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HealthTech Programme

Diagnostics Advisory Committee (DAC)

GID-HTE10058 Digital self-help for people with eating disorders : Early Value Assessment – 1st meeting

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Link to SCM list for topic:	https://www.nice.org.uk/guidance/gid-hte10058/documents/specialist-committee-members-3

The following documents are made available to the Committee:

1. Cover sheet
2. External assessment report overview (ARO) [REDACTED]
3. Patient group submissions
    - 3a. BEAT [no ACIC]
    - 3b. Diabetes UK [no ACIC]
4. Professional group and NHS organisation submissions
    - 4a. HIN - Health Innovation Network [no ACIC]
    - 4b. BDA - The British Dietetic Association Mental Health Specialist Group [no ACIC]
5. External assessment report (EAR) [REDACTED]
6. External Assessment Group (EAG) response to stakeholder comments on EAR and model [noCON]

Early value assessment

Digital self-help for people with eating disorders

Assessment report overview

This overview summarises key information from the assessment and sets out points for discussion in the committee meeting. It should be read together with the final scope and the external assessment report. As part of this assessment, NICE did a survey of views of using digital self-help. The summary of the survey responses is included in this overview in appendix A. NICE would like to thank all the 119 people with lived or carer experience of eating disorders who responded for their time and for sharing their experiences and views.

1. The technologies

This assessment included 3 technologies that can be used to offer NICE-recommended eating-disorder-focused cognitive behaviour therapy based (CBT-ED-based) self-help therapy for eating disorders in a digital format. All the technologies can be used as guided interventions as part of the current format of the self-help but they are also designed to work without the brief adherence supporting sessions. In this NICE assessment, they were assessed for this independent use. More information on the regulatory status of the technologies is in appendix B of this overview document.

Table 1 Digital self-help technologies

Technology (provider), regulatory status	Intended target condition or symptoms	Intended age group	Format
Digital CBTe (Credo Therapies) Class I CE mark	• Binge eating disorder • Bulimia • Other specified feeding or eating disorder (OSFED) with symptoms	18 years and above	Smartphone app Online

	similar to binge eating disorder or bulimia		
Overcoming Bulimia Online (Five Areas) Does not need medical device regulation	• Binge eating disorder • Bulimia • OSFED with symptoms similar to binge eating disorder or bulimia	16 years and above	Online
Worth Warrior (stem4) Does not need medical device regulation	• Anorexia • Avoidant restrictive food intake disorder (ARFID) • Binge eating disorder • Bulimia • OSFED with symptoms similar to the above conditions	12 years and above (under 12 with adult guidance)	Smartphone app

2. The condition

It is estimated that at least 1.25 million people in the UK have an eating disorder. Eating disorders are described as mental health conditions where controlling food is used to cope with feelings and situations (Beat).

Having a binge eating disorder means eating very large quantities of food without feeling in control of it, for example eating much faster than normal, until feeling uncomfortably full, eating large amounts of food when not physically hungry or eating alone through embarrassment at the amount being eaten, and feelings of disgust, shame or guilt during or after the binge. People with bulimia cycle between bingeing and trying to compensate for the overeating by vomiting, taking laxatives or diuretics (purging), fasting, or exercising excessively. When symptoms are similar to an eating disorder but they do not exactly fit the typical symptoms for the condition, the condition may be diagnosed as other specified feeding or eating disorder (OSFED). Disordered eating refers to food- and diet-related behaviours that do not meet diagnostic criteria for recognised eating disorders but may still negatively affect physical, mental, or emotional health.

3. Current practice

Signs of eating disorders can be noticed in many settings like school, university, work, home or social care. Often the first healthcare contact who will do an initial assessment is a GP. After the initial assessment, people with a suspected eating disorder should be immediately referred to a community-based eating disorder service for further assessment or treatment.

Guided self-help programmes are the first treatments to offer or consider for all people with binge eating disorder or OSFED with similar symptoms and adults (people aged 18 or over) with bulimia or OSFED with similar symptoms. In practice, clinical experts may not consider guided self-help suitable for young children (for example children aged 13 or younger).

Guided self-help involves working through a printed or an online or electronic book about binge eating or bulimia, and having brief supportive sessions (usually remote, virtual meetings or phone calls with a mental health nurse or an assistant psychologist) intended to support adherence. The guided self-help programmes are not designed to help people lose or gain weight.

4. Unmet need

Eating problems and eating disorder incidence are increasing. More referrals to specialist care mean that the services cannot meet the increasing need for psychological treatment with the healthcare professional capacity available.

Earlier treatment could help prevent the condition from becoming more severe by helping to prevent both physical and mental health decline. There is an unmet need for a treatment option that could start as soon as eating problems are identified, for example in primary care, or straight after an eating disorder is diagnosed in specialist eating disorder services.

5. Innovative aspects

Using digital self-help therapy does not depend on healthcare professional capacity to provide support for using the therapy, and could offer people with signs and symptoms of eating disorders faster access to eating disorder therapy.

Further details, including descriptions of the interventions, comparator, care pathway and outcomes, are in the final scope.

6. Clinical effectiveness

The external assessment group (EAG) did literature searches to identify relevant published clinical evidence. The search and selection methods are in section 4.1 of the external assessment report (EAR).

6.1 Overview of key studies

The EAG identified a total of 13 studies on the 3 technologies. All the studies were done in the UK. The study participants were aged 18 or over.

