

20<sup>th</sup> July 2009

## **ANALYSIS OF SURVEY OF OPERATIONAL COSTS 2008**

### **BACKGROUND**

1. In June and July 2008 the Ministry of Education conducted a survey of operational costs of early childhood providers. The aim of this survey was to collect information from services about the range and level of costs they incur and how these costs change over time. The results of the survey will be used to assess and advise the Government on the current level of funding for early childhood services.
2. The survey was sent to all licensed early childhood education (ECE) services. It requested information on expenditure for a range of categories over the most recent full year accounts.
3. This survey was previously conducted in July 2005 and July 2006. Minor changes to the 2008 survey have been made to improve the clarity of the questions.
4. This report analyses some of the key aspects of the data collected, covering response rates, average cost per hour, the proportion of expenditure spent on major cost categories and the fees centres charge for hours outside 20 hours ECE.
5. Responses from services that were received up to 1<sup>st</sup> September 2008 and data from Te Kōhanga Reo National Trust on behalf of Ngā Kōhanga Reo are included in the analysis.
6. Survey responses were provided excluding GST and analysis was conducted on the same basis.

### **RESPONSE RATE**

7. Overall, the response rate from the services was reasonable, with 48.2% of services responding. This response rate is considered to be sufficient, giving a suitable coverage of service types to provide an adequate indication of costs<sup>4</sup>. This compares with the 2005 response rate of 48% and the 2006 rate of 56%. As in 2005 and 2006, responses have good coverage of all services types, rates and regions.
8. The response rate by service type is shown in Table 1. The response rate ranged between 28.9% and 94.8%. The high response rates from the kindergartens and Te Kōhanga Reo are due to the kindergarten associations and the Te Kōhanga Reo National Trust completing the surveys on a collective basis for their members.

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<sup>4</sup> Based on the HOI's Dec 04 report on survey and price index mechanisms

**Table 1: Response rate by ECE service type<sup>5</sup>**

<b>ECE type</b>	<b>No. of responses</b>	<b>No of ECEs</b>	<b>Response rate</b>
Education and Care	607	2,100	28.9%
Kindergartens	567	623	91.0%
Playcentres	159	468	34.0%
Homebased Networks	105	260	40.4%
Te Kōhanga Reo	459	484	94.8%
<b>Total</b>	<b>1,897</b>	<b>3,935</b>	<b>48.2%</b>

9. After the initial analysis was conducted on the response rates, the survey information was put through a data validation process. The information was checked for internal consistency between fields and compared to the centres' last submitted annual accounts. After this validation was complete, a small number of records were excluded due to their poor data quality.

10. The response rate by service type with valid expense data is shown in Table 2.

**Table 2: Response rate by ECE service type with valid expense data<sup>6</sup>**

<b>ECE type</b>	<b>No. of responses</b>	<b>No of ECEs</b>	<b>Response rate</b>
Education and Care	539	2,100	25.7%
Kindergartens	566	623	90.9%
Playcentres	151	468	32.3%
Homebased Networks	103	260	39.6%
Te Kōhanga Reo	458	484	94.6%
<b>Total</b>	<b>1,817</b>	<b>3,935</b>	<b>46.2%</b>

11. The response rate by service type and funding band is shown in Table 3. For all-day and sessional teacher-led services the response rate was generally higher for centres with a higher proportion of registered teachers. The low number of centres in certain funding bands may result in sample bias, as one response might unduly influence the average. This means it is difficult to assess the survey results for services that receive funding at playcentre quality or below 100% sessional rates.

<sup>5</sup> Service numbers as at the 1<sup>st</sup> July 2008.

<sup>6</sup> Service numbers as at the 1<sup>st</sup> July 2008.

