**Service guideline:**
**Learning disabilities and behaviour that challenges**

Appendix C2: Evidence tables and methodology checklists

Economic evaluations

**Review question 1**

Review question 1.1

What types of community-based services (including residential care) are effective and cost-effective for children, young people and adults with learning disabilities and behaviour that challenges?

Review question 1.2

What types of hospital inpatient services (local and out of area) are effective and cost-effective for children, young people and adults with learning disabilities and behaviour that challenges?

# **Population** People with learning disabilities
# **Topic** Housing

Harflett N, Pitts J, Greig R et al. (2017) Housing choices: discussion paper 1: What is the evidence for the cost or cost-effectiveness of housing and support options for people with care or support needs? London: National Development Team for Inclusion

| **Country, study type, intervention and comparison** | **Study population, design and data sources** | **Outcomes, resource use** | **Results** | **Summary** |
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| **Country**<br>UK and Ireland.<br><br>**Date**<br>Included studies from 2000 and onwards.<br><br>**Follow-up period**<br>Varies – review.<br><br>**Study design**<br>This is a review, including cost and cost-effectiveness studies. | **POPULATION**<br>People with learning disabilities.<br><br>**DATA SOURCES**<br><br>**Sources of resource use**<br>Not reported for each study.<br><br>**Sources of unit cost data**<br>Authors report that studies use unit costs that may not be a true representation, as they use unit cost estimates (p7). | **Outcomes**<br>Not reported<br><br>**Resource use**<br>Not reported for each study – this review summarises the limitations across included studies. | **Price year**<br>Varies<br><br>**Findings on cost-effectiveness**<br>The review finds that the evidence on costs and cost-effectiveness of different housing and support models is unclear based on current available research. | **Applicability**<br>Applicable.<br><br>**Quality**<br>This review does not report its methods, nor mention the studies it included in its review. Due to lack of reporting and transparency, the quality of the review is lower.<br><br>**Summary**<br>The conclusions of the review are consistent with the findings. However, we cannot confirm the reliability of the findings given that the authors do not present detailed information on the studies included. Furthermore, we cannot determine whether the findings are biased, given that the report does not describe in detail its inclusion or exclusion criteria or method of searching for papers. |

| Critical appraisal: systematic review | |
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| **Study identification:** Harflett N, Pitts J, Greig R et al. (2017) Housing choices: discussion paper 1: What is the evidence for the cost or cost-effectiveness of housing and support options for people with care or support needs? London: National Development Team for Inclusion | |
| **Overall assessment** | |
| External validity (+), internal validity (-) | |
| **External validity** | |
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Partly | Individuals with intellectual disability, not focused specifically on challenging behaviour. |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | This is a systematic review. |
| **1.3 Were service users involved in the study?** | |
| N/A | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | Housing. |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Partly | Individuals with intellectual disability, not focused specifically on challenging behaviour. |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | Housing. |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | Housing. |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| Unclear | Not reported adequately in the review. |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.7 Does the study have a UK perspective?** | |
| Yes | Includes studies from UK and Ireland only. |

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| **3. Overall assessment of external validity (- , +, ++)** | |
| **(+)** | |
| **Internal validity** | |
| **1. Appropriate and clearly focused question?** | |
| Yes | Review the evidence on the costs and cost-effectiveness of different housing options. |
| **2. Inclusion of relevant individual studies? (Yes, somewhat relevant, no, unclear, N/A)** | |
| Unclear | Does not report which studies were included in the review. |
| **3. Rigorous literature search? (yes, partly, no, unclear)** | |
| Unclear | Not reported |
| **4. Study quality assessed and reported?** | |
| Unclear | Not reported. |
| **5. Adequate description of methodology?** | |
| No | Not reported. |
| **6. Do conclusions match findings?** | |
| Yes | |
| **7. Overall assessment of internal validity ( - , +, ++)** | |
| **(-)** | Given the lack of reporting of methods, the findings of this study must be treated with caution and is given a lower quality. |

# **Population** Adults with intellectual disabilities with relatively low support needs
# **Intervention** Semi-independent living vs. fully staffed group homes

Felce D, Perry J, Romeo R, Robertson J, Meek, A, Emerson E, Knapp, M (2008) Outcomes and costs of community living: semi-independent living and fully staffed group homes. American Journal on Mental Retardation 113(2): 87–101

| **Country, study type, service description** | **Study population, design and data sources** | **Outcomes, resource use** | **Results Cost-effectiveness** | **Summary** |
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| **Country** England.<br><br>**Date** 2003/2004.<br><br>**Internal and External validity** (+/++)<br><br>**Follow-up period** 3 months.<br><br>**Study design** Matched-groups design.<br><br>**Study type** Cost–consequence analysis.<br><br>**Intervention 1** Fully staffed group homes (n=35) with a larger number of individuals per | **POPULATION**<br>Individuals with low to moderate support needs.<br><br>Semi, 49% male, mean age 40 years, average duration in current tenancy is 59 months.<br>Full, 63% male, mean age 50 years, average duration in current tenancy is 74 months.<br><br>Matched using short checklists (groups were similar) and full checklists (groups were different).<br><br>24-item Adaptive Behaviour Scale (ABS) Short Form<br>Semi, mean =95 (12.2)<br>Full, mean =90 (10.6) | **Outcomes**<br>Individual and service-level outcomes.<br><br>**Resource use**<br>Accommodation and non-accommodation costs.<br><br>**RESULTS**<br>**Outcomes**<br><br>**Favourable to semi-independent living**<br>Larger percentage doing activities independently, larger percentage and higher scores on feeling that they have a large amount of choice and control over certain aspects of their life ($p<0.0001$).<br><br>**Unfavourable to semi-independent living (better outcomes for fully-staffed group homes)**<br>Larger percentage having difficulties with money management (using Money Management Scale), including running out of | **Price year** 2003/2004.<br><br>**Findings on cost-effectiveness**<br>Fully staffed group homes are more costly but offer some advantages on some outcome measures.<br><br>On the other hand, semi-staffed homes are less costly and have advantages on other outcome measures.<br><br>Both types of accommodation had similar effects on many outcome measures.<br><br>Lower costs in semi-independent living were driven by lower accommodation costs | **Applicability**<br>Partly applicable but requires careful interpretation of the results.<br><br>**Quality**<br>Potentially serious limitations.<br><br>**Summary**<br>Based on the limitations of the study and weaknesses in economic methods, it is not possible to come to clear conclusions about which is more or less cost-effective. |

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| home (2.5 people, sd=0.7, p<0.0001), and greater level of mean staffing hours per person per week (77 hours, sd=45, p<0.0001).<br><br>Defined as 'staff presence during waking hours at all times that service users were present' (included settings where staff members were not present during the periods of the day in which all service users were out either working or pursuing some other occupation).<br><br>**Intervention 2**<br>Semi-independent living (n=35) with fewer numbers of individuals living together (1.4, sd=0.7, p<0.0001) and lower mean staff hours per person per week | Full ABS<br>Semi, mean =264 (33.4)<br>Full, mean =234 (20.4)<br>P<0.0001<br><br>Short version of the Aberrant Behaviour Checklist<br>Semi, mean =3 (2.7)<br>Full, mean =4 (5.2)<br><br>*Full ABC*<br>Semi, mean= 6 (7.0)<br>Full, mean= 18 (19.2)<br>P<0.001<br><br>8-item question to screen for mental illness (created by the authors) and *PAS-ADD checklist* were not different between groups<br><br>**DATA SOURCES**<br>**Sources of effectiveness data**<br>Study data using various checklists.<br><br>**Sources of resource use data** Agency for accommodation costs and CSRI for non-accommodation costs. | money (25.7% vs. 0%, p<0.01), percentage with utility bills unpaid with a threat to cut off utilities (22.9% vs. 0%, p<0.01). Depending on whether the full or matched subset sample was used, there was a significantly greater percentage that were exploited financially or had money stolen (40% vs. 8.6%) although in the matched subset this was not statistically significant. Although the authors state that these issues were relatively minor based on the scores on the Money Management Scale based on the scale maxima (semi-staffed, 9.8, sd= 3.1 vs. fully staffed 11.8, sd=0.8, p<0.01). Higher scores indicate better money management. The authors do not report what maximum scores are.<br><br>Smaller proportion with a home that has a garden, smaller percentage having a vision check in past 2 years, Lower scores on healthcare routine and lifestyle scale which was driven mainly by lower scores on lifestyle subscale rather than healthcare subscale.<br><br>**Unclear impact given differing results using two different statistical approaches**<br>Larger percentage in the semi-independent living group having people other than family members or people with intellectual disability in their social network and greater participation in domestic life (vs. no difference).<br><br>Greater variety of activities in the community favouring the fully-staffed group (vs. no difference) | and lower non-accommodation costs (mainly through less use of daytime activity services).<br><br>**Sensitivity analyses**<br>Authors undertook analyses using full sample and matched subset analyses to account for differences between groups at baseline on the Adaptive Behaviour Scale (ABS) (full measure) and the full version of the Aberrant Behaviour Checklist (ABC). | |

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| (13.3 hours, sd=13, p<0.0001).<br><br>Defined as 'partially staffed, having no paid staff support for at least 28 hours per week when service users were awake at home. These settings also had no regular night time support or sleepover presence' (p89) | **Sources of unit cost data** National unit cost data for non-accommodation costs and for accommodation, the costs came from the 'accounts of the agencies providing housing-related care and support to each of the participants' (p92). | **No differences between groups**<br>Community integration (variety of social and community activities, number of social and community activities), number of activities in the last month, total social network size, percentage of social network with family members, visits to and from family and friends, lifestyle satisfaction (recreational activities and community activities), loneliness, home-likeness (excluding question about garden), body mass index, proportion inactive, proportion receiving various health checks (excluding vision check), risk questionnaire (perceived to be at risk, major accident in last year, victim of abuse in last 5 years, victim of crime), Safety Inventory.<br><br>**Resource use**<br>Authors report costs in American dollars but we have re-calculated costs into pounds sterling using the exchange rate they have provided in the paper (£1=$1.4306 $1=£0.699).<br><br>Costs were lower for the semi-independent group for both total accommodation and non-accommodation costs.<br><br>**Total accommodation costs per week**<br>Fully-staffed, £893 (455)<br>Semi-independent, £267 (228), p<0.0001<br><br>**Total non-accommodation costs per week**<br>Fully-staffed, £205 (138.4)<br>Semi-independent, £122 (98.2), p<0.05 | | |

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| | | Lower non-accommodation costs in the semi-independent living group were driven by less use of daytime activities (£185, sd=130 vs. £102, sd=90, p<0.05) as there were no differences in the use of hospital-based services or community-based professional input.<br><br>Lower accommodation costs in the semi-independent living group were driven by lower direct staffing costs (£675, sd=394 vs. £176, sd=175, p<0.0001), lower non-staff inputs (£75, sd=35 vs. £31, sd=36, p<0.0001), and lower agency overheads (£121, sd=73 vs. £51, sd=51, p<0.001) but there were no differences in use of on-site administration. | | |

**Methodological quality checklist for economic evaluations**

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| **Study identification:**<br>Felce D, Perry J, Romeo, R, Robertson J, Meek A, Emerson E, Knapp M (2008) Outcomes and costs of community living: semi-independent living and fully staffed group homes. American Journal on Mental Retardation 113(2): 87–101 | | |
| **Guideline topic:** Service guideline: Learning disabilities and behaviour that challenges | | |
| **Economic priority area:** Yes | | **Q:** 1 |
| ***Checklist: Section 1*** | | |
| Yes/No/Partly/ Not applicable | Detail | |
| **1.1 Is the study population appropriate for the review question?** | | |
| Yes. | Population focuses on individuals with low to moderate support needs, mainly white. Semi-independent living: 49% male, mean age 40 years, average duration in current tenancy is 59 months. Fully-staffed group homes: 63% male, mean age 50 years, average duration in current tenancy is 74 months. Individuals' mean scores on the 24-item Adaptive Behaviour Scale (ABS) Short Form were 95 (12.2) and 90 (10.6) for semi-independent and fully staffed accommodations, respectively. Individuals' mean scores on the Full ABS was 264 (33.4) and 234 (20.4) (p<0.0001) for semi-independent and fully staffed accommodations, respectively. The mean scores for the Short version of the Aberrant Behaviour Checklist were 3 (2.7) and 4 | |

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| | (5.2) for semi-independent and fully staffed accommodations, respectively. The mean scores for the Full ABC were 6 (7.0) and 18 (19.2), p<0.001, for semi-independent and fully staffed accommodations, respectively. |
| **1.2 Are the interventions appropriate for the review question?** | |
| Yes. | Comparison of fully staffed group homes to semi-independent living. |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Partly | This is a UK study. It draws on information from '14 agencies providing supported accommodation in South Wales, South West England, and North West England'. However only 70 individuals are included in the study, and it is unclear from which regions they come from. It is also unclear when the study was conducted but we might assume it is pre-2003 based on the price year used in the study. Therefore it is unclear whether social care and health care patterns and practice are similar in the current context. |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Yes | NHS and personal social services. |
| **1.5 Are all direct effects on individuals included** | |
| Yes | Authors include a wide range of outcome measures. |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| Not needed | Costs are measured over a 3-month period. |
| **1.7 How is the value of effects expressed?** | |
| Costs for resource use and natural units for effects. | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| No | Informal care costs are not included. |
| **General conclusion** | |
| The study is partly applicable but results require careful interpretation because of issues in study design (authors used a matched group comparison with unclear appropriateness of statistical analysis to account for differences in individual measured characteristics). It is unclear whether the social care context at the time is applicable and generalisable to current practice. The perspective of the analysis is appropriate and the authors include a wide range of effects. Informal care costs are not included. | |
| **Section 2: Study limitations (the level of methodological quality)** This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |
| N/A | Not a model. |
| **2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?** | |
| Partly | For the purposes of this study, 3 months may be sufficient to capture differences in costs and outcomes. |
| **2.3 Are all important and relevant outcomes included?** | |
| Yes | See section 1.5 above. |

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| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| Yes | Yes, from the study. |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |
| Yes | Yes, from the study. |
| **2.6 Are all important and relevant costs included?** | |
| Yes | Costs include accommodation and non-accommodation costs, which include health and social care service use. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| Yes | Resource use was taken from Client Service Receipt Inventory checklist to account for non-accommodation costs. Accommodation costs were obtained from the agencies providing care. Accommodation costs include 'Direct staffing in the setting, non-staffing costs within the setting (such as heating, light, and food), on-site administration, and central agency overheads' (p92). Support hours were calculated as 'the mean hours of support per resident per week by summing the number of paid and voluntary staff hours allocated to each setting and dividing the total by the number of people living in the setting' (p90). |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Partly | Appropriate use of national unit cost data for non-accommodation costs. However, the costs for accommodation were provided from 'accounts of the agencies providing housing-related care and support to each of the participants' (p92). As the authors contacted agencies from different parts of the UK, it is not clear whether it is appropriate to compare charges in 1 region to charges in another region. It would be more appropriate to use national unit costs however it is understandable that it may have been difficult to do so. |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| N/A | Incremental analysis not conducted but could be calculated. |
| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| Yes | Authors undertook analyses using full sample and matched subset analyses to account for differences between groups at baseline on the Adaptive Behaviour Scale (ABS) (full measure) and the full version of the Aberrant Behaviour Checklist (ABC). |
| **2.11 Is there any potential conflict of interest?** | |
| Unclear | |
| **2.12 Overall assessment** | |
| Potentially serious limitations in economic methods, which make it difficult to be confident in the findings on costs. In particular, the methods of calculating accommodation costs may not have been appropriate. Accommodation costs were based on local prices, meaning that it is unclear whether costs were higher because of prices or differences in resource use. It is unclear whether the time horizon is sufficient or not. | |

**Population** Adults with severe learning disabilities & behaviour that challenges
**Intervention model type** Congregate vs. non-congregate residential homes

Robertson J, Emerson E, Pinkey L, Caesar E, Felce D, Meek A, Carr D, Lowe K, Knapp M, Hallam A (2004) Quality and costs of community-based residential supports for people with mental retardation and challenging behavior. American Journal on Mental Retardation 109 (4): 332–44

| **Country, study type, intervention and comparison service description** | **Study population, design and data sources** | **Outcomes, resource use** | **Results Cost-effectiveness, costs** | **Summary** |
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| **Country** England.<br><br>**Date** Pre-2004.<br><br>**Internal and External validity** (+/+)<br><br>**Follow-up period** Unclear but may 10 months for outcomes and 3 months for costs but transformed into annual estimates.<br><br>**Study design** 'Longitudinal matched-groups design' using the mean score on the | **POPULATION**<br>All adults with severe learning disabilities and challenging behaviour aged between 18 and 64 years.<br><br>Mean age 36 to 38 (sd=not provided).<br><br>Mean years in current setting =4.5 to 6.9 years (sd=not provided).<br><br>Mean Total Aberrant | **Outcomes**<br>Individual and service outcomes for participants and individual outcomes for co-tenants.<br><br>**Resource use**<br>NHS and personal social services broken down into accommodation and non-accommodation costs.<br><br>**RESULTS**<br><br>**Outcomes**<br><br><u>1) Nature of support provided</u><br>(Score out of 4, with 4 being the best)<br>(Standard deviations not provided)<br><br>**Favourable to congregate settings** | **Price year**<br>Not reported but could be near publication date, perhaps 2003/04 or earlier.<br><br>**Findings on cost-effectiveness**<br>In summary, non-congregate settings were found to have better outcomes in 2 main outcome domains: methods for the treatment and control of challenging behaviour and quality of life (although for some measures there were no differences) and had similar outcomes to congregate settings in terms of risks and injuries and were inferior in some of the measures of 'nature and support provided' | **Applicability**<br>Partly applicable but requires careful interpretation of the results.<br><br>**Quality**<br>Potentially very serious limitations.<br><br>**Summary**<br>Based on the limitations of the study and weaknesses in economic methods, it is not possible to come to clear conclusions about which is more or less cost-effective. |

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| Aberrant Behaviour Checklist and Adaptive Behaviour Scale screening items. Sample members were spread across and taken from an availability sample (and not a random sample) of 36 different settings that were provided by 20 different organisations' (p334).<br><br>**Study type**<br>Cost–consequence analysis.<br><br>**Intervention 1**<br>Non-congregate setting (n=25, minority of residents had challenging behaviour) defined as 50% or fewer residents having challenging behaviour.<br><br>Lower staffing ratios in relation to care staff (1.4:1 individual) | Behavior Checklist score = 45.7 to 47.5 (sd=not provided).<br><br>**DATA SOURCES**<br><br>**Sources of effectiveness data**<br>Study data based on interviewing service personnel and observation by study researchers.<br><br>**Sources of resource use data**<br>Client Service Receipt Interview over the proceeding 3 months (p334).<br><br>**Sources of unit cost data**<br>'Cost information from agency | 1.1) Working practices – better outcomes for congregate setting in relation to 4 of 5 working practices:<br><br>• person-cantered planning (3.7 vs. 3.0, p<0.01)<br><br>• assessment and teaching (3.2 vs. 2.7, p<0.05)<br>• Activity planning (3.5 vs. 2.7, p<0.001)<br>• staff support to residents (3.0 vs. 2.4, p<0.05).<br>•<br>No differences between settings in 1/5 working practice:<br><br>• training and supervision of staff (3.8 vs. 3.3, p=not provided).<br><br>**Not different**<br>1.2) Social climate as measured by mean percentage of maximum institutional score (congregate vs. non-congregate, respectively, depersonalisation, 33% vs. 36%, rigidity of routines 16% vs. 11%, block treatment 35% vs. 36%, social distance, 23% vs. 19%).<br><br>1.3) Amount of different categories of contact received from staff (measured as the mean percentage participant time receiving contact over 1% of the time), respectively for congregate and non-congregate settings. | but these were only process-outcomes whereas the other outcome domains are final outcomes.<br><br>Non-congregate settings also cost £12,011 less than congregate settings and this was driven by lower accommodation costs (approximately £15,650 less), some of which was offset by higher use of community services through the use of day activity services (approximately £3,691 more).<br>(Figures may not add up to £12,011 due to rounding resulting from USD/GBP conversion rates.)<br><br>**Details – outcomes**<br>Better outcomes for non-congregate settings in the methods for the treatment and control of challenging behaviour, which includes lower use of pharmaceuticals, physical intervention used sometimes or usually, and physical intervention used by more than 1 staff member. Also better outcomes for quality of life, as measured by higher mean hours of scheduled activity per week | |

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| (statistically significant, even when accounting for co-tenant level of challenging behaviour, p<0.01) but similarly sized number of individuals to non-congregate in terms of people in the residence (4.1 people).<br><br>**Intervention 2**<br>Congregate settings (n=25, majority of residents had challenging behaviour) defined as 50% or more residents having challenging behaviour.<br><br>Higher staffing ratios in relation to care staff (2.1:1 individual) but similarly sized number of individuals to non-congregate in terms of people in the residence (4.7 people). | accounts' (p335)/'cost and price information at facility and agency level' (p334). | *Unclear due to reporting*<br>1.4) Amount of contact received from residents and from visitors/others is not clearly reported regarding statistical differences between groups although appear to be very low for both groups (0.7% vs. 0.5% of contact received from residents, for non-congregate and congregate respectively; and 0.7% and 1.7% contact received from visitors or others, for non-congregate and congregate respectively).<br><br><u>2) Methods for the treatment and control of challenging behaviour</u><br><br>**Not different**<br>2.1) Written treatment or programme to reduce or prevent challenging behaviour and methods for immediate control.<br><br>*Favourable to non-congregate settings*<br>2.2) Pharmaceuticals more frequently prescribed in congregate settings in both time periods (80% vs. 56% in non-congregate settings), p<0.05.<br><br>2.3) Physical intervention sometimes or usually used was more frequent in congregate settings (48% and 44% compared to 20% and 13% at times 1 and 2), p<0.05. | and this was also true for co-tenants, as they had a higher number of community activities (measured over a 4-week period).<br><br>There were better outcomes for congregate settings in the nature of support provided, which includes working practices such as person-cantered planning, assessment and teaching, activity planning, and staff support to residents. However these are process outcomes and these processes are not associated with better outcomes as can be shown by the lack of statistical differences or inferiority in outcomes related to quality of life and methods for the treatment and control of challenging behaviour.<br><br>There were no differences in (1) the nature of support provided as measured by social climate (which includes depersonalisation, rigidity of routines, block treatment, social distance) and also measured by different categories of contact received from staff and (2) methods for the treatment and control of | |

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| Both settings had between 2–6 residences and both were located near ordinary housing for people without learning disabilities. | | 2.4) Physical intervention used by more than one staff member more frequent in congregate settings (58% and 48% vs. 24% and 17% at times 1 and 2), p<0.05<br><br><u>3) Quality of life</u><br><br>**Mixed impact**<br>3.1) Choice – At time 1 only, congregate settings had greater choice over aspects of their lives (72.9% vs. 63.9%) but not at time 2 (67.1% vs. 71%), p<0.05.<br><br>**Favouring non-congregate settings**<br>3.2) Participant activity – mean hours per week of scheduled activity – greater for both time periods in non-congregate settings (17.8% and 17.2% vs. 6.4% and 7.1%), p<0.001, p<0.01.<br><br>3.3) Number of community activities in 4 weeks among co-tenants – higher in non-congregate settings (23% and 17.6% vs. 15.7% and 10.1%), p<0.05.<br><br>**Not different**<br>3.4) Observed activity in home or community (data not provided in the table).<br><br>3.5) Mean family contact, past 3 months.<br><br>3.6) Mean number of people identified in social networks (but it is unclear | challenging behaviour via written treatment or programmes, and<br>(3) quality of life as measured by observed activity in home or community, mean family contact in the past 3 months, mean number of people identified in social networks, and percentage of individuals engaged in various activities, and (4) risks and injuries which includes perceived risk of abuse by other service users, actual victim of abuse or solid evidence for perceived risk of abuse, mean number of minor injuries received in past year, percentage of residents who had received serious or major injuries from co-tenants.<br><br>**Sensitivity analyses**<br>The authors conduct additional statistical analyses to examine the impact of co-tenants behaviour on total costs.<br><br>Results are only presented for total costs and do not present results separately for accommodation and non-accommodation costs.<br><br>With this additional analysis, results were not changed. | |

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| | | whether there are statistical differences in composition of social networks (family members vs. non-family, non-staff, and those without intellectual disabilities).<br><br>3.7) Percentage of individuals who are disengaged, engaged, involved in domestic, personal, or other activity, total non-social engagement, stereotypical behaviour, challenging behaviour, variety of community activities in the last 4 weeks and co-tenants' variety of activities in the last 4 weeks.<br><br><u>4) Risks and injuries</u><br><br>**Not different**<br>4.1) Perceived risk of abuse by other service users (8 and 9% vs. 24 and 8% at times 1 and 2 for non-congregate and congregate settings).<br><br>4.2) Actual victim of abuse or solid evidence for perceived risk of abuse (12 and 17% vs. 32 and 12% at times 1 and 2 for non-congregate and congregate settings).<br><br>4.3) Mean number of minor injuries received in past year (including co-tenants) (0.9 and 1.9 vs. 1.4 and 3.1 at times 1 and 2 for non-congregate and congregate settings). | The costs presented below incorporate statistical analyses of the effects of co-tenants' Aberrant Behaviour Checklist (ABC) scores and mean Adaptive Behaviour Scale (ABS) Short Form (ABS) scores for the setting to examine the influence of co-tenants on total costs.<br><br>Total costs<br>Non-congregate, £58,338<br>Congregate, £73,468<br>P<0.01, (SD = not provided). | |