Studies on Digital CBTe

- 3 cohort studies (in total 197 participants) without a comparator group
- Most study participants had binge eating disorder
- Participants were recruited from the community or a waiting list for specialist eating disorder services
- In 2 studies Digital CBTe was used independently and in 1 study with support
- All the studies reported on clinical effectiveness and patient views

Studies on Overcoming Bulimia Online

- 3 randomised controlled trials (RCTs, in total 275 participants), 4 cohort studies and 2 qualitative studies
- Most study participants had bulimia
- Participants were recruited from the community or a waiting list for specialist eating disorder services
- In 2 RCTs, Overcoming Bulimia Online was used online with support and in 1 RCT independently using an older CD-ROM format
- The comparator in all the RCTs was usual care on a waiting list or delayed access to treatment
- All the RCTs (considered the key studies) reported on clinical effectiveness, and all studies reported patient views

Studies on Worth Warrior

- 1 small cohort study ([redacted] participants)
- The study participants had early-stage eating disorders
- Participants were recruited from the community
- Worth Warrior was used independently
- The study had no comparator
- The study reported on clinical effectiveness and patient views

Details of the studies are provided in table 2 in section 4.2 and in section 5.2 of the EAR.

Study quality

The EAG found the methodological quality of the cohort studies on Digital CBTe and Worth Warrior reasonable. The quality of the RCTs on Overcoming Bulimia was generally good. But the rate of people not completing the treatment in some trials was high. The EAG had no serious concerns about the methodological quality of the studies that provided qualitative evidence.

Details of the study quality assessments are in appendix C of the EAR.

Clinical effectiveness results

Table 2 shows the key clinical effectiveness results from the included studies.

The cohort studies on Digital CBTe showed significant improvement in binge-eating episodes and eating disorder symptom severity during the study. But the studies did not have comparators and provided limited data on those who did not respond to treatment. The EAG noted that the participants' symptoms might have improved for other reasons than the intervention. The rate of people not completing the treatment was high.

The RCTs on Overcoming Bulimia Online showed significant improvements in binge eating episode frequency and eating disorder symptom severity compared with the control group. The rate of people not completing the treatment in the studies varied. The non-comparative studies also reported improvements in key clinical outcomes following Overcoming Bulimia Online treatment.

In the small cohort study on Worth Warrior, [redacted] the study did not provide enough data to draw firm conclusions about the clinical effectiveness.

Details of the results from the Digital CBTe studies are in table 3, Overcoming Bulimia Online RCTs in table 4 and, and Worth Warrior study in table 5 in section 5.2 of the EAR. Results of the non-comparative Overcoming Bulimia Online studies are in the appendix E of the EAR.

Table 2 Clinical effectiveness of Digital CBTe, Overcoming Bulimia Online and Worth Warrior

Study	Study type, study size	Technology	Comparator	Proportion of people not completing therapy	Number of binge eating episodes in the past 28 days before the digital self-help treatment	Number of binge eating episodes in the past 28 days after the digital self-help treatment
Dorset NHS pilot study (2024)	Cohort study, n=51	Digital CBTe	None	72.5%	Mean (SD): [redacted]	Mean (SD not reported): 6.1
Kent and Medway NHS pilot study (2024)	Cohort study, n=36	Digital CBTe with support	None	55.6% (6 people were still completing the therapy when data collection closed)	Mean (SD): [redacted]	Mean (SD not reported): 1.9
Murphy et al. (2025)	Cohort study, n=110	Digital CBTe	None	37.3%	Mean 14.9 (8.1)	Mean (SD): 5.5 (5.1)
Schmidt et al. (2008)	RCT, n=97	Overcoming Bulimia Online (CD-ROM version) used without support at the specialist eating disorders service facility	Waiting list	Overcoming Bulimia Online group 28.6% Waiting list group 18.8%	Overcoming Bulimia Online group: median 12.0 (interquartile range 14.0) Waiting list group: median 9.0 (interquartile range 25.5)	Overcoming Bulimia Online group: median 3.0 (14.0) Waiting list group: median 6.0 (29.0)

Sánchez-Ortiz et al. (2011)	RCT, n=76	Overcoming Bulimia Online with support	Delayed access	Overcoming Bulimia Online group 5.2% Waiting list group: 18.4%	Mean 23.1 (24.3) Mean 16.9 (14.6)	Mean 7.7 (12.9) Mean 12.7 (12.3)
McClay (unpublished)	RCT, n=102	Overcoming Bulimia Online with support	Delayed access	Overcoming Bulimia Online group: [redacted] Delayed access group: [redacted]	Overcoming Bulimia Online group: mean (SD): [redacted] Delayed access group: mean (SD): [redacted]	Overcoming Bulimia Online group: mean (SD): [redacted] Delayed access group: mean (SD): [redacted]
Edwards & Krause (unpublished)	Cohort study, n=14	Worth Warrior	None	[redacted]	Not reported	Not reported

User acceptability, views, experience and satisfaction

User feedback on Digital CBTe on usability and the effect on their eating disorder was largely positive. Some people requested a more personalised approach and some mentioned technical issues.

Users of Overcoming Bulimia Online appreciated privacy, flexibility, and additional support. Motivation and adherence improved with guided support, while engagement was more difficult for some using the programme independently. Some participants saw the programme not as a complete solution to their eating problems, but as an initial step toward further treatment. Some mentioned technical issues.

Preliminary user feedback from the Worth Warrior study revealed varying views on the app's content and interactivity.

Data on subgroups

All the studies were in adults. One Overcoming Bulimia Online RCT excluded people with learning disabilities. The rest of the studies did not report subgroup data on groups who may find it more difficult to use digital self-help technologies (for example people with neurodiverse conditions, learning disability, visual, hearing or cognitive impairment or problems with manual dexterity, or who are less used to using digital technologies in general).