**Table 3: Response rates by funding band with valid expense data**

Funding Band	No of Responses	No of ECEs	Response Rate
Te Kōhanga Reo <sup>7</sup>	458	484	94.6%
Playcentre - Standard	145	451	32.2%
Playcentre - Quality	6	17	35.3%
Homebased - Standard	52	141	36.9%
Homebased - Quality	51	119	42.9%
All Day 100%	164	299	54.8%
All Day 80 - 99%	260	740	35.1%
All Day 50 - 79%	191	881	21.7%
All Day 25 - 49%	42	210	20.0%
All Day 0 - 24%	12	36	33.3%
All Day Sub Total	669	2,166	30.9%
Sessional 100%	411	475	86.5%
Sessional 80 - 99%	10	29	34.5%
Sessional 50 - 79%	8	26	30.8%
Sessional 25 - 79%	7	17	41.2%
Sessional 0 - 24%	0	3	0.0%
Sessional Sub Total	436	550	79.3%
<b>Total<sup>8</sup></b>	<b>1,817</b>	<b>3,935</b>	<b>46.7%</b>

**AVERAGE COST RESULTS**

12. One of the key results from the operational cost survey is the average cost per hour of ECE provision. This has been calculated and analysed by service type, funding rate and region.
13. The total expenditure of the ECE centres has been averaged over the total enrolled hours in 2007/08 for each service type and age group.
14. In many cases the ECE centres expenditure relates to the provision for both children under the age of two and children aged two and over. It is therefore necessary to make assumptions around the relative cost of the two different age groups to provide a reasonable estimate of the average service costs. Where centres provide services for both age groups, the costs have been allocated based on the assumption that the under two services are more costly by multiples of 1.7 to 2.0<sup>9</sup>. This gives us a range of service costs based on equivalent over two hours.
15. The total expenditure used to calculate the average cost was based on all responses in the dataset after the validation process.

<sup>7</sup> No data available on the number of service in the standard or quality funding band.

<sup>8</sup> Total includes funding bands where no services responded.

<sup>9</sup> The estimated ratio of under two to over two costs is based on the staffing ratios for each age group. Children under two require a staff to child ratio of 1:5 and for children over two a ratio of 1:10. If only the staff cost component is higher for under twos the cost ratio has been calculated as 1.7, if all costs are double the ratio is 2.0.

## COST BY SERVICE TYPE

16. The average cost per equivalent hour by service type is shown in Table 4. This shows that education and care services have the highest average cost for both under and over two services.

**Table 4: Average cost per equivalent hour (\$) by service type**

ECE type	Cost range (\$) based on ratios 1.7 & 2.0			
	Under Two		Over Two	
	Low	High	Low	High
Education and Care	13.43	15.09	7.54	7.90
Kindergartens <sup>10</sup>			6.28	6.28
Playcentres	8.33	9.16	4.58	4.90
Homebased Networks	10.89	11.88	5.94	6.40
Te Kōhanga Reo	9.02	10.02	5.01	5.31
<b>Total</b>	<b>11.32</b>	<b>12.85</b>	<b>6.66</b>	<b>6.43</b>

17. The level of service costs in the under two age group ranges from \$8.33 to \$15.09 per hour and from \$4.58 to \$7.90 for the over two age group. For both age groups the playcentres have the lowest hourly rate.

18. Further analysis on hourly costs has been undertaken on education and care, homebased and kindergarten services. This more in-depth analysis has not been conducted on other service types due to the relatively small numbers of responses.

## COST BY FUNDING BAND

19. For all-day education & care services there is a clear pattern that the cost per equivalent hour increases with the percentage of registered teachers as shown in Tables 5, 6 and 7.

20. The average cost per equivalent hour by service type versus 20 hours ECE rates for children aged two and over is shown in Table 5. The results of this analysis show that:

- 20 Hours ECE rates are higher than costs for all all-day services.
- 20 Hours ECE rates are lower than costs for sessional services.
- The homebased rates are higher than costs for both quality and standard services.
- The 100% and 80-99% all-day teacher led services have relatively higher rates compared to cost than the lower three funding bands.
- 100% sessional teacher-led has the highest percentage of costs covered by rates amongst the sessional funding bands due to the lower cost of the kindergarten services

<sup>10</sup> Under two hours accounted for less than 0.1% of the total hours for kindergarten services. Therefore, no costs were calculated as the results would be misleading.

