public health nutrition, exercise and physical activity, personal hygiene, mental health awareness promotion, sun exposure and protection, injury prevention including suicide prevention and female genital mutilation);
- (ii) environmental health (including activities such as rodent control, chemical regulation, water quality control and radiation safety control);
- (iii) food standards and hygiene (including activities such as development and surveillance of food standards, and education such as food safety awareness campaigns);
- (iv) cervical cancer screening;
- (v) prevention of hazardous and harmful drug use; and
- (vi) public health research.

198. The other public health services component will recognise that socio-demographic composition, input costs and dispersion disabilities affect costs.

## **SOCIO-DEMOGRAPHIC COMPOSITION FACTOR**

### ***1999 Review***

199. No socio-demographic composition factor was assessed for the population health component, which included the majority of services included in the 2004 Review other public health services component. The then Commission considered that the majority of population health services were aimed at the whole population. The cost of providing policy formulation, promotional and education services was not considered to be affected by the socio-demographic composition of State population.

### ***State views***

200. A number of States submitted that an assessment of socio-demographic composition disabilities should be made in the population health component.

### ***Staff proposals***

201. Staff agreed that socio-demographic composition disabilities should be assessed. Staff proposed to assess socio-demographic composition disabilities using a health status measure and a low English fluency cost weight.

202. The 2002 discussion paper proposed using health status as a measure of needs because:

- (i) no comprehensive use and cost data were available; and
- (ii) health promotion, the major expenditure item in this component, is related to the health status of the population.

203. Staff proposed to investigate possible measures of health status, including mortality, morbidity, disability and handicap, perceived health and risk factor indicators.

### ***Issues***

204. The issues to be dealt with in calculating a socio-demographic factor for this component are which socio-demographic characteristics affect the use and cost of services included in this component and how the necessary use and cost weights might be measured. Attachment A contains an overview of our consideration of research on these issues. In

particular, it covers the research and debate on the use of health status as an indicator of the use of public health services.

205. **Commission decision.** On the basis of the material in the attachment, the Commission has concluded that there is a conceptual case that socio-demographic characteristics affect the use and cost of services included in the other public health services component. The socio-demographic composition factors that appear to have a material effect on service use are the age-sex distribution of the population, socio-economic status, Indigeneity. Low English fluency has an effect on the costs of providing the services.

206. In some of these cases there are data on the use of services by people in the population group and the costs of providing the services to them. But in other cases, that direct data on the use of services by people in the population sub-groups is not available. For example, there is no direct data on the use of services by people in various age groups.

207. However, the research outlined in the attachment does strongly indicate that self-assessed health status is a good proxy for the use of health services and mortality. In addition, the data on self-assessed health status can be dissected by some socio-demographic characteristics, such as age, sex and income. We therefore propose to derive indicators of relative levels of service use for age and income groups from the relative levels of self-assessed health status. At its simplest, if the data on health status suggest that, across Australia, people in a certain age group are 'x' times more likely to have low health status than people in a base age group, we will assume that they use public health services 'x' times more than the population of the base group.

208. However, where we have direct data on the use of public health services by people in some sub-groups, those data will be used to derive the use weights. To avoid double-counting, those use weights will be adjusted to remove the effects of other socio-demographic characteristics of the sub-group.

### ***Age-sex***

209. **Further State views.** South Australia submitted that, in its experience, major health risk factors were highly correlated with population groups that were ageing, and that health campaigns and prevention programs were targeted at these high risk groups (that is, smokers, those suffering hypertension, those with poor diet, the overweight and obese, the physically inactive) rather than the general population. Some of the risk factors that were more prevalent in this group (compared to the general population) included physical

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<sup>3</sup> Mathers, C; Murray, C; Salomon, J; Sadana, R; Tandon, A; Lopez, A; Ustun, B & Chatterji, S, Healthy life expectancy: comparison of OECD countries in 2001. *Australian and New Zealand Journal of Public Health*, 2003, Vol 27, No.1.

<sup>4</sup> Public Health Division, Department of Human Services Victoria, Victoria's Health – Second Report on the Health Status of Victorians, 1995.

<sup>5</sup> Idler, E & Kasl, S, Health Perceptions and Survival: Do Global Evaluations of Health Status Really Predict Mortality? *Journal of Gerontology*, 1991, Vol 46, No.2.

<sup>6</sup> Kristensen, T; Bjorner, J; Smith-Hansen, L; Bjorg, W & Skov, T, Self-rated Health and Work Environment, 1998.

<sup>7</sup> McCallum, J; Shadbolt, B & Wang, D, Self-rated Health and Survival: A 7-year Follow-Up Study of Australian Elderly. *American Journal of Public Health*, 1994, Vol 84, No.7.

inactivity, poor diet/nutrition, overweight and obesity (all of which increase susceptibility to Stage 2 diabetes), and hypertension.

210. **Commission decisions.** The Commission accepts that there is a conceptual case for assessing additional costs associated with providing other public health services to people from different age-sex groups. Because there are no comprehensive demand and cost data relating to the use of other public health services by people from different age-sex groups, the Commission has decided to use the data on self-assessed health status, disaggregated by age and sex to derive the use and cost weights for each age and sex group.

### ***Socio-economic status***

211. **Further State views.** New South Wales suggested that a factor for socio-economic status should be included in any factor based on general health status.

212. Queensland said that the AIHW, in its publication *Australia's Health 2002*, indicated significantly higher levels of health risk factors for the socio-economically disadvantaged. Queensland also reported that an ABS survey<sup>8</sup> found that the more socioeconomically disadvantaged made greater use of doctors and outpatient/casualty services, but were less likely to use preventive health services.

213. South Australia said that, in its experience, major health risk factors were quite highly correlated with population groups that were socio-economically disadvantaged, and that health campaigns and prevention programs were targeted at these high risk groups (that is, smokers, those suffering hypertension, those with poor diet, the overweight and obese, the physically inactive) rather than the general population. Some of the risk factors that were more prevalent in this group (compared to the general population) included smoking, drug/alcohol abuse, poor diet/nutrition, physical inactivity, overweight and obesity, low education (particularly regarding personal hygiene, birth control and so on).

214. Tasmania said that a weight should be introduced to the socio-demographic composition factor to acknowledge the additional effort needed to assist low socio-economic status households to change and improve their health care activities.

215. Tasmania said that poor socio-economic status had a direct impact on the need for public health programs. It said that research for the *National Health Strategy*<sup>9</sup> found that of all people in the community, those of low socio-economic status were most likely to suffer disability, to have a serious chronic illness, to have suffered recent illnesses, and to report being only in fair/poor health.

216. **Commission decisions.** The Commission accepts that there is a conceptual case for assessing additional costs associated with providing other public health services to people with low socio-economic status. However, there are no comprehensive data that directly measure the different levels of use of public health services by people in different

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<sup>8</sup> ABS, Health and socio-economic disadvantage of area in Australian social trends, *ABS Cat. No. 4102.0, 1999*.

<sup>9</sup> Enough To Make You Sick: How Income and Environment Affect Health. *National Health Strategy Research Paper, No. 1*.

socio-economic groups or the different costs of providing the services to different socio-economic groups.

217. The health status data are however disaggregated by income groups. Because we have concluded that self-assessed health status is a good indicator of use of public health services, we propose to use the relative levels of health status of people in different income groups to measure the relative use rates of people in different income groups.

218. As we have done in other categories where income is used as the indicator of socio-economic status, we have used the Henderson scale to adjust income weights to reflect different family structures will also continue.