6.2 Ongoing studies

Table 4 lists the 2 ongoing UK-based Digital CBTe studies the EAG identified. In the cohort study, the technology is used in a supported mode. The BE-GUIDED study fully matches the scope.

Table 4 Ongoing studies on Digital CBTe

Study	Study type, size	Description	Completion
BE-GUIDED	RCT, n=70	Population: people aged 18 and over who have repeated episodes of binge eating Intervention group: Digital CBTe Control group: delayed access	December 2025

		Outcomes: clinical effectiveness and patient views	
A Supported Digital Programme-Led Intervention for Binge Eating: A Pilot Study	Cohort study	Population: People aged 18 and over who self-report binge eating, recruited from the community Intervention: Digital CBTe with support Comparator: none Outcomes: clinical effectiveness	December 2025

7. Health economic evidence

The external assessment group (EAG) did a review to identify suitable health economic models. They found 10 eating disorder-related decision models, one of which was done for the NICE guideline on eating disorders. A summary of the decision models is in table 7 in section 6.2 of the external assessment report (EAR).

The company Credo Therapies provided some early cost projections for the Digital CBTe technology. The cost projections were provided based on an assumption that digital self-help would be cheaper to deliver compared to guided self-help in UK clinical practice. The calculations assumed that 3 hours of staff time for assessment and reporting, 3 hours of clinician contact time (agenda for change band 5), 1.5 hours of note taking, 2 hours for questionnaires and £35 for a printed programme would be saved by adopting the digital technologies, leading to cost savings of £134.66 per person. The EAG considered these resource use estimates to be quite high for the settings of care and comparator in this assessment. The EAG's scenario analyses considered a small additional cost of a printed booklet that might be saved in usual care if digital technologies were adopted. But the EAG's model focused on assuming that people would have the same monitoring and access to services regardless of whether they used the digital self-help or not.

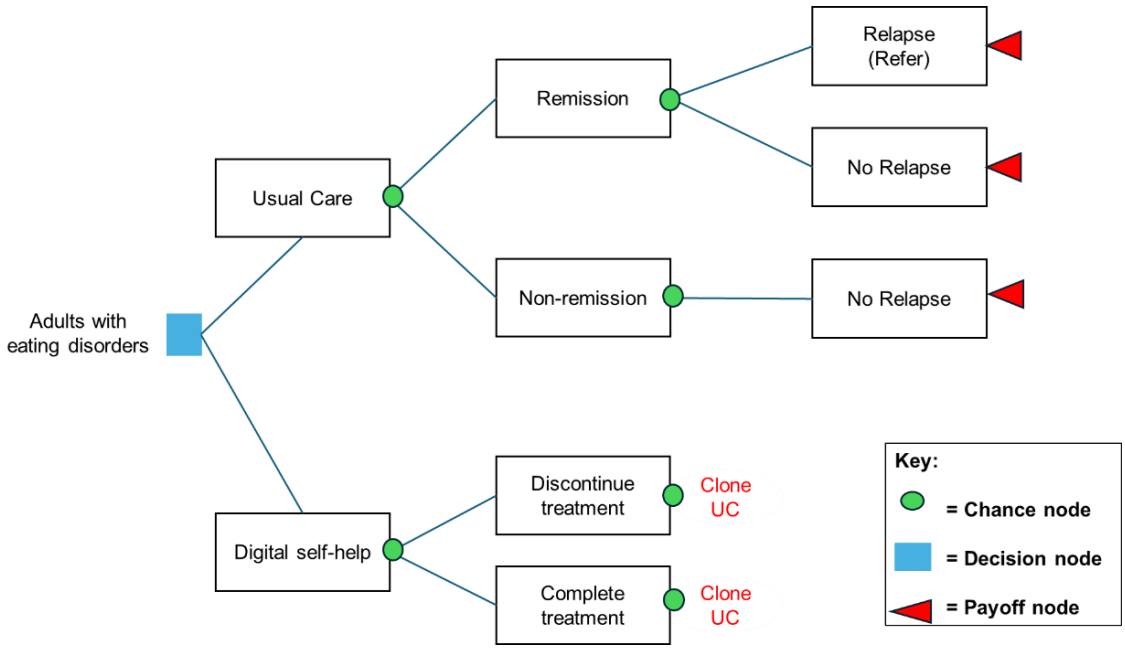
7.1 Health economic model

The EAG adapted the NICE eating disorder guideline model to estimate short-term resource use and costs associated with using the digital self-help technologies in primary care and specialist eating disorders services.

Figure 1 shows the model structure. People enter the model assigned to either digital self-help treatment or usual care for a period of 3 months. At the end of the 3-month period, some people's condition improves (remission). Other people continue to have eating disorder symptoms (no remission). The model then follows everyone up for a period of 1 year. For some of the people whose eating disorder was in remission, the eating disorder-related symptoms will return during the follow up (relapse). For others, the condition stays in remission. At the end of the follow up period, people whose condition is not in remission need a referral to the next point in the treatment pathway.

Further details of the economic modelling are in section 6.2 of the EAR.

Figure 1 Model structure



Population and intervention

The base case analysis estimated results for using Overcoming Bulimia Online for adults with bulimia or disordered eating with characteristics of bulimia.

For the technologies and conditions where no comparative clinical effectiveness evidence was available, so for Digital CBTe and Worth Warrior for binge eating disorder and bulimia, and for Overcoming Bulimia Online for binge eating disorder, the EAG used the model to do two-way sensitivity

analyses to show how effective a hypothetical digital self-help technology would need to be to have the potential to be cost saving.

Comparator

The comparator in the model was usual care.

Model inputs

Probability of not completing the digital self-help treatment

During the 3-month treatment phase, some people having digital self-help completed the treatment and some completed only a part of it. In the base case the probability of not completing the Overcoming Bulimia Online was 80.5% from Schmidt et al. (2008) study.