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| | | 4.4) Percentage of residents who had received serious or major injuries from co-tenants at either time 1 or time 2 (not shown in Table 6 but results provided narratively).<br><br>**Mixed evidence**<br>4.5) Residents receiving minor injury in past year (including co-tenants) (14 and 15% vs. 26 and 44% at times 1, not significant, and time 2, statistically significant, p<0.0001, favouring non-congregate vs. congregate settings).<br><br>**Resource use**<br>Authors report costs in American dollars but we have recalculated costs into pounds sterling using the exchange rate they have provided in the paper (£1=$1.65 $1=£0.606).<br><br>**Total costs**<br>Non-congregate, £58,182<br>Congregate, £70,193<br><br>p=0.018, (SD = not provided)<br><br>Total costs in congregate settings, compared to non-congregate settings, were driven by accommodation costs (94% vs. 86%). There were higher care staff ratios in congregate vs. non-congregate settings.<br><br>**Accommodation costs**<br>Non-congregate, £50,071 | | |

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| | | Congregate, £65,721<br><br>p<0.01, (SD=not provided)<br><br>**Non-accommodation cost*s***<br>Non-congregate, £8,111<br>Congregate, £4,420<br>P<0.05, (SD=not provided)<br><br>Lower costs in congregate settings, compared to non-congregate settings, were driven by lower costs of day activity services (£2,080 vs. £6,239), representing 47% of non-accommodation costs compared to 77% of costs in non-congregate settings.<br><br>There was no difference hospital costs and costs of aids and adaptations. | | |

**Methodological quality checklist for economic evaluations**

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| **Study identification**<br>Robertson J, Emerson E, Pinkey L, Caesar E, Felce D, Meek A, Carr D, Lowe K, Knapp M, Hallam A (2004) Quality and costs of community-based residential supports for people with mental retardation and challenging behavior. American Journal on Mental Retardation 109(4): 332–44 | |
| **Guideline topic:** Service guideline: Learning disabilities and behaviour that challenges | |
| **Economic priority area:** Yes | **Q:** 1 |
| ***Checklist: Section 1*** | |
| Yes/No/Partly/ Not applicable | Detail |
| **1.1 Is the study population appropriate for the review question?** | |
| Yes | All adults with severe learning disabilities and challenging behaviour aged between 18 and 64 years. |
| **1.2 Are the interventions appropriate for the review question?** | |
| Yes | Compares non-congregate setting (where minority of residents had challenging behaviour) defined as 50% or fewer residents having challenging behaviour to congregate settings (majority of residents had challenging behaviour) defined as |

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| | 50% or more residents having challenging behaviour). Both settings had between 2–6 residences and both were located to ordinary housing for people without learning disabilities. |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Partly | Study was conducted in England using a convenience sample (and not a random sample) of 36 different settings that were provided by 20 different providers (p334) but the data were collected some time before 2004 (based on publication date, but this is not clearly reported). It is unclear whether social care practices in that time period are the same as current practice. The authors note that, at the time, policy guidance discourages 'congregating people together with challenging behaviour' and that the authors' impression was that this policy was not being followed but the authors recognise that they did not have data to support this (p341). However their impression was based on the fact that they had difficulty in identifying providers providing non-congregate residences. |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Yes | NHS and personal social services. |
| **1.5 Are all direct effects on individuals included?** | |
| Yes | Main outcome domains include (1) the nature of support provided (2) methods for the treatment and control of challenging behaviour (3) quality of life and (4) risks and injuries. |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| Not necessary | One-year time horizon for costs and outcomes measured over a 10-month period. |
| **1.7 How is the value of effects expressed?** | |
| Natural units and costs. Resource use is not presented in natural units but in monetary units. | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| No/Unclear | Unpaid care and impact on criminal justice sector not measured. |
| **General conclusion** | |
| The authors used a non-randomised, matched-group design. It is unclear whether the methods used are sufficient to be confident in the findings. This is especially important when trying to explain the cause of differences, given that differences may be a result of differences in individual characteristics, including unmeasured characteristics. It is unclear whether the appropriate statistical methods were used to adjust for these differences. Likewise, it is difficult to determine whether results are due to differences in 'congregateness' or other differences in service characteristics (i.e. congregate settings had higher care staffing ratios (2.1 vs. 1.4), which limits conclusions about the impact of congregate vs. non-congregate settings on outcomes and costs. The study is partly applicable but requires careful interpretation of the results. | |
| ***Section 2: Study limitations (the level of methodological quality)*** | |
| This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |

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| N/A | Not a model. This is a cost–consequence analysis using a longitudinal matched-groups design (using the mean score on the Aberrant Behaviour Checklist and Adaptive Behaviour Scale screening items). |
| **2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?** | |
| Partly/Yes | Outcomes are measured at 2 time points over a period of 10 months. Resource use is measured. |
| **2.3 Are all important and relevant outcomes included?** | |
| Yes | See section 1.5 above. |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| Yes | Baseline outcomes are taken from the study. |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |
| Yes | Various outcome measures used (see section 1.5 above) which are based on a combination of interviewing service personnel and observation by study researchers. |
| **2.6 Are all important and relevant costs included?** | |
| Yes | See section 1.4 above. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| Yes | Resource use collected using the Client Services Receipt Inventory (CSRI) over the preceding 3 months. |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Partly | Costs are taken from agency accounts. |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| N/A | Not presented but could not be calculated as standard deviations were not provided for outcomes or costs. |
| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| Yes | Costs data were subject to statistical sensitivity analysis, which considered the impact of co-tenants behaviour on total costs. |
| **2.11 Is there any potential conflict of interest?** | |
| Unclear | Not reported |
| **2.12 Overall assessment** | |
| Potentially serious limitations in economic methods. Furthermore, there are weaknesses in the economic methods, which make it difficult to be confident in the findings on costs. In particular, the methods of calculating accommodation and non-accommodation costs may not have been appropriate. Costs were based on local prices, meaning that it is unclear whether costs were higher because of prices or differences in resource use. | |

# **Population** Adults with learning disability and challenging behaviour
# **Intervention model type** In-area vs. out-of-area placements

Perry J, Allen DG, Pimm C, Meek A, Lowe K, Groves S, Cohen S, Felce D (2013) Adults with intellectual disabilities and challenging behaviour: the costs and outcomes of in- and out-of-area placements. Journal of Intellectual Disability Research 57(2): 139–52

| **Country, study type, intervention and comparison** | **Study population, design and data sources** | **Outcomes, resource use** | **Results Cost-effectiveness, costs** | **Summary** |
|---|---|---|---|---|
| **Country** England (49 settings in total based in 'territory served by the largest NHS specialist health service in Wales' (p148).<br><br>**Date** Unclear.<br><br>**Internal and External validity** (–/++)<br><br>**Follow-up period** Unclear.<br><br>**Study design** | **POPULATION** Adults with learning disability and challenging behaviour.<br><br>**Mental health** No differences in relation to 'Caseness for symptoms associated with mental illness on the PAS-ADD checklist'. In-area, 28.9% Out-of-area, 15.8% p=0.14<br><br>**Proportion of individuals who reached the criterion level** | **Outcomes** Quality of care and quality of life.<br><br>**Resource use** Societal perspective (NHS, personal social services, and travel costs to family/carers).<br><br>**RESULTS**<br><br>**Outcomes**<br><br><u>Quality of care</u><br>1. Working methods (Residential Services Working Practices Scale (RSWPS))<br><br>**No differences**<br>Individual planning, planning activities, planning staff support.<br><br>**Favours in-area residence**<br>Behavioural assessment and teaching (80% | **Price year** 2008/09<br><br>**Findings on cost-effectiveness**<br>In summary, in-area had higher costs but better outcomes on a greater number of measures. Out-of-area had lower costs but had better outcomes in a smaller number of measures.<br><br>**Sensitivity analyses**<br>Authors attempt to match individuals as closely as possible on measures of adaptive behaviour and levels of challenging behaviour but it is unclear, due to unclear reporting of | **Applicability**<br>Partly applicable but requires careful interpretation of the results.<br><br>**Quality**<br>Potentially serious limitations.<br><br>**Summary**<br>Based on the limitations of the study and weaknesses in economic methods, it is not possible to determine whether in-area or out-of-area placements are |

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| Matched group comparison, controlling for 'risk factors for out-of-area placement identified by Allen et al. (2007)' (p142). but analysis of differences between groups did not take covariates into account, which is a limitation.<br><br>**Study type**<br>Cost–consequence analysis<br><br>**Intervention 1**<br>In-area residential placements (n=38).<br><br>Usually smaller compared to out-of-area, mean number of places 3.5, range =1–12, sd=2.21. | **associated with autistic spectrum disorders**<br>In-area, 47.4%<br>Out-of-area, 44.7%<br>Not statistically different<br><br>**DATA SOURCES**<br><br>**Sources of effectiveness data**<br>'Individual participants were interviewed for their subjective appraisals of outcome (provided they passed screening for response bias); and paid carers who knew the person well were consulted about objective information on participant characteristics and lifestyle outcome' (p143).<br><br>**Sources of resource use data**<br><br>'Case managers were asked about commissioning | vs. 43%, p<0.05) and staff training and supervision (100% vs. 65%, p<0.01).<br><br>2. Whether the setting was institutionally or individually oriented (Group Homes Management Scale, GHMS).<br><br>**No differences**<br>Absence of rigid routines, block treatment, and depersonalisation.<br><br>**Favours in-area residence**<br>Absence of staff distance (80% vs. 73%, p<0.05).<br><br>3. Various aspects of the treatment and management of challenging behaviour, usual intervention.<br><br>**No differences**<br>No intervention (behaviour ceases spontaneously and behaviour is tolerated or accepted), ignored as part of an agreed programme, verbal response, physical intervention, one staff member or more than one staff member, other.<br><br>Type of intervention needed 'usually' or 'sometimes'<br><br>**Not different**<br>4/7 measures including use of seclusion and other techniques, use of written programmes and use of medicines review. | statistical methods, whether covariates were controlled for when comparing differences between groups: 'there was limited use of analysis of covariance to control for outstanding differences in participant characteristics' (p143).<br><br>The authors note that had the groups been more closely aligned on measures of challenging behaviour and adaptive behaviour, we might expect in-area placements to show greater advantages and smaller differences in costs.<br><br>**Details**<br>This is particularly important because the authors note that out-of-area residents had greater ability (as measured by the Mean Total Adaptive Behaviour Scale (ABS) scores (in-area, 176, sd=61.8 vs. Out-of-area, 190, sd=62.1, p=0.31) and even though differences were not significant, they 'should not imply similarity' as this is likely to result in 'higher scores on the | relatively more cost-effective. |

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| Higher mean staffing hours per resident per week =134, sd=92.9.<br><br>**Intervention 2**<br>Out-of-area residential placements (n=38).<br><br>Larger compared to in-area, mean 8.5, range =1–24, sd=6.4, p<0.01.<br><br>Lower mean staffing hours per resident per week =56 (sd=35.4) p<0.001. | arrangements; service administrators were asked for financial information; service managers were interviewed about settings, staffing, staff training, working methods and routines' (p143)<br><br>'Site-specific costs were collected by the Residential Services Setting Questionnaire (RSSQ) and a separate Setting Cost Questionnaire developed by the project team which obtained accounts data from providing agencies' (p142).<br><br>'The frequency and extent of individual use of non-accommodation services and of costs borne by families of residents were assessed using the Client Service | **Favouring in-area**<br>2/7 measures including physical restraint used less (8% vs. 29%, p<0.05), functional analysis used more (97% vs. 79%, p<0.05).<br><br>**Favouring out-of-area**<br>1/7 measures, including less use of sedation (8% vs. 32%, p<0.01).<br><br><u>Quality of life</u><br>4. Degree and independence of individual participation in domestic management (Index of Participation in Domestic Life)<br>No difference.<br><br>5. Independence in the community was assessed by using the Community Participation Inventory.<br><br>**Favouring in-area**<br>Number of activities in past month (37, sd=21 vs. 25, sd=20).<br><br>**No difference**<br>Variety of activities, activities done independently.<br><br>6. Choice (Choice Questionnaire)<br>No difference.<br><br>7. Range and frequency of social and community activities (Index of Community Involvement)<br>No difference. | objective quality of life indicators (see Felce and Perry 2009)' (p145). But when we look at comparisons of quality of life outcomes, we see that out-of-area was superior in many areas, in fact mostly not different (and we might have expected there to be a favourable bias for out-of-area).<br><br>Likewise, residents in out-of-area placements had lower levels of challenging behaviour (mean scores on the Aberrant Behaviour Checklist (ABC), in-area, 35.1, sd=29.2, vs. out-of-area, 20.5, sd=21.2, p<0.01). The authors would expect this to 'bias the comparison in favour of the out-of-area group in terms of lower costs and higher scores on some objective quality of life indicators for the out-of-area group (see Felce et al. 2003, 2011)' (p145). In one sense, this aligned with results showing out-of-area to have lower costs but did not align with findings regarding | |

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| | Receipt Inventory' (p142).<br><br>**Sources of unit cost data**<br><br>National unit costs for items collected on the CSRI (p142).<br><br>Site-specific costs based on accounts data (p142). | 8. Size and nature of the participants' social networks (modified version of the Social Network Map).<br><br>No difference on 6/7 measures (visits to/from family, visits to friends, percentage of social network with family, friends, and friends without learning disability).<br><br>**Favourable for in-area**<br>Greater number of visits from friends in past 3 months.<br><br>9. Sense of social isolation (Loneliness Questionnaire)<br>No difference.<br><br>10. Health<br><br>No difference<br>BMI, health checks (general, blood pressure, dentist, hearing), healthcare scale (healthcare subtotal and lifestyle).<br><br>**Favouring out-of-area**<br>Greater number of vision checks (90% vs. 63%, $p<0.05$), larger percentage that are active (86% vs. 60%, $p<0.05$).<br><br>11. Safety (Risks Scale). No difference.<br><br>12. Lifestyle satisfaction (Comprehensive Quality of Life Scale – Intellectual Disability)<br>No difference. | superiority of quality of life outcomes. | |

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| | | 13. Lifestyle satisfaction (Lifestyle Satisfaction Scale). No difference.<br><br>**Resource use** (Mean weekly costs, rounded to nearest tenth)<br><br>**Total accommodation costs**<br>**Statistically different, higher accommodation costs for in-area residence**<br>In-area, £1690 (sd=573)<br>Out-of-area, £1280 (sd=471)<br>Mean diff. £411 (95% CI, 230 to 757)<br><br>Total accommodation costs higher for in-area residence driven by higher direct staffing costs that were statistically significant at for in-area vs. out-of-area (£1207, sd=686 vs. £650, sd=307) of which some was offset by slightly higher, but not statistically significant non-staff input costs (administration and overheads) (£628, sd=263 vs. £480, sd=403).<br><br>Total accommodation costs remained higher for in-area placements even after analysis of covariance on differences in ABC scores (df=1, F=9.75, p<0.01).<br><br>**Total non-accommodation costs**<br>**Statistically different, higher costs for in-area residence**<br>In-area, £187 (sd=174)<br>Out-of-area, £113 (sd=141)<br>Mean diff. £73 (95% CI, 6 to 147) | | |

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| | | Higher non-accommodation costs driven by statistically higher use of daytime activities, (£132, sd=152 vs. £65, sd=127, mean difference, £67 (95% CI, 7 to 133) which is likely due to out-of-area residences providing many of these activities within the residence with the same staff. There was statistically higher use of hospital based-services although this was low (£12, sd=32 vs. £3, sd=7, mean difference, £9.5 (95% CI, 3 to 29). Use of community-based services were not statistically different between groups (£43, sd=43 vs. £46, sd=74; mean difference, -2.8 (95% CI, -39 to 18).<br><br>**Private costs**<br>Out-of-area families had greater costs compared to in-area families (mean =£8/wk, sd=12.7 vs. £2/wk, sd=3.2; mean difference, -£6.7, 95% CI, -11.8 to -3.1). | | |

**Methodological quality checklist for economic evaluations**

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|---|---|---|
| **Study identification:**<br>Perry J, Allen DG, Pimm C, Meek A, Lowe K, Groves S, Cohen S, Felce, D (2013) Adults with intellectual disabilities and challenging behaviour: the costs and outcomes of in- and out-of-area placements. Journal of Intellectual Disability Research 57(2): 139–52 | | |
| **Guideline topic:** Service guideline: Learning disabilities and behaviour that challenges | | |
| **Economic priority area:** Yes | | **Q:** 1 |
| ***Checklist: Section 1*** | | |
| Yes/No/Partly/ Not applicable | Detail | |
| **1.1 Is the study population appropriate for the review question?** | | |
| Yes | Adults with learning disability and challenging behaviour. | |
| **1.2 Are the interventions appropriate for the review question?** | | |

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| Yes | Comparison of out-of-area residential placements to in-area residential placements. |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Partly | Study takes place in England based on 49 settings in total. They are located in the 'territory served by the largest NHS specialist health service in Wales' (p148). The authors caution about generalisability because it is based on 1 territory. Furthermore, it is unclear when the data were collected and whether social care practice patterns are similar in current context. |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Yes | 'Costs were assessed from a societal perspective to include costs to the caregiving agencies, the National Health Service (NHS), local authorities and families of residents' (p142). |
| **1.5 Are all direct effects on individuals included?** | |
| Yes | Quality of care and quality of life outcomes (see data extraction tables above). |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| Unclear but most likely yes | Unclear – the study time horizon is not clearly reported. Costs are reported as mean costs per week, which does not add more clarity, especially when information on use of health and social care services was measured in past 3 months. |
| **1.7 How is the value of effects expressed?** | |
| Natural units for outcomes and monetary units for costs although some narrative provided for some areas of resource use using natural units. | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| Partly | Travel costs to family were included (to visit individuals in their residence). |
| **General conclusion** | |
| Partly applicable but requires careful interpretation of the results due to limitations in study design. The authors used a non-randomised, matched-group design. It is unclear whether the methods used are sufficient to be confident in the findings. | |
| ***Section 2: Study limitations (the level of methodological quality)*** | |
| This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |
| N/A | Not a model. This is a cost–consequence analysis. |
| **2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?** | |
| Unclear | Time horizon not clearly reported and it seems that outcomes were measured at only one point in time. Cost time period is unclear. |
| **2.3 Are all important and relevant outcomes included?** | |
| Yes | See section 1.5 above. |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |

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| Yes | From the study. 'Individual participants were interviewed for their subjective appraisals of outcome (provided they passed screening for response bias); and paid carers who knew the person well were consulted about objective information on participant characteristics and lifestyle outcome' (p143). |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |
| Partly | From the study. However this was a matched group comparison, controlling for 'risk factors for out-of-area placement identified by Allen et al. (2007)' (p142). However the statistical analysis of differences between groups is not clearly reported in relation to whether any covariates were included in the analysis. It may be the case that they were not included as the authors state that they attempted to match individuals as closely as possible on measures of adaptive behaviour and levels of challenging behaviour but they also say that 'there was limited use of analysis of covariance to control for outstanding differences in participant characteristics' (p143). The authors also say that had the groups been more closely aligned on measures of challenging behaviour and adaptive behaviour, we might expect in-area placements to show greater advantages and smaller differences in costs, which indicates that analyses may not have included covariates. However, the authors assess how differences in individual characteristics would affect costs and outcomes by referencing other literature, which is helpful in interpreting results. |
| **2.6 Are all important and relevant costs included?** | |
| Yes | See section 1.4. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| Yes | From the study. 'Case managers were asked about commissioning arrangements; service administrators were asked for financial information; service managers were interviewed about settings, staffing, staff training, working methods and routines' (p143). 'Site-specific costs were collected by the Residential Services Setting Questionnaire (RSSQ) and a separate Setting Cost Questionnaire developed by the project team which obtained accounts data from providing agencies' (p142). 'The frequency and extent of individual use of non-accommodation services and of costs borne by families of residents were assessed using the Client Service Receipt Inventory' (p142). |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Partly | National unit costs for items collected on the CSRI (p142). Site-specific costs based on accounts data and were adjusted for specific residents based on 'staff estimates of the distribution of staffing to the individuals concerned' (p142). |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| Not presented but could be calculated using the data with some limitations. | |
| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| Partly | See section 2.5 above. |
| **2.11 Is there any potential conflict of interest?** | |
| Unclear | Not reported. |
| **2.12 Overall assessment** | |
| Potentially serious limitations in economic methods. It is difficult to be confident in the findings on costs. In particular, the methods of calculating accommodation costs may not have been appropriate. Accommodation costs were based on local prices, meaning that it is | |

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| unclear whether costs were higher because of prices or differences in resource use. |

**Review question 2**

2.1 What is the appropriate community-based (including residential) service capacity for children, young people and adults with learning disabilities and behaviour that challenges, and their families and carers?

2.2 What is the appropriate hospital inpatient bed capacity for children, young people and adults with learning disabilities and behaviour that challenges, and their families and carers?

- This area focuses on issues such as strategic planning, location of services, integration of services, and is very likely to affect timely access to services.

**Population** Young children with intellectual disability or global developmental delay and behaviour that challenges
**Topic** Association between costs and child and parent characteristics

Adams D, Handley L, Simkiss D, Walls E, Jones A, Knapp M, Romeo R, Oliver C (2016) Service use and access in young children with intellectual disability or global developmental delay: associations with challenging behaviour. Journal of Intellectual and Developmental Disability: 1-10.

| **Critical appraisal: survey** |
|---|
| **Overall assessment** |
| External validity (++) Internal validity (+) |

| **External validity** | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Partly | Their objective helps to understand current levels of service use among young children with intellectual disability or global developmental delay and its associations with service use and challenging behaviour. This study does not entirely answer questions about capacity.<br><br>'The key aims for this paper were to first describe the range and cost of services accessed by children with ID and GDD. The degree to which services accessed and their associated costs are associated with child characteristics including age, form, and severity of challenging behaviour, and degree of ID or GDD will then be explored. Finally, we aimed to explore the degree to which services accessed and their associated costs are associated with parental anxiety and depression' (p2). |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Yes | 'Ethical approval was received from the University of Birmingham Research Ethics Committee' (p3). |
| **1.3 Were service users involved in the study?** | |
| No | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |

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| Partly | Describes service use but does not provide answers regarding appropriate capacity levels. |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | Young children with intellectual disability or global developmental delay and challenging behaviour. |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | Service use. |
| **2.4 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.5 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.6 Does the study have a UK perspective?** | |
| Yes | Sampling from a large UK city (most likely Birmingham, as that is where ethical approval was given). |
| **Overall assessment of external validity ( -/+/++)** | |
| (++) | Relevant in terms of population and observations of service use although cannot be generalised outside of this sampling frame and cannot be used to inform decisions about optimal capacity levels. |
| **Internal validity** | |
| **1. Objectives clearly stated?** | |
| Yes | See section 1.1 above. |
| **2. Design** | |
| **2.1 Research design clearly specified and appropriate?** | |
| Yes | 'A cross-sectional design was used to collect data from a community-based sample' (p3). |
| **2.2 Clear description of context?** | |
| Yes | |
| **2.3 References made to original work if existing tool used?** | |
| N/A | |
| **2.4 Reliability and validity of new tool reported?** | |
| Yes | 1. Self-injury, Aggression and Destruction Screening Questionnaire (SAD-SQ; Davies and Oliver 2016).<br>2. The Vineland Adaptive Behavior Scale, 2nd Edition, Survey Form (VABS-II, Survey Form;Sparrow et al. 2005).<br>3. Client Service Receipt Inventory for Children with Intellectual Disabilities (CSRI-CID; Beecham & Knapp 2001).<br>4. Hospital Anxiety and Depression Scales (HADS; Zigmond and Snaith 1983). |

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| **2.5 Survey population and sample frame clearly described?** | |
| Yes | 'Parents who identified their children as having a diagnosis of ID or a GDD were recruited while waiting for appointments at Child Development Centres in a large UK city … Following completion of the initial questionnaire pack within the Child Development Centre, parents were later asked to complete a telephone interview' (pp2–3). 'This resulted in a sample of 49 parents of children.' (p3) |
| **2.6 Representativeness of sample is described?** | |
| No | Sample characteristics described but not whether sample is representative. |
| **2.7 Subject of study represents full spectrum of population of interest?** | |
| Yes | |
| **2.8 Study large enough to achieve its objectives, sample size and estimates performed?** | |
| Partly | Small sample size (n=49). |
| **2.9 Are all subjects accounted for?** | |
| Yes | |
| **2.10 Ethical approval obtained?** | |
| Yes | |
| **2.11 Measures for contacting non-responders provided?** | |
| There are no non-responders | |
| **2.12 All appropriate outcomes considered?** | |
| Yes | See section 2.4 above. |
| **2.13 Response rate provided?** | |
| Not reported | |
| **3. Measurement and observation** | |
| **3.1 Describes what was measured, how it was measured, and the outcomes?** | |
| Yes, see section 2.4 above | |
| **3.2 Measurements valid?** | |
| Yes | |
| **3.3 Measurements reliable?** | |
| Yes | |
| **3.4 Measurements reproducible?** | |
| Yes | |
| **4. Presentation of results** | |
| **4.1 Basic data adequately described?** | |
| Yes | |
| **4.2 Results presented clearly, objectively and in enough detail for readers to make personal judgement?** | |

| | |
|---|---|
| Yes | |
| **4.3 Results internally consistent?** | |
| Yes | |
| **5. Analysis** | |
| **5.1 Data suitable for analysis?** | |
| Yes | |
| **5.2 Clear description of data collection and methods and analysis?** | |
| Yes | |
| **5.3 Methods appropriate for data?** | |
| Yes | |
| **5.4 Statistics correctly performed and interpreted?** | |
| Yes | |
| **5.5 Response rate calculation provided?** | |
| No | |
| **5.6 Methods for handling missing data described?** | |
| No missing data | |
| **5.7 Difference between non-respondents and respondents described?** | |
| Not applicable – there were no non-responders | |
| **6. Discussion** | |
| **6.1 Results discussed in relation to existing knowledge on subject and study objectives?** | |
| Yes | |
| **6.2 Limitations of study stated?** | |
| Yes | |
| **6.3 Results can be generalised?** | |
| No | |
| **6.4 Appropriate attempts made to establish 'reliability' and 'validity' of analysis?** | |
| Yes | |
| **7. Interpretation: Conclusions justified?** | |
| Yes | |
| **Overall assessment of internal validity (- /+/++)** | |
| (+) | Limitations include small sample with unclear representativeness and not reporting response rate. However, the authors use appropriate, valid, and reliable tools in measuring service use and characteristics. |