### ***Indigeneity***

219. ***Further State views.*** Victoria said one of the Commission's intended purposes of the proposed health status factor was to account for additional costs of providing services to the Indigenous population. It said the Commission already separately applied two factors that recognised the increased cost of providing services to Indigenous people, namely low-English fluency and dispersion. It was unclear to Victoria what other additional costs relating to the Indigenous population the health status factor was proposed to account for. It also questioned whether such costs had been empirically proven to exist. Victoria said that, to date, robust, quantitative evidence had not been made available to it.

220. Queensland said that Australian Institute of Health and Welfare (AIHW) data, in its publication *Australia's Health 2002*, indicated significantly higher levels of health risk factors for Indigenous people. Health risk factors (for example, smoking, alcohol misuse, poor housing, exposure to violence) were important determinants of health. Health risk factors identified among the Indigenous population included higher than average levels of low birth weight, obesity, poor diet, alcohol dependency, illicit drug use, petrol sniffing, and overcrowding. Hence, Queensland said there was evidence that socio-demographic factors needed to take account of the higher needs of Indigenous people, more specifically, for Indigenous people living outside metropolitan regions. It said that specific programs developed by the Aboriginal and Torres Strait Islander Health Unit within Queensland Health were aimed towards the Indigenous population.

221. The Northern Territory said that, if a health status measure were used to assess socio-demographic composition disabilities, it would not capture the additional costs associated with delivering public health services to people with low English fluency and the Indigenous population because it would only be a measure of demand. Other factors would be necessary to account for the additional costs.

222. The Northern Territory submitted that a component for chronic diseases should also be assessed. It noted that over 29 per cent of the Northern Territory's public health budget was spent on chronic diseases, an amount greater than that spent on communicable diseases.

223. The Northern Territory recommended the introduction of separate factors to account for the need to conduct original research and for expenses incurred as a result of its high rates of mortality and unique disease profile. The Territory noted that many of these additional costs were related to its Indigenous population, so an alternative option would be to recognise these needs in an Indigeneity factor.

224. The Northern Territory cited the 2001 AIHW report on expenditures on health services for Aboriginal and Torres Strait Islander People as giving an indication of the relative expense (per person) on health research and administration for Indigenous and non-Indigenous people. The report indicated that the Northern Territory's ratio (Indigenous/non-Indigenous) for health research expense and administration expenses were 14.36 and 1.75 respectively. The national averages were 1.37 and 3.32 respectively. These values demonstrated the additional cost of providing services to Indigenous people and the greater level of expense incurred by the Territory in servicing its large Indigenous population.

225. The Northern Territory noted the Commission's view that if, for example, the health status of Indigenous people was three times worse than non-Indigenous people, but public health expense was only 1.5 times more for Indigenous people, some discounting of the health status factor might be appropriate. The Territory did not support this proposal. It argued that mortality rates were a measure of demand while expenses reflected unit costs, met (but not unmet) demand, policy choice and budget constraints so the two measures were not directly comparable. Furthermore, the national average of expenses was likely to be much lower than the average of expenses of States with large Indigenous populations.

226. **Commission decisions.** The Commission accepts that there is a conceptual case for assessing additional costs associated with providing public health services to Indigenous people. There is strong evidence that States spend more on Indigenous people for public health services. The AIHW Report on Indigenous Health Expenditure showed that the national average expenditure on providing public and community health services to Indigenous people was 3.6 times (after adjusting for the size of the Indigenous population used by the Commission) that on non-Indigenous people. As the AIHW report reflects actual service use and costs, we consider this is the best source to use in deriving an Indigeneity weight. This also addresses Victoria's concerns about health status being used to account for Indigenous costs. The Commission decided to apply a weight of 3.6 to all Indigenous people in this component, based on the AIHW report. To avoid double-counting, the weight was adjusted to exclude effects of age-sex and income taken into account in other parts of the factor (see below).

227. The Northern Territory's expenses on chronic disease will be accounted for in this component. Therefore the Commission decided a separate chronic disease component was unnecessary. The proposed Indigeneity weight will allow for the additional costs of chronic disease because those extra costs largely relate to Indigenous people.

228. The Commission decided not to specifically recognise the Northern Territory's level of expenditure on Indigenous research on the grounds that all States are likely to have some specialised research in areas of interest to them.

### ***Cultural and linguistic diversity***

229. ***Further State views.*** New South Wales said that recently arrived migrants were less likely to engage in preventive health partly due to low level of awareness of health issues. It said it needed to spend more on this group to raise the level of awareness. New South Wales provided data to support its argument.

230. New South Wales advised the Commission that it had established designated multicultural units as a contact point for the New South Wales Health system for newly arrived migrants and actively promoted its service through the Migrant English Centres. This was to improve health related behaviour and access to health services

231. Victoria said the low-English fluency weighting was too low and should be increased to account for the cost of providing culturally acceptable and effective population and preventative health services to people from non-English speaking background (NESB). Victoria said that low-English fluency and NESB were large drivers of additional costs for population and preventative health services. It said the cost of providing services to the NESB population was not limited to the translating/interpreting costs associated with low-English fluency. Migrant populations from NESB provided many additional demands for these public health services. It said that evidence of this was in its main submission.

232. Victoria said that, to combat the health problems associated with migrants from NESB, it had implemented numerous targeted public health and drug initiatives, including rubella education targeting women from South East Asian countries and China, a thalassemia service of DNA testing and counselling for families and individuals with an increased risk of thalassemia (particularly from the Mediterranean Sea, the Middle East and Asia), immunisation and communicable diseases programs aimed at improving immunisation levels of hard to reach/at risk groups including children of recently arrived migrants. The total expenses for 2002-03 on NESB populations were estimated at \$1.14 million. The total budget in Public Health and Drugs Output Group for externally provided services was \$174.6 million. Thus, Victoria concluded that the Commission should increase the low-English fluency weighting to reflect the costs of translating/interpreting and the costs associated with specific public health programs aimed at NESB clients.

233. Queensland and the Northern Territory said that AIHW data, in its publication *Australia's Health 2002*, indicated that the stringent health requirements for immigration ensure that most migrants have good health. Data indicated that both mortality and hospital separation ratios were significantly lower than the Australian born population. Queensland said that risk factors for the Australian born population appeared to be generally higher than for the migrant population. It said that any weight associated with culturally and linguistically diverse groups should be limited to, and based on, additional costs identified with low English fluency.

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<sup>10</sup> ABS, Health and socio-economic disadvantage of area in Australian social trends, *ABS Cat. No. 4102.0, 1999*.

<sup>11</sup> Enough To Make You Sick: How Income and Environment Affect Health. *National Health Strategy Research Paper, No. 1.*

234. South Australia said that the current weight of 1.5 for low English fluency was more than sufficient to account for the additional costs associated with NESB populations.

235. The Northern Territory said that, in general, migrants did not appear to be associated with additional demand, and additional unit costs primarily arise from language barriers. However, the Northern Territory did experience additional costs associated with illegal foreign nationals. The Northern Territory said Indonesian fishermen posed a public health threat in respect of tuberculosis, malaria and other contagious diseases. These illegal aliens were not screened in terms of their health requirements because they did not enter Australia through normal immigration channels. The Northern Territory concluded that the costs of addressing the health risk that they posed might be best accounted for in the Corrective Services category rather than the Population and Preventive Health category given their entry mode resulted in imprisonment.

236. The Northern Territory made a number of points in relation to the cultural diversity of Indigenous groups. It said that it was more difficult, however, to make an equivalent generalisation about, and assess the magnitude of costs for, other CALD groups except in relation to low-English fluency.