Remission probability

In the base case, for people having usual care, the probability of remission was 13.9% from the control arm of the Sánchez-Ortiz et al. (2011) study. The EAG then calculated the probability of remission for people with bulimia who had used Overcoming Bulimia Online using the relative risk (RR) from the same study as: 13.9% (probability with usual care) multiplied by 1.86 (RR with Overcoming Bulimia Online) equals to 25.9%. The model used the data from the Sánchez-Ortiz et al. (2011) study because this was the only RCT from the clinical effectiveness review that provided remission data for the online version of Overcoming Bulimia Online.

The base case analysis assumed that only people who fully completed the digital self-help treatment had increased probability of remission.

Relapse probability

The probability of experiencing a relapse in the base case was 7.5%. This was the midpoint of the clinical expert estimates from the NICE eating disorder guidance and EAG and expert discussions.

The base case assumed the same probability of relapse for people having usual care and people using Overcoming Bulimia Online (there was no evidence on the effect of the digital self-help technologies on preventing future relapses after remission).

Resource use and costs

Digital self-help technology costs

Table 5 shows the technology costs per patient. The EAG estimated these using information on the license costs from the companies. Overcoming Bulimia Online and Digital CBTe licenses are patient-level licenses, and Worth Warrior licence is a primary care network-level license.

Details of how the costs were estimated are in table 9 in section 6.2 of the EAR.

Table 5 Digital self-help technology costs

Technology	Cost per patient
Overcoming Bulimia Online	£5.91
Digital CBTe	£95.00
Worth Warrior	£18.99 for binge eating disorder in year 1 £10.28 for binge eating disorder after year 1 £71.43 for bulimia in year 1 £38.69 for bulimia after year 1

Cost of usual care during the 3-month treatment period

The base case analysis assumed that using the digital self-help did not reduce health service use that is provided as part of usual care. The EAG did not explicitly model routine monitoring costs because they were assumed equal for people having usual care and people using Overcoming Bulimia Online. The model assumed that the only way to reduce resource use was through an increased probability of remission. It assumed that in remission the frequency of healthcare contacts would be reduced.

Healthcare use and costs during the 1-year follow-up

Table 6 lists the healthcare use and costs related to non-remission and relapse the model included during the 1-year follow-up period. The resource use was estimated based on 2 clinical expert group interviews. The experts noted that it was very difficult to give definitive estimates. The base case used the midpoints of the first group's estimates because these were generally more conservative.

Based on the interviews, resource use estimates for primary care or specialist eating disorder service might not always reflect the severity of the eating disorder, but it often reflects availability of and access to services, which vary widely across the UK.

The model did not include resource use during follow-up for people whose condition was in remission because the clinical experts estimated that people whose condition was in remission would have minimal or no contact with health services at these early places in the care pathway.

Details of the resource use estimates are in table 10 in section 6.2 of the EAR.

Table 6 Healthcare use and costs during the 1-year follow-up for people with bulimia

Healthcare resource	Resource use estimate	Unit cost	Notes (source)
GP visits	1.5	£45.00	10 min consultation (PSSRU, 2023/24)
Nurse visits	0.5	£13.25	Calculated based on a 15.5 min duration of a £53 nurse appointment per hour per qualification (PSSRU, 2015 and PSSRU, 2023/24)
Blood tests	0.5	£6.00	Phlebotomy (National Cost Collection 2023/2024)
A&E attendance	5%	£273.00	Weighted average of all emergency medicine episodes except when patient was dead on arrival (National Cost Collection 2023/2024)
Proportion of people who need hospitalisation	1.5%	£1,064.00	Non-elective inpatient - short stay for bulimia FF05 (National Cost Collection 2023/2024)
Referral from primary care to assessment in specialist eating disorder service	Cost applied to people not in remission in primary care	£320.00	Referral to community eating disorder services (PSSRU, 2023/24)
Next treatment in specialist eating disorder service	Cost applied to people not in remission in specialist	£1,247.25 (for binge eating disorder in scenario	Individual CBT-ED for bulimia

	eating disorder service	analyses the cost was £316.90)	(group CBT-ED for binge eating disorder in scenario analyses) (NICE eating disorder guideline Appendix S)

Health-related quality of life

The model did not estimate quality-adjusted life years (QALYs) as an outcome. None of the economic models provided patient-reported estimates of how eating disorder symptoms affect health-related quality of life, using UK general population value sets (EQ-5D-5L). Studies using other measures suggested that eating disorders are associated with a reduction in health-quality of life, more so when not in remission. More details of the EAG's findings on health utilities are in section 6.2 of the EAR.

Mortality

The model did not include mortality. This was because the time horizon was short and there was no evidence to suggest using digital self-help affects mortality at the early stages in the care pathway the technologies are assessed for. The model assumed that in clinical practice, patients at a higher risk of mortality would not be offered self-help interventions alone.

7.2 Model results

Base case: Overcoming Bulimia Online in people with bulimia

The base case analysis estimated that, compared with usual care, using Overcoming Bulimia Online would result in cost savings of £5.52 in primary care and cost savings of £39.86 in specialist eating disorder services.

The savings in specialist care were larger because the cost of the next step in the care pathway that could be avoided for some people (individual CBT-ED) was a more costly step than in primary care (referral to specialist eating disorder service).

The total costs and results are in table 12 in section 6.3 of the EAR.