**Population** Adults with intellectual disability and aggressive behaviour
**Topic** Association between costs of specialist community learning disability teams (CLDT) and individual characteristics

Unwin G, Deb S, and Deb T (2016) An Exploration of Costs of Community Based Specialist Health Service Provision for the Management of Aggressive Behaviour in Adults with Intellectual Disabilities. Journal of Applied Research in Intellectual Disabilities, Advance online publication. doi:10.1111/jar.12241.

| **Critical appraisal: survey** |
|---|
| **Overall assessment** |
| External validity (++) Internal validity (+) |

| **External validity** | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Partly | Investigates the associations between costs and individual characteristics. This cannot tell us about appropriate capacity for services. |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Yes | 'Ethical approval on the study's procedures and measures was obtained from an NHS Research Ethics Committee prior to commencement, & the study was agreed by the Research & Development offices of all participating NHS sites' (p2). |
| **1.3 Were service users involved in the study?** | |
| No | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Partly | See section 1.1 above. |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | Adults with intellectual disability and aggressive behaviour. |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | Community services. |

| | |
|---|---|
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.4 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.5 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.6 Does the study have a UK perspective?** | |
| Yes | West Midlands region. |
| **Overall assessment of external validity (-/+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Objectives clearly stated?** | |
| Yes | 'This study therefore estimates the 12-month specialist outpatient/community-based healthcare and psychotropic medication costs of managing aggressive behaviour in the community and explores the relative contributions of personal variables towards cost, including demographic, health and behavioural variables' (p2).<br><br>'The focus of the analyses was narrowed to concentrate on contact with professionals from the CLDT, namely psychiatrists, community nurses, clinical psychologists, physiotherapists, speech and language therapists, occupational therapists, arts/drama/music therapists and/or alternative therapists such as reflexologists, massage therapists or sensory therapists' (p3).<br><br>'Contact with generic health professionals such as general practitioner, dentist, optician and chiropodist were not included in the analyses as it is unlikely that contact with these professionals was specifically for the management of aggression and they are not part of the specialist CLDT' (p3). |
| **2. Design** | |
| **2.1 Research design clearly specified and appropriate?** | |
| Yes | |
| **2.2 Clear description of context?** | |
| Yes | |
| **2.3 References made to original work if existing tool used?** | |
| Yes | |
| **2.4 Reliability and validity of new tool reported?** | |

| | |
|---|---|
| Not reported | (1) Checklist based on the International Classification of Diseases and Health Related Problems-Revision 10 was used to determine whether intellectual disability was mild-moderate or severe-profound.<br>(2) Mini PAS-ADD Interview to screen for mental health problems.<br>(3) Modified Overt Aggression Scale assessed for aggressive behaviour.<br>(4) Client Service Receipt Inventory (CSRI). |
| **2.5 Survey population and sample frame clearly described?** | |
| Yes | Convenience sample from 'ten specialist community-based psychiatrist-led outpatient clinics for adults with intellectual disabilities in the West Midlands region of the UK' which covered six NHS trusts (p2). Carers, both paid and unpaid, were sent a letter inviting to participate. |
| **2.6 Representativeness of sample is described?** | |
| Partially | 'However, the sample is not representative of the wider population with intellectual disabilities as participants were recruited via psychiatrist-led clinics and it would be anticipated that people would be in touch with psychiatrist for medication-based intervention' (p7). |
| **2.7 Subject of study represents full spectrum of population of interest?** | |
| Yes | |
| **2.8 Study large enough to achieve its objectives, sample size and estimates performed?** | |
| No | '… complete follow-up data (T1, T2 and T3) were only available for 61 adults' (p4) and 'It was anticipated that between three and four predictors would be entered into the multiple regression analysis so a sample size of 76–84 participants would be required to detect at least a medium effect (f2=0.15) with statistical power of 0.8' (p3). |
| **2.9 Are all subjects accounted for?** | |
| No | n=100 recruited but only n=61 had complete data for T1, T2, and T3. |
| **2.10 Ethical approval obtained?** | |
| Yes see section 1.2 | |
| **2.11 Measures for contacting non-responders provided?** | |
| No methods to contact non-responders | |
| **2.12 All appropriate outcomes considered?** | |
| Yes | |
| **2.13 Response rate provided?** | |
| No | |
| **3. Measurement and observation** | |
| **3.1 Describes what was measured, how it was measured, and the outcomes?** | |
| Yes | |
| **3.2 Measurements valid?** | |
| Not reported | |

| | |
|---|---|
| **3.3 Measurements reliable?** | |
| Not reported | |
| **3.4 Measurements reproducible?** | |
| Not reported | |
| **4. Presentation of results** | |
| **4.1 Basic data adequately described?** | |
| Yes | |
| **4.2 Results presented clearly, objectively and in enough detail for readers to make personal judgement?** | |
| Yes | |
| **4.3 Results internally consistent?** | |
| Yes | |
| **5. Analysis** | |
| **5.1 Data suitable for analysis?** | |
| Partially | See section 2.8. |
| **5.2 Clear description of data collection and methods and analysis?** | |
| Yes | |
| **5.3 Methods appropriate for data?** | |
| Yes | |
| **5.4 Statistics correctly performed and interpreted?** | |
| Yes | |
| **5.5 Response rate calculation provided?** | |
| No | |
| **5.6 Methods for handling missing data described?** | |
| N/A | Only individuals with data were used in the analysis. |
| **5.7 Difference between non-respondents and respondents described?** | |
| No | |
| **6. Discussion** | |
| **6.1 Results discussed in relation to existing knowledge on subject and study objectives?** | |
| Yes | |
| **6.2 Limitations of study stated?** | |
| Yes | (1) Small sample which may bias results for service use and costs (2) Sampling method – individuals taken from psychiatrist-led clinics, which may explain high use of medications in this sample. |
| **6.3 Results can be generalised?** | |
| No | |

| | |
|---|---|
| **6.4 Appropriate attempts made to establish 'reliability' and 'validity' of analysis?** | |
| Yes | |
| **7. Interpretation: Conclusions justified?** | |
| Yes | |
| **Overall assessment of internal validity ( - , +, ++)** | |
| (+) | Internal validity is limited given small sample size (issues stated in section 2.8 and 5.1), which may bias the results. |

## **Population** Adolescents aged 16–18 transitioning to adult services
## **Topic** Service use patterns, relationship between characteristics and costs

Barron D, Molosankwe I, Romeo R, Hassiotis A (2013) Urban adolescents with intellectual disability and challenging behaviour: costs and characteristics during transition to adult services. Health and Social Care in the Community 21(3): 283–92

| **Critical appraisal: survey** |
|---|
| **Overall assessment** |
| External validity (++), Internal validity (+) |

| **External validity** | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Partly | 'The objective was to examine their socio-demographic and clinical characteristics, pattern of service use and associated costs of care.' This objective helps to understand current levels of service use although it is does not entirely answer questions about capacity. |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Yes | 'Ethical approval was gained from the North London Research Ethics Committee' (p285) |
| **1.3 Were service users involved in the study?** | |
| No | They were not involved in the design of the study. |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Partly | Describes service use but does not provide answers regarding appropriate capacity levels. |

| | |
|---|---|
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | Adolescents in transition from children's to adult services who have learning disabilities and challenging behaviour. |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | Measures service use across health, social, and education services and the amount of informal care provided by caregivers. |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | Transition from children's to adult services. |
| **2.4 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.5 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.6 Does the study have a UK perspective?** | |
| Yes | London. |
| **Overall assessment of external validity ( - , +, ++)** | |
| **++** | The study provides valuable information about current use of services across health, social, and education, and measures the amount of informal care provided by caregivers. However, results are not necessarily generalizable as this is based on the specific service patterns in one local area of the UK. It is generalizable in that it applies to the population and review question. |
| **Internal validity** | |
| **1. Objectives clearly stated?** | |
| Yes | See section 1.1 above. |
| **2. Design** | |
| **2.1 Research design clearly specified and appropriate?** | |
| Yes | |
| **2.2 Clear description of context?** | |
| Yes | |
| **2.3 References made to original work if existing tool used?** | |
| Yes | Strengths and Difficulties Questionnaire, Mini PAS-ADD, CSRI, Challenging Behaviour Checklist |
| **2.4 Reliability and validity of new tool reported?** | |
| Not reported | |
| **2.5 Survey population and sample frame clearly described?** | |

| | |
|---|---|
| Yes | 'The sampling frame included all individuals between the age of 16 and 18 years, who had an intellectual disability and challenging behaviour' (p285) (based in one inner-London borough). 'Potential participants and their families who had been identified by the transition social worker …' (p285). 'Fifty-nine young people aged 16 to 18 years were found to be suitable for adult Community Intellectual Disability Services, 36 of whom were identified as having challenging behaviours and were therefore invited to participate in the survey. Twenty-seven young people and their family carers agreed to take part. Of the nine who did not take part in the survey, three individuals were found not to have challenging behaviour when first contacted by DAB, two were deemed not suitable to receive services due to respectively Asperger syndrome and complex needs without intellectual disabilities and four individuals refused to participate' (pp286–7). |
| **2.6 Representativeness of sample is described?** | |
| No | Sample representativeness is not described. |
| **2.7 Subject of study represents full spectrum of population of interest?** | |
| Yes | |
| **2.8 Study large enough to achieve its objectives, sample size and estimates performed?** | |
| Partly | Small sample (n=27). |
| **2.9 Are all subjects accounted for?** | |
| Yes | |
| **2.10 Ethical approval obtained?** | |
| Yes | |
| **2.11 Measures for contacting non-responders provided?** | |
| N/A | |
| **2.12 All appropriate outcomes considered?** | |
| Yes | |
| **2.13 Response rate provided?** | |
| Yes | See p291 – they report 88% response rate (n=27/36 eligible) however the n=31 includes the 5 individuals who were willing to participate but were excluded on the basis that 3 did not have a history of challenging behaviour and 2 did not meet eligibility checklist for community intellectual disability services, leaving a total of 27 individuals who were both eligible and willing to participate (out of 31), of which the remaining 4 individuals were eligible but refused to participate. That means the adjusted response rate, excluding those who are no longer eligible (n=5) is actually 27/31= 87%. |
| **3. Measurement and observation** | |
| **3.1 Describes what was measured, how it was measured, and the outcomes?** | |
| Yes | (1) Costs (health, social care, education), and caregiver's time (informal care) and (2) participant characteristics: Strengths and Difficulties Questionnaire, Mini PAS-ADD, CSRI, Challenging Behaviour Checklist, age, gender, ethnicity, accommodation and clinical diagnoses (physical, mental). |
| **3.2 Measurements valid?** | |

| | |
|---|---|
| Not reported | |
| **3.3 Measurements reliable?** | |
| Not reported | |
| **3.4 Measurements reproducible?** | |
| Not reported | |
| **4. Presentation of results** | |
| **4.1 Basic data adequately described?** | |
| Yes | |
| **4.2 Results presented clearly, objectively and in enough detail for readers to make personal judgement?** | |
| Yes | |
| **4.3 Results internally consistent?** | |
| Yes | |
| **5. Analysis** | |
| 5.1 Data suitable for analysis? | |
| Yes | |
| **5.2 Clear description of data collection and methods and analysis?** | |
| Yes | |
| **5.3 Methods appropriate for data?** | |
| Yes | |
| **5.4 Statistics correctly performed and interpreted?** | |
| Yes | |
| **5.5 Response rate calculation provided?** | |
| Yes | |
| **5.6 Methods for handling missing data described?** | |
| N/A | No missing data. |
| **5.7 Difference between non-respondents and respondents described?** | |
| N/A | All respondents completed all measures. |
| **6. Discussion** | |
| **6.1 Results discussed in relation to existing knowledge on subject and study objectives?** | |
| Yes | |
| **6.2 Limitations of study stated?** | |
| Yes | |
| **6.3 Results can be generalised?** | |
| No | |

| | |
|---|---|
| **6.4 Appropriate attempts made to establish 'reliability' and 'validity' of analysis?** | |
| Yes | |
| **7. Interpretation:** Conclusions justified? | |
| Yes | |
| **Overall assessment of internal validity (- /+/++)** | |
| (+) | Study is not generalisable and is based on a small sample from an inner-London borough. Strengths of the paper are that the response rate is high. Limitation is that the validity, reliability, and reproducibility of the measures are not reported. |

**Population** People with learning disability and/or autism who display behaviour that challenges, including those with a mental health condition

**Topic** Developing community services and closing inpatient facilities

| **Critical appraisal: qualitative study** |
|---|
| **Study identification:**<br>Local Government Association (2016) Learning disability services efficiency project. London: LGA. |
| **Overall assessment** |
| External validity (-), Internal validity (-) |

| **External validity** | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Partly | Focuses on 5 councils' efforts to redesign more cost-effective services. |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Unclear | Not reported. |
| **1.3 Were service users involved in the study?** | |
| Unclear | Not reported. |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |

| | |
|---|---|
| Partly | Looks at cost-effective service options, not a clear focus on capacity, and focuses on individuals with learning disabilities but not specific to individuals with challenging behaviour. |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Partly | Focuses on individuals with learning disabilities but not specific to individuals with challenging behaviour. |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | Housing and support models, service design. |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.7 Does the study have a UK perspective?** | |
| Yes | Five councils in England. |
| **3. Overall assessment of external validity (-/+/++)** | |
| (-) | Not a complete match to population and review question about capacity. |
| **Study credibility** | |
| **1. Theoretical approach** | |
| **1.1 Is a qualitative approach appropriate?** | |
| Partly | This report provides a summary of findings across the 5 councils, so a qualitative report is partly appropriate. However, this also means that information on costs and outcomes are summarised with very little detail, and in this way, a qualitative approach, on its own, is not appropriate, and would be better if it was accompanied by a more robust economic evaluation. |
| **1.2 Is the study clear what in it seeks to do?**<br>Is the purpose of the study discussed? Is there adequate/appropriate reference to the literature? Are underpinning values/assumptions/theories discussed? | |
| Yes | Context is the budgetary pressures councils face and the purpose is to discuss the new approaches undertaken in the 5 councils to address this challenge. |
| **2. Study design** | |
| **2.1 How defensible/rigorous is the research design/methodology** | |

| | |
|---|---|
| Is the design appropriate to the research question? Is rationale given for using qualitative approach? Is the selection of cases/sampling strategy theoretically justified? | |
| Partly | Design is partially appropriate (see section 1.1 above). Rationale is not provided. The rationale for providing the case studies is not clear, but appears to offer 'successful' examples of cost-savings and where these have also improved or left unchanged individuals' outcomes. |
| **3. Data collection** | |
| **3.1 How well was the data collection carried out?**<br>For example, were the data collection methods described? Were appropriate data collected to address the research question? Was the data collection and record keeping systematic? | |
| No | Due to lack of reporting, the data collection methods are not described, it is not clear whether record keeping was systematic, and it is unclear whether appropriate data were collected. |
| **4. Validity** | |
| **4.1 Is the context clearly described?**<br>Are the characteristics of the participants and settings clearly defined?<br>Were observations made in a sufficient variety of circumstances? Was context bias considered? | |
| No | The amount of detail in the context varied depending on the case study described. However, detail was very limited. |
| **4.2 Were the participants recruited in an appropriate way?**<br>Is there risk of bias or influence on the respondents due to the recruitment? | |
| Partly | The selection of case studies is meant to illustrate 'what worked', however this is in line with the aims of this report. |
| **4.3 Were methods reliable?**<br>For example, were data collected by more than 1 method? Is there justification for triangulating or not triangulating the findings? Do the methods investigate what they claim to? | |
| Unclear | Methods of data collection are unclearly reported. |
| **5. Analysis** | |
| **5.1 Are the data rich?**<br>How well are the contexts of the data described? Has the diversity of perspective and content been explored? How well has the detail and depth been demonstrated? Are responses compared and contrasted across groups/sites? | |
| No | Summaries are provided, very limited detail. |
| **5.2 Is analysis reliable?** | |

| | |
|---|---|
| Did more than 1 researcher theme and code transcripts/data? If so, how were differences resolved? Did participants feedback on the transcripts/data if possible and relevant? Were negative/discrepant results addressed or ignored? | |
| Unclear | No information provided. |
| **5.3 Are the findings reliable?**<br>Are the findings clearly presented? Findings internally coherent? Extracts from the original data included? Data appropriately referenced? Is reporting clear and coherent? | |
| Unclear | Limited information and reporting limits our ability to determine whether findings are reliable. |
| **5.4 Are the conclusions adequate?**<br>Are the findings relevant to the aims of the study? How clear are the links between data, interpretation, and conclusions? Are the conclusions plausible and coherent? Have alternative explanations been explored and discounted? Does this enhance understanding of the research topic? | |
| Partly | The summaries provide too little information to determine whether conclusions are reliable. The data that show reduced expenditure do support conclusions about cost-savings, although it is not clear, due to the lack of adequate and detailed reporting, how this affected individuals' outcomes and whether some cost-savings were due to reduced demand for services. |
| **6. Overall assessment of credibility?** | |
| **6.1 As far can be ascertained from the paper, how well was the study conducted?** | |
| (-) | Low quality report. |

**Population** Adults with intellectual disabilities
**Topic** Predictors of out-of-area placements and impact on costs

| **Critical appraisal: survey** |
|---|
| **Study identification:**<br>Deveau R, McGill P, Poynter J (2016) Characteristics of the most expensive residential placements for adults with learning disabilities in South East England: a follow-up survey. Tizard Learning Disability Review 20(2): 97–102 |
| **Overall assessment** |
| External validity (+), Internal validity (+) |

| **External validity** | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | 'The purpose of this paper is to investigate the characteristics of the highest cost residential placements provided for adults with learning disabilities in the South East of England, comparing findings with a previous survey' (p97). |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Not reported | Uses anonymous administrative data. |
| **1.3 Were service users involved in the study?** | |
| Not reported | Uses administrative data, most likely service users not involved. |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Partly | Focus is on individuals with learning disabilities although individuals with challenging behaviour are included. |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | In-area vs. out-of-area placements. |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |

| | |
|---|---|
| **2.4 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| Yes | Outcomes measured include placement type (in-area vs. out-of-area) and costs of care packages. |
| **2.4 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| Yes | |
| **2.5 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.6 Does the study have a UK perspective?** | |
| Yes | South East of England |
| **Overall assessment of external validity (-/+/++)** | |
| (+) | Lower quality due to lack of service users' involvement and lack of reporting of ethical concerns. |
| **Internal validity** | |
| **1. Objectives clearly stated?** | |
| Yes | 'The purpose of this paper is to investigate the characteristics of the highest cost residential placements provided for adults with learning disabilities in the South East of England, comparing findings with a previous survey' (p97). |
| **2. Design** | |
| **2.1 Research design clearly specified and appropriate?** | |
| Yes | Follow-up survey. |
| **2.2 Clear description of context?** | |
| Yes | Out-of-area placements are considered high-cost and many individuals are placed out-of-area. This is a follow-up survey to understand whether patterns have changed since last survey. |
| **2.3 References made to original work if existing tool used?** | |
| Yes | Survey questionnaire is provided |
| **2.4 Reliability and validity of new tool reported?** | |
| No | |
| **2.5 Survey population and sample frame clearly described?** | |
| Yes | Survey asks local authority commissioners and NHS trusts to provide information on top 5 highest-cost individuals. |
| **2.6 Representativeness of sample is described?** | |
| Yes | Sample meets criteria of the study. |
| **2.7 Subject of study represents full spectrum of population of interest?** | |
| Yes | |
| **2.8 Study large enough to achieve its objectives, sample size and estimates performed?** | |
| No | Authors do not report whether sample size obtained is large enough for statistical power. |

| | |
|---|---|
| **2.9 Are all subjects accounted for?** | |
| Yes | Subjects are accounted for insofar as they represent all individuals based on overall 62% response rate. |
| **2.10 Ethical approval obtained?** | |
| N/A | |
| **2.11 Measures for contacting non-responders provided?** | |
| Not reported | |
| **2.12 All appropriate outcomes considered?** | |
| Yes | |
| **2.13 Response rate provided?** | |
| Yes | Overall 62% response rate, of which 50% from NHS trusts and 74% from local authorities. |
| **3. Measurement and observation** | |
| **3.1 Describes what was measured, how it was measured, and the outcomes?** | |
| Yes | Characteristics, including gender, ethnicity, age, level of learning disability, yes/no of autism, yes/no to physical, sensory, or health impairment, yes/no to challenging behaviour, yes/no to mental health diagnosis, yes/no to offending behaviour, yes/no to being under a mental health act section, yes/no to genetic syndrome, yes/no to whether person is 'well placed', yes/no previously attended residential school, cost of placement, who funds placement (tick all that apply) – LA, continuing health, joint LA and health budget, mixture of LA and health, direct payment, type of placement (residential care, residential college, supported living, hospital, forensic, secure/medium, assessment and treatment unit), type of provider (NHS, private, non-profit), date of admission, admitted from (family home, residential school, supported living, hospital, forensic, secure/medium, assessment and treatment unit, in-area, out-of-area), yes/no plans for different placement, discharge date, location (in-area vs. out-of-area), approximate distance from home area. |
| **3.2 Measurements valid?** | |
| Unclear | Self-reported using administrative data - unclear whether all responding local authorities have similar definitions for each. |
| **3.3 Measurements reliable?** | |
| Partly | |
| **3.4 Measurements reproducible?** | |
| Yes | |
| **4. Presentation of results** | |
| **4.1 Basic data adequately described?** | |
| Yes | |
| **4.2 Results presented clearly, objectively and in enough detail for readers to make personal judgement?** | |
| Yes | |
| **4.3 Results internally consistent?** | |
| Yes | |

| | |
|---|---|
| **5. Analysis** | |
| **5.1 Data suitable for analysis?** | |
| Yes | |
| **5.2 Clear description of data collection and methods and analysis?** | |
| Yes | |
| **5.3 Methods appropriate for data?** | |
| Yes | Simple comparison of in-area vs. out-of-area placements to identify significantly different characteristics. |
| **5.4 Statistics correctly performed and interpreted?** | |
| Yes | |
| **5.5 Response rate calculation provided?** | |
| Yes | |
| **5.6 Methods for handling missing data described?** | |
| Yes | Implicit – seems to calculate results only for sample size with available information. |
| **5.7 Difference between non-respondents and respondents described?** | |
| N/A | Based on administrative data, non-respondents are the local authorities/NHS trusts providing individual-level data. |
| **6. Discussion** | |
| **6.1 Results discussed in relation to existing knowledge on subject and study objectives?** | |
| Yes | |
| **6.2 Limitations of study stated?** | |
| Yes | 'Data were drawn from existing records which are likely to contain inaccuracies' (p101). |
| **6.3 Results can be generalised?** | |
| No/Partly | Findings might be generalisable, as it is possible that some areas have similar issues. However, this is not immediately generalisable and this would need to be confirmed. |
| **6.4 Appropriate attempts made to establish 'reliability' and 'validity' of analysis?** | |
| Yes | |
| **7. Interpretation:** Conclusions justified? | |
| Yes | |
| **Overall assessment of internal validity ( - /+/++)** | |
| **(+)** | Response rate of 62% contributes to lower rating, in addition to reliance on administrative data, which may be inaccurate. Administrative data may be incomplete or inaccurate due to daily practicalities of recording data. This is relative to data gathered via independent researchers, who may be more diligent in the data they collect. |

**Population** Adults with intellectual disabilities
**Topic** Predictors of out-of-area placements and impact on costs

| **Critical appraisal: survey** |
|---|
| **Study identification:**<br>Hassiotis A, Parkes C, Jones L, Fitzgerald B, Romeo R (2008) Individual characteristics and service expenditure on challenging behaviour for adults with intellectual disabilities. Journal of Applied Research in Intellectual Disabilities 21: 438–45 |
| **Overall assessment** |
| External validity (++), Internal validity (+) |

| **Critical appraisal: survey** | |
|---|---|
| **External validity** | |
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Yes | |
| **1.3 Were service users involved in the study?** | |
| Yes | 'Individuals who took part in the service users and stakeholders meeting were asked to comment on general experiences of service use rather than answer specific questions about their own current service provision and support' (p440). |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |

| | |
|---|---|
| N/A | |
| **2.7 Does the study have a UK perspective?** | |
| Yes | Five London boroughs. |
| **Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Critical appraisal: survey** | |
| **Internal validity** | |
| **1. Objectives clearly stated?** | |
| **Yes** | 'This paper seeks to look at the subsection of people with intellectual disabilities who have expensive care needs because of challenging behaviour, to identify the decision-making processes that have led to current service provision and expenditure and to suggest improvements' (p438). |
| **2. Design** | |
| **2.1 Research design clearly specified and appropriate?** | |
| Yes | |
| **2.2 Clear description of context?** | |
| Yes | 'English policy argues that people with intellectual disabilities should be supported in their local communities. There is considerable evidence that this aspiration is not being achieved' (p438). |
| **2.3 References made to original work if existing tool used?** | |
| Yes | |
| **2.4 Reliability and validity of new tool reported?** | |
| Yes | |
| **2.5 Survey population and sample frame clearly described?** | |
| Yes | 'A cohort of people aged 18+ years with intellectual disabilities and challenging behaviour in high-cost accommodation (over £70 000/annum)' (p438). |
| **2.6 Representativeness of sample is described?** | |
| Partly | Study looks at a specific subgroup of individuals. |
| **2.7 Subject of study represents full spectrum of population of interest?** | |
| Yes | |
| **2.8 Study large enough to achieve its objectives, sample size and estimates performed?** | |
| Not reported | |
| **2.9 Are all subjects accounted for?** | |
| Not reported | Not reported. Although appears to be 100% or close to 100%, n=205 individuals reported as having challenging behaviour. |
| **2.10 Ethical approval obtained?** | |

| | |
|---|---|
| N/A | |
| **2.11 Measures for contacting non-responders provided?** | |
| Not reported | |
| **2.12 All appropriate outcomes considered?** | |
| Partly | Individual outcomes not measured, focuses on costs. |
| **2.13 Response rate provided?** | |
| Not reported | |
| **3. Measurement and observation** | |
| **3.1 Describes what was measured, how it was measured, and the outcomes?** | |
| Yes | |
| **3.2 Measurements valid?** | |
| Yes | |
| **3.3 Measurements reliable?** | |
| Yes | |
| **3.4 Measurements reproducible?** | |
| Yes | |
| **4. Presentation of results** | |
| **4.1 Basic data adequately described?** | |
| Yes | |
| **4.2 Results presented clearly, objectively, and in enough detail to make personal judgement?** | |
| Yes | |
| **4.3 Results internally consistent?** | |
| Yes | |
| **5. Analysis** | |
| **5.1 Data suitable for analysis?** | |
| Yes | |
| **5.2 Clear description of data collection and methods and analysis?** | |
| Yes | |
| **5.3 Methods appropriate for data?** | |
| Yes | |
| **5.4 Statistics correctly performed and interpreted?** | |
| Yes | |
| **5.5 Response rate calculation provided?** | |
| No | |

| | |
|---|---|
| **5.6 Methods for handling missing data described?** | |
| Yes | Uses available sample only. |
| **5.7 Difference between non-respondents and respondents described?** | |
| No | |
| **6. Discussion** | |
| **6.1 Results discussed in relation to existing knowledge on subject and study objectives?** | |
| Yes | |
| **6.2 Limitations of study stated?** | |
| Yes | |
| **6.3 Results can be generalised?** | |
| No | Results are from 5 London boroughs. |
| **6.4 Appropriate attempts made to establish 'reliability' and 'validity' of analysis?** | |
| Yes | |
| **7. Interpretation: Conclusions justified?** | |
| Yes | |
| **Overall assessment of internal validity (- /+/++)** | |
| (+) | No information on response rate and unclear if all individuals accounted for – results lower quality. |

## Review questions 3 and 4

Review question 3.1 What models of service delivery are effective and cost effective for children, young people and adults with learning disabilities and behaviour that challenges and their families and carers?