237. **Analysis.** It is not possible to present a clear picture of how NESB might affect the use of public health services because it is difficult to disentangle the combined effects of migration, cultural factors, health selection and socio-economic status. But what we know is that, according to the AIHW in its publication *Australia's Health 2002* and the ABS 2001 NHS:

- (i) recently arrived migrants enjoy better health than average, although this may not be the case for refugees and migrants arriving under the family reunion program;
- (ii) the advantage due to recent arrival disappears over time;
- (iii) NESBs are not a homogenous group;
- (iv) some NESB groups suffer specific health conditions such as diabetes;
- (v) NESBs use inpatient services less than average, but non-inpatient, community health and doctor services more than average; and
- (vi) some States, at least, have special programs for NESBs.

238. The evidence we have, both from States and other sources, is conflicting. It is not clear to us that recently arrived migrants or people with NESB use other public health services more than average. If they do, it is not clear whether this is over and above factors already accounted for in the assessment, such as socio-economic status.

239. **Commission decisions.** The evidence does not support a conceptual case for introducing a separate adjustment for use of services by people from NESB. The assessment of low socio-economic status may capture the higher demand from people from

NESB. Therefore, the Commission has decided not to introduce an adjustment for use rates for people from NESB.

240. The Commission accepts that a conceptual basis exists for a cost weighting for low English fluency because services such as providing promotional health material in a range of languages results in additional costs. However, we do not have any evidence that would justify increasing the 1999 Review weighting of 1.5 for low English fluency. The Victorian cost data indicate that only 0.65% of its public health budget was spent on NESB populations in 2002-03. We consider that this amount is not material enough to justify increasing the weight. Thus, the Commission has decided to continue the 1999 Review approach of applying a weighting of 1.5 for low English fluency.

**Remoteness**

241. **Further State views.** Queensland said that AIHW data, in the publication *Australia’s Health 2002*, indicated people in remote areas have higher levels of health risk factors than people in non-remote areas. Some of the risk factors for poor health for which rural data are available are physical inactivity, overweight, smoking, hazardous or harmful alcohol consumption and high blood pressure. The AIHW recognised that the higher risk factors of rural and remote communities may result from higher than average numbers of Indigenous people and people with lower than average incomes.

242. **Commission decisions.** The Commission does not consider, on balance, that a conceptual case has been made for the existence of remoteness disabilities influencing public health expenditure, beyond the effects of Indigeneity, socio-economic status and dispersion. The Commission therefore decided not to make an assessment of remoteness in this component.

**Summary of Commission decisions**

243. The Commission’s decisions are summarised in Table 38.

**Table 38** COMMISSION DECISIONS – SOCIO-DEMOGRAPHIC COMPOSITION FACTOR — OTHER PUBLIC HEALTH COMPONENT

Recommendation/Decision	Reason
A socio-demographic composition factor will be assessed, based on age-sex, income, Indigeneity and low English fluency.	There is evidence that States spend more on people with certain socio-demographic characteristics.
Health status will be used to obtain use weights for age-sex and income.	There are no direct data on the use and cost of services for these characteristics. Evidence indicates that it is the health status of these population groups that drives additional public health expenditure.
Indigeneity will be assessed using data from the AIHW report on Indigenous health expenditure	This data shows actual expenses on Indigenous people.

244. ***Proposed method and results.*** The socio-demographic composition factor will recognise the following disabilities.

- (i) age-sex;
- (ii) Indigeneity;
- (iii) income; and
- (iv) low English fluency.

245. 2001 NHS data were used to derive self-assessed health status weights for age, sex and income.

246. Table 39 shows the estimated numbers of people with high (calculated by adding the number of people who rated their health as excellent, very good or good) and low (calculated by adding the number of people who rated their health as fair or poor) and low health status, from the 2001 NHS. People aged 0 to 14 were not asked to rate their health in the NHS.

**Table 39** SELF-ASSESSED HEALTH STATUS BY AGE AND SEX

Age	Self-assessed health status	Male	Female	Total
0 to 4	High	na	na	na
	Low	na	na	na
5 to 14	High	na	na	na
	Low	na	na	na
15 to 24	High	1 198 958	1 131 805	1 198 958
	Low	106963	130660	106 963
25 to 44	High	2 468 176	2 564 917	2 468 176
	Low	346 869	345 725	346 869
45 to 54	High	1 059 422	1 051 230	1 059 422
	Low	239 212	266 660	239 212
55 to 64	High	614 484	675 663	614 484
	Low	285 179	221 821	285 179
65 to 74	High	426 277	475 159	426 277
	Low	194 191	187 876	194 191
75+	High	248 165	349 747	248 165
	Low	151 214	226 370	151 214
Total high		6 015 483	6 248 522	12 264 004
Total low		1 323 629	1 379 112	2 702 741

Source: ABS 2001 National Health Survey.

247. Table 40 calculates the ratios (number with low health status divided by number with high) and the resulting weights (ratios for each age-sex group divided by total use ratios). Weights for the 0 to 4 and 5 to 14 age groups were calculated by averaging the weights for the 15 to 24, 25 to 44, 45 to 54 and 55 to 64 age groups — the 65+ age groups were not included because they have much lower health status than the rest of the population.

**Table 40** AGE-SEX RATES AND WEIGHTS FOR LOW HEALTH STATUS

Age	Sex	Proportion with low health status	Weight (proportion divided by total proportion)
0 to 4	Male	na	na
	Female	na	na
5 to 14	Male	na	na
	Female	na	na
15 to 24	Male	0.089	0.70
	Female	0.115	0.63
25 to 44	Male	0.141	0.70
	Female	0.135	0.63
45 to 54	Male	0.226	0.40
	Female	0.254	0.52
55 to 64	Male	0.464	0.64
	Female	0.328	0.61
65 to 74	Male	0.456	1.02
	Female	0.395	1.15
75+	Male	0.609	2.11
	Female	0.647	1.49
Total		0.220	2.07

248. Low health status incidence weights were assessed for people with low incomes to reflect their greater likelihood of having low health status. Analysis of 2001 NHS data, including the use of Henderson Scales to adjust income levels to reflect different family structures, showed that people with low incomes reported having low health status at a rate 2.79 times that of others. The calculation is shown in Table 41.

**Table 41** CALCULATION OF INCOME WEIGHTS FOR OTHER PUBLIC HEALTH SERVICES

	High Income	Low Income	Not Stated
Rated health as low	533 932	1 541 374	627 435
Rated health as high	5 312 565	4 511 320	2 503 861
Total	5 846 496	6 052 694	3 131 296
Proportion	0.0913	0.2547	0.2004
Weight (incidence of low health as a proportion of high health)	1	2.7885	

Source: ABS 2001 NHS data.

249. It was considered that this weight included double counting based on the different age-sex structure of the low income population. That is, some of the greater incidence of low health status was because people with low incomes tended to be in the age groups which have a greater incidence of low health status (or vice versa). Before this low income weight was used in the calculation of the joint socio-demographic composition factor, it was adjusted for the effects of age and sex. The method for doing this was similar to that used to adjust the Indigeneity weights below.

250. After the age and sex adjustment, the weight changed from 2.79 to 1.93, indicating that the raw weight over-estimated the greater needs of people with low incomes because they were more likely to be in the age-sex groups with greater incidence of low health status.

251. A weight for Indigenous people was derived from data in the *AIHW Report on Expenditures on Health Services for Aboriginal and Torres Strait Islander People, 1998-99*. This report showed that per capita spending on Indigenous people for public and community health services was 4.04 times the expenditure per non-Indigenous person.

252. The report used an Indigenous population from the ABS 1998 experimental estimates, which was different from that used by the Commission. When updated to the current Indigenous population, the Indigenous weight fell to 3.6.

253. This weight reflects all the factors that affect the expenses incurred in providing services to Indigenous people, such as higher use rates, higher unit costs, interpreters and development of culturally sensitive services. Because of this, the weight was adjusted for age-sex and income before being multiplied by these weights in the calculation of the joint socio-demographic composition factor.