**Table 5: Over two costs vs. 20 hours ECE rates**

Funding Band	No of centres	Over two costs (\$)		2007/08 Actual Rates (\$) -GST exclusive	Rates - Cost		% Cost covered	
		Low	High	20 Hrs ECE	Low	High	Low	High
100% All-day Teacher-led	66	8.59	8.87	9.68	1.09	0.81	112.7%	109.1%
80-99% All-day Teacher-led	199	7.99	8.35	9.00	1.02	0.66	112.6%	107.8%
50-79% All-day Teacher-led	177	7.15	7.53	7.92	0.77	0.39	110.8%	105.2%
25-49% All-day Teacher-led	40	6.27	6.64	7.18	0.91	0.54	114.5%	108.1%
0-24% All-day Teacher-led	5	5.92	6.25	6.76	0.84	0.51	114.2%	108.2%
100% Sessional Teacher-led <sup>11</sup>	411	6.25	6.25	5.80	-0.45	-0.45	92.8%	92.8%
80-99% Sessional Teacher-led	10	7.44	7.75	5.20	-2.24	-2.55	69.9%	67.1%
50-79% Sessional Teacher-led	8	6.98	7.31	4.52	-2.45	-2.78	64.8%	61.8%
25-49% Sessional Teacher-led	7	6.01	6.34	4.06	-1.94	-2.27	67.6%	64.0%
Homebased Quality	51	6.65	7.17	7.51	0.86	0.34	112.9%	104.7%
Homebased Standard	51	5.04	5.44	7.09	2.06	1.66	140.7%	130.3%

21. The average cost per equivalent hour by service type versus non 20 hours ECE rates for children aged two and over is shown in Table 6. The results of this analysis show that:

- The 100% all-day teacher led service has a relatively high rate compared to the other all-day funding bands.
- The proportion of costs covered by the subsidy rate generally increases with the funding band.
- 100% sessional teacher-led has the highest percentage of costs covered by rates amongst the sessional funding bands due to the lower cost of the kindergarten services.

**Table 6: Over two costs vs. non 20 hours ECE rate**

Funding Band	No of centres	Over two Costs (\$)		2007/08 Actual Rates (\$) -GST exclusive	Rates - Cost		% Cost covered	
		Low	High	Non 20 Hrs ECE	Low	High	Low	High
100% All-day Teacher-led	66	8.59	8.87	5.70	-2.89	-3.17	66.4%	64.3%
80-99% All-day Teacher-led	199	7.99	8.35	5.07	-2.92	-3.28	63.5%	60.7%
50-79% All-day Teacher-led	177	7.15	7.53	4.11	-3.04	-3.42	57.5%	54.6%
25-49% All-day Teacher-led	40	6.27	6.64	3.43	-2.84	-3.21	54.7%	51.7%
0-24% All-day Teacher-led	5	5.92	6.25	3.05	-2.87	-3.20	51.5%	48.8%
100% Sessional Teacher-led <sup>11</sup>	411	6.25	6.25	4.76	-1.49	-1.49	76.2%	76.2%
80-99% Sessional Teacher-led	10	7.44	7.75	4.03	-3.41	-3.72	54.2%	52.0%
50-79% Sessional Teacher-led	8	6.98	7.31	3.40	-3.58	-3.91	48.7%	46.5%
25-49% Sessional Teacher-led	7	6.01	6.34	3.00	-3.01	-3.34	49.9%	47.3%
Homebased Quality	51	6.65	7.17	3.55	-3.10	-3.62	53.4%	49.5%
Homebased Standard	51	5.04	5.44	3.13	-1.91	-2.31	62.1%	57.5%

22. The average cost per equivalent over two hour (based on assumed relativities between costs for under two and over two services) by service type versus rates for children under two is shown in Table 7. The results of this analysis show that:

- The differences between cost and rates increase for services with higher teacher ratios except for the 100% sessional rate.