Review question 3.2 What models of service delivery facilitate timely access to effective and cost effective services for children, young people and adults with learning disabilities and behaviour that challenges?

Review question 4 What mechanisms enable effective and cost-effective joined-up working between service providers supporting children, young people and adults with learning disabilities and behaviour that challenges and their families and carers?

# **Population** Adults with intellectual disabilities and challenging behaviour
# **Topic** Specialist behaviour therapy team

Hassiotis A, Robotham D, Canagasabey A, Romeo R, Langridge D, Blizard R, Murad S, and King M (2009) Randomized, single-blind, controlled trial of a specialist behavior therapy team for challenging behavior in adults with intellectual disabilities. American Journal of Psychiatry 166: 1278–85

| **Country, study type, intervention and comparison** | **Study population, design and data sources** | **Outcomes, resource use** | **Results** | **Summary** |
|---|---|---|---|---|
| **Country** England.<br><br>**Date** 2005–08.<br><br>**Internal and External validity** (+/++)<br><br>**Time horizon** 6 months.<br><br>**Study design**<br>Cost-effectiveness.<br><br>**Study type** RCT.<br><br>**Intervention** Referring to a specialist behaviour therapy team (using applied behavioural analysis) plus standard care.<br><br>**Control** Standard care. | **POPULATION**<br>Adults with intellectual disabilities and challenging behaviour (n=63).<br><br>**Sources of resource use**<br>Self-report of service use in previous 6 months.<br><br>**Sources of unit cost**<br>PSSRU unit costs. | **Outcomes**<br>The primary outcome measure was challenging behaviour, measured by the Aberrant Behaviour Checklist.<br><br>Secondary outcome measures include psychiatric comorbidity, assessed with the Psychiatric Assessment Schedule for Adults With a Developmental Disability Checklist (PAS-ADD), and service use in the past 6 months, using the Client Service Receipt Inventory.<br><br>**Resource use**<br>Costs were calculated according to 'treatment' and 'non-treatment' costs (such as non-psychiatric inpatient stays, outpatient appointments, day care, leisure activities, adult education, support for voluntary work, and contact with general practitioners and other professionals, such as community nurse, social worker, and advocate) (p1281).<br><br>Costs to the criminal justice system and costs of informal care were not measured. | **Price year**<br>Not reported<br><br>**Findings**<br>In conclusion, at 6 months, the intervention group had better outcomes with no statistically significant differences in costs (even after including costs of the intervention), compared to the control group. | **Applicability**<br>Applicable.<br><br>**Quality**<br>Some potentially serious limitations given that the time horizon was too short in order to detect the full changes in service use and costs, small sample size, and the lack of baseline measures of service use.<br><br>**Summary**<br>The study shows that in the short-term, the intervention is cost-effective. |

| | | | | |
|---|---|---|---|---|
| | | **RESULTS**<br>The intervention group did better than the standard treatment group on improvements in challenging behaviour (total scores on the Aberrant Behaviour Checklist), lethargy and hyperactivity subscale scores, and were less likely to have comorbid organic disorder.<br><br>At six months, there were no differences in health and social care service use/costs (including the costs of the intervention), although the intervention group was trending towards lower service use/costs. | | |

| | |
|---|---|
| **Study identification:**<br>Hassiotis A, Robotham D, Canagasabey A, Romeo R, Langridge D, Blizard R, Murad S, King M (2009) Randomized, single-blind, controlled trial of a specialist behavior therapy team for challenging behavior in adults with intellectual disabilities. American Journal of Psychiatry 166: 1278–85 | |
| **Methodological quality checklist for economic evaluations** | |
| **Guideline topic:** Service guideline: Learning disabilities and behaviour that challenges | |
| **Economic priority area:** Yes | **Q:** 3 and 4 |
| ***Checklist: Section 1*** | |
| Yes/No/Partly/ Not applicable | Detail |
| **1.1 Is the study population appropriate for the review question?** | |
| Yes | Adults with intellectual disabilities and challenging behaviour (n=63). |
| **1.2 Are the interventions appropriate for the review question?** | |
| Yes | Referring to a specialist behaviour therapy team (using applied behavioural analysis) plus standard care. |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Yes | England, study taking place between 2005–08. |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Yes | Health and social care services. |
| **1.5 Are all direct effects on individuals included** | |
| Yes | The primary outcome measure was challenging behaviour, measured by the Aberrant Behaviour Checklist. Secondary outcome measures include psychiatric comorbidity, assessed with the Psychiatric Assessment Schedule for Adults With a Developmental Disability Checklist (PAS-ADD), and service use in the past 6 months, using the Client Service Receipt |

| | |
|---|---|
| | Inventory. |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| N/A | Six-month time horizon. |
| **1.7 How is the value of effects expressed?** | |
| Natural units and costs | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| No | Costs to the criminal justice system and costs of informal care were not measured. |
| **General conclusion** | |
| The study is applicable to the review question. | |
| ***Section 2: Study limitations (the level of methodological quality)*** | |
| This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |
| N/A | Not a model – this is a cost-effectiveness study. |
| **2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?** | |
| Partly | Six-month time horizon is sufficient to detect changes in primary outcomes but perhaps insufficient to detect changes in service use under the assumption that this is a potentially preventative intervention with longer-term effects. |
| **2.3 Are all important and relevant outcomes included?** | |
| Yes | See section 1.5. |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| Partly | Costs were not measured at baseline (however, service use was measured over the 6 months of the study). Baseline measurements were available for primary and secondary outcomes. |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |
| Yes | From the study. |
| **2.6 Are all important and relevant costs included?** | |
| Yes | See section 1.4. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| Yes | Retrospective self-report of service use. |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Yes | PSSRU unit costs. |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| Not presented but could be calculated. | |
| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| N/A | Not a decision model. |

| **2.11 Is there any potential conflict of interest?** | |
|---|---|
| No | Authors declare no competing interests. |
| **2.12 Overall assessment** | |
| Some potentially serious limitations given that the time horizon was too short in order to detect the full changes in service use and costs, small sample size, and the lack of baseline measures of service use. | |

| **Methodological quality checklist for quantitative evaluations** | |
|---|---|
| **External validity** | |
| **Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Yes | |
| **1.3 Were service users involved in the study?** | |
| No | |
| **Study relevance to scope** | |
| **1.4 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **1.5 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **1.6 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **1.7 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **1.8 Are the study outcomes relevant to the guideline?** | |
| Yes | |
| **1.9 Are the views and experiences reported relevant to the guideline?** | |
| N/A | Not a qualitative study. |
| **1.10 Does the study have a UK perspective?** | |
| Yes | |
| **Overall assessment of external validity** | |
| (++) | |
| **Internal validity** | |

| | |
|---|---|
| **1.1 Is this study a prospective evaluation?** | |
| Yes | |
| **1.2 Description of theoretical approach?** | |
| Yes | 'Our objective was to test the hypothesis that use of the specialist behavior therapy team in combination with standard treatment was more effective than standard treatment alone in reducing challenging behavior and costs' (p1278). |
| **Group allocation** | |
| **1.3 How was selection bias minimized?** | |
| Randomised | |
| **1.4 Was the allocation method followed?** | |
| Yes | |
| **1.5 Is blinding an issue in this study?** | |
| Partly | Single-blind. |
| **Attrition** | |
| **1.6 Did participants reflect the target group?** | |
| Unclear | Not explicitly stated. Study focuses on 'everyday' real-world settings, such that relevant population was those individuals referred by services. In such scenario, it seems implicit that these were the target population. |
| **1.7 Were all participants accounted for at study conclusion?** | |
| Yes | Acceptably low attrition rate (very low). |
| **Performance** | |
| **1.8 Was the exposure to the intervention and comparison as intended?** | |
| Yes | |
| **1.9 Was contamination acceptably low?** | |
| Yes | |
| **1.10 Did either group receive additional interventions or have services provided in a different manner?** | |
| No | |
| **Detection** | |
| **1.11 Were outcomes relevant?** | |
| Yes | |
| **1.12 Were outcome measures reliable?** | |
| Yes | |
| **1.13 Were all outcome measurements complete?** | |
| Yes | |
| **1.14 Were all important outcomes assessed?** | |
| Yes | |

| | |
|---|---|
| **1.15 Were there similar follow-up times in exposure and comparison groups?** | |
| Yes | |
| **1.16 Was follow-up time meaningful?** | |
| Partly | For outcomes yes, for costs, perhaps not. |
| **Analyses** | |
| **1.17 Were exposure and comparison groups similar at baseline? If not, were these adjusted?** | |
| Partly | Service use was measured at 6 months, which is a self-report of service use in the previous 6 months (baseline to end of study). It would have been better to measure service use in the previous 6 months, at baseline, but this did not happen. |
| **1.18 Was intention-to-treat analysis conducted?** | |
| Yes | |
| **1.19 Were the estimates of effect size given or calculable?** | |
| Yes | Not given but could be calculated. |
| **1.20 Was the study sufficiently powered to detect an intervention effect?** | |
| Partly | For outcomes, yes. For costs, no: '… a lack of statistically significant differences in costs is widely reported in cost-effectiveness comparisons of mental health interventions. In our study, it may be due to an insufficient sample size, which was calculated to detect differences in clinical outcome only' (p1283). |
| **1.21 Were analytical methods appropriate?** | |
| Yes | |
| **1.22 Was precision of intervention effects given or calculable? Were they meaningful?** | |
| Yes | |
| **1.23 Do conclusions match findings?** | |
| Yes | |
| **Overall assessment of internal validity** | |
| (+) | Study seems to be robust for clinical outcomes, but for costs, the small sample size limits robustness of findings. |

# **Population** Adults over age 18+ with challenging behaviour
# **Intervention model type** Complex Behaviour Service

Inchley-Mort S, Rantell K, Wahlich C, Hassiotis A (2014) Complex Behaviour Service: enhanced model for challenging behaviour. Advances in Mental Health and Intellectual Disabilities 8(4): 219–27

| **Country, study type, intervention and comparison service description** | **Study population, design and data sources.** | **Outcomes, resource use** | **Results Cost-effectiveness, costs** | **Summary** |
|---|---|---|---|---|
| **Country**<br>Inner London, England.<br><br>**Date** Unclear<br><br>**Internal and external validity**<br>Qualitative study (++/++).<br><br>**Time horizon** 12 months.<br><br>**Study design**<br>Observational study + nested matched comparison based on three variables (see below).<br><br>**Study type**<br>Cost–consequence analysis.<br><br>**Intervention**<br>'Complex behaviour service' comprised of 2 FTE postdoctoral clinical psychologists with experience | **POPULATION**<br>Adults aged 18+ with challenging behaviour.<br><br>Excluded those with acute mental health problems or substance misuse (p221).<br><br>Characteristics:<br>50% had mild intellectual disability, 70% male.<br><br>**DATA SOURCES**<br><br>**Sources of effectiveness data**<br>Intervention, n=24<br>Control, n=22<br><br>Outcomes measured at baseline, 6, and 12 | **Outcomes**<br>Primary outcome<br>1. Reduction in challenging behaviour as measured by Aberrant Behaviour Checklist (ABC).<br><br>Secondary outcomes<br>2. Assessment of mental and social functioning measured by the informant administered Health of the Nation Outcome Survey-LD (HoNOS-LD).<br><br>3. Assessment of met and unmet needs measured by informant administered Camberwell Assessment of Needs-Developmental and Intellectual Disabilities-short version (CANDID-s).<br><br>4. Assessment of mental health | **Price year** Not reported.<br><br>**Findings on cost-effectiveness**<br>The intervention was associated with reduced total challenging behaviour and two specific domains at 6 months, but the only difference remaining at 12 months was one domain of challenging behaviour.<br><br>The intervention was associated with increased costs of individuals' care | **Applicability**<br>Applicable with some limitations.<br><br>**Quality**<br>Potentially serious limitations.<br><br>**Summary**<br>Based on the limitations of the study it is not possible to come to a firm conclusion about the intervention's cost-effectiveness. In relation to the nested study design, there may have been some contamination effect, which could have made the intervention seem less effective (if |

| | | | | |
|---|---|---|---|---|
| and 1 FTE psychology graduate.<br><br>Fully integrated with community intellectual disability team and staff worked across team boundaries.<br><br>In practice, staff could participate in referral meetings, be visible to their co-workers and the team members were integrated within appropriate management structures.<br><br>'The CBS team undertook a significant amount of organisational tasks which included development of the service's operational policy, identification of the service users who would benefit from the new service, development of referral and of a comprehensive behaviour assessment using the Behaviour Assessment Guide and Functional Analysis Interview, induction and training CBS staff to use assessment and intervention | months (outcomes #1 and #2, see right) and baseline and 12 months (outcomes #3 and #4, see right) (p221).<br><br>**Sources of resource use data**<br>'Derived from service records' (p222).<br><br>**Sources of unit cost data** Not reported clearly but is likely to reflect location-specific costs, which is likely if resource use was derived from 'service records' (as above). | status, measured by informant administered Psychopathology for Assessment Schedule for Adults with Developmental Disabilities checklist (PASSAD).<br><br>**Resource use**<br>Only social care costs, authors state that this included day care provision, supported living, and various types of training.<br><br>**Statistical analysis**<br>Outcomes at 6 and 12 months combined as a single outcome.<br><br>Two statistical analyses: adjusted and unadjusted.<br><br>• Adjusted model included additional participant characteristics (living situation, level of intellectual disability, physical problems and presence of possible mental health, met and unmet needs). 'Analysis was not adjusted for multiple testing and therefore significant findings need to be interpreted with caution' (p222).<br><br>**RESULTS** | packages at the end of 12 months (approx. £604 incr. pp/pw).<br><br>However, intervention costs are not included in the analysis, so total costs, from the view of social care services, are likely to be higher.<br><br>The perspective of the analysis did not include the NHS perspective so the impact of the intervention on NHS resources is unclear.<br><br>**Sensitivity analyses**<br>None undertaken apart from standard statistical analyses. | the comparison group was adopting good practice methods as seen in the intervention services). Given that the intervention participants had increased social care package costs it would have been worth exploring other effects on individuals, such as feelings of choice, control, independence, and other social care related measures of quality of life. Third, a longer time horizon would be beneficial to explore the longer-term effects of changes in social care packages on both individual outcomes but also on the frequency of crises and crisis-related service use. This is yet another limitation. It would have been useful to explore the impact on NHS service use, but this was not included. This would |

| | | | | |
|---|---|---|---|---|
| procedures and training plan for provider staff' (p223).<br><br>Interventions delivered were based on PBS.<br><br>'The team also provided additional services including monitoring of mental and physical health, review of occupational activities and limited monitoring of out of area placements leading to two service users being relocated back in borough' (p220).<br><br>Compared to control group, participants were younger, had higher proportion with mild intellectual disability (65% vs. 18%), higher proportion living with family (53% vs. 2%) and higher proportion with mental health problems (8% vs. 4%)<br><br>**Comparison**<br>'Identified through the service register, who did not receive CBS (non-CBS) matched on gender, level of intellectual disability and level of challenging behaviour' (p221). | | **Outcomes**<br><u>Primary outcome</u><br>Adjusted analyses indicate that the intervention group had significantly reduced challenging behaviour at 6-months for the total score (11.8 (95%CI, 0 to 23.6) and domains of irritability (4.7 (95%CI, 0.6 to 8.8)); and stereotypy (2.0 (95%CI, 0.4 to 3.7). The other domains were not different between groups: lethargy, hyperactivity, and inappropriate speech.<br><br>At 12 months, the only remaining difference between groups was reduced challenging behaviour as measured by the stereotypy domain.<br><br><u>Secondary outcomes</u><br>No differences between groups at 12 months for HONOS-LD, mental status, and mental health needs.<br><br>**Resource use**<br>Care package costs/week.<br><br><u>Baseline</u><br>Intervention £972 (sd= £1,065.71).<br>Control £1,017 (sd=713.70).<br><br><u>12 months</u><br>Intervention £1,468 (sd=£1,538).<br>Control £864 (sd=£712). | | have been useful because as the intervention led to reductions in challenging behaviour, so there might also have been reductions in crises and crises-related events, such as fewer use of NHS services. Overall, the study provides a promising exploration of an integrated and specialised service model. However more research is needed to confirm the findings' reliability and generalisability. |

**Methodological quality checklist for economic evaluations**

| | |
|---|---|
| **Study identification:**<br>Inchley-Mort S, Rantell K, Wahlich C, Hassiotis A (2014) Complex Behaviour Service: enhanced model for challenging behaviour. Advances in Mental Health and Intellectual Disabilities 8(4): 219–27 | |
| **Guideline topic:** Service guideline: Learning disabilities and behaviour that challenges | |
| **Economic priority area:** Yes | **Q:** 3 and 4 |
| ***Checklist: Section 1*** | |
| Yes/No/Partly/ Not applicable | Detail |
| **1.3 Is the study population appropriate for the review question?** | |
| Yes. | Adults aged 18+ with challenging behaviour. Excluded those with acute mental health problems or substance misuse (p221) Characteristics: 50% had mild intellectual disability, 70% male. Varied percentage living at home vs. placed through local authority. |
| **1.4 Are the interventions appropriate for the review question?** | |
| Yes. | Service model (see data extraction table above for more detail). |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Yes | Based on 1 area, inner-London. |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Yes | Social care perspective. |
| **1.5 Are all direct effects on individuals included** | |
| Partly | Measures of effect include primary outcome: (1) challenging behaviour; and secondary outcomes: (2) mental and social functioning (3) met and unmet needs (4) mental health status. |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| N/A | |
| **1.7 How is the value of effects expressed?** | |
| Resource use measured in terms of costs; outcomes measured in natural units. | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| No | Does not include impact on carers (outcomes or costs) and does not consider other sectors apart from social care services. |
| **General conclusion** | |

| | |
|---|---|
| The study is applicable but it does not include the NHS healthcare perspective regarding resource use. Furthermore, it only measures some relevant effects (e.g. choice, control, and other social-care relevant outcomes) but does not measure impact on carers (outcomes or costs). | |
| ***Section 2: Study limitations (the level of methodological quality)*** | |
| This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |
| n/a | Not a model, this is an observational study with nested match group design. |
| **2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?** | |
| 12 months | |
| **2.3 Are all important and relevant outcomes included?** | |
| Partly | See section 1.5. |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| Yes | From the study |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |
| Yes | From the study. |
| **2.6 Are all important and relevant costs included?** | |
| Partly | See section 1.7. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| Yes | Service records. |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Unclear | Not reported clearly but it is likely that unit costs are based on local charges. |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| Not presented but it could be calculated | |
| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| N/A | |
| **2.11 Is there any potential conflict of interest?** | |
| Not reported | |
| **2.12 Overall assessment** | |
| Potentially serious limitations due to the study design (observational study + nested matched-comparison of service users). The study design poses several limitations. First, differences in costs and outcomes are not directly the result of the intervention but could be due to differences in individual characteristics. Second, the nested design means that there could be some contamination effect. The authors hypothesise that the intervention's good practice could have spilled over into the comparison group and have affected differences in outcomes. A third limitation is the small sample size (n=46). A fourth limitation is that the analysis was not adjusted to take into account multiple statistical tests, which could give rise to false positive results in outcomes. | |

# **Population** Individuals with learning disabilities in inpatient settings
# **Intervention model type** Personal health budgets

Department of Health (2015) Securing inclusion and independence for all: impact assessment. London: Department of Health.

| **Country, study type, intervention and comparison service** | **Study population, design and data sources.** | **Outcomes, resource use** | **Results**<br>**Cost-effectiveness, costs** | **Summary** |
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| **Country**<br>England.<br><br>**Follow-up period**<br>10-year period.<br><br>**Study design**<br>Impact assessment, economic modelling exercise.<br><br>**Intervention**<br>Personal health budgets (PHBs) which result in individuals moving into fully staffed group homes in their local community. | **POPULATION**<br>Adults with learning disabilities in inpatient settings.<br><br>**DATA SOURCES**<br>**Sources of effectiveness data** Modelling and assumptions based on personal health budget evaluation and meta-analysis.<br><br>**Sources of resource use data** PSSRU unit cost data for fully-staffed group homes and bottom-up costing approach for administrative costs of personal health budgets..<br><br>The average cost of an inpatient stay is based on national data. | **Outcomes**<br>Based on assumptions<br><br>**Resource use**<br>Based on assumptions and national data. See sensitivity analysis for more information. | **Price year** 2015<br><br>**Findings on cost-effectiveness**<br>Giving personal health budgets to people with learning disabilities who are in inpatient settings might result in them moving to community settings much sooner.<br><br>If this happens, £3.7 million could be saved, over a 10-year period, to both NHS and social care services, with most of the savings accruing to the NHS.<br><br>It is possible that people moving into the community would have better outcomes if people get better continuity of care and are reunited with family and friends. Having family and friends and therefore reducing social isolation reduces the chances of developing mental health problems and reduces the chance of dying sooner. | **Applicability**<br>Partly applicable. (1) The analysis makes assumptions about the impact on individuals with learning disabilities in inpatient settings. While they do not explicitly focus on those with challenging behaviour, it is very likely that these individuals do have challenging behaviour. (2) The analysis assumes that individuals would move from inpatient settings and into fully staffed group homes. It is unclear whether this is an appropriate comparison group, especially as individuals might also move into supported living in a single occupancy flat. The analysis does not consider this scenario. This is discussed in |