254. To remove double counting due to the differential age-sex structure of the Indigenous population, the age-sex and income weights were applied to the Indigenous and non-Indigenous populations to calculate the differences in use and cost of public health services by Indigenous people that would be entirely due to age, sex and income. This difference was then taken out of the Indigeneity weight.

255. Table 42 shows the age-sex-income weights.

**Table 42** TOTAL AGE-SEX-INCOME WEIGHTS FOR OTHER PUBLIC HEALTH SERVICES

Age	Sex	Income	Age-sex weight	Income weight	Total weight
0 to 4	Male	Low	0.70	2.79	1.94
		High	0.70	1.00	0.70
	Female	Low	0.63	2.79	1.75
		High	0.63	1.00	0.63
5 to 14	Male	Low	0.70	2.79	1.94
		High	0.70	1.00	0.70
	Female	Low	0.63	2.79	1.75
		High	0.63	1.00	0.63
15 to 24	Male	Low	0.40	2.79	1.13
		High	0.40	1.00	0.40
	Female	Low	0.52	2.79	1.46
		High	0.52	1.00	0.52
25 to 44	Male	Low	0.64	2.79	1.78
		High	0.64	1.00	0.64
	Female	Low	0.61	2.79	1.71
		High	0.61	1.00	0.61
45 to 54	Male	Low	1.02	2.79	2.86
		High	1.02	1.00	1.02
	Female	Low	1.15	2.79	3.21
		High	1.15	1.00	1.15
55 to 64	Male	Low	2.11	2.79	5.87
		High	2.11	1.00	2.11
	Female	Low	1.49	2.79	4.15
		High	1.49	1.00	1.49
65 to 74	Male	Low	2.07	2.79	5.76
		High	2.07	1.00	2.07
	Female	Low	1.79	2.79	5.00
		High	1.79	1.00	1.79
75+	Male	Low	2.76	2.79	7.71
		High	2.76	1.00	2.76
	Female	Low	2.94	2.79	8.19
		High	2.94	1.00	2.94

256. Table 43 disaggregates the Indigenous and non-Indigenous populations by age, sex and income.

**Table 43** NUMBERS OF INDIGENOUS AND NON-INDIGENOUS PEOPLE BY AGE-SEX AND INCOME STATUS

Age	Sex	Income	Indigenous Population	Non-Indigenous Population	Proportion of Indigenous Population.	Proportion of non-Indigenous Population.
0 to 4	Male	Low	12 951	429 402	0.02826	0.02346
		High	16 687	146 727	0.03641	0.00802
	Female	Low	13 152	452 430	0.02870	0.02472
		High	17 386	154 998	0.03794	0.00847
5 to 14	Male	Low	27 163	920 007	0.05927	0.05026
		High	30 081	321 091	0.06564	0.01754
	Female	Low	29 472	967 939	0.06431	0.05288
		High	31 730	340 420	0.06924	0.01860
15 to 24	Male	Low	18 230	830 632	0.03978	0.04538
		High	23 612	386 887	0.05152	0.02114
	Female	Low	21 105	917 588	0.04605	0.05013
		High	20 995	345 445	0.04581	0.01887
25 to 44	Male	Low	31 515	2 141 387	0.06877	0.11699
		High	35 272	632 071	0.07696	0.03453
	Female	Low	33 002	2 212 008	0.07201	0.12085
		High	28 685	474 950	0.06259	0.02595
45 to 54	Male	Low	9 541	979 827	0.02082	0.05353
		High	8 893	293 683	0.01940	0.01604
	Female	Low	9 435	1 023 762	0.02059	0.05593
		High	8 099	234 069	0.01767	0.01279
55 to 64	Male	Low	3 705	472 366	0.00808	0.02581
		High	5 833	392 826	0.01273	0.02146
	Female	Low	3 813	574 014	0.00832	0.03136
		High	4 887	301 912	0.01066	0.01649
65 to 74	Male	Low	1 509	211 554	0.00329	0.01156
		High	3 328	448 088	0.00726	0.02448
	Female	Low	1 147	229 138	0.00250	0.01252
		High	2 812	382 388	0.00614	0.02089
75+	Male	Low	690	171 049	0.00151	0.00935
		High	1 862	489 794	0.00406	0.02676
	Female	Low	503	136 617	0.00110	0.00746
		High	1 191	288 737	0.00260	0.01577
Total			458 286	18 303 806	1.00000	1.00000

Source: 2001 Census of Population and Housing.

**Table 44** INDIGENOUS AND NON-INDIGENOUS WEIGHTS DUE TO AGE, SEX AND INCOME — POPULATION PROPORTIONS MULTIPLIED BY AGE-SEX—INCOME WEIGHTS (FROM TABLE 42)

Age	Sex	Income	Indigenous Population	Non-Indigenous Population
0 to 4	Male	Low	0.0548	0.0455
		High	0.0253	0.0056
	Female	Low	0.0504	0.0434
		High	0.0239	0.0053
5 to 14	Male	Low	0.1149	0.0975
		High	0.0457	0.0122
	Female	Low	0.1129	0.0928
		High	0.0436	0.0117
15 to 24	Male	Low	0.0449	0.0512
		High	0.0209	0.0086
	Female	Low	0.0673	0.0732
		High	0.0240	0.0099
25 to 44	Male	Low	0.1223	0.2080
		High	0.0491	0.0220
	Female	Low	0.1228	0.2061
		High	0.0383	0.0159
45 to 54	Male	Low	0.0595	0.1529
		High	0.0199	0.0164
	Female	Low	0.0661	0.1795
		High	0.0203	0.0147
55 to 64	Male	Low	0.0475	0.1515
		High	0.0268	0.0452
	Female	Low	0.0346	0.1303
		High	0.0159	0.0246
65 to 74	Male	Low	0.0190	0.0666
		High	0.0150	0.0506
	Female	Low	0.0125	0.0626
		High	0.0110	0.0375
75+	Male	Low	0.0116	0.0720
		High	0.0112	0.0740
	Female	Low	0.0090	0.0611
		High	0.0076	0.0463
Total			1.3484	2.0949

257. When the age-sex-income weights were applied to the Indigenous and non-Indigenous populations above, a ratio of 0.64 was indicated. That is, the incidence of low health status for Indigenous people was 0.64 times that for non-Indigenous people based entirely on their age-sex-income profile.

258. The extra costs of Indigenous people, over and above their age-sex-income profile, was calculated by dividing the total Indigenous weight (3.6) by 0.64. This calculation gave an adjusted (no double counting) Indigenous weight of 5.57. This weight was applied to all Indigenous people in the calculation of the socio-demographic composition factor for other public health services. This calculation is shown in Table 45.

**Table 45** AGE-SEX ADJUSTMENT OF INDIGENEITY WEIGHT

	Weight
Ratio (from Table 14) (a)	0.6436
Indigeneity weight (b)	3.6
Age-sex adjusted Indigeneity weight (b/a)	5.5662

259. A cost weight of 1.5 was applied to people with low English fluency. The weight was not applied to Indigenous people, as any extra costs associated with language difficulties were captured in the weight already calculated for Indigenous people.

260. The socio-demographic composition factor for the other public health services component was calculated in the following way:

- (i) the weights for age-sex groups, Indigeneity, income and low English fluency (all outlined above) were applied to cross-tabulated 2001 Census data for each State and for Australia to derive weighted populations;
- (ii) the weighted population for each State and for Australia was divided by the unweighted population; and
- (iii) factors were derived by dividing the ratio for each State by the ratio for Australia.

261. The socio-demographic composition factors calculated for the other public health services component, using the weights and calculation method described above, are shown in Table 46.