<sup>11</sup> 100% sessional teacher-led service information includes kindergarten data. Three associations were excluded as they had greater than 50% of their kindergartens as all-day services at July 2007.

**Table 7: Under two costs vs. Under two ECE rates**

Funding Band	No of centres	Under two costs (\$)		2007/08 Actual Rates (\$) -GST exclusive	Rates - Cost		% Cost covered	
		Low	High	Under 2	Low	High	Low	High
100% All-day Teacher-led	66	15.07	17.17	10.35	-4.73	-6.82	68.6%	60.3%
80-99% All-day Teacher-led	199	14.19	15.97	9.77	-4.42	-6.20	68.8%	61.2%
50-79% All-day Teacher-led	177	12.80	14.30	8.44	-4.36	-5.85	66.0%	59.1%
25-49% All-day Teacher-led	40	11.30	12.55	6.97	-4.33	-5.58	61.7%	55.5%
0-24% All-day Teacher-led	5	10.63	11.84	6.12	-4.51	-5.71	57.6%	51.7%
100% Sessional Teacher-led	27	12.41	14.48	9.64	-2.77	-4.84	77.7%	66.6%
80-99% Sessional Teacher-led	10	13.17	14.89	9.08	-4.08	-5.80	69.0%	61.0%
50-79% Sessional Teacher-led	8	12.42	13.96	7.83	-4.59	-6.12	63.0%	56.1%
25-49% Sessional Teacher-led	7	10.77	12.01	6.46	-4.31	-5.55	60.0%	53.8%
Homebased Quality	51	12.19	13.31	6.76	-5.42	-6.54	55.5%	50.8%
Homebased Standard	51	9.24	10.07	5.93	-3.31	-4.15	64.2%	58.9%
<b>Grand Total</b>	<b>641</b>	<b>13.00</b>	<b>14.53</b>					

23. The same analysis was carried out on the data from the 2006 survey and the results followed the same pattern as the 2008 data.

24. However, the absolute amounts are not comparable since:

- The 2008 survey measured costs which were then rebased to the 2007/08 (June) year and have been compared with actual funding rates that applied during the 2007/08 year.
- The 2006 survey measured costs that applied around the 2005/06 year though there were some differences in the periods to which costs related for some providers; additional amounts were incorporated into rates then used for funding in 2007/08 to acknowledge higher marginal revenue being obtained from the first 20 hours for over two services.
- If costs from the survey are compared to 2007/08 funding rates, the change (reduction) in the excess of rates over costs will essentially reflect the increases in costs that have occurred between the surveys.

#### **DISTRIBUTION OF COSTS BY SERVICE TYPE<sup>12</sup>**

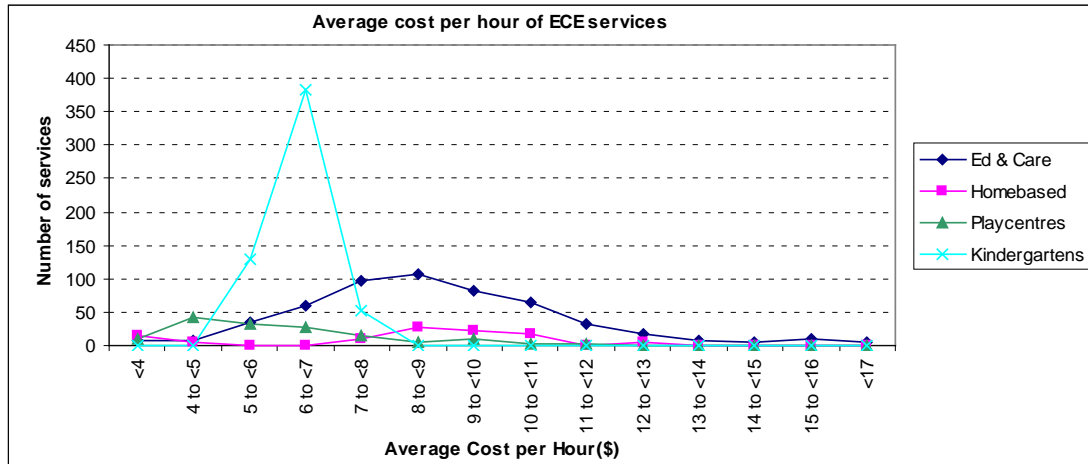
25. The range of cost per equivalent hour by service type shown in Table 8, Figure 1 and 2. This shows that education and care and homebased services have the greatest range of costs and kindergartens the least.