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| **Comparison**<br>Usual inpatient care services. | **Sources of unit cost data**<br>Cost of community care packages of fully staffed group homes are appropriate, they are based on PSSRU unit cost data.<br><br>Unit costs for NHS inpatient services are appropriate, and are based on average national tariffs for an inpatient stay.<br><br>The administrative costs of personal health budgets were also appropriate, based on bottom-up costing and used PSSRU unit cost data. | | The analysis is based on the following data and assumptions: (1) cost of care package in an inpatient setting is £178,000 per year, which is based on national data collection; (2) it is assumed that these individuals would move into fully staffed group homes in the community and would have care package costs of £144,00 per year (3) It is also assumed that individuals would move into the community 12 months sooner than if they were not provided with a personal health budget. (4) The administrative costs of the personal health budgets are £4,300 per person per year and this is based on an assumption that 14 new individuals (3%) decide to use personal health budgets each year over the 10-year period.<br><br>**Sensitivity analyses**<br>There are three things that influence the impact on cost savings described above. The first is the cost of the community care package (assumed to be £144,000 per year), the second is the number of people that actually take a personal health budget (14%, or 14 new people per year), and third, how much sooner people leave hospital (assumed 12 months sooner).<br><br>If the cost of the community care package is higher than expected (£170,000 per year), then the savings would be smaller, | more detail in the summary section.<br><br>**Quality**<br>This analysis needs to be considered with a lot of caution because this is based on assumptions (based on their review of the research) and is not based on an actual evaluation of people with learning disabilities and behaviour that challenges.<br><br>**Summary**<br>The modelling exercise is applicable but caution must be exercised, as results are not based on an actual evaluation but based on assumptions of various scenarios that could occur. Taken together, the modelling exercise usefully demonstrates the potential impact on outcomes and costs if people were given personal health budgets. The authors fully state their assumptions and appropriately test these assumptions with sensitivity analysis. The sensitivity analysis indicates that even in 'worse case' scenarios, there is, at minimum likely to be |

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| | | | at £1 million over a 10-year period. If the cost of community care package is lower than expected (£118,000 per year), then the savings would be larger, at £6.4 million over a 10-year period.<br><br>If the number of people who take personal health budgets is lower than expected (1%, 4 people per year), the cost savings is smaller, at £1.2 million over a 10-year period.<br><br>If people don't leave the hospital as soon as we expect (4 months and not 12 months sooner), then the savings will be smaller, at £1.2 million over a 10-year period.<br>The cost of providing personal health budgets is included in the calculations above.<br><br>It is estimated that the administrative costs of providing personal health budgets is £4,300 per person per year. However, these administrative costs will decrease as more people use personal health budgets. | cost-savings over a 10-year period.<br><br>However, it is also important to consider that the analysis assumes that individuals transition to fully staffed group homes. The analysis does not consider that individuals could receive community care packages that might involve supported living in a single occupancy flat, which is likely to increase the cost of the community care package. This would result in smaller net cost savings. However, these need to be considered alongside improvements in outcomes. This is not to say that the analysis is inappropriate, but that there may be other settings that individuals move into. |

**Methodological quality checklist for economic evaluations**

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| **Study identification:**<br>Department of Health (2015) Securing inclusion and independence for all: impact assessment. London: Department of Health | |
| **Guideline topic:** Service guideline: Learning disabilities and behaviour that challenges | |
| **Economic priority area:** Yes | **Q:** 3 and 4 |
| ***Checklist: Section 1*** | |
| Yes/No/Partly/ Not applicable | Detail |
| **1.1 Is the study population appropriate for the review question?** | |
| Yes | The analysis makes assumptions about the impact on individuals with learning disabilities in inpatient settings. While they do not explicitly focus on those with challenging behaviour, it is very likely that these individuals do have challenging behaviour. |
| **1.2 Are the interventions appropriate for the review question?** | |
| Partly | People are given personal health budgets and it is assumed that they would move into fully supported group homes. It is also possible that people could move into other settings but these are not explored in the analysis. This is not to say that the analysis is inappropriate, but that there may be other settings that individuals move into. |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Yes | Modelling assumptions are based on English data and context. |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Yes | NHS and personal social services. |
| **1.5 Are all direct effects on individuals included** | |
| Partially | Assumptions focus on the impact of quality of life that could be improved through improved continuity of care and contact with family and friends. Contact with family and friends is then linked to an assumption that individuals experience reduced social isolation, which reduces the likelihood of mental health problems and premature mortality. |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| Yes | Costs discounted at 3.5% per year. |
| **1.7 How is the value of effects expressed?** | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| Partly | Costs to families were not quantitatively included. |
| **General conclusion** | |

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| The modelling exercise is partly applicable to the review question due to the focus of the analysis on just 1 of many settings that individuals could move into. In this study, it is assumed that people move into fully supported group homes. It is also possible that people could move into other settings (supported living with single occupancy flat) but this and other options are not explored in the analysis. This is important because it is likely to affect costs of care and outcomes. This is not to say that the analysis is inappropriate, but that the analysis could have been expanded to include other relevant settings. | |
| ***Section 2: Study limitations (the level of methodological quality)*** | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |
| Yes | The authors clearly state their assumptions about the nature of the care pathway. |
| **2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?** | |
| Yes | The time horizon is sufficiently long (10 years). |
| **2.3 Are all important and relevant outcomes included?** | |
| Partly | See section 1.5. |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| Partly | These authors make assumptions about the potential impact of the intervention by making links between barriers to good care and how this might link to final outcomes of quality of life. This information is obtained through a review of the literature about individuals who have learning disabilities and who are in inpatient or out-of-area settings. |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |
| Partly | Intervention effects are based on assumptions (see sections 2.4 and 1.5 above). |
| **2.6 Are all important and relevant costs included?** | |
| Yes | The authors provide a simplified analysis that considers changes in the cost of care packages provided by the NHS and social care services. The authors also include the costs of the intervention. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| Partly | The analysis is based on the following data and assumptions: (1) cost of care package in an inpatient setting is £178,000 per year, which is based on national data collection; (2) then it is assumed that these individuals moving to the community would have care package costs of £144,00 per year, based on the costs of a fully staffed group home; (3) it is also assumed that individuals with a personal health budget would move into the community 12 months sooner than if they were not provided with a personal health budget; (4) the administrative costs of the personal health budgets are £4,300 per person per year and this is based on an assumption that (5) 14 individuals (3%) decide to use personal health budgets per year. |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Yes. | Cost of community care packages of fully staffed group homes are appropriate (based on PSSRU unit costs). Unit costs for NHS inpatient services are appropriate (based on average national tariffs for an inpatient stay). Administrative costs of personal health budgets were also appropriate, based on bottom-up costing and used PSSRU unit cost data. |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| Not possible as outcomes are presented narratively and not quantitatively | |

| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
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| Yes | Three factors assumed to have the most impact on the differences in net cost: (1) cost of the community care package; (2) uptake rate of personal health budgets; (3) reduction in inpatient length of stay as a result of receiving a personal health budget. |
| **2.11 Is there any potential conflict of interest?** | |
| Unclear | |
| **2.12 Overall assessment** | |
| This analysis needs to be considered with a lot of caution because this is based on assumptions and is not based on an actual evaluation of people with learning disabilities and behaviour that challenges. It is also important to consider that the analysis makes the very big assumption that community care package costs are based on fully staffed group homes. The analysis does not consider that individuals could receive community care packages that might involve supported living in a single occupancy flat. This is likely to increase the cost of the community care package. This would result in smaller net cost savings. However, these need to be considered alongside improvements in outcomes. This is not to say that the analysis is inappropriate, but that there may be other settings that individuals move into. | |

# **Population** Male adults with intellectual disabilities and behaviour that challenges **Intervention model type** Positive behavioural support

Iemmi V, Knapp M, Saville M, McWade P, McLennan K, Toogood S (2015) Positive behavioural support for adults with intellectual disabilities and behaviour that challenges: an initial exploration of the economic case. International Journal of Positive Behavioural Support 5(1): 16–25

| **Country, study type, intervention and comparison** | **Study population, design and data sources.** | **Outcomes, resource use** | **Results Cost-effectiveness, costs** | **Summary** |
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| **Country** England.<br><br>**Date** 2010–13.<br><br>**Time horizon**<br>1 year.<br><br>**Study design/Study type**<br>Economic modelling.<br><br>(Before and after study on n=5 adults + Delphi exercise to provide info about a hypothetical comparison group's use of resources in the | **POPULATION**<br>Adults with intellectual disabilities and behaviour that challenges.<br><br>White males, mean age 34 (sd=10, range 18-43).<br><br>Education = primary or lower. Earning salary = none. Single = all. Accommodation = living alone (1), with parents (2), supported housing (1), nursing home (1).<br><br>**DATA SOURCES**<br><br>**Sources of effectiveness data**<br>Study data collected by clinician. | **Outcomes**<br>1. Behaviours that challenge (frequency).<br>2. Behaviours that challenge (severity).<br>3. Activity engagement.<br>4. Community participation.<br><br>**Resource use**<br>Public sector perspective including health and social care.<br><br>**RESULTS**<br><br>**Outcomes**<br>'At the individual level, outcomes on all four measures either improved or remained unchanged while none worsened, suggesting PBSS involvement had been beneficial' (p21). | **Price year** 2012–13.<br><br>**Findings on cost-effectiveness**<br>Individuals who received PBS, compared to when they did not receive PBS, improved in various outcomes measures and these outcomes did not worsen.<br><br>For the 6-month period where individuals were receiving PBS, net costs to health and social care (inclusive of intervention costs) were increased by £225/week or £5,580/6 months.<br><br>In the short-term (6 months), | **Applicability**<br>Applicable.<br><br>**Quality**<br>Potentially serious limitations.<br><br>**Summary**<br>Results are promising but due to the limitations of the study design more research is needed to ensure that results are not biased and that results are generalisable.<br><br>Outcomes that were not measured but would have been beneficial include choice, control, |

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| absence of the intervention.)<br><br>**Intervention** Individuals (n=5) receiving positive behavioural support (PBS) for an average of 12 months (sd=4, range = 7–18) however high-intensity case takes an average of 15 months.<br><br>**Comparator** Hypothetical group of individuals not receiving PBS support (estimated impacts based on Delphi exercise). | **Sources of resource use data** Client-service Receipt Inventory (CSRI) collected by clinicians for 6 months retrospectively and retrieved from routinely collected administrative data for the n=5 individuals.<br><br>Delphi exercise using 2 case study vignettes to estimate average cost of a care package for individuals not receiving the intervention.<br><br>Average cost was calculated based on the weighted by the number of times participants different care packages were selected as most appropriate based on described behaviour and level of need.<br><br>**Sources of unit cost data** National unit costs taken from PSSRU (Curtis 2013), and NHS reference costs (DH 2013). | **Resource use**<br><br>**(1) Intervention, during the intervention** Results based on 3 of 5 individuals.<br><br><u>Resource use based on first 6 months of receiving PBS. It does not include the second 6 months of PBS and does not include resource use after PBS.</u><br><br>**(A) Net costs, inclusive of intervention** =£2,296/week (£119,408/year).<br><br>**(B) Intervention cost for a representative high intensity case** for 15 months, at £14,625.<br><br>**(C) Health and social care services** =£2,071 per week (£107,692/year).<br><br>**(D) Detailed resource use**<br>• Community based care =78% (£1,618), of which includes care worker support (£1,344), other services paid by direct payments (£128), social worker (£125), psychiatrist (£13), nurse (£7).<br>• Residential care =19% (£397), of which, 75% was | PBS is estimated to cost more but could deliver better outcomes.<br><br>However, the authors believe that in the short and long-term there could be reductions in the costs to individuals' informal carers.<br><br>From the view of the public sector (health, social care) the impact on costs is not clear.<br><br>**Sensitivity analyses** Not applicable. | engagement, independence, confidence, etc. If individuals were receiving improved care packages, then it would be worth investigating whether these important social care outcomes were changed.<br><br>A longer time horizon would be advisable to investigate the impact on the use of inpatient and crises services as well as changes in measured and unmeasured outcomes as a result of changes in their care package. |

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| | | supported housing (£305) and 25% respite care (£92).<br>• Day care =3% (£57).<br>• Inpatient =£0.<br>• Outpatient =£0.<br><br>**(2) Hypothetical comparison group using Delphi method**<br><br>Estimated weekly cost for first vignette = £1,567/week (£94,799/year).<br><br>Estimated weekly cost for second vignette = £1,823/week (£81,478/year). | | |

**Methodological quality checklist for economic evaluations**

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| **Study identification:**<br>Iemmi V, Knapp M, Saville M, McWade P, McLennan K, Toogood S (2015) Positive behavioural support for adults with intellectual disabilities and behaviour that challenges: An initial exploration of the economic case. International Journal of Positive Behavioural Support 5(1): 16–25 | |
| **Guideline topic:** Service guideline: Learning disabilities and behaviour that challenges | |
| **Economic priority area:** Yes | **Q:** 3 and 4 |
| ***Checklist: Section 1*** | |
| Yes/No/Partly/ Not applicable | Detail |
| **1.1 Is the study population appropriate for the review question?** | |
| Yes | Adults with intellectual disabilities and behaviour that challenges. |
| **1.2 Are the interventions appropriate for the review question?** | |
| Yes | Positive behavioural support. |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Yes | England, 2010–13, but based on n=5 individuals so generalisability is not clear. |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Yes | Public sector perspective including health and social care |

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| **1.5 Are all direct effects on individuals included** | |
| Partly | Measured outcomes included behaviours that challenge (frequency and severity), Activity engagement, community participation. Outcomes that were not measured but would have been beneficial include choice, control, engagement, independence, confidence etc. If individuals were receiving improved care packages, then it would be worth investigating whether these important social care outcomes were changed. |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| Not applicable | Period: 12-months. |
| **1.7 How is the value of effects expressed?** | |
| Natural units for the measurement of intervention group, monetary units for estimation of hypothetical comparator group via Delphi exercise. | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| No | Informal care costs and outcomes not included. |
| **General conclusion** | |
| The study is applicable | |
| ***Section 2: Study limitations (the level of methodological quality)*** | |
| This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |
| Yes | This is a simple economic modelling exercise. The economic model is composed of three parts. The first part looks at the impact of a positive behavioural support service (PBS) on n=5 individuals. It measures the impact on 4 outcomes before and after PBS. Outcomes include behaviours that challenge (frequency and severity), activity engagement and community participation. The outcomes are measured over a 6-month period. The second part of the analysis looks at the impact of PBS on n=3 individual's use of health and social care service. Service use is measured over the first 6 months of receiving PBS. The third part of the analysis is to estimate the hypothetical use of health and social care services if PBS were not provided. The purpose of that exercise was to try and create a hypothetical comparison group These estimates were obtained using a group of experts. Experts were provided with two case studies of individuals who have different levels of need. |
| **2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?** | |
| No | The authors believe that in the short and long term there could be reductions in the costs to individuals' informal carers. |
| **2.3 Are all important and relevant outcomes included?** | |
| Partially | See section 1.5 above. |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| Partially | See section 2.1 above. |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |

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| No | N=5 before and after, over a 6-month period. See section 2.1 above. The reason this study's estimates of relative effects have **not** been taken from the best available source is that it does not come from the 'gold standard' RCT or even quasi-experimental comparison design. It will be necessary for the Guideline Committee to determine whether, in their experience, they think these results are indeed reliable and/or generalisable. |
| **2.6 Are all important and relevant costs included?** | |
| Yes | See section 1.4 above. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| No | See section 2.1 above. The n=5 individuals' resource use was collected using the Client-service Receipt Inventory (CSRI) collected by clinicians for 6 months retrospectively and retrieved from routinely collected administrative data. For the hypothetical comparison group, Delphi exercise was used based on 2 case study vignettes to estimate average cost of a care package for individuals not receiving the intervention. Average cost for the hypothetical group was calculated based on the weighted by the number of times participants different care packages were selected as most appropriate based on described behaviour and level of need. The reason this study's estimates of resource use have **not** been taken from the best available source is that it does not come from the 'gold standard' RCT or even quasi-experimental comparison design. However, the Delphi method is a suitable alternative in the absence of such information. |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Yes | National unit costs taken from PSSRU (Curtis 2013), and NHS reference costs (DH 2013). |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| Not presented. | |
| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| Not applicable | |
| **2.11 Is there any potential conflict of interest?** | |
| No conflicts | |
| **2.12 Overall assessment** | |
| Results are promising but due to the limitations of the study design more research is needed to ensure that results are not biased and that results are generalisable. Outcomes that were not measured but would have been beneficial include choice, control, engagement, independence, confidence etc. If individuals were receiving improved care packages, then it would be worth investigating whether these important social care outcomes were changed. A longer time horizon would be advisable to investigate the impact on the use of inpatient and crises services as well as changes in measured and unmeasured outcomes as a result of changes in their care package. | |

## **Population** Children and adolescents in schools
## **Intervention model type** Positive behavioural support

Iemmi V, Knapp M and Brown F (2016) Positive behavioural support in schools for children and adolescents with intellectual disabilities whose behaviour challenges: an exploration of the economic case. Journal of Intellectual Disabilities 20(3), 281-295.

| **Country, study type, intervention and comparison** | **Study population, design and data sources** | **Outcomes, resource use** | **Results** | **Summary** |
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| **Country** England.<br><br>**Date** 2009.<br><br>**Time horizon**<br>22 months.<br><br>**Study design/study type**<br>Economic modelling.<br><br>(Before and after study on n=9 children and adolescents' + Delphi exercise to provide info about a hypothetical comparison group's use of resources in the absence of the intervention.) | POPULATION<br>Children and adolescents at risk of residential education placement.<br><br>Mainly boys, mean age 10 years, range 4–13, most were white.<br><br>'Most living in the community, except one who was living in a children's home. All attended a public sector day school where they received the daily support of a classroom assistant' (p8).<br><br>**DATA SOURCES** | **Outcomes**<br>1. Number of challenging behaviours per day (in the analysis, the outcome used was average per week).<br><br>2. Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP).<br>• Total score ranges between 0 and 170. Higher scores indicate more advanced skills.<br><br>**Resource use**<br>Public services perspective: NHS, social care and education plus costs to carers.<br><br>**RESULTS**<br><br>**Outcomes**<br>1. Improvements in average number of challenging behaviours per week when compared before and after receiving PBS support. | **Price year** 2012–13.<br><br>**Findings on cost-effectiveness**<br>The children receiving PBS had reduced challenging behaviour and improvements in functioning. The average cost of PBS was £1909.10 per week (from view of NHS, social services, and education).<br><br>It is assumed that individuals who do not receive PBS will not have these benefits, but it is not clear based on the | **Applicability** Applicable.<br><br>**Quality** Potentially serious limitations.<br><br>**Summary** This analysis is applicable but the quality of the analysis, due to the type of data used and design, has potentially serious limitations.<br><br>More research is needed to ensure that results are not biased and that results are generalisable.<br><br>(1) In the short-term the impact on costs is not clear.<br><br>The costs of PBS children were in the middle of the range in comparison to the examples provided in the 4 case studies. |

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| **Intervention**<br>Positive behavioural support, average duration =22 months (range 7–42).<br><br>**Comparison**<br>Hypothetical group of children and adolescents not receiving PBS support (estimated impacts based on Delphi exercise) | **Sources of effectiveness data**<br>From the study.<br><br>For the outcome of VB-MAPP, analysis based on n=5 (for whom data were available).<br><br>For challenging behaviour, analysis based on n=9 (for whom data were available).<br><br>**Sources of resource use** Client-service Receipt Inventory (CSRI) or other studies (Clifford and Thobald 2012; McGill 2008) based over the first 6 months of receiving PBS, using clinical files, for n=12 children and adolescents.<br><br>**Sources of unit cost data** Personal Social Services Research Unit volume (Curtis 2013), NHS reference costs (DH 2013). | Before: 21/wk (sd=20, range 5–65).<br>After: 4/wk (sd=5, range 0–14).<br>P=0.01.<br><br>2. Improvements in Verbal Behaviour Milestones Assessment and Placement Program (VB-MAPP), maximum score of 170.<br>Before: 28 (sd=27, range 6–72). After: 53 (sd=48, range 23–136)<br>p=0.04.<br><br>**Resource use**<br><u>Intervention group</u><br>Total public sector cost (PBS + education, health and social care) =£1909.10 per week.<br><br>Total societal cost (PBS + education, health and social care + carers) =£1951.20 per week.<br><br>(1) PBS intervention, weekly cost, £700.10.<br><br>(2) Education, health and social care, £1209 per week.<br>Education=43%, £526 pw.<br>Health & social care=56%, £683 pw.<br><br>(3) Cost to carers, per week, £42.10<br><u>Comparison group</u><br>Four vignettes, weekly cost estimated to be £762, £988, £1336 and £1440 (p11). | study design.<br><br>The estimated costs of children not receiving the intervention range between £762, £988, £1336 and £1440 per week.<br><br>**Sensitivity analyses**<br>Not applicable. | (2) It is assumed that individuals who do not receive PBS will not have these benefits. It is likely that PBS is cost-effective.<br><br>However we do not know for sure due to the study design.<br><br>(3) A longer time horizon would be advisable.<br><br>There may have been long term cost savings with PBS.<br>Of the n=12 individuals at risk for residential education, only 2 were transferred to residential school. Another 3 individuals were still receiving ongoing PBS support. |

**Methodological quality checklist for economic evaluations**

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| **Study identification:**<br>Iemmi V, Knapp M and Brown F (2016) Positive behavioural support in schools for children and adolescents with intellectual disabilities whose behaviour challenges: an exploration of the economic case. Journal of Intellectual Disabilities 20(3), 281-295. | |
| **Guideline topic:** Service guideline: Learning disabilities and behaviour that challenges | |
| **Economic priority area:** Yes | **Q:** 3 and 4 |
| ***Checklist: Section 1*** | |
| Yes/No/Partly/ Not applicable | Detail |
| **1.1 Is the study population appropriate for the review question?** | |
| Yes | Children and adolescents at risk of residential education placement. |
| **1.2 Are the interventions appropriate for the review question?** | |
| Yes | Positive behavioural support. |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Partially | Conducted in England, 2009, unclear generalisability due to small sample size (n=12). |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Yes | Public services perspective: NHS, social care, and education plus costs to carers. |
| **1.5 Are all direct effects on individuals included** | |
| Partially | The authors measure the (1) number of challenging behaviours per day (in the analysis, the outcome used was average per week) and the (2) Verbal Behaviour Milestones Assessment and Placement Program (VB-MAPP). It is not clear whether other social care related outcomes may have been beneficial to measure alongside impacts on challenging behaviour and functioning. |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| N/A | Time horizon: 12 months. |
| **1.7 How is the value of effects expressed?** | |
| Natural units for the measurement of intervention group, monetary units for estimation of hypothetical comparator group via Delphi exercise. | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| Yes | Private costs to families are included. |
| **General conclusion** | |
| The study is applicable. | |
| ***Section 2: Study limitations (the level of methodological quality)***<br>This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |

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| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |
| Yes | This is a simple economic modelling exercise. The economic model is composed of three parts. The first part looks at the impact of a positive behavioural support service in schools (PBS) on n=12 children and adolescents. It measures the impact on 2 outcomes before and after PBS. Outcomes include the average number of behaviours that challenge per week and the Verbal Behaviour Milestones Assessment and Placement Program (VB-MAPP), which measures skills. The outcomes are measured before and after the intervention (average duration of 22 months, range 7–42). N=9 individuals were used for analysis of challenging behaviour. N=5 individuals were used for analysis of VB-MAPP.<br><br>The second part of the analysis looks at the impact of PBS on n=12 individual's use of education, health and social care service and its impact on their carers. Service use is measured over the first 6 months of receiving PBS.<br><br>The third part of the analysis is to estimate the hypothetical use of education, health and social care services if PBS were not provided. The purpose of that exercise was to try and create a hypothetical comparison group. These estimates were obtained using a group of experts. Experts were provided with four case studies of individuals who have different levels of need. |
| **2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?** | |
| Partially | In the long term, it is possible that PBS is cost saving if it reduces the number going into residential school.<br>The study would benefit from a longer time horizon. |
| **2.3 Are all important and relevant outcomes included?** | |
| Partially | See section 1.5 above. |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| Yes | See section 2.1 above. |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |
| No | See section 2.1 above. Intervention effects are based on n=5 individuals for the VB-MAPP and n=9 individuals for the analysis of challenging behaviour before and after receiving PBS (average duration of 22 months, range 7–42). The reason this study's estimates of relative effects have **not** been taken from the best available source is that it does not come from the 'gold standard' RCT or even quasi-experimental comparison design. It will be necessary for the Guideline Committee to determine whether, in their experience, they think these results are indeed reliable and/or generalisable. |
| **2.6 Are all important and relevant costs included?** | |
| Yes | See section 1.4 above. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| No | See section 2.1 above. The n=12 individuals' resource use was collected using the Client-service Receipt Inventory (CSRI) collected by clinicians for 6 months retrospectively and retrieved from routinely collected administrative data. For the hypothetical comparison group, Delphi exercise was used based on 4 case study vignettes to estimate average cost of a care package for individuals not receiving the intervention. Average cost for the hypothetical group was calculated based on the weighted by the |

| | |
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| | number of times participants different care packages were selected as most appropriate based on described behaviour and level of need. The reason this study's estimates of resource use have **not** been taken from the best available source is that it does not come from the 'gold standard' RCT or even quasi-experimental comparison design. However, the Delphi method is a suitable alternative in the absence of such information. |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Yes | Personal Social Services Research Unit volume (Curtis, 2013) NHS reference costs (DH 2013). |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| Not presented. | |
| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| N/A | |
| **2.11 Is there any potential conflict of interest?** | |
| No conflicts | |
| **2.12 Overall assessment** | |
| This analysis is applicable but the quality of the analysis, due to the type of data used and design, has potentially serious limitations. More research is needed to ensure that results are not biased and that results are generalisable. (1) In the short-term the impact on costs is not clear. The costs of PBS children were in the middle of the range in comparison to the examples provided in the four case studies. (2) It is assumed that individuals who do not receive PBS will not have these benefits. It is likely that PBS is cost-effective. However we do not know for sure due to the study design. (3) A longer time horizon would be advisable. There may have been long term cost savings with PBS. Of the n=12 individuals at risk for residential education, only 2 were transferred to residential school. Another 3 individuals were still receiving ongoing PBS support. | |