**Table 46** SOCIO-DEMOGRAPHIC COMPOSITION FACTORS — OTHER  
PUBLIC HEALTH SERVICES COMPONENT

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	AUS
Population	6 332 166	4 669 129	3 517 735	1 822 841	1 468 918	458 898	308 589	183 817	18 762 092
Weighted population	9 661 644	6 742 448	5 474 261	2 780 607	2 342 536	7 758 38	368 898	487 722	28 633 955
Ratio	1.52580	1.44405	1.55619	1.52543	1.59474	1.69066	1.19544	2.65330	1.52616
Factors	0.99977	0.94620	1.01968	0.99952	1.04493	1.10778	0.78330	1.73854	1.00000

262. **Updateability.** Most of the data used in the calculations, particularly the NHS data, are not updated on an annual basis. Therefore, the socio-demographic composition factor in this component will not be updated.

263. **Reality check.** Consistent with expected outcomes, States with greater than average proportions of people in groups who have higher incidence of low health status, such as Indigenous people (Queensland and the Northern Territory) and people with low income (Tasmania), have factors above one.

### INPUT COSTS FACTOR

264. **1999 Review.** In the 1999 Review, the input costs factors assessed for the population health component, which included other public health services, were the same as those for the fixed costs component.

265. **2004 Review.** The Commission considers that approach remains appropriate for the 2004 Review because the proportion of standard expenses affected by the input costs factors in the fixed costs and other public health services components would be similar. The input costs factors shown in Table 6 have also been applied in the other public health services component.

### DISPERSION FACTOR

266. **1999 Review.** In the 1999 Review, no dispersion factor was assessed for the population health component.

267. **2004 Review.** The Commission noted that the expenses incurred in providing the services included in the other public health component are affected by population dispersal. It has therefore decided that a dispersion disability will be assessed.

268. Because the proportion of dispersion-affected costs in the other public health services and breast cancer screening components are similar, the dispersion factors shown in Table 12 have also been applied in the other public health services component.

## **CROSS-BORDER FACTOR**

269. **Staff proposals.** Staff proposed to introduce a cross-border assessment for this component.

270. **Further State views.** New South Wales did not support a cross-border adjustment for the other public health component. It argued that the scope of most activities under the component (environmental health, food standards and hygiene and other core public health services) are restricted by the nature of the services – that is, the ACT authority has no power to regulate activities of a business registered in New South Wales.

271. **Analysis and Commission decisions.** It appears to us that most of the services included in this component are not significantly affected by population size. Given this, and the fact that the ACT has not provided any evidence that services in this component are influenced by cross-border flows, we are no longer inclined to assess a cross-border factor for this component.

272. The Commission does not think a conceptual case has been made for the assessment of cross-border in the other public health services component. It therefore decided not to assess cross-border.

## **ISOLATION-AFFECTED EXPENSES COMPONENT**

### **ISOLATION FACTOR**

273. **1999 Review.** The isolation factor was assessed to account for differences in per capita costs of service provision for some States because of their economic and geographical isolation from the main interstate sources of supply in South Eastern Australia. It reflected the combined effect of isolation on labour-related costs, interstate freight costs, professional infrastructure costs, commercial goods costs, airfares, travel allowances and

other travel-related subsidies. The isolation-affected expenses component represented 0.07 per cent of expenses in this category.

274. **2004 Review.** *Draft Assessment Paper CGC 2003/65 Isolation* discusses the issues raised by the States regarding the assessment of isolation. The paper sets out the Commission's decisions on the general method of assessment adopted for the 2004 Review and on the size of the isolation-affected expenses component for relevant categories. The States did not raise issues specific to this category.

275. **Proposed method and results.** The isolation factors, shown in Table 47 have been calculated according to the 2004 Review general method. Isolation-affected expenses for this category have been estimated to be 0.10 per cent of the category standard

**Table 47** ISOLATION FACTORS — ISOLATION-AFFECTED EXPENSES COMPONENT

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
All years	0.05107	0.10737	0.17783	0.74776	0.56469	3.49490	1.51842	68.27218

276. The factor and component weight will not be updated until the next review. This means that isolation-affected expenses will grow at the same rate as category expenses.

## PROPOSED ASSESSMENT FOR THE 2004 REVIEW - EXPENSES

277. Table 48 summarises the proposed assessment for the 2004 Review.

**Table 48** PROPOSED ASSESSMENT STRUCTURE FOR THE 2004 REVIEW

Component	Component Weight	Factors	Basis of calculation
<b>Expenses</b>	%		
Fixed costs	1.40	Input costs Administrative scale	General method. General method.
Breast cancer screening	14.78	Socio-demographic composition Dispersion Input costs Cross-border	Based on the target population and a weight for low English fluency. General method. General method. General method.
Organised immunisation	15.76	Socio-demographic composition Economic environment  Dispersion Input costs Cross-border	Based on the target population and a weight for low English fluency. Based on number of general practitioners and specialists in different regions.  General method. General method. General method.
Communicable disease control	19.71	Socio-demographic composition  Input costs Cross-border Dispersion	Based on target populations, disease rates and weights for low English fluency.  General method. General method. General method.
Other public health	48.28	Socio-demographic composition   Cross-border Dispersion Input costs	Weights for age-sex and socio-economic status (derived from self-assessed health status), and weights for Indigeneity and low English fluency.   General method. General method. General method.
Isolation	0.07	Isolation	General method.

## SUMMARY OF RESULTS – EXPENSES

### *Calculating the category factor*

278. Table 49 summarises the components, component weights and disability factors assessed for this category for 2001-02. It shows the calculation of the category factor.