<sup>12</sup> Te Kōhanga Reo (TKR) information has not been included in the analysis as the format of the data return prevented a breakdown at this level of detail.

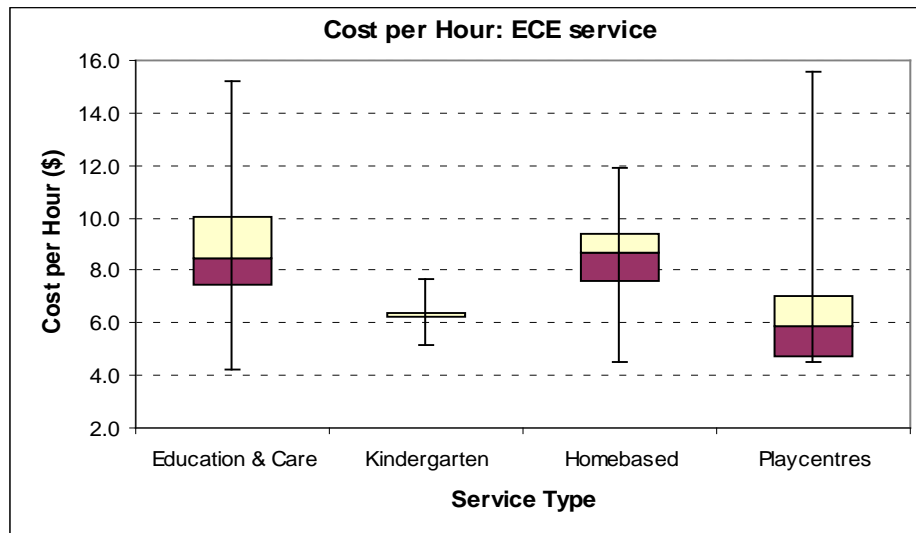
**Table 8: Distribution of average cost per hour for services by service type**

Service Type	Median	Percentile				
		90	75	50	25	10
Education & Care	8.50	11.43	10.06	8.50	7.43	6.24
Kindergarten	6.26	6.74	6.39	6.26	6.21	5.73
Homebased	8.71	10.63	9.42	8.71	7.57	3.97
Playcentre	5.88	9.20	7.04	5.88	4.76	4.23

**Figure 1: Distribution of average cost per hour for services by service type**



**Figure 2: Distribution of cost per hour by service type**



## COST BY REGION (EDUCATION AND CARE SERVICES ONLY)

26. The average cost by region<sup>13</sup> is shown in table 9. This analysis has demonstrated that, on average the higher costs per hour were found in the larger cities and urban areas.