Scenario analyses: Overcoming Bulimia Online in people with bulimia

The EAG analysed alternative plausible scenarios using less conservative assumptions:

- Using resource use estimates from the second clinical expert group interview (these were slightly higher for primary care and people who had experienced a relapse than in the base case and included also some dental care and community mental health service use)
- Increased probability of remission for all who used Overcoming Bulimia Online regardless of whether they fully or partially completed the treatment
- Expert 2 estimates and increased probability of remission for all who used Overcoming Bulimia Online
- Definite remission for those who completed Overcoming Bulimia Online (probability of 100% using risk ratio [RR] 8.07, instead of probability of 25.9% using RR 1.86 in the base case, both from Sanchez et al. 2011)
- Lower relapse probability for those who completed Overcoming Bulimia Online and experienced remission compared with those having usual care (5.25% using RR 0.7, 6% using RR 0.8 or 6.75% using RR 0.9, instead of 7.5% for all in the base case)
- Adding a £20 cost for a printed self-help book to usual care

In the alternative scenarios, the cost savings ranged from £5.72 to £188.17 in primary care and from £40.66 to £364.14 in specialist eating disorder services.

Optimistically combining all the scenarios above (using the lowest 5.25% relapse probability for those who completed Overcoming Bulimia Online) resulted in £1,435.03 in primary care and £2,738.25 in specialist eating disorder services.

Details of the resource use estimates of expert group 2 are in table 10 and the costs for dental care and community mental health service are in table 11 in section 6.2 of the EAR. The scenario analysis results for Overcoming Bulimia Online in people with bulimia are in table 12 in section 6.3 of the EAR.

Two-way sensitivity analyses: potential for a digital self-help technology to be cost saving in adults

For the technologies and conditions where no comparative clinical effectiveness evidence was available, so for Digital CBTe and Worth Warrior for binge eating disorder and bulimia, and for Overcoming Bulimia Online for binge eating disorder, the EAG did two-way sensitivity analyses to show how effective a hypothetical digital self-help technology at a given per person cost would need to be to have the potential to be cost saving. The analyses used the EAG's conservative assumptions and like the base case analysis, these analyses assumed that only people who fully completed the digital self-help treatment had increased probability of remission.

Table 7 shows, for different per person technology costs, approximately how much more effective than usual care the technologies would need to be to have the potential to be cost saving. For context, the Sánchez-Ortiz et al. (2011) study estimated that Overcoming Bulimia Online for bulimia is 86% more effective than usual care.

Based on the clinical expert opinion, resource use estimates for people with binge eating disorder were lower than for people with bulimia because they would be less likely to have acute events needing care or in some cases urgent attention because of the binge eating disorder. The next treatment for binge eating disorder in specialist eating disorder service applied to those not in remission at the end of the 1-year follow up was nearly 4 times less costly than the next treatment for bulimia.

Table 7 How much more effective than usual care the digital self-help technologies would need to be to have the potential to be cost saving (numbers are approximate)

Technology, cost	For bulimia	For binge eating disorder
Overcoming Bulimia Online, £5.91	• See scenario analysis results in table 12 in section 6.3 of the EAR	• In primary care: around 5% more effective than usual care than usual care • In specialist care: around 5% more effective than usual care

Digital CBTe, £95.00	• In primary care: around more than 3.5 times as effective • In specialist care: around 70% more effective than usual care	• In primary care: around more than 3.5 times as effective as usual care • In specialist care: around more than 2.5 times as effective as usual care
Worth Warrior, Binge eating disorder: £18.99 (year 1) £10.28 (after year 1) Bulimia: £71.43 (year 1) £38.69 (after year 1)	• In primary care: around 2 to 3.5 times (depending on the per person cost) as effective as usual care • In specialist care: around 30% to 55% (depending on the per person cost) more effective than usual care	• In primary care: around 20% to 40% (depending on the per person cost) more effective than usual care • In specialist care: around 15% to 35% (depending on the per person cost) more effective than usual care

The relationship between the effectiveness (RR for remission) and the cost of a digital self-help technology is presented in figures 2 to 5 in section 6.3 of the EAR. Details of the resource use estimates and costs used in the two-way sensitivity analyses for binge eating disorder are in tables 10 and 11 in section 6.2 of the EAR.

8. Survey of views on using digital self-help

NICE did a survey of experience and views on using digital self-help therapy. The survey received responses from 119 people with lived or carer experience of bulimia, binge eating disorder, disordered eating and other eating disorders. Having an eating disorder affected different areas of people's lives in many ways including their social life, usual activities like work or study, how they cope with feelings, and their physical and mental health.

Of the 119 people, 16 people had experience of using digital self-help technology, 9 of them independently without support. Of the 16 people, most found it difficult or somewhere in between easy and difficult to stay committed digital self-help therapy. Lack of accountability and motivation when left to manage the process alone without support made it difficult. Regardless of this, several participants reported that digital self-help had a beneficial effect on their understanding of eating disorders and their recovery journey by providing

structure and support, and offering insights into personal experiences. Most people said they would be likely to recommend using digital self-help therapy to others with eating disorders.

Among all the survey participants, with or without experience of using digital self-help, the thoughts on how likely they would be to use digital self-help in the future were quite evenly spread across likely, unlikely and somewhere in between. People mentioned accessibility, effectiveness, motivating features and personalised experience as factors that could encourage the use. Cost, concern over using complex technologies and lack of contact or support with healthcare professionals could discourage use.

A more detailed summary of the survey participant characteristics and survey responses is in appendix A of this overview.

9. Equality considerations

The final scope and the scoping equality impact assessment describe equality considerations for this assessment. Most study participants in the key studies in this assessment were white women. Not all studies reported study participant information on ethnicity. The key studies in this assessment did not report subgroup data or study participant information on groups who may find it more difficult to use digital self-help technologies. One study excluded people with learning disabilities. The external assessment group (EAG) did not identify additional equality issues.