**Table 49** POPULATION AND PREVENTIVE HEALTH SERVICES —  
DERIVATION OF CATEGORY FACTOR, 2004 REVIEW

Factors	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
<b>Fixed costs (component weight = 1.40%)</b>								
Administrative scale	0.34013	0.46524	0.61538	1.17754	1.48735	4.77358	7.00016	18.94453
Input costs	1.03498	0.99044	0.97446	0.98186	0.97135	0.92001	1.01306	1.09897
Component factor	0.35208	0.45986	0.59795	1.15172	1.43735	4.40609	7.07698	20.37115
Cont. to category factor	0.00458	0.00598	0.00777	0.01497	0.01869	0.05728	0.09200	0.26482
<b>Breast cancer screening services (component weight = 14.78%)</b>								
Dispersion	0.99912	0.98172	1.02635	1.01018	0.98429	0.98364	0.96876	1.10018
Input costs	1.03714	0.99034	0.97354	0.97996	0.96824	0.92479	1.01291	1.07737
Socio-demographic composition	1.01519	1.00705	0.96917	0.94813	1.07241	1.06001	0.87910	0.87654
Cross-border	0.99928	1.00000	1.00000	1.00000	1.00000	1.00000	1.01481	1.00000
Component factor	1.05187	0.97949	0.96964	0.93933	1.02211	0.96351	0.87629	1.03279
Cont. to category factor	0.15547	0.14477	0.14331	0.13883	0.15107	0.14241	0.12952	0.15265
<b>Organised immunisation (component weight = 15.76%)</b>								
Dispersion	0.99912	0.98172	1.02635	1.01018	0.98429	0.98364	0.96876	1.10018
Input costs	1.03714	0.99034	0.97354	0.97996	0.96824	0.92479	1.01291	1.07737
Economic environment	0.99991	1.00000	1.00000	1.00000	1.00000	1.00000	1.00184	1.00000
Socio-demographic composition	0.98669	0.98317	1.00925	1.03241	1.00724	0.99727	0.98248	1.36582
Cross-border	1.02739	0.96574	0.98557	0.95788	1.04240	1.07045	0.75738	1.51591
Component factor	1.04571	0.91885	0.99017	0.97482	0.99566	0.96546	0.72857	2.42724
Cont. to category factor	0.16480	0.14481	0.15605	0.15363	0.15692	0.15216	0.11482	0.38253
<b>Communicable disease control (component weight = 38.76%)</b>								
Dispersion	0.99912	0.98172	1.02635	1.01018	0.98429	0.98364	0.96876	1.10018
Input costs	1.03714	0.99034	0.97354	0.97996	0.96824	0.92479	1.01291	1.07737
Socio-demographic composition	0.81470	0.84010	1.19011	1.27168	1.12524	0.89448	0.74109	4.86856
Cross-border	0.99576	1.00000	1.00000	1.00000	1.00000	1.00000	1.08739	1.00000
Component factor	0.83447	0.81062	1.18123	1.24987	1.06394	0.80659	0.78527	5.69082
Cont. to category factor	0.16447	0.15977	0.23282	0.24635	0.20970	0.15898	0.15478	1.12166
<b>Other public health (component weight = 48.28%)</b>								
Dispersion	0.99912	0.98172	1.02635	1.01018	0.98429	0.98364	0.96876	1.10018
Input costs	1.03714	0.99034	0.97354	0.97996	0.96824	0.92479	1.01291	1.07737
Socio-demographic composition	0.99977	0.94620	1.01968	0.99952	1.04493	1.10778	0.78330	1.73854
Component factor	1.03431	0.91824	1.01789	0.98803	0.99369	1.00469	0.76768	2.04386
Cont. to category factor	0.49937	0.44333	0.49144	0.47702	0.47975	0.48506	0.37063	0.98677
<b>Isolation (component weight = 0.07%)</b>								
Isolation	0.05107	0.10737	0.17783	0.74776	0.56469	3.49490	1.51842	68.27218
Component factor	0.05107	0.10737	0.17783	0.74776	0.56469	3.49490	1.51842	68.27218
Cont. to category factor	0.00004	0.00008	0.00012	0.00052	0.00040	0.00245	0.00106	0.04779
<b>CATEGORY FACTOR</b>	<b>0.98872</b>	<b>0.89873</b>	<b>1.03152</b>	<b>1.03133</b>	<b>1.01652</b>	<b>0.99833</b>	<b>0.86281</b>	<b>2.95623</b>

**Standardised expenses**

279. Table 50 shows the category factors calculated for the draft assessment for the 2004 Review compared with the category factors assessed in the 2003 Update

**Table 50** COMPARISON OF CATEGORY FACTORS, 2003 UPDATE AND DRAFT ASSESSMENT FOR THE 2004 REVIEW

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
2003 Update	1.01260	0.96051	0.93385	1.02600	0.98622	1.11000	1.30003	1.86525
Draft Assessment - 2004 Review	0.98872	0.89873	1.03152	1.03133	1.01652	0.99833	0.86281	2.95623

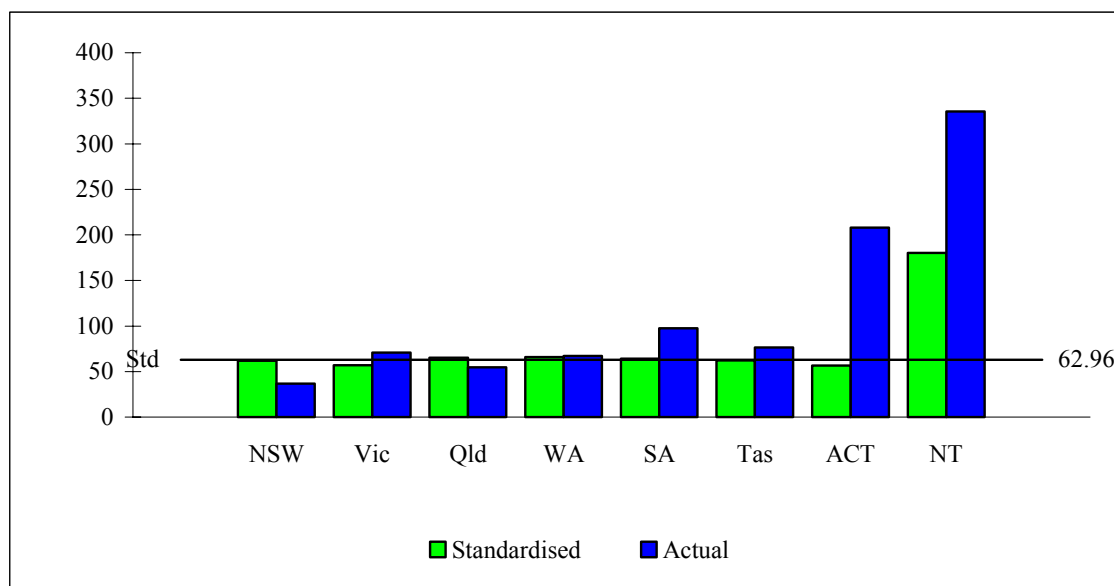
280. Table 51 shows the standardised expenses assessed for this category for 2001-02 in the draft assessment compared with those assessed in the 2003 Update.

**Table 51** ESTIMATED, STANDARD AND STANDARDISED EXPENSES, 2001-02

	Standard	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
<b>2003 Update -</b>									
Estimated expenses									
\$m	1104.60	293.73	283.14	170.24	91.81	112.05	32.86	67.05	53.68
\$ per capita	56.36	44.23	58.32	46.38	47.86	73.78	69.45	207.79	268.49
Standardised expenses									
\$m		378.99	262.81	193.18	110.92	84.41	29.60	23.64	21.02
\$ per capita		57.07	54.13	52.63	57.82	55.58	62.56	73.27	105.12
<b>2004 Review</b>									
Estimated expenses									
\$m	1234.74	244.32	343.92	199.79	128.80	148.11	36.19	67.05	67.08
\$ per capita	62.96	36.79	70.84	54.43	67.15	97.53	76.48	207.79	335.48
Standardised expenses									
\$m		413.83	275.01	238.63	124.69	97.30	29.77	17.55	37.25
\$ per capita		62.32	56.64	65.01	65.00	64.07	62.92	54.38	186.32

281. Figure 1 shows, for 2001-02, the standardised, estimated and standard expenses per capita in the 2004 Review draft assessment.

**Figure 1** POPULATION AND PREVENTIVE HEALTH SERVICES — GROSS EXPENSES PER CAPITA — STANDARDISED, ESTIMATED AND STANDARD



***Effect of assessment on grants***

282. Table 52 shows the redistribution of grants resulting from the assessment in the 2003 Update and the Draft Assessment. It also shows the sources of change.

**Table 52** EFFECT OF ASSESSMENT ON GRANT DISTRIBUTION — POPULATION AND PREVENTIVE HEALTH SERVICES

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total <sup>(a)</sup>
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Contribution to 2003 Update relativities <sup>(b)</sup>	3.7	-11.8	-13.1	3.4	-0.9	3.1	5.4	10.1	25.8
Contribution to 2004 Review Draft Assessments relativities <sup>(b)</sup>	-5.3	-34.4	9.0	4.2	1.7	0.2	-2.8	27.4	42.5
Total change	-9.1	-22.6	22.1	0.8	2.6	-2.9	-8.2	17.3	42.8 <sup>(c)</sup>

(a) Total redistribution.

(b) Assuming same pool and a constant population.

(c) This figure shows the change in the amount redistributed among the States between the 2003 Update and the 2004 Review Draft Assessment. It does not necessarily equal the difference in the total contributions to the relativities between the two inquiries.