## **Population** Individuals with learning disabilities and challenging behaviour
## **Intervention model type** Partnership: project manager, housing consultant, and PBS expert

Lingard J (2012) Personalisation for people with learning disabilities and behaviour described as challenging: a report from a project run between summer 2011 and 2012. Chatham: The Challenging Behaviour Foundation.

| **Country, study type, intervention and comparison service description** | **Study population, design and data sources.** | **Outcomes, Resource use** | **Results** | **Summary** |
|---|---|---|---|---|
| **Country** England, East Midlands (5 local authorities: Leicester; Leicestershire and Rutland; Northamptonshire and Nottinghamshire).<br><br>**Date** 2011–12.<br><br>**Internal and external validity** Cohort study (-/+).<br><br>**Study design** Cohort study.<br><br>**Study type** Cost and outcome analysis.<br><br>**Intervention** 'East Midlands regional Joint Improvement Partnership and Strategic Health Authority agreed to work in partnership with the Challenging Behaviour Foundation (CBF) to enable more people with learning | **POPULATION** Individuals with learning disabilities and behaviour described as challenging.<br><br>**DATA SOURCES**<br><br>**Sources of effectiveness data** Study, n=14 individuals.<br><br>**Sources of resource use data** Study.<br><br>**Sources of unit cost data** Not clearly reported | **Outcomes** Improve personalisation of services and have housing of their own.<br><br>**Resource use** Intervention costs only.<br><br>'The project team included a project manager employed by the CBF (0.6wte for 12 months) and commissioned time from two housing consultants (Housing Options, 11.5 days) and a certified behaviour analyst/positive behaviour support expert (PBS consultancy, 15.5 days)' (p5).<br><br>Did not include additional costs arising from 'Monthly detailed supervision sessions were provided jointly by the Chair of Trustees of the CBF and Peter McGill of the Tizard Centre' (p5).<br><br>**RESULTS**<br>**Outcomes**<br>Mixed outcomes due to various barriers. | **Price year** not clearly reported but most likely 2012.<br><br>**Findings** Not an economic evaluation.<br><br>**Sensitivity analyses** None undertaken/not applicable | **Applicability** Applicable.<br><br>**Quality** Not an economic evaluation.<br><br>**Summary** This study cannot be used to inform decisions about the cost-effectiveness of the partnership, as this was not an economic evaluation. |

| | | | | |
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| disabilities to have homes of their own' (p4). | but most likely local costs. | **Resource use**<br>£60,000 for the project (p4). | | |

**Methodological quality checklist for economic evaluations**

| | | |
|---|---|---|
| **Study identification:**<br>Lingard J (2012) Personalisation for people with learning disabilities and behaviour described as challenging: a report from a project run between summer 2011 and 2012. Chatham:The Challenging Behaviour Foundation. | | |
| **Guideline topic:** Service guideline: Learning disabilities and behaviour that challenges | | |
| **Economic priority area:** Yes | | **Q:** 3 and 4 |
| ***Checklist: Section 1*** | | |
| Yes/No/Partly/NA | Detail | |
| **1.1 Is the study population appropriate for the review question?** | | |
| Yes | Individuals with learning disabilities and behaviour described as challenging. | |
| **1.2 Are the interventions appropriate for the review question?** | | |
| Yes | Partnership/service model to improve individuals' housing outcomes. | |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | | |
| Yes | England. | |
| **1.4 Are the perspectives clearly stated and what are they?** | | |
| Partly | This is not an economic evaluation. This is a process outcome, which reports on the cost of the partnership based on the project inputs. See data extraction table for more detail on cost estimation. | |
| **1.5 Are all direct effects on individuals included?** | | |
| Partly | Process evaluation includes qualitative descriptions of individual outcomes. Aimed at improving individuals' housing situation. | |
| **1.6 Are all future costs and outcomes discounted appropriately?** | | |
| N/A | | |
| **1.7 How is the value of effects expressed?** | | |
| Qualitative discussion of outcomes | | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | | |
| No | See section 1.4. | |
| **General conclusion** | | |
| This study is applicable but it is not suitable for informing decisions about the cost-effectiveness of the partnership, as this was not an economic evaluation. | | |
| ***Section 2: Study limitations (the level of methodological quality)*** | | |

| | |
|---|---|
| This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |
| N/A | Process evaluation. |
| **2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?** | |
| No | Due to barriers in implementation a longer time horizon is needed. |
| **2.3 Are all important and relevant outcomes included?** | |
| Partly | See section 1.5. |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| N/A | Process evaluation. |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |
| Yes | From the study. |
| **2.6 Are all important and relevant costs included?** | |
| No | This study includes only the cost of the partnership It does not provide a comprehensive account of changes in health and social care service use. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| Partly | Information about intervention costs are taken from the study. It is not clear whether the costing approach is comprehensive. |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Not reported | |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| N/A | |
| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| N/A | |
| **2.11 Is there any potential conflict of interest?** | |
| No | |
| **2.12 Overall assessment** | |
| This study cannot be used to inform decisions about the cost-effectiveness of the partnership, as this was not an economic evaluation. | |

# **Population** Adults with severe psychiatric, behavioural and forensic needs
# **Intervention model type** Supported living outreach

Ayres M and Roy A (2009) Supporting people with complex mental health needs to get a life! The role of the Supported Living Outreach Team. Tizard Learning Disability Review 14(1): 29–39

| **Country, study type, intervention and comparison service description** | **Study population, design and data sources.** | **Outcomes, resource use** | **Results** | **Summary** |
|---|---|---|---|---|
| **Country** England, Birmingham.<br><br>**Time horizon** 1- or 2-year period.<br><br>**Internal and external validity**<br>(-/+)<br><br>**Study design**<br>Qualitative study.<br><br>**Study type**<br>Case study analysis of some costs and outcomes.<br><br>**Intervention**<br>Supported living outreach team.<br><br>Aim of the study was to 'enable and support | **POPULATION**<br>Adults with severe psychiatric, behavioural and forensic needs.<br><br>Characterised as having complex needs.<br><br>Individuals are only included if they have exhausted all local service resources and face risk of out-of-area placement or placement in hospital due to severity or complexity of needs.<br><br>**DATA SOURCES** | **Outcomes**<br>1 Reductions in levels of risk.<br>2 Reductions in target behaviour.<br>3 Reductions in administration of medication.<br>4 Reductions in calls to crisis and no calls requiring hands-on support in last 6 months.<br>5 Person-centred plan with evidence that action plans are achieved or worked towards.<br>6 Service passes audit.<br>7 Stable and skilled staff team with low turnover and sickness.<br>8 No further cost savings can be made to the service (p33).<br><br>**Resource use**<br>Provides information on costs although methods used to estimate costs are not reported in detail.<br><br>Considers example case studies of reductions in relation to direct and indirect support, | This is a process evaluation.<br>It is not possible to come to a conclusion about the intervention's cost-effectiveness based on this study design.<br><br>The study presents case study illustration of cost savings (in service cost) using example of 4 clients in a 2-year period and also provide a case study of reductions in inputs in relation to staffing support, home visits, and | **Applicability**<br>Applicable.<br><br>**Quality**<br>Not an economic evaluation.<br><br>**Summary**<br>This is a process evaluation.<br>It is not possible to come to a conclusion about the intervention's cost-effectiveness based on this study design. |

| | | | | |
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| individuals to live fully inclusive lives, while safely managing the risks to themselves and the local community in a cost-effective manner' (p30). | **Sources of effectiveness data** N=26 people, 18 males, 8 females.<br><br>**Sources of resource use data** Study.<br><br>**Sources of unit cost data** Study, local area charges. | measured as home visits, staffing support and telephone support.<br><br>Considers example of 4 client case studies and changes in total costs of service for a 2-year period.<br><br>Perspective of costs (i.e. who pays) is not clear.<br><br>**RESULTS**<br>**Outcomes**<br>1 and 2.<br>Reductions in challenging behaviour and target behaviour: 'There have been significant reductions across the client group' (p35).<br><br>3. Reductions in medication: 'for nearly all clients, reduction in problem behavior has also been reflected in reduction in use of medication' (p36).<br><br>4. Crisis: Average reduction of 34% in costs due to reduction in hours of support and crisis calls.<br><br>5. Person-centred plan: Discussed qualitatively without quantitative data<br><br>6. Service passes audit: Not reported.<br><br>7. Stable and skilled staff team with low turnover and sickness: Not reported.<br><br>8. No further cost savings can be made to the | increases in telephone support.<br><br>The authors report on improvements in outcomes using qualitative methods. | |

| | | | | |
|---|---|---|---|---|
| | | service:<br>Not reported.<br><br>**Resource use**<br>Authors provide 2 case studies to illustrate potential cost savings made as a result of the intervention.<br><br>In the first, changes in service costs for 4 clients from 2004/05 to 2007/08. Cost savings were estimated by creating 'expected costs' for the following two years assuming that costs do not change apart from keeping in line with inflation and then presenting 'actual cost' estimates. Cost savings range from 5%, 34%, 37%, and 53% (Table 2, p37).<br><br>In the second case study, changes in input costs are presented. It shows that between 2006 and 2007, input costs decreased for home visiting and staffing support by 59% and 43% (hours of support) and indirect support increased by 70% (hours of support) (Table 3, p37). | | |

**Methodological quality checklist for economic evaluations**

| **Study identification:**<br>Ayres M and Roy A. (2009) Supporting people with complex mental health needs to get a life! The role of the Supported Living Outreach Team. Tizard Learning Disability Review 14(1): 29–39 | |
|---|---|
| **Guideline topic:** Service guideline: Learning disabilities and behaviour that challenges | |
| **Economic priority area:** Yes | **Q:** 3 and 4 |
| ***Checklist: Section 1*** | |
| Yes/No/Partly/<br>Not applicable | Detail |

| | |
|---|---|
| **1.1 Is the study population appropriate for the review question?** | |
| Yes | Adults with severe psychiatric, behavioural and forensic needs. Characterised as having complex needs. |
| **1.2 Are the interventions appropriate for the review question?** | |
| Yes | Service model. |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Yes | England. |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Not clearly stated. | |
| **1.5 Are all direct effects on individuals included?** | |
| Partly | A range of outcomes are included but results are presented qualitatively and not quantitatively across each individual supported. See data extraction table for more detail. |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| No | Discounting does not seem to be applied in case study on costs. |
| **1.7 How is the value of effects expressed?** | |
| Monetary units and qualitative discussion of impact on outcomes. | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| No | |
| **General conclusion** | |
| This study is applicable but this is a process evaluation. It is not possible to come to a conclusion about the intervention's cost-effectiveness based on this study design. | |
| ***Section 2: Study limitations (the level of methodological quality)*** | |
| This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |
| Not a model | This is a process evaluation. |
| **2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?** | |
| N/A | Cost case studies are conducted over a 1- or 2-year period. Outcomes are discussed with reference to timing over the general period from 2001 to 2009 in a qualitative manner. |
| **2.3 Are all important and relevant outcomes included?** | |
| See section 1.5 | |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| Partly | Authors do not report on baseline outcomes. |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |

| | |
|---|---|
| Partly | Authors do not provide a systematic and quantitative report on individual outcomes. These are discussed qualitatively using narrative summary. |
| **2.6 Are all important and relevant costs included?** | |
| Partly | Case study on costs include changes in service package costs and changes in support staff hours. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| Partly | From the study but these are not reported for all participants. |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Partly | Local area charges. |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| Not presented | |
| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| Not applicable | |
| **2.11 Is there any potential conflict of interest?** | |
| Not clear | |
| **2.12 Overall assessment** | |
| It is not possible to come to a conclusion about the intervention's cost-effectiveness based on this study design. | |

# Methodology checklists: additional literature searches for housing and support

## Congregate vs. non-congregate settings

| | |
|---|---|
| **Critical appraisal: Systematic review** | |
| **Study identification:**<br>Mansell J and Beadle-Brown J (2004) Grouping People with Learning Disabilities and Challenging Behaviour in Residential Care. Tizard Learning Disability Review 9(2), 4-10. | |
| **Overall assessment** | |
| External validity (++), Internal validity (-) | |
| **External validity** | |
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | This is a systematic review, therefore, ethical issues of the review are out-of-scope of control. However, the review does not provide information about ethical concerns. |
| **1.3 Were service users involved in the study?** | |
| N/A | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | Impact of congregate vs. non-congregate settings on individuals' outcomes. |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | Individuals with challenging behaviour and intellectual disabilities. |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | Congregate vs. non-congregate settings. |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | Models of housing. |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |

| | |
|---|---|
| Yes | Costs, characteristics predicting out-of-area placement and predicting higher costs. |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.7 Does the study have a UK perspective?** | |
| Yes | Includes UK research. |
| **3. Overall assessment of external validity (-/ +/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Appropriate and clearly focused question?** | |
| Yes | Describes the findings of research studies on the effects of grouping together people with learning disabilities and challenging behaviour. |
| **2. Inclusion of relevant individual studies? (Yes, somewhat relevant, no, unclear, N/A)** | |
| Yes | |
| **3. Rigorous literature search? (yes, partly, no, unclear)** | |
| Unclear | The review does not include a section describing its methods for inclusion/exclusion of studies nor its approach to searching the literature. |
| **4. Study quality assessed and reported?** | |
| No | Included studies are not assessed for methodological rigor. |
| **5. Adequate description of methodology?** | |
| No | Methodology not described. |
| **6. Do conclusions match findings?** | |
| Yes | |
| **7. Overall assessment of internal validity (-/+/++)** | |
| (-) | Low quality: absence of reporting methods for literature search, inclusion/exclusion criteria, and quality assessment. |

# In-area vs. out-of-area

| Critical appraisal: systematic review |
|---|
| **Study identification:**<br>Emerson E and Robertson J (2008) Commissioning person-centred, cost-effective, local support for people with learning difficulties (Knowledge review 20). London: Social Care Institute for Excellence. |
| **Overall assessment** |
| External validity (++), Internal validity (-) |

| External validity | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | |
| **1.3 Were service users involved in the study?** | |
| N/A | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |

| | |
|---|---|
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.7 Does the study have a UK perspective?** | |
| Yes | |
| **3. Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Appropriate and clearly focused question?** | |
| Partly | |
| **2. Inclusion of relevant individual studies? (Yes, somewhat relevant, no, unclear, N/A)** | |
| Partly | |
| **3. Rigorous literature search? (yes, partly, no, unclear)** | |
| Unclear | |
| **4. Study quality assessed and reported?** | |
| No | |
| **5. Adequate description of methodology?** | |
| No | |
| **6. Do conclusions match findings?** | |
| Yes | |
| **7. Overall assessment of internal validity (- /+/++)** | |
| **(-)** | Lower quality due to lack of reporting of methods for literature search (inclusion/exclusion criteria, databases), meaning we do not know whether all relevant research is included. Likewise, does not report study quality or whether study quality is assessed, meaning it is unclear whether reported results are reliable. |

| Critical appraisal: Systematic review and survey |
|---|
| **Study identification:**<br>Barron DA, Hassiotis A, Paschos D (2011) Out-of-area placements for adults with intellectual disability and challenging behaviour in England: policy perspectives and clinical reality. Journal of Intellectual Disability Research 55(9): 832–43 |
| **Overall assessment** |
| Systematic review: external validity (++), internal validity (-)<br>Survey: external validity (++), (+) |

| External validity | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | |
| **1.3 Were service users involved in the study?** | |
| N/A | This is a systematic review + survey which only aims to look at characteristics associated with out-of-area placement. |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |

| | |
|---|---|
| **2.7 Does the study have a UK perspective?** | |
| Yes | Includes UK studies. |
| **3. Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Critical appraisal: Systematic review** | |
| **Internal validity** | |
| **1. Appropriate and clearly focused question?** | |
| Yes | |
| **2. Inclusion of relevant individual studies? (Yes, somewhat relevant, no, unclear, N/A)** | |
| Yes | |
| **3. Rigorous literature search? (yes, partly, no, unclear)** | |
| Unclear | Methods not described. |
| **4. Study quality assessed and reported?** | |
| No | Quality not assessed |
| **5. Adequate description of methodology?** | |
| No | Not undertaken. |
| **6. Do conclusions match findings?** | |
| Yes | |
| **7. Overall assessment of internal validity (- /+/++)** | |
| (-) | Lower quality due to unclear rigorous literature search, not describing methods, quality of studies not assessed/reported, and inadequate description of methodology. |
| **Critical appraisal: survey** | |
| **Internal validity** | |
| **1. Objectives clearly stated?** | |
| Yes | 'This paper reports on current evidence relating to such [out-of-area] placements and uses a scoping review across five London boroughs to illustrate key issues on provider characteristics and aspects of good practice' (p832). |
| **2. Design** | |
| **2.1 Research design clearly specified and appropriate?** | |

| | |
|---|---|
| Yes | 'The scoping project overall aimed to examine the socio-demographic and clinical characteristics of a group of service users with ID and complex needs in receipt of the most expensive care packages in 2005/2006 (£70,000 per annum and above)' (p834). |
| **2.2 Clear description of context?** | |
| Yes | In the UK, out-of-area placements are being used increasingly and are perceived to cost more than in-area placements. The purpose of this survey was to understand whether out-of-area placements offer value for money (summarised from p832). |
| **2.3 References made to original work if existing tool used?** | |
| Yes | Survey questionnaire was created for purposes of this survey, and service standards asked on the survey were 'agreed on by the project steering group including the researchers, a pair of commissioners and 1 clinician from each participating borough' (p834).<br>These service standards include: staffing, staff training, management of behaviour, planned access to members of multidisciplinary team, record-keeping, use of medication, use of restraint (p835). |
| **2.4 Reliability and validity of new tool reported?** | |
| No | No report about reliability and validity of survey and measures. |
| **2.5 Survey population and sample frame clearly described?** | |
| Yes | '… service users with ID and complex needs in receipt of the most expensive care packages in 2005/2006 (£70,000 per annum and above) …' who were taken from '… central north London sector, three of which fit the "exporter" label and two are "importers". The sector is both urban inner city and suburban in nature and supports several clinical and academic institutions' (p834). |
| **2.6 Representativeness of sample is described?** | |
| Yes | |
| **2.7 Subject of study represents full spectrum of population of interest?** | |
| Yes | Sample focuses on a subgroup of individuals with highest-cost care packages (£70K+/year) as of 2005/06 prices. |
| **2.8 Study large enough to achieve its objectives, sample size and estimates performed?** | |
| Not reported | 'A total of 80 provider organisations were identified as supplying 120 out-of-area placements for 133 service users' (p835). |
| **2.9 Are all subjects accounted for?** | |
| Unclear | |
| **2.10 Ethical approval obtained?** | |
| Unclear | |
| **2.11 Measures for contacting non-responders provided?** | |
| Yes | 'A single reminder letter was sent following a period of 4 weeks if no response had been received by that time' (p835). |

| | |
|---|---|
| **2.12 All appropriate outcomes considered?** | |
| Partly | Focus of the research is on service standards. It does not measure individuals' quality of life. |
| **2.13 Response rate provided?** | |
| Yes | 'Fifty-four out of a total of 120 questionnaires (45%) were returned (the questionnaire can be viewed on request to the authors)' (p835). |
| **3. Measurement and observation** | |
| **3.1 Describes what was measured, how it was measured, and the outcomes?** | |
| Yes | Self-report by service managers using administrative data. |
| **3.2 Measurements valid?** | |
| Partly | Measurement outcomes are various aspects of service standards: staffing, staff training, management of behaviour, planned access to members of multidisciplinary team, record-keeping, use of medication, use of restraint (p835). |
| **3.3 Measurements reliable?** | |
| Not reported | |
| **3.4 Measurements reproducible?** | |
| Yes | |
| **4. Presentation of results** | |
| **4.1 Basic data adequately described?** | |
| Yes | Descriptive results reported. |
| **4.2 Results presented clearly, objectively and in enough detail for readers to make personal judgement?** | |
| Yes | Data on all service standards measured are reported. |
| **4.3 Results internally consistent?** | |
| Partly | Service standards are measured in various ways, for instance, 'hold relevant qualifications' – but this can be interpreted in various ways and some qualifications may be higher than others. The self-report and open-ended nature of this measure means that results are, in general, valid, but there is scope for some variation in definition. |
| **5. Analysis** | |
| **5.1 Data suitable for analysis?** | |
| Yes | |
| **5.2 Clear description of data collection and methods and analysis?** | |
| Yes | |
| **5.3 Methods appropriate for data?** | |
| Yes | |
| **5.4 Statistics correctly performed and interpreted?** | |
| Yes | |
| **5.5 Response rate calculation provided?** | |

| | |
|---|---|
| Yes | |
| **5.6 Methods for handling missing data described?** | |
| Yes | Missing data not included in analysis. Uses data from available sample. |
| **5.7 Difference between non-respondents and respondents described?** | |
| N/A | |
| **6. Discussion** | |
| **6.1 Results discussed in relation to existing knowledge on subject and study objectives?** | |
| Yes | |
| **6.2 Limitations of study stated?** | |
| Yes | |
| **6.3 Results can be generalised?** | |
| No | Results are from 5 London boroughs, generalisability to this area is limited by low response rate (45%). |
| **6.4 Appropriate attempts made to establish 'reliability' and 'validity' of analysis?** | |
| Yes | |
| **7. Conclusion** | |
| **7.1 Conclusions justified?** | |
| Yes | |
| **Overall assessment of internal validity (- /+/++)** | |
| (+) | |

| Critical appraisal: Prospective cohort study |
|---|
| **Study identification:**<br>Beadle-Brown J, Mansell J, Cambridge P, Milne A, and Whelton B (2010) Adult protection of people with intellectual disabilities: incidence, nature and responses. Journal of Applied Research in Intellectual Disabilities 23: 573–84 |
| **Overall assessment** |
| External validity (++), internal validity (++) |

| External validity | |
|---|---|
| **1. Can the results be applied to the review population?** | |
| No | Findings are based on longitudinal administrative data of 2 local authorities in South East of England. They cannot be generalised to rest of the UK but it is possible similar results could be found although this requires further research. |
| **2. Do the results from the study fit with other available evidence?** | |
| Unclear | Other studies did not measure administrative data relating to abuse and neglect and these studies had very short (≤1 year) time horizon. Therefore, it is not possible to determine whether this evidence fits with other available evidence. |
| **3. What are the implications of this study for practice?** | |
| There are different patterns of abuse comparing those in-area to those in out-of-area. | |
| **4. Overall external validity (- /+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Did the study address a clearly focused issue?** | |
| Yes | We focus on the findings that compare individuals with intellectual disabilities and differences in abuse and referral rates between those placed in-area vs. out-of-area. |
| **2. Was the cohort recruited in an acceptable way?** | |
| Yes | Based on administrative data of all referrals and responses to abuse and neglect. |
| **3. Was the exposure accurately measured to minimise bias?** | |
| Yes | 'Exposure' is the comparison of individuals in-area vs. out-of-area placements. |
| **4. Was the outcome accurately measured to minimise bias?** | |
| Yes | Measures are based on administrative data relating to service response/processes. |
| **5. Have the authors identified all-important confounding factors?** | |
| No | Not possible to identify characteristics that may be different between in-area vs. out-of-area placements and whether that contributes to differences in rates of abuse/referrals, e.g. challenging behaviour is a confounder but could not be accounted for (p581). |

| **6. Have the authors taken account of confounding factors in the design and/or analysis?** | |
|---|---|
| Partly | In discussion of limitations they mention potential confounder and limitations of interpretation of the findings. In particular, it is not possible to determine whether service characteristics or individual characteristics lead to differences in patterns of abuse (p582). However these are not accounted in the analysis. |
| **7. Was the follow-up complete?** | |
| Yes | 'Findings from one of the largest databases in the UK collected between 1998 and 2005' (p573). |
| **8. Was the follow-up of subjects long enough?** | |
| Yes | |
| **9. Reporting of the results** | |
| Yes | Authors report rates relating to pattern of abuse/service response. |
| **10. How precise are the results?** | |
| Descriptive analysis, confidence intervals not provided. | |
| **11. Do you believe the results?** | |
| Yes | The conclusions of this study are not testing whether in-area vs. out-of-area are at greater risk for abuse and neglect. This study is analysing the pattern of abuse and neglect and whether they are different among those already referred. |
| **12. Overall internal validity (- /+/++)** | |
| (++) | Issues with confounding do not alter the findings. High quality due to long time horizon and robust data collection. |

| Critical appraisal: survey |
|---|
| **Study identification:**<br>Deveau R, McGill P, Poynter J (2016) Characteristics of the most expensive residential placements for adults with learning disabilities in South East England: a follow-up survey. Tizard Learning Disability Review 20(2): 97–102 |
| **Overall assessment** |
| External validity (+), Internal validity (+) |

| External validity | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | 'The purpose of this paper is to investigate the characteristics of the highest cost residential placements provided for adults with learning disabilities in the South East of England, comparing findings with a previous survey' (p97). |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | Uses anonymous administrative data. |
| **1.3 Were service users involved in the study?** | |
| N/A | See aims of study, section 1.1 above. |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |

| | |
|---|---|
| **2.7 Does the study have a UK perspective?** | |
| Yes | South East of England. |
| **3. Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Objectives clearly stated?** | |
| Yes | |
| **2. Design** | |
| **2.1 Research design clearly specified and appropriate?** | |
| Yes | Follow-up survey |
| **2.2 Clear description of context?** | |
| Yes | Out-of-area placements are considered high-cost and many individuals are placed out-of-area. This is a follow-up survey to understand whether patterns have changed since last survey. |
| **2.3 References made to original work if existing tool used?** | |
| Yes | Survey questionnaire is provided. |
| **2.4 Reliability and validity of new tool reported?** | |
| No | |
| **2.5 Survey population and sample frame clearly described?** | |
| Yes | Survey asks local authority commissioners and NHS trusts to provide information on top 5 highest-cost individuals. |
| **2.6 Representativeness of sample is described?** | |
| Yes | Sample meets criteria of the study. |
| **2.7 Subject of study represents full spectrum of population of interest?** | |
| Yes | |
| **2.8 Study large enough to achieve its objectives, sample size and estimates performed?** | |
| No | Authors do not report whether sample size obtained is large enough for statistical power. |
| **2.9 Are all subjects accounted for?** | |
| Yes | Subjects are accounted for insofar as they represent all individuals based on overall 62% response rate. |
| **2.10 Ethical approval obtained?** | |
| N/A | |
| **2.11 Measures for contacting non-responders provided?** | |
| Not reported | |
| **2.12 All appropriate outcomes considered?** | |
| Yes | |

| | |
|---|---|
| **2.13 Response rate provided?** | |
| Yes | Overall 62% response rate, of which 50% from NHS trusts and 74% from local authorities. |
| **3. Measurement and observation** | |
| **3.1 Describes what was measured, how it was measured, and the outcomes?** | |
| Yes | Characteristics, including gender, ethnicity, age, level of learning disability, yes/no of autism, yes/no to physical, sensory, or health impairment, yes/no to challenging behaviour, yes/no to mental health diagnosis, yes/no to offending behaviour, yes/no to being under a Mental Health Act section, yes/no to genetic syndrome, yes/no to whether person is 'well placed', yes/no previously attended residential school, cost of placement, who funds placement (tick all that apply) – LA, continuing health, joint LA and health budget, mixture of LA and health, direct payment, type of placement (residential care, residential college, supported living, hospital, forensic, secure/medium, assessment and treatment unit), type of provider (NHS, private, non profit), date of admission, admitted from (family home, residential school, supported living, hospital, forensic, secure/medium, assessment and treatment unit, in-area, out-of-area), yes/no plans for different placement, discharge date, location (in-area vs. out-of-area), approximate distance from home area. |
| **3.2 Measurements valid?** | |
| Partly? Yes? | Self-reported using administrative data, it is unclear whether all responding local authorities will have similar definitions for each. |
| **3.3 Measurements reliable?** | |
| Partly | |
| **3.4 Measurements reproducible?** | |
| Yes | |
| **4. Presentation of results** | |
| **4.1 Basic data adequately described?** | |
| Yes | |
| **4.2 Results presented clearly, objectively and in enough detail for readers to make personal judgement?** | |
| Yes | |
| **4.3 Results internally consistent?** | |
| Yes | |
| **5. Analysis** | |
| **5.1 Data suitable for analysis?** | |
| Yes | |
| **5.2 Clear description of data collection and methods and analysis?** | |
| Yes | |
| **5.3 Methods appropriate for data?** | |
| Yes | Simple comparison of in-area vs. out-of-area placements to identify significantly different characteristics. |

| | |
|---|---|
| **5.4 Statistics correctly performed and interpreted?** | |
| Yes | |
| **5.5 Response rate calculation provided?** | |
| Yes | |
| **5.6 Methods for handling missing data described?** | |
| Yes | Implicit – seems to calculate results only for sample size with available information. |
| **5.7 Difference between non-respondents and respondents described?** | |
| N/A | Based on administrative data, non-respondents are the local authorities/NHS trusts providing individual-level data. |
| **6. Discussion** | |
| **6.1 Results discussed in relation to existing knowledge on subject and study objectives?** | |
| Yes | |
| **6.2 Limitations of study stated?** | |
| Yes | 'Data were drawn from existing records which are likely to contain inaccuracies' (p101). |
| **6.3 Results can be generalised?** | |
| No | |
| **6.4 Appropriate attempts made to establish 'reliability' and 'validity' of analysis?** | |
| Yes | |
| **7. Interpretation: Conclusions justified?** | |
| Yes | |
| **8. Overall assessment of internal validity (- /+/++)** | |
| (+) | 62% response rate contributes to lower rating, in addition to reliance on administrative data, which may be inaccurate. |

| Critical appraisal: survey |
|---|
| **Study identification:**<br>McGill P, Poynter J (2011) How much will it cost? Characteristics of the most expensive residential placements for adults with learning disabilities. Tizard Learning Disability Review 16(2): 54–7 |
| **Overall assessment** |
| External validity (++), Internal validity (-) |

| External validity | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | |
| **1.3 Were service users involved in the study?** | |
| N/A | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |

| | |
|---|---|
| **2.7 Does the study have a UK perspective?** | |
| Yes | |
| **3. Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Objectives clearly stated?** | |
| Yes | Investigate predictors of out-of-area placements. |
| **2. Design** | |
| **2.1 Research design clearly specified and appropriate?** | |
| Yes | |
| **2.2 Clear description of context?** | |
| Yes | |
| **2.3 References made to original work if existing tool used?** | |
| No | Survey questionnaire not available for viewing. |
| **2.4 Reliability and validity of new tool reported?** | |
| No | |
| **2.5 Survey population and sample frame clearly described?** | |
| Yes | Five most expensive adult placements, taken from 70 placements in 14 areas of South East England after contacting 19 local authorities between 2009–10 (pp54–5). |
| **2.6 Representativeness of sample is described?** | |
| Yes | |
| **2.7 Subject of study represents full spectrum of population of interest?** | |
| Yes | Focuses on a subgroup of individuals who are highest cost. |
| **2.8 Study large enough to achieve its objectives, sample size and estimates performed?** | |
| Not reported | |
| **2.9 Are all subjects accounted for?** | |
| Not reported | Based on a convenience sample. |
| **2.10 Ethical approval obtained?** | |
| N/A | Uses anonymous administrative data. |
| **2.11 Measures for contacting non-responders provided?** | |
| Not reported | |
| **2.12 All appropriate outcomes considered?** | |
| Yes | |

| | |
|---|---|
| **2.13 Response rate provided?** | |
| No | |
| **3. Measurement and observation** | |
| **3.1 Describes what was measured, how it was measured, and the outcomes?** | |
| Yes | |
| **3.2 Measurements valid?** | |
| Partly | Measures include cost of placement, demographic data, mental health and accommodation setting, and these are reported on basis of administrative data, and it is possible definitions could vary between local authorities. |
| **3.3 Measurements reliable?** | |
| Unclear | Administrative data could be prone to error. |
| **3.4 Measurements reproducible?** | |
| Yes | |
| **4. Presentation of results** | |
| **4.1 Basic data adequately described?** | |
| Yes | Narrative summary of most data, most data not provided in tabular format. |
| **4.2 Results presented clearly, objectively and in enough detail for readers to make personal judgement?** | |
| Partly | Statistical methods and p values not provided. Results are said to be 'statistically different' but no accompanying p value or type of test used. |
| **4.3 Results internally consistent?** | |
| Unclear | See above – cannot be determined with little information provided. |
| **5. Analysis** | |
| **5.1 Data suitable for analysis?** | |
| Yes | |
| **5.2 Clear description of data collection and methods and analysis?** | |
| No | No detailed information about survey provided, response rates, whether all individuals are included (for data collection). Methods and analysis are not reported. |
| **5.3 Methods appropriate for data?** | |
| Not reported | |
| **5.4 Statistics correctly performed and interpreted?** | |
| Not reported | |
| **5.5 Response rate calculation provided?** | |
| No | |
| **5.6 Methods for handling missing data described?** | |
| N/A | Appears that calculations are undertaken on available sample only. |

| | |
|---|---|
| **5.7 Difference between non-respondents and respondents described?** | |
| No | No information available on non-responders. |
| **6. Discussion** | |
| **6.1 Results discussed in relation to existing knowledge on subject and study objectives?** | |
| Yes | |
| **6.2 Limitations of study stated?** | |
| No | |
| **6.3 Results can be generalised?** | |
| No | Findings are applicable to specific locations in South East England. Further research needed to confirm generalisability. |
| **6.4 Appropriate attempts made to establish 'reliability' and 'validity' of analysis?** | |
| No | Lower quality due to lack of reporting information on all questions covered in the survey, survey response rate, whether sample was complete, statistical methods and p values, and lack of discussion of study limitations. |
| **7. Interpretation: Conclusions justified?** | |
| Partly | |
| **8. Overall assessment of internal validity (- /+/++)** | |
| (-) | |

| Critical appraisal: survey |
|---|
| **Study identification:**<br>Joyce T, Ditchfield H, Harris P (2001) Challenging behaviour in community services. Journal of intellectual disability research. 45(2):130–8 |
| **Overall assessment** |
| External validity (++), Internal validity (+) |

| External validity | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | |
| **1.3 Were service users involved in the study?** | |
| N/A | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |

| | |
|---|---|
| **2.7 Does the study have a UK perspective?** | |
| Yes | London boroughs n=3. |
| **3. Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Objectives clearly stated?** | |
| Yes | |
| **2. Design** | |
| **2.1 Research design clearly specified and appropriate?** | |
| Yes | |
| **2.2 Clear description of context?** | |
| Yes | 'The extent to which people with challenging behaviour are present in the community and the extent to which community services can support them effectively still requires significant research' (p130). |
| **2.3 References made to original work if existing tool used? 2.3 References made to original work if existing tool used?** | |
| Yes | 'The questionnaire consisted of demographic details, current service provision, medication, mental health status, whether or not the person had been in contact with the law, and the involvement or otherwise of specialist health services. The Challenging Behaviour Checklist (CBC; Harris and Russell 1989) was used to identify the specific behaviours in question, together with frequency of occurrence, severity and management difficulty' (p132). |
| **2.4 Reliability and validity of new tool reported?** | |
| Partly | For challenging behaviour measures, yes. All other measures, no. |
| **2.5 Survey population and sample frame clearly described?** | |
| Yes | Adults aged 19+ years in 3 London boroughs (both in and out-of-area) who had intellectual disabilities and challenging behaviour (p132). |
| **2.6 Representativeness of sample is described?** | |
| No | |
| **2.7 Subject of study represents full spectrum of population of interest?** | |
| Yes | |
| **2.8 Study large enough to achieve its objectives, sample size and estimates performed?** | |
| Not reported | |
| **2.9 Are all subjects accounted for?** | |
| Yes | |
| **2.10 Ethical approval obtained?** | |
| N/A | |

| | |
|---|---|
| **2.11 Measures for contacting non-responders provided?** | |
| Not reported | |
| **2.12 All appropriate outcomes considered?** | |
| Yes | |
| **2.13 Response rate provided?** | |
| No | |
| **3. Measurement and observation** | |
| **3.1 Describes what was measured, how it was measured, and the outcomes?** | |
| Yes | Demographic data, challenging behaviour, type of accommodation, placement type (in-area vs. out-of-area). |
| **3.2 Measurements valid?** | |
| Yes | 'Each provider returned lists of those individuals known by them to be challenging. This was followed up with a face- to-face structured interview with a keyworker or individual who knew the client well. A minority of clients were living in distant, out-of-borough residential placements. In these cases, the interview was conducted over the telephone' (p132). |
| **3.3 Measurements reliable?** | |
| Yes | |
| **3.4 Measurements reproducible?** | |
| Yes | |
| **4. Presentation of results** | |
| **4.1 Basic data adequately described?** | |
| Yes | |
| **4.2 Results presented clearly, objectively and in enough detail for readers to make personal judgement?** | |
| Yes | |
| **4.3 Results internally consistent?** | |
| Yes | |
| **5. Analysis** | |
| **5.1 Data suitable for analysis?** | |
| Yes | |
| **5.2 Clear description of data collection and methods and analysis?** | |
| Yes | |
| **5.3 Methods appropriate for data?** | |
| Yes | |
| **5.4 Statistics correctly performed and interpreted?** | |
| Yes | Simple comparisons of characteristics to predict individuals placed in in-area vs. out-of-area placements. |
| **5.5 Response rate calculation provided?** | |

| | |
|---|---|
| No | |
| **5.6 Methods for handling missing data described?** | |
| N/A | Only available data used. |
| **5.7 Difference between non-respondents and respondents described?** | |
| No | |
| **6. Discussion** | |
| **6.1 Results discussed in relation to existing knowledge on subject and study objectives?** | |
| Yes | |
| **6.2 Limitations of study stated?** | |
| Yes | |
| **6.3 Results can be generalised?** | |
| No | Findings apply to these 3 local authority boroughs. It is possible that findings may be generalisable but further research is needed to confirm. |
| **6.4 Appropriate attempts made to establish 'reliability' and 'validity' of analysis?** | |
| Yes | |
| **7. Interpretation: Conclusions justified?** | |
| Yes | |
| **8. Overall assessment of internal validity (- /+/++)** | |
| (+) | Lower rating due to lack of reporting on response rate. |

# Cluster vs. dispersed housing

| Critical appraisal: systematic review |
|---|
| **Study identification:**<br>Mansell J and Beadle-Brown J. (2009) Dispersed or clustered housing for adults with intellectual disability: a systematic review. Journal of intellectual and developmental disability 34(4): 313–23 |
| **Overall assessment** |
| External validity (++), Internal validity (-) |

| Critical appraisal: Systematic review | |
|---|---|
| **External validity** | |
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | |
| **1.3 Were service users involved in the study?** | |
| N/A | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |

| | |
|---|---|
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.7 Does the study have a UK perspective?** | |
| Yes | |
| **3. Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Appropriate and clearly focused question?** | |
| Partly | |
| **2. Inclusion of relevant individual studies? (Yes, somewhat relevant, no, unclear, N/A)** | |
| Partly | |
| **3. Rigorous literature search? (yes, partly, no, unclear)** | |
| Unclear | |
| **4. Study quality assessed and reported?** | |
| No | |
| **5. Adequate description of methodology?** | |
| No | |
| **6. Do conclusions match findings?** | |
| Yes | |
| **7. Overall assessment of internal validity (- /+/++)** | |
| (-) | Lower quality due to lack of reporting of methods for literature search (inclusion/exclusion criteria, databases), meaning we do not know whether all relevant research is included. Likewise, does not report study quality or whether study quality is assessed, meaning it is unclear whether reported results are reliable. |

# Environmental factors

| Critical appraisal: systematic review |
|---|
| **Study identification:**<br>Bigby C and Beadle Brown J (2016) Improving Quality of Life Outcomes in Supported Accommodation for People with Intellectual Disability: What Makes a Difference? Journal of Applied Research in Intellectual Disabilities. Advance online publication. doi:10.1111/jar.12291. |
| **Overall assessment** |
| External validity (++), Internal validity (+) |

| Critical appraisal: Systematic review | |
|---|---|
| **External validity** | |
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | |
| **1.3 Were service users involved in the study?** | |
| N/A | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |

| | |
|---|---|
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.7 Does the study have a UK perspective?** | |
| Yes | |
| **3. Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Appropriate and clearly focused question?** | |
| Yes | 'A realist review of the literature aimed to expose different propositions about variables influencing QoL outcomes and review the strength of supporting evidence for these, to identify their relative influence. Evidence was reviewed for and against each of five clusters' (p1). |
| **2. Inclusion of relevant individual studies? (Yes, somewhat relevant, no, unclear, N/A)** | |
| Yes | |
| **3. Rigorous literature search? (yes, partly, no, unclear)** | |
| Yes | 'Importantly, a realist review does not follow procedures characteristic of systematic reviews, or identify a finite set of papers. Rather the scope is broad and realist review aims to identify the body of working theories that lie behind an intervention' (p2).<br><br>'We followed iterative steps. The first was to "scavenge ideas from different sources to produce a long list of inherent theories" (Pawson et al. 2005, p S125). Team members drew on their breadth of deep research experience in this field and significant knowledge of the extant literature to identify core literature about how supported accommodation was thought to work. A series of team meetings were used to select a purposive sample of literature that traced ideas back over time and reflected the diverse analytical approaches and opinions' (p2).<br><br>Total of 44 papers included, ranging from 1970 to 2010. Studies included 'academic and professional journal articles, books, government and other reports and commentaries' (p2).<br><br>'The Web of Science databases were searched by research assistants over several occasions from 2010 to 2014 to ensure that the evidence for each proposition was as comprehensive as possible' (p3). |
| **4. Study quality assessed and reported?** | |
| Yes | 'Quality was not assessed using criterion checklists as one might for a systematic review but rather inclusion relied on judgements of the authors about "fitness for purpose" based on relevance and rigour (Pawson et al. 2005)' (p4). |
| **5. Adequate description of methodology?** | |

| | |
|---|---|
| Yes | |
| **6. Do conclusions match findings?** | |
| Yes | |
| **7. Overall assessment of internal validity (- /+/++)** | |
| (+) | Strengths of analysis include reporting methods for literature search, methods for assessing study quality, and clear description of studies to be included in the search. However, downgraded quality as non-standard checklist is used for assessing study quality. |

| Critical appraisal: systematic review |
|---|
| **Study identification:**<br>Felce D (2016) Community living for adults with intellectual disabilities: unravelling the cost effectiveness discourse. Journal of Policy and Practice in Intellectual Disabilities. Advance online publication. doi:10.1111/jppi.12180. |
| **Overall assessment** |
| External validity (++), Internal validity (-) |

| Critical appraisal: Systematic review | |
|---|---|
| **External validity** | |
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | |
| **1.3 Were service users involved in the study?** | |
| N/A | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |

| | |
|---|---|
| **2.7 Does the study have a UK perspective?** | |
| Yes | |
| **3. Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Appropriate and clearly focused question?** | |
| Yes | 'This article reviews evidence on the costs and quality of residential services for adults with ID' (p1). |
| **2. Inclusion of relevant individual studies? (Yes, somewhat relevant, no, unclear, N/A)** | |
| Yes | |
| **3. Rigorous literature search? (yes, partly, no, unclear)** | |
| Not reported | |
| **4. Study quality assessed and reported?** | |
| Not reported | |
| **5. Adequate description of methodology?** | |
| Not reported | |
| **6. Do conclusions match findings?** | |
| Yes | |
| **7. Overall assessment of internal validity (- /+/++)** | |
| (-) | Lower quality because the review did not report on the methods for including studies, so it is not clear whether a rigorous search was undertaken, likewise, it is not reported whether study quality was assessed, and there was no information on the methods for data extraction. This limits our ability to check reliability of the author's conclusions and to understand which groups of individuals the results apply (i.e. individuals with challenging behaviour?) because there was not enough detail provided about sample characteristics. |

| Critical appraisal: systematic review |
|---|
| **Study identification:**<br>Kozma A, Mansell J, Beadle-Brown J (2009) Outcomes in different residential settings for people with intellectual disability: A systematic review. American Journal on Intellectual and Developmental Disabilities 114(3): 193–222 |
| **Overall assessment** |
| External validity (++), Internal validity (+) |

| Critical appraisal: Systematic review | |
|---|---|
| **External validity** | |
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | |
| **1.3 Were service users involved in the study?** | |
| N/A | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |

| | |
|---|---|
| **2.7 Does the study have a UK perspective?** | |
| Yes | |
| **3. Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Appropriate and clearly focused question?** | |
| Yes | 'In the present study we provide a comprehensive review of more recent research on outcomes in residential settings for people with intellectual disabilities, including both deinstitutionalization and post-deinstitutionalization studies' (pp193–4). |
| **2. Inclusion of relevant individual studies? (Yes, somewhat relevant, no, unclear, N/A)** | |
| Yes | Key terms 'de-institutionalisation/de-institutionalization, learning/intellectual disabilities, mental retardation, living arrangements, community services, resettlement, transition to community care, relocation, hospital/institution closure, residential care institution' (p194). |
| **3. Rigorous literature search? (yes, partly, no, unclear)** | |
| Yes | 'All research published in English from different countries since 1997 were considered' (p194). Thorough search of academic search engines, including Web of Science, PsycINFO, and Google Scholar, selected journals, and follow-up of references' (p194). |
| **4. Study quality assessed and reported?** | |
| Yes | Review described studies' design and whether method were used to control for confounding, in particular, individual characteristics. However, authors do not appear to undertake an assessment of quality using predefined checklist. |
| **5. Adequate description of methodology?** | |
| Yes | |
| **6. Do conclusions match findings?** | |
| Yes | |
| **7. Overall assessment of internal validity (- /+/++)** | |
| (+) | While the authors did not undertake a complete assessment of study quality they provided sufficient information about the included studies' design such that an indication of study quality could be gathered.<br>However, this review did not provide sufficient detail on sample characteristics, making it difficult to understand to which groups results apply (for instance, whether any studies were specific to or included individuals with challenging behaviour). |

# Semi-independent living

| Critical appraisal: quantitative evaluation |
|---|
| **Study identification:**<br>Stancliffe RJ, Keane S. (2000) Outcomes and costs of community living: a matched comparison of group homes and semi-independent living. Journal of Intellectual and Developmental Disability 25(4): 281–305 |
| **Overall assessment** |
| External validity (-), Internal validity (-) |

| External validity | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| N/A | |
| **1.3 Were service users involved in the study?** | |
| N/A | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |

| | |
|---|---|
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.7 Does the study have a UK perspective?** | |
| No | Based in Australia. |
| **3. Overall assessment of external validity (- /+/++)** | |
| **(-)** | Lower quality due to older study from Australia. |
| **Internal validity** | |
| **1. Is this a prospective evaluation?** | |
| Yes | |
| **2. Do they provide a description of the theoretical approach?** | |
| Yes | |
| **3. Allocation** | |
| **3.1 How was selection bias minimised?** | |
| Not randomly assigned groups, as this was a prospective matched comparison study. | |
| **3.2 Was the allocation method followed?** | |
| N/A | |
| **3.3 Is blinding an issue in this study?** | |
| N/A | |
| **4. Attrition** | |
| **4.1 Did participants reflect target group?** | |
| Partly | Authors state that representativeness of sample is unclear, although it is possible that group home residents were more able than general population average as all participants were verbal. In general, the samples from group homes and semi-independent living are matched on characteristics, and findings will apply to those individuals specifically. There was no strict definition of 'target group' apart from matching individuals of similar ability and comparing their outcomes for those living in semi-independent vs. fully-staffed group homes. |
| **4.2 Were all participants accounted for at study conclusion?** | |
| Unclear | |
| **5. Performance** | |
| **5.1 Was the exposure to the intervention and comparison group as intended?** | |
| Yes | |
| **5.2 Was contamination acceptably low?** | |

| | |
|---|---|
| Yes | |
| **5.3 Did either group receive additional interventions or have services provided in a different manner?** | |
| No | |
| **6. Detection** | |
| **6.1 Were outcomes relevant?**<br>Did the study's outcome measures clearly relate to the outcomes which they wanted to impact? | |
| Yes | |
| **6.2 Were outcome measures reliable?**<br>Were outcome measures subjective or objective (e.g. biochemically validated nicotine levels ++ vs. self-reported smoking -)? | |
| Mixed, some had reliable measures, some were not measured at all, and some had low/ moderate reliability. | • Inventory for client and agency planning (ICAP) is a measure of adaptive and challenging behaviour, this was cited to have excellent psychometric properties – test/retest reliability, inter-rater reliability, and criterion validity (p289).<br>• ICAP General maladaptive index (GMI) also has good test/re-test reliability, inter-rater reliability, and good construct and current validity (p289).<br>• ICAP service score is a measure of the need for service support. It also has good test/re-test reliability, inter-rater reliability, and good validity (p289).<br>• Medical conditions that required medical care by doctor or nurse and psychiatric disability which is recorded on basis of formal diagnosis (p290).<br>• Loneliness questionnaire has good test/re-test reliability, inter-rater reliability, moderate internal consistency for aloneness items and good internal consistency for social dissatisfaction (p290).<br>• Safety questionnaire was developed for this study, and internal consistency was moderate (0.57) for this study (p290).<br>• 40-item Quality of Life Questionnaire has good psychometric properties, moderate inter-rater reliability and test-retest reliability, and evidence of content and construct validity (p291).<br>• Community living staff questionnaire relating to personal care, domestic management, participation in domestic tasks = internal consistency of measures were mostly good (p292).<br>• Community living staff questionnaire relating to health care, money management, use of mainstream community services, community participation, had lower internal consistency (Cronbach's alpha =0.51) (p292).<br>• Community living staff questionnaire relating to money management, social network, stability of place of residence, living companion turnover, natural support were not measured for internal consistency (pp292–3). |
| **6.3 Were all outcome measurements complete?**<br>Were all or most study participants who met the defined study outcome definitions likely to have been identified? | |
| Yes – a majority | Small amount of missing outcomes data for loneliness (3.1%) and safety (1.6%) but these were estimated using group mean for the missing item (p294) and n=3 individuals with missing information for quality of life, meaning that information from the comparison group were excluded from the matched pairs analysis (p295). |