**Table 9: Education and care services: cost per equivalent hour, under and over two by region**

Region	No. of services	Cost range (\$) based on ratios 1.7 & 2.0			
		Under Two		Over Two	
		Low	High	Low	High
Auckland & North Shore	92	14.39	16.21	8.10	8.47
Manukau, Papakura, Waitakere	58	12.14	13.80	6.90	7.14
Other North Island	169	12.80	14.32	7.16	7.53
Hamilton	27	13.42	14.94	7.47	7.90
Lower Hutt, Upper Hutt & Porirua	26	13.44	15.23	7.62	7.91
Wellington City	45	18.02	20.14	10.07	10.60
Other South Island	62	12.10	13.63	6.82	7.12
Christchurch City	41	13.03	14.69	7.34	7.67
Dunedin City	19	15.13	16.85	8.42	8.90
<b>Total</b>	<b>539</b>	<b>13.43</b>	<b>15.09</b>	<b>7.54</b>	<b>7.90</b>

27. The average cost by region and selected funding band is shown in Table 10. The results of this analysis follow a similar pattern as Table 9, where on average the higher costs per hour were found in the larger cities and urban areas. The results also demonstrate that the costs are higher for the centres with a higher proportion of teachers. In this analysis the average costs may be influenced by individual services where the sample size is small.

<sup>13</sup> Regions comprise of groups of Territorial Local Authorities as follows:

Auckland & North Shore: *Auckland City & North Shore City*

Manukau, Papakura, Waitakere: *Manukau City, Papakura District & Waitakere City*

Other North Island: *all other North Island TLAs*

Hamilton: *Hamilton City*

Lower Hutt, Upper Hutt & Porirua: *Lower Hutt City, Upper Hutt City & Porirua City*

Wellington City: *Wellington City*

Other South Island: *all other South Island TLAs*

Christchurch City: *Christchurch City*

Dunedin City: *Dunedin City*



**Table 10: Education and care services: cost per equivalent hour, under and over two by region and selected funding band<sup>14</sup>**

Rate	Region	No. of services	Cost range (\$) based on ratios 1.7 & 2.0			
			Under Two		Over Two	
			Low	High	Low	High
80-99% All-day Teacher-led	Auckland & North Shore	33	15.84	18.00	9.00	9.31
	Manukau, Papakura, Waitakere	17	12.93	14.90	7.45	7.61
	Other North Island	60	13.10	14.63	7.32	7.71
	Hamilton	7	16.41	18.54	9.27	9.65
	Lower Hutt, Upper Hutt & Porirua	11	14.67	16.81	8.41	8.63
	Wellington City	19	19.64	22.07	11.03	11.56
	Other South Island	26	12.42	13.87	6.93	7.30
	Christchurch City	21	13.73	15.48	7.74	8.07
	Dunedin City	5	13.79	14.95	7.48	8.11
<b>80-99% Total</b>		<b>199</b>	<b>14.19</b>	<b>15.97</b>	<b>7.99</b>	<b>8.35</b>
50-79% All-day Teacher-led	Auckland & North Shore	28	14.20	15.84	7.92	8.35
	Manukau, Papakura, Waitakere	15	10.73	12.01	6.00	6.31
	Other North Island	71	12.75	14.27	7.14	7.50
	Hamilton	11	12.87	14.11	7.06	7.57
	Lower Hutt, Upper Hutt & Porirua	9	12.82	14.31	7.16	7.54
	Wellington City	12	16.52	18.21	9.11	9.72
	Other South Island	21	11.46	12.98	6.49	6.74
	Christchurch City	9	10.77	11.93	5.97	6.34
	Dunedin City <sup>15</sup>					
<b>50-79% Total</b>		<b>177</b>	<b>12.80</b>	<b>14.30</b>	<b>7.15</b>	<b>7.53</b>

28. In conclusion, the results show that overall the main differences in the cost of provision are due to the age of the children enrolled, the type of services, the proportion of teachers and the location of the service.

#### **ANALYSIS OF FEES INFORMATION**

29. Centres have been asked what fees they would charge (for hours outside 20 hours ECE<sup>16</sup>) for

- Up to 5 sessions for up to 4 hours
- 3 days of 8+ hours per day
- 5 days of 8+ hours per day.