283. The main reason for the change in grant shares is the greater weight given to socio-demographic characteristics in the 2004 Review compared to the 2003 Update. The majority of population and preventive health expenses did not have a socio-demographic composition factor applied to them in the 2003 Update, whereas these factors are proposed for the 2004 Review. This explains why the States with a greater than average proportion of Indigenous people are receiving an increased grant share from this assessment. The increased grant shares due to Indigeneity are decreased in States with smaller than average proportions of other population groups who use public health services more, such as older people. This is the case for Western Australia — while it has a larger than average proportion of Indigenous people, it has a smaller than average proportion of older people.

### SUMMARY OF RESULTS — USER CHARGES

284. **1999 Review.** User charges comprises all population and preventive health user charges. User charges were assessed using an equal per capita method.

285. Table 53 shows the population and preventive health user charges assessed in the 2004 Review preliminary assessment. The figures presented are actual amounts.

**Table 53** POPULATION AND PREVENTIVE HEALTH USER CHARGES, 2001-02

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Per capita (\$)	3.8	55.5	3.1	9.4	34.9	7.6	16.4	20.4	19.90
User charges (\$m)	24.94	269.69	11.48	17.94	53.02	3.60	5.30	4.07	390.03

286. **State views.** States did not raise any issues concerning population and preventive health user charges in the first round or rejoinder submissions.

287. **Commission decisions.** Amounts of population and preventive health user charges raised by States can vary greatly. Differences in State policies and circumstances of individual health service providers will influence the level of money able to be raised by States. Therefore, the Commission considers it is appropriate to continue the current method for assessing population and preventive health user charges in the 2004 Review.

288. **Proposed method and results.** As an equal per capita method is proposed, the actual amounts will be distributed on an equal per capita basis. This assessment will have no effect on the relativities.

## ATTACHMENT A

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### HEALTH STATUS

1. The 2002 discussion paper proposed using health status as a measure of needs because:

- (i) no comprehensive use and cost data were available; and
- (ii) health promotion, the major expenditure item in this component, is related to the health status of the population.

2. Staff proposed to investigate possible measures of health status, including mortality, morbidity, disability and handicap, perceived health and risk factor indicators.

3. **Further State views.** New South Wales supported the staff proposal. It cited a New South Wales study that supported the development of a general health status measure. It showed that premature mortality rates (expressed as Standardised Mortality Ratios (SMRs) for all causes of death in people below 70 years) might be a reliable proxy indicator of overall disability in this category when used in conjunction with a factor for socio-economic status.

4. The study investigated an approach to the allocation of funds for the population health program based on selected preventable risk factors and illnesses modelled alongside the existing funding approach used in the New South Wales Resource Distribution Formula (RDF). The RDF uses population size adjusted by a composite need index comprising of SMR<70, a socio-economic status measure (ABS SEIFA Index of Education and Occupation) and a rurality measure (developed by New South Wales Health) that reflects the higher need in rural areas and lower availability of major hospitals. A similar approach is used in the RDF for other health programs.

5. The study developed a preventability index for Area Health Services to indicate the relative distribution of need for population health services according to various health risk factors' contribution to preventable deaths. Tobacco smoking was assigned a weight of 19, nutrition, 7, physical inactivity, 7, alcohol use, 5, infectious diseases, 4, suicide, 2, and sexual health risk behaviour, motor vehicle accidents, and illicit drug use were weighted by one. The scope of this study did not allow for consideration of environmental health and statutory food inspection requirements.

6. The risk factor/preventable illness model developed in the study identified similar outcome rankings to those of the current New South Wales RDF approach. The study found that, for the most part, relative population health need and disadvantage rankings were reasonably similar using both methods. It concluded that the current approach in New South Wales based on the need index should be maintained for simplicity

and because the need index was used elsewhere in the RDF. In summary, there was concordance when alternative indicators of population health needs: risk factors, preventable illnesses, socio-economic indicators, and premature mortality were used. New South Wales therefore suggested that the Commission investigate the possibility of using SMRs as the general health status measure along with a factor for socio-economic status.

7. Victoria did not support the assessment of socio-demographic composition through a general health status measure. It argued that any general health status measure would be contaminated by State policy. Expenses by States on public health promotion reflected differing policy decisions and therefore the health status of a State's population predominantly reflected State policy. This policy contamination would be difficult to remove from a general measure such as health status, and would make the assessment more complex. Victoria said that a health status indicator better reflected what some States do not do, not what they do. Victoria concluded that a measure that was more closely reflective of what States did should be used for the assessment.

8. Queensland submitted that population and preventative health were primarily about managing the health risks inherent in a State's population. Preventive health strategies were targeted towards specific health risks among specific groups. Queensland said that health status varied across groups in the community. Thus, a socio-demographic factor assessed using use and/or cost weights for Indigeneity, non-urban Indigeneity, low socio-economic status and low English fluency was the preferred method. However, given the amount of funding redistributed by this assessment, Queensland said that a general indicator of health status based on mortality rates was appropriate.

9. Western Australia said that the link between health status indicators and expense needs was poor, particularly as health status was policy influenced. Small variations in the health status of the general population did not tend to have any impact on public health expenses, but groups with significantly poorer health status needed disproportionately large public health expenditures.

10. South Australia said the Commission should use a single socio-demographic disability that was based on the relative level of socio-economic disadvantage and ageing of the population.

11. Tasmania said that, conceptually, a direct measure of health status was preferable to a proxy indicator of health status based on specific population characteristics such as NESB, Indigeneity, remoteness, low income and so on. However, whether a measure could be developed that adequately represented the merged expense category, and whether States would ever agree on the appropriate measure, was problematic. Tasmania strongly suggested that mortality and morbidity rates were suitably reliable and valid measures of health status.

12. Tasmania said that if a health status measure (such as one based on mortality and morbidity rates) was found to be acceptable to all States, it should not be applied in relation to certain preventive health programs. This was because the need to provide some preventive health programs, such as immunisation, was independent of the health status of the population.

13. The ACT said that target populations for most population and preventive health services were not people with poor health status, and using health status measures to assess expense disabilities in this category would misrepresent the relative demands on State expenditure. Due to the complexity of the category, the multiple target groups for activities, and the fact that a large proportion of expense had a ‘whole of population’ focus, the ACT said that disabilities relating to the composition of State populations should not be assessed for this category. If the Commission was still inclined to assess a socio-demographic composition factor using a general health status measure, the ACT said it should be discounted by at least 63 per cent, on the basis of the NPHER.

14. The Northern Territory submitted that the logic behind the use of health status was that high levels of morbidity and mortality were likely to act as drivers for preventive and other public health expense. In particular, high prevalence, costly and debilitating diseases were likely to encourage preventive expense. This situation could be likened to emergency or natural disaster incidents which also tend to stimulate anticipatory actions. In both cases, it may be difficult to quantify the degree of risk or need for public expense, especially for prevention measures. In the Public Safety category, the Commission used incident data to measure relative need. Incident data was similar to health status — in the absence of a better measure they acted as proxies that demonstrated the degree of a problem where preventive-type actions would diminish the incidence of adverse outcomes.

15. The Northern Territory supported the use of unstandardised death rates as a simple, broad based measure of health status. It said that mortality was defined in comparison to morbidity, disability and handicap, perceived health and risk factor indicators. Alternative measures sourced from hospital admissions understated the incidence of morbidity in States like the Northern Territory where accessibility is an issue.

16. *Analysis.* The 2002 discussion paper proposed using health status as a measure of needs because:

- (i) no comprehensive use and cost data were available; and
- (ii) health promotion, the major expenditure item in this component, is related to the health status of the population.

17. These things still hold true. Thus, we investigated possible measures of health status. To be suitable, a measure of health status should be:

- (i) a good proxy for use, and therefore cost, of health services;
- (ii) capable of being disaggregated by different socio-demographic characteristics;
- (iii) widely accepted; and
- (iv) based on good quality and recent data.

