

## Estimating the unit costs of vision rehabilitation services

Kate Baxter and Parvaneh Rabiee

### Introduction

Sight loss is a major health issue that impacts on all aspects of wellbeing including daily functioning and mental health. Vision rehabilitation services aim to help people learn how to live as independently as possible, to build confidence and to maintain quality of life following full or partial sight loss. Vision rehabilitation services are provided by qualified vision rehabilitation officers. The services they offer include a range of interventions such as: orientation and mobility training; emotional support; communication skills; independent living skills; equipment training; and risk assessments.

Vision rehabilitation services are usually funded by local councils and provided either by in-house teams or contracted-out services. As with other preventive services, early access to vision rehabilitation is recommended (ADASS, 2013; Vision2020UK, 2013; UK Vision Strategy Advisory Group, 2013).

A literature review undertaken as part of a wider study (Rabiee et al., 2015) showed that there have been few economic studies of vision rehabilitation services and none that estimates unit costs. This short article therefore uses data from Rabiee et al. (2015) to estimate the unit costs of vision rehabilitation services in England. The calculations are based on detailed data from three case studies with additional data collected from a national survey.

### Unit costs of vision rehabilitation services in three case studies

Data were collected from three vision rehabilitation teams in May and June 2014. Case studies A and B were local council in-house vision rehabilitation teams, whereas C was a contracted-out service. Specially-designed forms requested detailed information about:

- the total number of hours worked per typical week by staff in the team;

- the total number of clients supported by the service in the previous 12 months;

- the typical weekly mileage accumulated by the team;

- the numbers of hours (or percentage of time) spent by team members in a typical week on activities categorised as:

- contact time - face-to-face and telephone contact delivering support to clients;

- other client-related time - client-related administrative tasks such as preparing for visits or writing case notes, client-related meetings with other professionals, and travel to and from client visits;

- non-client-related time - all other duties, such as general administrative tasks such as doing duty/taking new referrals, general meetings with other professionals or agencies, and providing or receiving training or supervision;

- annual staff salaries and on-costs, direct and indirect revenue costs and capital charges.

Data collection forms were discussed in detail with each manager. The forms used terms such as 'preparing for client visits' and 'writing up case notes'. The data were grouped into the broader categories presented above (e.g. other client-related time) by the researchers.

No account was taken of the cost of initial qualifications or ongoing professional training for vision rehabilitation officers. However, these costs are important as they are an integral part of becoming a rehabilitation officer and should be included in any future estimation of costs.

Table 1 shows the number and percentage of hours spent by staff on different activities in a typical week in each case study.

**Table 1: Number (%) of hours per week spent on client/non-client related activities**

	Contact time		Other client-related time		No-client-related time			Total		
	Hrs	%	Hrs	%	Hrs	%	Hrs	%	Hrs	
<b>Mean</b>	116	44%	80	31%	58	25%	254			
<b>Case study A</b>										
Managers	2	6%	1	3%	26	92%	28			
Rehab officers	60	42%	56	39%	27	19%	144			
Admin support staff	5	27%	0	0%	14	73%	19			
<b>Total</b>	<b>67</b>	<b>35%</b>	<b>57</b>	<b>30%</b>	<b>66</b>	<b>35%</b>	<b>190</b>			
<b>Case study B</b>										
Managers	5	14%	10	27%	22	60%	37			
Rehab officers	98	53%	62	36%	25	14%	185			
Admin support staff	1	33%	0	0%	2	67%	3			
<b>Total</b>	<b>104</b>	<b>46%</b>	<b>72</b>	<b>32%</b>	<b>49</b>	<b>22%</b>	<b>225</b>			
<b>Case study C</b>										
Managers	3	11%	6	19%	21	70%	30			
Senior rehab officer	8	35%	9	40%	6	25%	23			
Rehab officers	151	85%	9	5%	18	10%	178			
Admin support staff	3	3%	83	83%	14	14%	100			
Assistant	11	66%	4	25%	2	9%	17			
<b>Total</b>	<b>177</b>	<b>51%</b>	<b>112</b>	<b>32%</b>	<b>60</b>	<b>17%</b>	<b>348</b>			

Numbers/% may not sum due to rounding errors

Table 1 reveals a number of differences between the services. Case study C, for example, is almost twice the size of case study A in terms of number of hours worked a week (348 and 190 hours respectively). The staffing structure was different (only case study C included senior rehabilitation officers and assistants) and the percentage of time that rehabilitation officers spent in face-to-face contact with clients was higher in case study C (85%) than the other case studies (42% and 53%). In addition, the administrative members of staff in case study C spent 83 per cent of their time on other client-related activities compared to zero in case studies A and B. As a proportion of total staff hours a week, case study C had more administrative support (approximately one third) than the other two (one tenth and almost zero).