30. After initial analysis of the data, the information about fees for 3 days of 8+ hours per day and 5 days of 8+ hours per day was found to be poor quality. The majority of the further analysis of fee data has been confined to up to 5 sessions or up to 4 hours per day, except where otherwise indicated.

31. The information on up to 5 sessions or up to 4 hours per day are limited to a maximum of 20 hours per week that are potentially covered by 20 hours ECE.

<sup>14</sup> Where there were fewer than 5 respondents the data has been removed as the sample is too small to provide robust results. The other funding group were not analysed due to low numbers of responses.

<sup>15</sup> Information for Dunedin City is included in the 'Other South Island' field due to small sample size.

<sup>16</sup> The survey refers to 20 hours ECE in line with the policy regime of the time and references to that are continued in this document.

The fees for up to 5 sessions per week provide a natural basis for comparison with the top-up rates for 20 hours ECE.

32. The average fees by hours spent at an ECE centre are shown in Table 11. This shows that the fees across age groups and hours spent in the ECE centre are broadly similar. The fees are generally highest for the one year old age group and lowest for those children (aged four) receiving 20 hours ECE funding.

**Table 11: Fees per hour spent at Education and Care services**

Hours at Education and Care services	Age			
	1	2 1/2	4 (not receiving 20 Hours)	4 (receiving 20 hours)
Up to 5 sessions per week for up to 4 hours/day	\$2.95	\$2.91	\$2.93	
3 days for 8+ hours a day	\$2.98	\$2.99	\$2.49	\$1.94
5 days for 8+ hours a day	\$2.61	\$2.45	\$2.02	\$1.70

33. Information was also collected on optional charges and donations made by ECE centres (see Table 12). The level of money brought in from donations and optional charges was relatively small, with rates rarely exceeding 20 cents per hour.
34. For education and care services for children not receiving 20 hours ECE the optional charges ranged from 2 to 14 cents per hour. For children receiving 20 hours ECE, optional charges appear to be slightly higher, at around 20 cents per hour.

**Table 12: Optional charges per hour spent at Education and Care services**

Hours at Education and Care services	Age			
	1	2 1/2	4 (not receiving 20 Hours)	4 (receiving 20 hours)
Up to 5 sessions for up to 4 hours per day	\$0.07	\$0.07	\$0.05	\$0.24
3 days for 8+ hours a day	\$0.10	\$0.04	\$0.02	\$0.24
5 days for 8+ hours a day	\$0.14	\$0.06	\$0.02	\$0.22

**FEES BY SERVICE TYPE (up to 5 sessions per week for up to 4 hours per day only)**

35. The average fees by service type for up to 5 sessions per week for up to 4 hours per day are shown in Table 13. This demonstrates that under two fees do not appear markedly higher than over two rates; in the largest group, education and care, fees are virtually the same. Subsidy rates are higher for all-day services by an amount ranging from 59% to 95% and for sessional services by 90%-131%. This suggests that most of the additional costs of under two provision, principally those of lower staff ratios, are met by government.

**Table 13: Average fees (\$) for by service type, age group and funding group, for hours outside 20 hours ECE**

Service Type	Funding Group	Age				Free ECE top-up
		1	2 1/2	4 (not receiving 20 Hours)	4 (receiving 20 hours)	
Education & Care	All-day	\$2.95	\$2.91	\$2.93		\$4.23-\$4.54
Homebased	Quality	\$4.30	\$4.23	\$4.06	\$4.17	\$4.56
	Standard	\$3.70	\$3.42	\$3.53	\$4.25	\$4.56
Kindergarten	All-day	N/A	\$1.36	\$1.87	\$1.32	\$4.54 <sup>17</sup>
	Sessional	N/A	\$0.85	\$1.43	\$1.11	\$1.18
Playcentre	Standard	\$0.36	\$0.57	\$0.61	N/A	N/A

<sup>17</sup> Assuming funding at 100% all-day provision.