18. Initially, mortality rates — whether they be SMRs, as proposed by New South Wales, or unstandardised death rates, as proposed by the Northern Territory, were considered to be an appropriate measure of health status. However, we have

concluded that there are a number of problems with this measure which make it unsuitable for use in the assessment.

19. The major problem with mortality rates is that they cannot be disaggregated by all of the socio-demographic characteristics in which we are interested. An example of this is socio-economic status. Socio-economic indicators of interest to us, such as income, are not collected in association with mortality statistics. The death notification form is of limited value — the data available are of questionable quality and therefore are not published by the ABS. Also, the ABS advises that the official figures for Indigenous deaths are understated because of under-reporting. While the ABS adjusts for this, there are still questions about whether data based on death records of Indigenous people are accurate enough to be used.

20. In addition, as the average age of death has progressively risen in almost all populations world-wide, there has been widespread reconsideration of how the health of populations is measured. There has been a move away from using mortality rates in isolation. Measures that categorise the population into only two states (such as dead or alive) may not reflect the true health state of populations. Much of the health expenditure in high-income countries may be directed towards interventions that improve health status without changing mortality. This would not be picked up if mortality rates alone were used to measure health status.

21. There has been increased attention given to non-fatal as well as fatal health outcomes. As stated by Mathers et al<sup>12</sup>, it is important to capture both fatal and non-fatal health outcomes in any summary measure of population health since health policy is not aimed only at reducing mortality. The paper said that substantial resources were devoted to reducing the incidence of conditions that cause ill-health but not death and to reducing their impact on people's lives. This view was re-iterated by the Public Health Division of the Victorian Department of Human Services.<sup>13</sup> It said that, in a country like Australia, where overall health status was high by international standards, death rates alone were no longer an adequate measure of population health. Increasing numbers of health problems were emerging, which did not threaten life, but were nonetheless responsible for substantial amounts of continuing ill health and disability.

22. Given that there appears to be an increasing international consensus that the best measures of population health combine information on both mortality and morbidity, it would seem sensible to look for such a measure to use in our assessment.

23. One measure of health status that appears to match our criteria is 'self-assessed health'. Self-assessed health is an increasingly common measure of health status. The assessment is often done through the use of a single global health question, such as 'In general, would you say that your health is excellent, very good, fair or poor'.

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<sup>12</sup> Mathers, C; Murray, C; Salomon, J; Sadana, R; Tandon, A; Lopez, A; Ustun, B & Chatterji, S, Healthy life expectancy: comparison of OECD countries in 2001. *Australian and New Zealand Journal of Public Health*, 2003, Vol 27, No.1.

<sup>13</sup> Public Health Division, Department of Human Services Victoria, Victoria's Health – Second Report on the Health Status of Victorians, 1995.

24. *Is it a good proxy for use of health services?* Research shows that measures of health status are good predictors of health services use. Self-rated health has been found to be associated with a number of other measures of health status, the use of health services and future mortality. A 1991 study<sup>14</sup> reviewed a number of other studies in this area and concluded that self-evaluations of health status have been shown to predict mortality, above and beyond the contribution to prediction made by indices based on the presence of health problems, physical disability, and biological or life-style risk factors. A 1998 study<sup>15</sup> concluded that a comprehensive and systematic review of the epidemiologic literature showed that self reported health was a powerful and independent predictor of mortality and probably also of a number of other endpoints such as morbidity, use of medical services, absence from work, early retirement, and so on. An Australian study concluded that self-ratings of health were an important predictor of mortality and this held true even after controlling for objective health. The study further said the evidence suggested that self-rated health was an economical indicator of health status.<sup>16</sup>

25. The literature indicates that self-assessed health is a good proxy for the use of health services and mortality. Using it in place of mortality rates would enable us to obtain weights for different socio-demographic characteristics, which is not possible with mortality rates. Because self-assessed health has been shown to correlate with mortality, we consider it is likely that weights produced from self-assessed health would be similar to those produced from mortality rates, if mortality rates were available in a suitable form for this assessment.

26. *Can it be disaggregated by different socio-demographic characteristics?* The National Health Survey (NHS) contains records of self-assessed health. The data are available for all of the socio-demographic groups we are interested in. Particularly, they are available in terms of income, which is our preferred measure of socio-economic status.

27. Mathers (1994) suggested that a perceived health question discriminated well within culturally homogenous populations and, therefore, it was useful in identifying differentials in health status according to education level, family income, and other measures of socio-economic disadvantage.

28. *Is it a widely accepted measure?* The ABS publication 4707.0 *Occasional Paper: Self-Assessed Health Status, Indigenous Australians, 1994*, states that health is recognised as having physical, mental, social and spiritual components. Therefore, the measurement of health must go beyond such objective measures as morbidity, mortality and limitations in activity. Part of this broader approach to measuring health is to ask people to assess the state of their own health. Subjective health assessment has become a critically important component of contemporary health research, which some argue is perhaps even more reliable than biomedical measures. The OECD states that despite its subjective nature, this measure appears to be a useful indicator of health status.

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<sup>14</sup> Idler, E & Kasl, S, Health Perceptions and Survival: Do Global Evaluations of Health Status Really Predict Mortality? *Journal of Gerontology*, 1991, Vol 46, No.2.

<sup>15</sup> Kristensen, T; Bjorner, J; Smith-Hansen, L; Bjorg, W & Skov, T, Self-rated Health and Work Environment, 1998.

<sup>16</sup> McCallum, J; Shadbolt, B & Wang, D, Self-rated Health and Survival: A 7-year Follow-Up Study of Australian Elderly. *American Journal of Public Health*, 1994, Vol 84, No.7.

29. *Are good quality recent data available for this measure?* We have data on self-assessed health from the 2001 ABS NHS.

30. Some expenses in this category are not driven by health status and, by definition, are largely whole of population services. However, while many public health services may be aimed at the population as a whole, this does not preclude States from targeting certain population groups over and above the levels aimed at the general population. A majority of States have indicated that, while most public health services are provided to the whole population, some are targeted more towards population groups with certain health problems. The Commission concludes that assessing socio-demographic disabilities would mean the assessment would better capture how differences in State socio-demographic composition impact on the costs of providing public health services.

31. We acknowledge that a factor based on health status should not be applied in the components dealing with certain preventive health programs — namely breast screening and immunisation — because the need to provide these programs is independent of the health status of the population.

32. However, evidence from States has convinced us that expenses in the other public health component are influenced by the socio-demographic composition of populations.

33. **Conclusion.** The Commission accepts that a conceptual case exists for assessing socio-demographic drivers of expenses on services included in the other public health services component. The socio-demographic composition factors that appear to have an effect on service use are the age-sex distribution of the population, socio-economic status, Indigeneity. Low English fluency has an effect on the costs of providing the services.

34. In some of these cases, there are no direct data on the use of services by people in the various population sub-groups. For example, there is no direct data on the use of services by people in various age groups.

35. However, the research outlined above does strongly indicate that self-assessed health status is a good proxy for the use of health services and mortality. In addition, the data on self-assessed health status can be dissected by age and by income. We therefore propose to derive indicators of relative levels of service use for age and income groups from the relative levels of self-assessed health status. At its simplest, if the data on health status suggest that, across Australia, people in a certain age group are ‘x’ times more likely to have low health status than people in a base age group, we will assume that they use public health services ‘x’ times more than the population of the base group.

36. However, where we have direct data on the use of public health services by people in some sub-groups, those data will be used to derive the use weights. To avoid double-counting, those use weights will be adjusted to remove the effects of other socio-demographic characteristics of the sub-group.

37. In response to Victoria’s concerns about policy contamination, we do not intend to use State specific health status measures, but national averages for various population sub-groups. This will average the effects of State policy.