The typical number of hours per week worked by each team was converted into hours per year based on 43 working weeks a year. This is based on a 41-week year for community-based staff (Curtis 2014), with ten days for study/training reinstated as time for receiving or providing training was already included in non-client-related time for the vision rehabilitation teams.

Each case study also provided details of their annual costs. These included: salaries and associated on-costs (for managers, rehabilitation officers, administrative staff and others); direct revenue costs (utilities, cleaning, equipment, consumables and other operating costs); indirect revenue costs (human resources and finance); and capital charges (building and land costs). The annual costs were £237,985; £256,276 and £336,241 for case studies A, B and C respectively (mean £276,834).

The costs per hour for different activities for each case study were calculated from the hours worked and the annual costs. These are presented in Table 2, along with the ratios of direct to indirect time spent on activities.

**Table 2: Ratios of direct to indirect time and costs per hour**

	Case study A	Case study B	Case study C	Average
Ratio of direct to indirect time				
face-to-face contact	1 : 1.85	1 : 1.16	1 : 0.97	1 : 1.33
client-related work	1 : 0.54	1 : 0.28	1 : 0.21	1 : 0.34
Cost per hour of contact with clients	£83	£57	£43	£61
Cost per hour of client-related work	£45	£34	£26	£35
Cost per hour worked by the team	£29	£26	£22	£26

## Annual costs of vision rehabilitation services using national survey data

In order to place the case-study budgets in a wider context, data on annual budgets and staffing levels from the national survey were used.

Twenty-two respondents to the national survey provided a figure for their annual budget (mean £220,624). In addition, 66 respondents provided details of the whole-time equivalent number of staff on their teams and their salary grades. The latter were used to build up a 'bottom-up' estimate of the staff costs of services.

Table 3 gives the annual budgets estimated from staffing details. Row one gives the salary costs calculated from data in the survey.

**Table 3: Estimated annual budgets based on staffing levels provided in national survey**

	Mean	Median	Minimum	Maximum
Salary costs	£173,026	£134,274	£25,716	£683,166
Salary on-costs <sup>1</sup>	£53,638	£41,625	£7,972	£211,781
Non-salary costs <sup>2</sup>	£75,555	£58,633	£11,229	£298,316
Total budget	£302,219	£234,532	£44,917	£1,193,263

<sup>1</sup> Salary on-costs assumed to be 31 per cent of salary costs (allowing for national insurance and employer pension contributions) (based on Curtis, 2014).

<sup>2</sup> Non-salary costs assumed to be 33 per cent of salary costs, based on survey data showing that salary costs accounted for an average of 75 per cent of the total vision rehabilitation service budgets (Rabiee et al., 2015).

The mean annual budget reported by the three case studies (£276,834) lies between the mean estimated from staffing levels in the national survey (£302, 219) and the annual 'top down' budget levels provided in the survey (£220,624). This suggests that the three case studies' annual budgets are fairly typical of current vision rehabilitation services.

The survey also asked for the size of annual caseloads. The intention was to combine survey data on annual caseloads with annual budget data to calculate the costs per case. However, this was not possible due to different interpretations of the term 'annual caseload'.

### Sensitivity analysis of time spent doing duty

One issue that was highlighted during focus groups with case study teams was that rehabilitation officers in case studies A and B spent a total of five and 1.5 days a week, respectively, doing duty: that is, spending time in the office answering the telephone and taking new referrals. Participants in the focus group in case study C reported that they did not do duty; this was undertaken by staff in a different organisation.

To explore how doing duty impacted on the unit costs of the teams, rehabilitation officers' time and the associated salary costs of doing duty were taken out of the calculations for case studies A and B. The results are given in Tables 5 and 6.

**Table 4: Hours per week worked and percentage of time spent on different activities (excluding duty)**

	Case study A	Case study B	Case study C	Average
Total hours a week	173 hours	215 hours	348 hours	245 hours
Face-to-face contact with clients	39%	48%	51%	46%
Other client-related time	33%	33%	32%	33%
Non-client-related time	28%	18%	17%	21%

**Table 5: Ratios of direct to indirect time and costs per hour (excluding duty)**

	Case study A	Case study B	Case study C	Average
Ratio of direct to indirect time face-to-face contact client-related work	1 : 1.59	1 : 1.07	1 : 0.97	1 : 1.21
	1 : 0.39	1 : 0.22	1 : 0.21	1 : 0.27
Cost per hour of contact with clients	£78	£55	£43	£59
Cost per hour of client-related work	£42	£33	£26	£34
Cost per hour worked by the team	£30	£27	£22	£26

Table 4 gives the total number of hours a week worked by the vision rehabilitation teams, excluding duty. For case studies A and B, total hours have been reduced by 17.5 and 10.5 hours a week respectively. For case study A, the reduction is far less than the reported five days (35 hours) that rehabilitation officers spent doing duty. This is because the team manager reported that the total time spent per week by rehabilitation officers on general administrative tasks (including duty) was 17.5 hours. Therefore, all 17.5 hours were excluded from the revised calculations. This may be an under- or overestimation of the impact of doing duty and should be explored more fully in future research.