10. Evidence gaps

No or very limited evidence was available for:

- children and young people
- groups who may find it more difficult to use digital self-help technologies
- independent use of the digital self-help technologies
- clinical effectiveness of Digital CBTe and Worth Warrior compared with usual care
- user acceptability, views, experience and satisfaction in routine NHS settings (current data is from research contexts)

- characteristics of people, and reasons for, not completing the digital self-help therapy plus actual data on completion rates for Worth Warrior
- longer-term effects of using the digital self-help technologies
- effect of digital self-help on remissions and relapse
- effect of digital self-help on health-related quality of life
- effect of using digital self-help technologies on access to care, waiting times, demand for face-to-face services and transitions to more intensive treatment in routine NHS practice.

The full evidence gap analysis is presented in table 15 in section 8.2 and key areas for evidence generation in section 8.3 of the external assessment report (EAR).

11. Key points, limitations and considerations

11.1 Clinical effectiveness

Key points

- Studies showed improvements in binge eating episodes, eating disorder symptom severity and other eating disorder-related outcomes
- Users gave positive feedback on usability, effect on their eating disorder, privacy, flexibility, content and interactivity in the study settings. Some people mentioned technical issues and some wished for further personalisation.

Limitations

- Comparative evidence not available for Digital CBTe or Worth Warrior
- Not enough data on Worth Warrior to draw conclusions on effectiveness
- No data in children and young people, or people who may find it more difficult to use the digital self-help technologies
- The proportion of people not completing the digital self-help therapy was high

Considerations for committee:

- Do the technologies have the potential to address the unmet need? Do the studies suggest that the technologies have the potential to be clinically effective?
- Is the evidence of potential benefit sufficient to support a conditional recommendation for use in an evidence generation context?
- Are the risks for use in an evidence generation context acceptable? Do any of these risks need to be, and can be, mitigated in the evidence generation plan? Is there any risk of harm to patients with any of the technologies?
- Can the technology be integrated into the NHS and is it likely to be acceptable to health care professionals and patients?

11.2 Health economic evidence

Key points:

- Cost savings for Overcoming Bulimia Online were seen in all scenario analyses tested
- If effect sizes observed with Overcoming Bulimia Online could be replicated for the Digital CBTe and Worth Warrior, they could have a good potential for generating cost savings to the NHS
- It is likely that, if the technologies are effective, they would also have a positive effect on health-related quality of life and so there is good potential for digital self-help technologies to also be cost effective

Limitations:

- Because of uncertain resource use estimates and the magnitude of clinical benefit there was considerable uncertainty in the magnitude of the cost savings
- The model is conservative and did not include:
  - potential improvements in health-related quality of life or avoided deaths
  - potential reductions in longer-term resource use and costs associated with co-morbidity (such as obesity in binge eating disorder or other mental health conditions such as depression and anxiety)

- Because of a lack of comparative clinical effectiveness evidence on Digital CBTe and Worth Warrior, the EAG could not model them directly

Considerations for committee:

- Are the early economic model structure, assumptions and clinical and cost parameters suitable to answer the decision question (see final scope) for this assessment?
- Do the model results suggest that the technologies have the potential to be cost effective?
- Are the risks for use in an evidence generation context acceptable? Can any of the risks associated with implementation be mitigated?

11.3 Evidence gaps

Considerations for the committee

- Which evidence gaps does the committee consider essential to collect the data for?

11.4 Possible recommendations

Table 8 describes the possible recommendations.

Table 8 Types of recommendations

Recommendation (1.1)	What this means in practice panel
Can be used during the managed access period 1.1 [Technology] can be used during the managed access period as an option to treat [specific condition, specific subpopulation and specific circumstances]. It can only be used if the conditions in the managed access agreement for [technology] are followed.	NICE, NHS England and [company] have a managed access agreement for [technology]. This means it can be used as an option in the NHS in England during the managed access period. During this time, more evidence will be collected to address any uncertainties. After this, NICE will review and update this guidance. [Technology] can only be used if the conditions in the managed access agreement are followed.
More research is needed 1.1 More research is needed on [technology/procedure] to treat [specific condition and population] before it can be funded in the NHS.	[Technology] has potential to provide benefits, but there is not enough evidence to support using it routinely in the NHS in England. It should only be used in research. [Technology] is not required to be funded in the NHS in England to treat [specific condition and population].

Should not be used 1.1 Technology/procedure] should not be used to treat [specific condition and population].	[Technology] is not required to be funded in the NHS in England to treat [specific condition and population]. It should not be used routinely in the NHS in England. This is because [there is not enough evidence to determine whether/the available evidence does not suggest that] [technology] [offers benefit / is value for money].

Appendix A

Survey on views of using digital self-help

Survey participants

NICE did a survey of experience and views on using digital self-help therapy. It received responses from 119 people with lived or carer experience of bulimia, binge eating disorder, disordered eating and other eating disorders. Table 10 summarises the characteristics of the survey participants.

