

# Economic plan

This plan identifies the areas prioritised for economic modelling. The final analysis may differ from those described below. The rationale for any differences will be explained in the guideline.

## 1 Guideline

Transition between inpatient mental health settings and community or care home settings

## 2 List of modelling questions

<b>Review questions by scope area</b>	<p><b>Review Question 5:</b></p> <p>What is the effectiveness or impact of interventions, components of care packages and approaches designed to improve discharge from inpatient mental health settings?</p> <p><b>Review Question 6:</b></p> <p>What is the effectiveness or impact of interventions and approaches delivered as part of discharge and admission processes in reducing or preventing readmissions to inpatient mental health settings?</p>
Population	Individuals in the early stages of bipolar 1 disorder (defined as their first, second or third hospitalisation).
Interventions and comparators considered for inclusion	<p>Intervention: 2-year multi-staged psychological intervention composed of specialised bipolar staff + guideline-based pharmacological treatment + 3-staged psychological intervention + 6-week manual-based psycho-educative group therapy for families</p> <p>Comparator: generic outpatient treatment of bipolar affective disorders (active treatment as usual)</p>
Perspective	NHS and personal social services.
Outcomes	QALYs.
Type of analysis	Cost–utility analysis.
Issues to note	<p><u>Summary of strengths and limitations in the overarching approach</u></p> <p>There are several limitations to this analysis but it is believed that the results are still indicative of the intervention’s potential cost-effectiveness in the English context. The main issues relate to assumptions about costs and effects in the analysis.</p> <p>The strength of analysis is that it takes a conservative approach, including to the estimation of the cost of the intervention and QALY gains. Uncertainties in the data are minimised by using</p>

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both probabilistic analyses (Monte Carlo simulations), conservative one-way sensitivity analyses and referencing other literature to triangulate findings and fill gaps in information.

The analysis still has some potentially serious limitations, such as not analysing the impact on informal, unpaid carers, or the impact on service users from the perspective of employment, housing and the legal system. However, one might consider that, if anything, results may be underestimated if it is assumed that positive impacts for service users may, in the best case, positively impact carers, or, at the very least, would not negatively affect them. The same might apply to the impacts on other sectors.

Further detail on the strengths and limitations in the data

##### **UK data**

When carrying out sensitivity analyses on less certain UK data, results did not change very much. This includes baseline probability of hospital admission, proportion of patients admitted to hospital with mania or depression and the health-state utility of being treated in a Crisis Resolution and Home Treatment (CRHT) Teams.

##### **Community health and social care service use**

Assumptions about changes in community health and social care services were made from an older UK study that was partially comparable in terms of sample characteristics to the people in the intervention study by Kessing et al. However, uncertainty was addressed through the scenario analyses. ~~It~~ was found that the intervention was still cost-effective across these scenarios at very low levels of willingness-to-pay and even in the conservative one-way sensitivity analyses.

##### **Structural assumptions about impact**

The Danish study measures the impact on hospitalisation only, but in the UK context it is unclear whether the intervention would affect not only hospitalisation but also CRHTTs. This uncertainty was accounted for through scenario analyses. Assuming reductions in both hospitalisation and CRHTTs made it much more likely that the intervention would be cost-effective, even from the perspective of the most conservative scenario.

##### **Impact on hospitalisation**

An important limitation is that the study was not conducted in the UK. Furthermore, results are based on a single study rather than from a meta-analysis. To account for this, we referred to the NICE clinical guideline 185, which contained a meta-analysis of similar psychological interventions (group-based psychological interventions). Results showed a positive impact favoring the intervention, reducing hospitalisation and the number of bipolar relapses (CG 185, p257–60). Studies were conducted in European countries. However, the meta-analysis was limited due to the studies being of low quality (as indicated by the GRADE checklist) largely due to imprecision, publication/reporting bias and inconsistency. Furthermore, ~~a limitation~~ a limitation of this is that interventions included in the meta-analysis were not