Despite this limitation, Tables 5 and 6 shows that excluding an amount of non-client-related time affects the percentages and ratios of time spent on different activities. In case study A, for example, the ratio of time spent on face-to-face contact with clients increased from 1:1.85 (Table 2) to 1:1.59 (Table 5). Ratios of time spent on different activities in case study B mirrored those in case study C more closely after time doing duty was removed.

The impact on the unit costs was small. The cost per hour worked by teams in case studies A and B increased slightly; the costs per hour of face-to-face and of client-related contact time reduced by between £2 and £5 an hour (see Table 5). These changes reflect the fact that proportionately more time was spent on these activities compared to non-client-related tasks.

## Conclusion

The mean cost per hour across the three case studies was £26, and the cost per hour of contact time was £61. Excluding the time and costs of doing duty left the cost per hour the same but reduced the cost per hour of contact time to £59. The ratios of direct to indirect time were 1:1.33 and 1:1.21 on average, including and excluding time on duty respectively. This means that, for every hour spent in face to face contact with clients, approximately one hour and 20 minutes was spent on other (client and non-client-related) work. Vision rehabilitation services can be compared with reablement services to give an indication of their relative costs. Reablement is a short, intensive service which, like vision rehabilitation services, aims to help people relearn skills for independent living. It is usually delivered at home to people who have had an increase in support needs. Reablement is estimated to cost £22 per hour or £42 per hour of contact time, with a ratio of direct to indirect time of 1:0.94 (Curtis, 2014).

The intention had been to calculate the cost per case from caseload data and annual budgets. However, the case studies and respondents to the national survey varied in their interpretation and measurement of caseload. Some provided the number of people allocated to a vision rehabilitation worker, whereas others measured the number of episodes of support (individuals could receive more than one episode). It was not clear from the survey data which services had used which interpretation. Only one case study recorded the number of people allocated to a vision rehabilitation worker. Cost per case has therefore not been calculated.

The detailed bottom-up calculation of unit costs is based on only three case study sites. To be more confident in the generalisability of the costs, these calculations should be repeated for a larger number of services. Given the differences in the makeup and use of the team members in the in-house services (case studies A and B) compared to C (a contracted-out service), they should also be repeated for in-house and contracted-out services separately.

## Acknowledgements

We would like to thank Thomas Pocklington Trust ([www.pocklington-trust.org.uk](http://www.pocklington-trust.org.uk)) for funding the research on which this paper is based. The views expressed here are those of the authors and not necessarily those of the funding body. Thank you also to Gillian Parker and Sylvia Bernard who were co-investigators on the project.

## References

- ADASS (2013) *ADASS position statement on visual impairment rehabilitation in the context of personalisation*, Association of Directors of Adult Social Services, London. Available at:  
[http://www.adass.org.uk/uploadedFiles/adass\\_content/policy\\_networks/physical\\_and\\_sensory\\_impairment\\_and\\_HIVA\\_IDS/key\\_documents/ADASS\\_position\\_statement\\_on\\_visual\\_impairment\\_rehabilitation\\_in\\_the\\_context\\_of\\_personalisation\\_december\\_2013\\_MG.pdf](http://www.adass.org.uk/uploadedFiles/adass_content/policy_networks/physical_and_sensory_impairment_and_HIVA_IDS/key_documents/ADASS_position_statement_on_visual_impairment_rehabilitation_in_the_context_of_personalisation_december_2013_MG.pdf) [accessed 22 October 2015].
- Curtis, L. (2014) *Unit Costs of Health and Social Care 2014*, Personal Social Services Research Unit, University of Kent, Canterbury.
- Rabiee, P., Parker, G., Bernard, S. and Baxter, K. (2015) *Vision Rehabilitation Services: What is the evidence?* Social Policy Research Unit, University of York, York.
- UK Vision Strategy Advisory Group (2013) *UK Vision Strategy 2013-2018: Setting the direction for eye health and sight loss services*. Available at:  
<http://www.vision2020uk.org.uk/ukvisionstrategy/page.asp?section=291&sectionTitle=Strategy+publications> [accessed 22 October 2015].
- Vision2020UK (2013) *Adult UK sight loss pathway: Appendix C of the UK Vision Strategy 2013*. Available at:  
<http://www.vision2020uk.org.uk/ukvisionstrategy/page.asp?section=299&sectionTitle=Adult+UK+sight+loss+pathway> [accessed 22 October 2015].