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| **6.4 Were all-important outcomes assessed?**<br>Were all important benefits and harms assessed? Was it possible to determine the overall balance of benefits and harms of the intervention versus comparison? | |
| Yes | |
| **6.5 Were there similar follow-up times in exposure and comparison groups?** | |
| Yes | |
| **6.6 Was follow-up meaningful?** | |
| Partly | Outcomes measured at 1 point in time. Costs measured over a 1-year period.<br>A longer follow-up period would be beneficial to see whether changes occur over time. |
| **7. Analyses** | |
| **7.1 Were exposure and comparison groups similar at baseline? If not, were these adjusted?** | |
| Yes | |
| **7.2 Was ITT analysis conducted?** | |
| Yes | Imputation used for missing data. |
| **7.3 Were the estimates of effect size given or calculated?**<br>Were effect estimates given or possible to calculate? | |
| No | Effect size estimates not given. Not possible to calculate - confidence intervals/standard deviation not reported. |
| **7.4 Was the study sufficiently powered to detect an intervention effect?**<br>A power of 0.8 (that is, it is likely to see an effect of a given size if one exists, 80% of the time) is the conventionally accepted standard. Is a power calculation presented? If not, what is the expected effect size? Is the sample size adequate? | |
| Unclear | Power size not calculated. Sample size is small, n=27 in each group. |
| **7.5 Were the analytical methods appropriate?** | |
| Yes | |
| **7.6 Was the precision of intervention effects given or calculable? Were they meaningful?** | |
| No | Confidence intervals and standard deviation not provided for outcomes, however, these were provided for costs. |
| **7.7 Do conclusions match overall findings?** | |
| Partly | Conclusions on outcomes are fine, however, conclusions on costs are appropriate only in relation to staffing costs but less clear in relation to accommodation costs. |
| **8. Overall assessment of internal validity (- /+/++)** | |
| (-) | Due to small sample size, matched-comparison design (not randomised). |

# Assistive technology

| Critical appraisal: quantitative evaluation |
|---|
| **Study identification:**<br>Perry J, Firth C, Puppa M, Wilson R, Felce D (2012) Targeted support and telecare in staffed housing for people with intellectual disabilities: impact on staffing levels and objective lifestyle indicators. Journal of Applied Research in Intellectual Disabilities 25: 60–70 |
| **Overall assessment** |
| External validity (++), Internal validity (+) |

| External validity | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Not reported | |
| **1.3 Were service users involved in the study?** | |
| No | They were not involved in the design of the study. |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | Individuals with learning disabilities and behaviour that challenges.<br>Challenging behaviour was assessed using the Aberrant Behaviour Checklist (ABC). Scores averaged 25.2 (range =0–117, sd=29.3). |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |

| | |
|---|---|
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| N/A | |
| **2.7 Does the study have a UK perspective?** | |
| Yes | |
| **3. Overall assessment of external validity (- /+/++)** | |
| (++) | |
| **Internal validity** | |
| **1. Is this a prospective evaluation?** | |
| Yes | |
| **2. Do they provide a description of the theoretical approach?** | |
| Yes | Initially the design was to compare individuals in Network 4, who did not receive assistive technology, to individuals in Networks 1, 2 and 3, who received assistive technology in staggered intervals. However, since Network 4 was statistically different in levels of adaptive behaviour compared to Networks 1, 2 and 3, it was decided to excluded Network 4 in the analytic approach (p63). Levels of adaptive behaviour were higher in Networks 1, 2 and 3 and lower in the fourth network. Groups were similar in level of challenging behaviour (p62).<br>Average Adaptive Behaviour Scale score among participants in the three intervention networks was 191 (range =27– 306, sd=64.1). The 25 settings in which change was implemented had an average of 2.7 places per setting (range =1–5). In the fourth network mean score was 106 (range =25–303, sd=79.9). The difference was statistically significant ($p<0.001$) (p62).<br>Instead, study design changed so that they estimate the 'stability' of pre-intervention data at two time points for Networks 2, 3 and 4 – and this data was assigned as the 'PIC group' (pre-intervention comparison group). Then they estimated the potential effect of assistive technology by calculating the difference in pre/post data for Networks 1, 2 and 3 – which they refer to as the 'PPC group' (pre-post comparison group). The intervention effect was then estimated to be when the PPC group differences were significant and the differences in PIC group were not significant. |
| **3. Allocation** | |
| **3.1 How was selection bias minimised?** | |
| Quasi-experimental design. See above for methods and limitations. | |
| **3.2 Was the allocation method followed?** | |
| N/A | This is not a randomised evaluation. |
| **3.3 Is blinding an issue in this study?** | |

| | |
|---|---|
| Potentially | The data were collected by interviews with staff who knew the participants well (p63) and these are the same employees of the agencies that introduced assistive technology. This scenario could give rise to performance bias, regardless of whether outcomes measures are objective or subjective. Objective measures included **safety** using the Risks Scale, **money management** (Money Management Scale), **benefits and income** (using the Client Services Receipt Inventory), **range and frequency of social and community activities** (the Index of Community Involvement and the Measure of Community Participation as measured by Stancliffe and Keane 2000), **degree and independence of individual participation in household activities** (Index of Participation in Domestic Life), and **health-related outcomes** like weight, height, smoking, alcohol use and diet were collected, and body mass index scores were calculated, **health checks** was recorded, and the Health Care Scale, and a measure of **choice** (using the Choice Questionnaire) (p65).<br><br>Other measures included staff working methods, such as the use of **active support**, and setting descriptors like, **home likeness**. These measures could be prone to performance bias since the employed staff completes them. |
| **4. Attrition** | |
| **4.1 Did participants reflect target group?** | |
| Yes | |
| **4.2 Were all participants accounted for at study conclusion?** | |
| Yes | Indirectly reported but there appear to be no drop-outs during the study (as the total sample size number of n=91 remained the same) (see pp62, 67). |
| **5. Performance** | |
| **5.1 Was the exposure to the intervention and comparison group as intended?** | |
| Yes | |
| **5.2 Was contamination acceptably low?** | |
| Yes | |
| **5.3 Did either group receive additional interventions or have services provided in a different manner?** | |
| No | |
| **6. Detection** | |
| **6.1 Were outcomes relevant?** | |
| Yes | |
| **6.2 Were outcome measures reliable?** | |
| Not reported | However, the outcome measures chosen in this study have been used in many other studies among individuals with intellectual disabilities and it is highly likely that these measures are reliable and validated. However, it still remains a limitation that this information on reliability was not directly reported in this study. |

| | |
|---|---|
| **6.3 Were all outcome measurements complete?** | |
| Unclear | They do not report that there were missing data related to outcomes and costs measured. It is possible that outcome measures are complete given that there seem to be no drop-outs (see section 7.2 below). However it is a limitation that the authors do not clearly report this information. |
| **6.4 Were all-important outcomes assessed?** | |
| Yes | |
| **6.5 Were there similar follow-up times in exposure and comparison groups?** | |
| Yes | |
| **6.6 Was follow-up meaningful?** | |
| Partially | Short-term follow up poses some limitations. Data were collected twice in the 6 months preceding the intervention and once more in the post-intervention period at 6-months follow-up. |
| **7. Analyses** | |
| **7.1 Were exposure and comparison groups similar at baseline? If not, were these adjusted?** | |
| Partially | Networks 1, 2 and 3 were similar on level of adaptive behaviour and setting size, however they were different from Network 4, in both those areas. It appears that the analysis was not adjusted to take into account those differences. The effect may be small considering that the estimation of treatment effect combines information regarding 'pre-intervention data' on Networks 2, 3 and 4 compared to 'post-intervention data' on Networks 1, 2 and 3. |
| **7.2 Was ITT analysis conducted?** | |
| Yes | Indirectly reported but there appear to be no drop-outs during the study (as the total sample size number of n=91 remained the same) (see pp62, 67). |
| **7.3 Were the estimates of effect size given or calculated?** | |
| Yes | Effect size not given but can be calculated. |
| **7.4 Was the study sufficiently powered to detect an intervention effect?** | |
| Not reported | Sample size is n=91 but the authors did not calculate whether the study was sufficiently powered. |
| **7.5 Were the analytical methods appropriate?** | |
| Somewhat | Did not adjust for differences between Network 4 and Networks 1, 2 and 3 in relation to adaptive behaviour score and setting size. However, impact of imbalance on adaptive behaviour may be minimised due to intervention effect being estimated as an average of all pre-intervention scores and average of post-intervention scores, with more of the average scores coming from the similar networks (1, 2, 3) relative to Network 4. |
| **7.6 Was the precision of intervention effects given or calculable? Were they meaningful?** | |

| | |
|---|---|
| Yes | |
| **7.7 Do conclusions match overall findings?** | |
| Yes | |
| **8. Overall assessment of internal validity (- /+/++)** | |
| (+) | Potential for performance bias given that staff measuring the outcomes were not blind to the intervention allocation. The analytical methods were somewhat appropriate. |

| Critical appraisal: qualitative report |
|---|
| **Study identification:**<br>Barnard S (no date) HFT and Innovation in service delivery to people with a learning disability. Home Farm Trust |
| **Overall assessment** |
| External validity (+), Internal validity (-)<br>This study was provided by a member of the Guideline Committee. |

| External validity | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Unclear | |
| **1.3 Were service users involved in the study?** | |
| Unclear | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | Assistive technology. |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | Individuals with learning disabilities which may or may not include challenging behaviour. |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| Yes | |
| **2.7 Does the study have a UK perspective?** | |

| | |
|---|---|
| Yes | |
| **3. Overall assessment of external validity (- /+/++)** | |
| (+) | |
| **Study credibility** | |
| **1. Theoretical approach** | |
| **1.1 Is a qualitative approach appropriate?** | |
| Partially | In the discussion of impact it needs more rigorous description of methodology and more information about the data/results. |
| **1.2 Is the study clear what in it seeks to do?**<br>Is the purpose of the study discussed? Is there adequate/appropriate reference to the literature? Are underpinning values/assumptions/theories discussed? | |
| Partially | This is a report describing the role of the organisation in using assistive technology, its values and aims, and provides some examples of service users' views and some of the impacts on staffing hours. |
| **2. Study design** | |
| **2.1 How defensible/rigorous is the research design/methodology**<br>Is the design appropriate to the research question? Is rationale given for using qualitative approach? Is the selection of cases/sampling strategy theoretically justified? | |
| Partly defensible | This is not a rigorous study design but more of a summary of findings without clear and detailed information about the methods underpinning the findings. |
| **3. Data collection** | |
| Not reported | |
| **3.1 How well was the data collection carried out?**<br>For example, were the data collection methods described? Were appropriate data collected to address the research question? Was the data collection and record-keeping systematic? | |
| Not reported | |
| **4. Validity** | |
| **4.1 Is the context clearly described?**<br>Are the characteristics of the participants and settings clearly defined?<br>Were observations made in a sufficient variety of circumstances? Was context bias considered? | |
| Not reported | |

| | |
|---|---|
| **4.2 Were the participants recruited in an appropriate way?** | |
| Is there risk of bias or influence on the respondents due to the recruitment? | |
| Not reported | |
| **4.3 Were methods reliable?** | |
| For example, were data collected by more than 1 method? Is there justification for triangulating or not triangulating the findings? Do the methods investigate what they claim to? | |
| Not reported | |
| **5. Analysis** | |
| **5.1 Are the data rich?** | |
| How well are the contexts of the data described? Has the diversity of perspective and content been explored? How well has the detail and depth been demonstrated? Are responses compared and contrasted across groups/sites? | |
| No | This is more of a summary report. |
| **5.2 Is analysis reliable?** | |
| Did more than 1 researcher theme and code transcripts/data? If so, how were differences resolved? Did participants feedback on the transcripts/data if possible and relevant? Were negative/discrepant results addressed or ignored? | |
| Unclear | |
| **5.3 Are the findings reliable?** | |
| Are the findings clearly presented? Findings internally coherent? Extracts from the original data included? Data appropriately referenced? Is reporting clear and coherent? | |
| Unclear | |
| **5.4 Are the conclusions adequate?** | |
| Are the findings relevant to the aims of the study? How clear are the links between data, interpretation, and conclusions? Are the conclusions plausible and coherent? Have alternative explanations been explored and discounted? Does this enhance understanding of the research topic? | |
| Unclear | Lack of detail on description of methods and underlying data prevent assessment as to whether conclusions are adequate. |
| **6. Overall assessment of credibility?** | |
| **6.1 As far can be ascertained from the paper, how well was the study conducted?** | |
| (-) | More information is required before the study can be assessed adequately. |

| Critical appraisal: qualitative report |
|---|
| **Study identification:**<br>Bye G, and Gibson M (2009) A review of assistive technology and its impact. Coventry: Life Path Trust. |
| **Overall assessment** |
| External validity (+), Internal validity (-). This study was provided by a member of the Guideline Committee. |

| External validity | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Not reported | |
| **1.3 Were service users involved in the study?** | |
| Not reported | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | Assistive technology. |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | Individuals with learning disabilities although unclear whether individuals with challenging behaviour are included. |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| Yes | |
| **2.7 Does the study have a UK perspective?** | |

| | |
|---|---|
| Yes | |
| **3. Overall assessment of external validity (- /+/++)** | |
| (+) | |
| **Study credibility** | |
| **1. Theoretical approach** | |
| **1.1 Is a qualitative approach appropriate?** | |
| Partially | For evaluation of intervention effects a more robust study design is needed. |
| **1.2 Is the study clear what in it seeks to do?**<br>Is the purpose of the study discussed? Is there adequate/appropriate reference to the literature? Are underpinning values/assumptions/theories discussed? | |
| Yes | 'This report is a review of the assistive technology that has been used by Life Path Trust to support people with learning disabilities. The equipment was first introduced in January 2007 and is based on the 2.5 years experience that has been gained.' (p3) |
| **2. Study design** | |
| **2.1 How defensible/rigorous is the research design/methodology**<br>Is the design appropriate to the research question? Is rationale given for using qualitative approach? Is the selection of cases/sampling strategy theoretically justified? | |
| Not provided | This is a review of the use of assistive technology and 3 case studies are provided. Unclear how they are chosen. |
| **3. Data collection** | |
| **3.1 How well was the data collection carried out?**<br>For example, were the data collection methods described? Were appropriate data collected to address the research question? Was the data collection and record keeping systematic? | |
| Not described | Data collection methods not described. |
| **4. Validity** | |
| **4.1 Is the context clearly described?**<br>Are the characteristics of the participants and settings clearly defined?<br>Were observations made in a sufficient variety of circumstances? Was context bias considered? | |

| | |
|---|---|
| No | |
| **4.2 Were the participants recruited in an appropriate way?** Is there risk of bias or influence on the respondents due to the recruitment? | |
| Not reported | |
| **4.3 Were methods reliable?**<br>For example, were data collected by more than 1 method? Is there justification for triangulating or not triangulating the findings? Do the methods investigate what they claim to? | |
| Not reported | Outcomes data from 3 case studies. Financial data does not come with clear description of underlying data (i.e. sample characteristics, how they were selected, where they are accommodated). |
| **5. Analysis** | |
| **5.1 Are the data rich?**<br>How well are the contexts of the data described? Has the diversity of perspective and content been explored? How well has the detail and depth been demonstrated? Are responses compared and contrasted across groups/sites? | |
| No | Case study from 3 individuals. |
| **5.2 Is analysis reliable?**<br>Did more than 1 researcher theme and code transcripts/data? If so, how were differences resolved? Did participants feedback on the transcripts/data if possible and relevant? Were negative/discrepant results addressed or ignored? | |
| No | Unclear due to lack of reporting of methods. |
| **5.3 Are the findings reliable?**<br>Are the findings clearly presented? Findings internally coherent? Extracts from the original data included? Data appropriately referenced? Is reporting clear and coherent? | |
| Unclear | Findings are based on limited number of case studies (3) and unclear methods for collection of cost-savings information. |
| **5.4 Are the conclusions adequate?**<br>Are the findings relevant to the aims of the study? How clear are the links between data, interpretation, and conclusions? Are the conclusions plausible and coherent? Have alternative explanations been explored and discounted? Does this enhance understanding of the research topic? | |
| Unclear | More information needed. |
| **6. Overall assessment of credibility?** | |
| **6.1 As far can be ascertained from the paper, how well was the study conducted?** | |
| (-) | Unclear methods due to lack of reporting, findings are based on limited number of case studies. |

| Critical appraisal: qualitative report |
|---|
| **Study identification:**<br>Cheshire East Council (2010) Cheshire East Council: enabling adults with a learning disability. London: Department of Health. Care Services Efficiency Delivery. |
| **Overall assessment** |
| External validity (+), Internal validity (-) |

| External validity | |
|---|---|
| **1. Study relevance to review question** | |
| **1.1 Does the study's research question match the review question?** | |
| Yes | |
| **1.2 Has the study dealt appropriately with any ethical concerns?** | |
| Unclear | |
| **1.3 Were service users involved in the study?** | |
| Unclear | |
| **2. Study relevance to scope** | |
| **2.1 Is there a clear focus on the guideline topic?** | |
| Yes | |
| **2.2 Is the study population the same as at least 1 of the groups covered by the guideline?** | |
| Yes | Individuals with learning disabilities although unclear how many had challenging behaviour. |
| **2.3 Is the study setting the same as at least 1 of the settings covered by the guideline?** | |
| Yes | |
| **2.4 Does the study relate to at least 1 of the activities covered by the guideline?** | |
| Yes | |
| **2.5 (For effectiveness questions) Are the study outcomes relevant to the guideline?** | |
| N/A | |
| **2.6 (For views questions) Are the views and experiences reported relevant to the guideline?** | |
| Yes | |

| | |
|---|---|
| **2.7 Does the study have a UK perspective?** | |
| Yes | |
| **3. Overall assessment of external validity (- /+/++)** | |
| (+) | |
| **Study credibility** | |
| **1. Theoretical approach** | |
| **1.1 Is a qualitative approach appropriate?** | |
| Yes | This uses a case study approach. |
| **1.2 Is the study clear what in it seeks to do?**<br>Is the purpose of the study discussed? Is there adequate/appropriate reference to the literature? Are underpinning values/assumptions/theories discussed? | |
| Partly | Provides a summary and some case studies in its use of assistive technology. |
| **2. Study design** | |
| **2.1 How defensible/rigorous is the research design/methodology?**<br>Is the design appropriate to the research question? Is rationale given for using qualitative approach? Is the selection of cases/sampling strategy theoretically justified? | |
| Not reported | |
| **3. Data collection** | |
| **3.1 How well was the data collection carried out?**<br>For example, were the data collection methods described? Were appropriate data collected to address the research question? Was the data collection and record keeping systematic? | |
| Not reported | |
| **4. Validity** | |
| **4.1 Is the context clearly described?**<br>Are the characteristics of the participants and settings clearly defined?<br>Were observations made in a sufficient variety of circumstances? Was context bias considered? | |
| Not reported | |
| **4.2 Were the participants recruited in an appropriate way?**<br>Is there risk of bias or influence on the respondents due to the recruitment? | |

| | |
|---|---|
| Not reported | |
| **4.3 Were methods reliable?** | |
| For example, were data collected by more than 1 method? Is there justification for triangulating or not triangulating the findings? Do the methods investigate what they claim to? | |
| Not reported | |
| **5. Analysis** | |
| **5.1 Are the data rich?** | |
| How well are the contexts of the data described? Has the diversity of perspective and content been explored? How well has the detail and depth been demonstrated? Are responses compared and contrasted across groups/sites? | |
| No | Case studies (3). |
| **5.2 Is analysis reliable?** | |
| Did more than 1 researcher theme and code transcripts/data? If so, how were differences resolved? Did participants feedback on the transcripts/data if possible and relevant? Were negative/discrepant results addressed or ignored? | |
| Not clear | |
| **5.3 Are the findings reliable?** | |
| Are the findings clearly presented? Findings internally coherent? Extracts from the original data included? Data appropriately referenced? Is reporting clear and coherent? | |
| Unclear | Inadequate amount of information on sample, methods, and data collection. |
| **5.4 Are the conclusions adequate?** | |
| Are the findings relevant to the aims of the study? How clear are the links between data, interpretation, and conclusions? Are the conclusions plausible and coherent? Have alternative explanations been explored and discounted? Does this enhance understanding of the research topic? | |
| Unclear | See section 5.3 above. |
| **6. Overall assessment of credibility?** | |
| **6.1 As far can be ascertained from the paper, how well was the study conducted?** | |
| (-) | Lack of information on sample, methods, data collection, outcomes, and costs make it difficult to assess reliability of findings. |

# Shared Lives

| Critical appraisal: economic evaluations |
|---|
| **Study identification:**<br>Curtis L (2011) PSSRU Unit Costs report. “Shared Lives – model for care and support.” Canterbury: Personal Social Services Research Unit. The University of Kent |
| **Overall assessment** |
| External validity (+), Internal validity (-) |

| Critical appraisal: economic evaluations | |
|---|---|
| **1.1 Is the study population appropriate for the review question?** | |
| Yes | Individuals with learning disabilities. Unclear which percentage with challenging behaviour. |
| **1.2 Are the interventions appropriate for the review question?** | |
| Yes | |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Yes | |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Not explicitly stated but appears to reflect service provider perspective. | |
| **1.5 Are all direct effects on individuals included** | |
| N/A | This is a costing study. |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| N/A | Estimates weekly cost of Shared Lives per person |
| **1.7 How is the value of effects expressed?** | |
| N/A – effects not measured | |
| **1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| No | This is a costing study of the intervention. |
| **General conclusion** | |
| Applicable study with a narrow focus of costing the intervention. | |
| ***Section 2: Study limitations (the level of methodological quality)***<br>This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |

| | |
|---|---|
| N/A | |
| **2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?** | |
| N/A | |
| **2.3 Are all important and relevant outcomes included?** | |
| N/A | |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| N/A | |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |
| N/A | |
| **2.6 Are all important and relevant costs included?** | |
| Unclear | Only reports on cost of Shared Lives from provider perspective. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| Unclear | |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Unclear | |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| N/A | |
| **2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| N/A | |
| **2.11 Is there any potential conflict of interest?** | |
| Not clear | |
| **2.12 Overall assessment** | |
| This report is intended as a summary of the costs and primarily an introduction to the Shared Lives scheme. There is insufficient information in this report about methods of estimating costs but rather a summarised report of the findings based on 1 costing study (see NAAPS 2009 below). | |

| **Critical appraisal: economic evaluations** |
|---|
| **Study identification:**<br>NAAPS (2009) A business case for Shared Lives. |
| **Overall assessment** |
| External validity (+), Internal validity (-) |

| **Critical appraisal: economic evaluations** | |
|---|---|
| **1.1 Is the study population appropriate for the review question?** | |
| Yes | Individuals with learning disabilities. Unclear which percentage with challenging behavior. |
| **1.2 Are the interventions appropriate for the review question?** | |
| Yes | |
| **1.3 Is the current social care system in which the study was conducted sufficiently similar to the current UK social care context?** | |
| Yes | Findings from experience in South East of England. |
| **1.4 Are the perspectives clearly stated and what are they?** | |
| Not explicitly stated but appears to be that of provider costs | |
| **1.5 Are all direct effects on individuals included** | |
| N/A | Not an economic evaluation but a calculation of intervention costs and potential cost-savings from a very limited provider perspective. |
| **1.6 Are all future costs and outcomes discounted appropriately?** | |
| No | Future costs of intervention are not discounted but actually they would need to be inflated. |
| **1.7 How is the value of effects expressed?** | |
| N/A | CQC inspection ratings. |
| **1.8 Are costs and outcomes from other sectors (including value of unpaid care, where relevant) fully and appropriately measured and valued?** | |
| N/A | Not an economic evaluation but a calculation of intervention costs and potential cost savings from a very limited provider perspective. |
| **General conclusion** | |
| This study is applicable in that it provides an estimate of intervention costs. | |
| ***Section 2: Study limitations (the level of methodological quality)*** | |
| This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the social care guidance. | |
| **2.1 Does the model structure adequately reflect the nature of the topic under evaluation?** | |
| N/A | |
| **2.2 Is the time horizon sufficiently long to reflect all-important differences in costs and outcomes?** | |
| Partially | Estimates the staff costs over a 5-year period but this doesn't take into account wider service use. |
| **2.3 Are all important and relevant outcomes included?** | |
| Partially | CQC quality ratings of Shared Lives are included along with quotes from some service users and carers. |
| **2.4 Are the estimates of baseline outcomes from the best available source?** | |
| N/A | |
| **2.5 Are the estimates of relative intervention effects from the best available source?** | |

| | |
|---|---|
| N/A | |
| **2.6 Are all important and relevant costs included?** | |
| No | Shared Lives costs only based on staff costs. Does not include accommodation, insurance, office equipment, supplies, travel and operational costs. |
| **2.7 Are the estimates of resource use from the best available source?** | |
| Yes | Information is based on actual implementation data. |
| **2.8 Are the unit costs of resources from the best available source?** | |
| Unclear | It is not clearly reported what source of costing data is used to estimate the staff costs of Shared Lives. |
| **2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?** | |
| N/A | |
| **2.10 Are all-important parameters whose values are uncertain subjected to appropriate sensitivity analysis?** | |
| N/A | |
| **2.11 Is there any potential conflict of interest?** | |
| Yes | Authors of the report are the main providers and advocates for Shared Lives. |
| **2.12 Overall assessment** | |
| Some limitations in the calculation of costs due to unclear source of unit cost to estimate staffing costs of Shared Lives. Likewise, costs of Shared Lives be underestimates as a full-cost approach was not used (i.e. only included staffing costs and did not include capital/building, insurance, office equipment, supplies, travel and operational costs). | |