Table 10 Characteristics of survey participants

Characteristic	Proportion
Age group, years	
On behalf of an under 18-year-old	10%
18 to 29	33%
30 to 39	18%
40 to 49	13%
50 to 59	13%
60 or over	12%
No response	1%
Gender identity	
Women	91%
Men	5%
Other	3%
Prefer not to say	2%
Ethnicity	
White	91%
Asian or Asian British	3%
Black, Black British, Caribbean or African	2%
Mixed or multiple ethnic groups	2%
Prefer not to say	3%
Disability	
No disability	37%
Prefer not to say or no response	6%
With one or more disability	57%
Type of disability (one or multiple conditions)	
Neurodivergent condition	42%
Cognitive impairment	5%

Problems with manual dexterity	4%
Hearing impairment	4%
Learning disability	4%
Visual impairment	4%
Other form of disability	25%
Experience of eating disorder	
Personal experience	79%
Carer experience	21%
Current or past eating disorder experience	
Current	67%
Past	29%
No response	4%
Length of eating disorder experience	
Less than 1 year	8%
1 to 3 years	20%
3 to 5 years	12%
5 to 10 years	17%
Over 10 years	43%
No response	1%
Type of eating disorder (one or multiple conditions)	
Anorexia or OSFED with similar symptoms	68%
Disordered eating	27%
Bulimia or OSFED with similar symptoms	18%
Binge eating disorder or OSFED with similar symptoms	16%
Other	5%
Not sure	3%
No response	1%
Healthcare experience	
Formal diagnosis of an eating disorder	
Yes	
No	77%
No response	21%
	2%
Received professional support for an eating disorder	
Yes	66%
No	32%
No response	2%

Effects of eating disorder on daily life

Having an eating disorder affected different areas of people's lives in many ways. Table 11 describes some of the effects people reported.

Table 11 Effects of eating disorder on daily life

Area of life	Effects
Social life	Respondents described avoiding meals with family, withdrawing from social events, and feeling isolated. Eating disorders often disrupted relationships and created barriers to social engagement.
Usual activities	Many participants reported that their eating disorder interfered with daily functioning, including work, school, and routines.
Way to cope with emotions and feelings	Disordered eating was often used as a coping strategy for stress, trauma, or a need for control. Behaviours like purging, excessive exercise, and rigid rituals were described as ways to manage emotional turmoil.
Physical health	Many participants experienced serious physical consequences, including hospitalisation, fatigue, and long-term health issues like osteoporosis and heart problems. These effects often stemmed from prolonged restriction, purging, or malnutrition.
Mental health	Respondents frequently mentioned anxiety, obsessive thoughts, depression, and emotional distress. The mental toll of the disorder was often described as constant and overwhelming, even during

Experience and views on using digital self-help

Experience of using digital self-help

Of the 16 people who had experience of using digital self-help technology, 6 had used Digital CBTe and 1 had used both Digital CBTe, Overcoming Bulimia Online and Worth Warrior. Eight of the 16 people had completed and 2 people were currently using the therapy (4 people had not completed and 2 were unsure if they had completed the therapy). In total, 9 people had experience of using the digital self-help technology independently without support.

Of the 16 people, 9 found it very or quite difficult to stay committed to digital self-help therapy whereas 4 found it very or quite easy. Three people thought

committing to the therapy was somewhere in between easy and difficult. Participants found simplicity, clarity, accessibility, ability to use the technology discreetly, and features like guided steps and not needing to log every detail helpful for staying committed to the therapy. Lack of accountability and motivation when left to manage the process alone without support made it more difficult.

Effects of digital self-help on eating disorders

Several participants reported that digital self-help had a beneficial effect on their understanding of eating disorders and their recovery journey by providing structure and support, and offering insights into personal experiences. Some participants noted limited or no effect from digital self-help tools. Table 12 describes people's experiences of these effects.

Table 12 Effects of digital self-help on eating disorders

Experience of positive effects	Experience of limited or no effect
• "[the technology] gave me space to talk about/explain my day with the constant nightmare of eating thoughts dictating my day when I had nobody else to talk to or share with" • "it enabled me to understand my relationship with eating" • "[I have used the technology] with limited support for nearly 8 weeks. In that period my binge eating (which usually occurred at least once a week, often more frequently) has greatly reduced. In the last three weeks I have had only one binge." • "[My] eating became much more stable than anytime previously in my life" • "It brought more awareness and it reminded me daily what I'm doing and that I am in a process of getting better" • "I learned a lot through the process even though I had read the book several times. My eating stabilised and I did not binge anywhere as much as I did"	• "I used it twice. I'm not sure if it affected my eating disorder exactly, rather than put me in the zone or keep me motivated to keep working on it. But I did gain weight while using it (but didn't maintain it sadly)." • "didn't improve didn't worsen" • "my daughter refused to engage with [the technologies]"

• "It has been helpful. In some ways it is easier to open up when it is online."	

Views on digital self-help

Of 16 people who had used digital self-help, 11 said they would be very or quite likely to recommend using digital self-help therapy to others with eating disorders. Two people were not sure and 2 said it was not so likely or at all likely. Table 13 describes reasons for people's views.

Table 13 Reasons for recommending or not recommending digital self-help to others with eating disorders

Participants who were likely to recommend digital self-help emphasised:	Participants who were less likely to recommend digital self-help raised concerns about:
• Ease of use and accessibility, especially for those who may struggle to attend in-person sessions. • Positive impact on their recovery journey, particularly when the tools were structured and easy to follow. • Flexibility, allowing users to engage at their own pace and convenience.	• The lack of professional support, which made it difficult to stay accountable or feel truly supported. • Limited effectiveness when used in isolation, especially for those with more severe or complex needs. • Affordability, with some noting that helpful tools were not financially accessible. • A preference for face-to-face interaction, which they felt offered more personalized and responsive care.

Figure 6 shows people's thoughts on how likely they would be to use digital self-help in the future. All the survey participants, with or without experience of using digital self-help, were asked this question. Overall, people's thoughts were quite evenly spread across likely (30%), unlikely (36%) and somewhere in between (34%).