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	<p>completely comparable, but they were similar. The intervention in this analysis is more intensive (5 components, 24 months long) whereas those in the meta-analysis were single-component interventions lasting 5 to 9 months. Uncertainty in effectiveness was accounted for through conservative one-way sensitivity analyses using Monte Carlo simulations assuming a reduction in impact by 50%. Even in conservative scenarios, the findings still show that the intervention is cost-effective within <del>a threshold</del> <u>threshold</u> of less than £10,000 per QALY.</p> <p><b>Impact on QALYs gained</b></p> <p>Assumptions about QALYs gained were made. QALYs were not directly measured in the study and so gains due to reductions in hospitalisation were estimated. The EQ-5D health-state utility data was used and found that being in hospital versus other utilities of being in the community were substantially different. However, it is generally unclear whether QALY gains would be different had they been directly measured from the study.</p> <p><u>Conclusion</u></p> <p>In conclusion, the results indicate that the intervention may be cost-effective. Results are dependent on the impact of the intervention on reducing hospitalisation and the corresponding gains in QALYs.</p>
<p><b>Review questions by scope area</b></p>	<p><b>Review Question 5:</b></p> <p>What is the effectiveness or impact of interventions, components of care packages and approaches designed to improve discharge from inpatient mental health settings?</p> <p><b>Review Question 6:</b></p> <p>What is the effectiveness or impact of interventions and approaches delivered as part of discharge and admission processes in reducing or preventing readmissions to inpatient mental health settings?</p>
<p>Population</p>	<p>Individuals with severe mental illness.</p>
<p>Interventions and comparators considered for inclusion</p>	<p>Intervention: manual-based recovery and self-management programme in group sessions of 4 to 13 individuals between 2 to 2.5 hours per week for a duration of 8 to 12 weeks delivered in the community. Two peer workers provided psycho-education, social support, information about the disease and taught strategies to overcome disease-specific problems in weekly sessions. The intervention does not involve any evidence-based psychotherapeutic treatment. It is predominantly support-based.</p> <p>Comparator: 'treatment as usual'.</p>
<p>Perspective</p>	<p>NHS and personal social services.</p>
<p>Outcomes</p>	<p>Quality of life (not to be confused with QALY) and hope.</p>

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Type of analysis	Cost-effectiveness analysis.
Issues to note	<p><u>Summary of strengths and limitations in the overarching approach</u></p> <p>There are several limitations to this analysis but we believe that the results are still indicative of the intervention’s potential cost-effectiveness in the English context.</p> <p><u>Limitations</u></p> <p>The analysis does contain some serious limitations: the exclusion of the impacts on individual productivity, on the housing and legal sectors, and on informal carers. Therefore, we had to make assumptions about the impact on health and social care resource use, as these were not measured in the studies.</p> <p>A further limitation is that two of the three studies in the meta-analysis provided small financial incentives to study participants with the purpose of minimising data loss (i.e. interview and data collection, not to boost participation in the intervention). In comparison to the study that did not use financial incentives, participation rates were slightly lower but were still very similar. Participation rates were between 80% and 70% (no financial incentive). Among the studies providing financial incentives participation rate was 88% and 86% at first and second follow-up points in one study. In the second study, participation rates were 80% and 75%.</p> <p><u>Excluding public and societal perspective from the analysis</u></p> <p>An analysis was not conducted from the public sector or societal perspectives due to a lack of robust information in this area (in particular, potential impacts on housing, criminal justice or productivity).</p> <p><u>Excluding impact on carers</u></p> <p>Literature to estimate potential impacts on carers was not found and so this was excluded from the analysis. While it would be expected that service users’ improvements in hope and quality of life could positively impact on their informal carers, it was not possible to find precise information on those links.</p> <p><u>Assumptions about impact on peer workers</u></p> <p>Impact on peer support workers was not measured. In the analysis, an assumption was made that it would have increased peer workers’ quality of life. However, it is unclear what the impacts may have been on their use of health and social care services. Would participating as a peer worker have contributed to lower use of services?</p> <p><u>Assumptions about service users’ use of health and social care services</u></p> <p>The studies in the meta-analysis did not directly measure impact on health and social care service use. This was counteracted by referencing the only other similar study available – 1 UK pre/post test study. However, this is a potentially minor limitation considering we undertake various scenario analyses, each of which resulted in the intervention remaining cost-effective at very low levels of willingness to pay.</p>

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##### Strengths

The strength of the analysis is that it takes a conservative approach and the conclusions reflect this. This includes using the upper end of the intervention costs in all analyses, using a conservative estimate of effects on peer workers in the sensitivity analyses, and testing various 'what if' scenarios regarding potential changes in health and social care resource use.

To minimise uncertainties in the analysis a variety of tools have been used. Probabilistic analyses using Monte Carlo simulations were used and findings are based on a meta-analysis of 3 RCTs and findings triangulated, referencing the small pre/post UK study.

##### Conclusions

With the available information, the probability that the intervention is cost-effective may be underestimated. This is possible if it is assumed that informal carers would have experienced positive effects, if impacts on peer workers' quality of life would be higher than what they have been assumed to be, and finally, if it was assumed that there would be some reductions in peer workers' health and social care resource use.