Figure 6 People's thoughts on how likely they would be to use digital self-help in the future

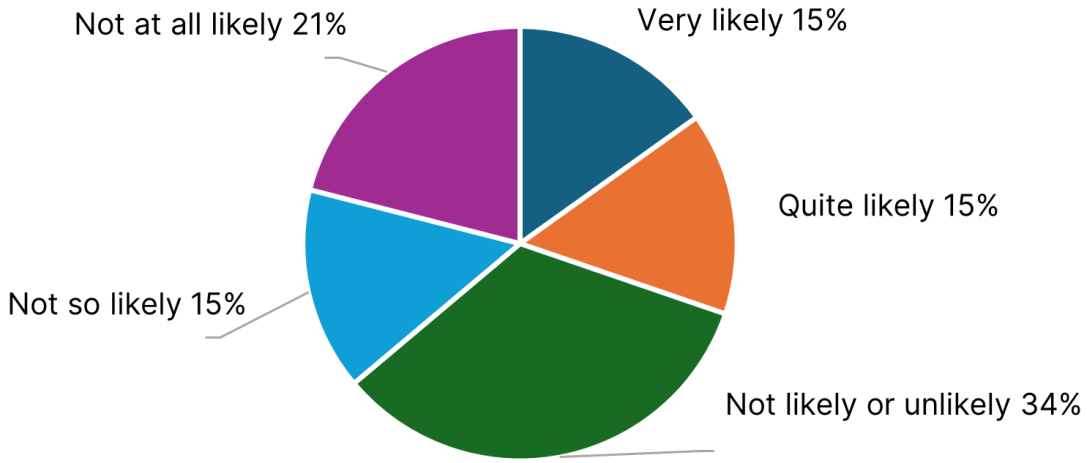


Table 14 describes factors that people said might encourage them to use digital self-help in the future.

Table 14 Factors that might encourage people to use digital self-help in the future

Encouraging factor	Description
Accessibility	Respondents stressed the need for user-friendly, non-triggering, and well-designed tools that feel safe and intuitive. They highlighted the need for digital tools to be inclusive, easy to access, always available and supportive in moments of need.
Effectiveness	Respondents said they would be more likely to engage if the tools had proven benefits. They expressed a desire for evidence-based solutions.
Motivation	Respondents mentioned the need for encouragement and commitment to recovery. They mentioned the role of accountability in staying on track. They felt that digital tools should help them stay committed and on track.
Personalised experience	Some respondents shared personal stories and emphasised the need for tools that feel tailored to their individual experiences and recovery journeys. Respondents highlighted the need for tools that reflect diverse experiences (including those of for example neurodivergent users, older adults and men), culturally sensitive, and adaptable to individual needs. They suggested that having a personalised experience could help with staying committed to the therapy.

Table 15 describes factors that people said might put them off from using digital self-help in the future.

Table 15 Factors that might put people off from using digital self-help in the future

Discouraging factor	Description
Cost	Affordability was a concern. Respondents expressed a preference for free or low-cost digital tools, noting that financial barriers could prevent access.
Technology concerns	Some participants expressed discomfort or fear around using digital technology. This was highlighted especially true for older users or those unfamiliar with digital platforms. Concerns about the complexity or usability of digital tools were mentioned, especially if users had to manage them without support.
Lack of contact or support	Respondents were concerned about the absence of professional guidance. They felt that digital tools should be accompanied by support from therapists or other professionals to be truly effective. Some were worried that without a therapist involvement, digital tools might feel inadequate or even unsafe. People expressed concerns about the impersonal nature of digital platforms and the need for human connection. Many respondents emphasised that digital tools should not replace face-to-face therapy or clinician involvement.

Appendix B Further information on the regulatory status of the included technologies

Digital CBTe has a class I CE mark as a medical device. The providers of Overcoming Bulimia Online and Worth Warrior have stated that they do not

need medical device regulation. Table 9 presents the further information the companies have provided. The questions in the header of table 9 are from the MHRA guidance on digital mental health technology qualification and classification. The guidance recommends using these questions to determine whether a digital mental health technology needs medical device regulation. If the answer to one or both questions is no, the technology does not need medical device regulation.

Table 9 More information on the regulatory status of Overcoming Bulimia Online and Worth Warrior from the companies

Technology	Does the digital mental health technology have a medical purpose?	Does the DMHT have sufficient functionality?
Overcoming Bulimia Online	**We provide clarity of what is offered:** What the package is and what it isn't is clearly stated in the Terms and conditions and also the product advert. Our product is a Lifestyle/Wellness App meant to support mental wellbeing and help users adopt healthier habits. It does not claim to diagnose, treat, prevent, or monitor a disease or medical condition. This is clearly stated in our Terms and Conditions (https://llttf.com/terms/) which users are asked to read and confirm FAQ's state clearly what is offered – and what to do if feeling worse (e.g. suicidal) https://llttf.com/faqs/ **See - How it works:** https://llttf.com/how-it-works/ states that: The support and resources you will find on this site are not about diagnosis. They are not about medical treatment, nor about completing diagnostic questionnaires. No tablets, no diagnosis, no preaching. Nor do we provide direct clinical support: if you are struggling with panic attacks or feeling suicidal, please contact your doctor or emergency services, or see our directory of further support. **Also - In the shop:** The product is described at: https://llttf.com/product/access-to-overcoming-bulimia-bingeing-and-overeating-online-resource-1-year-access/	**Does Overcoming Bulimia Online qualify as Software as a Medical Device (SaMD)?** The Medical Device Coordination Group (MDCG, an official EU advisory group) guidance document 2019-11 defines Software (Software in SaMD): "For the purpose of this guidance, "software" is defined as a set of instructions that processes input data and creates output data". The language of the official guidance relates to input data being processed by the software (product) to create output data. NB: "Output data" generated by the software is not being produced by Overcoming Bulimia Online. **Conclusion:** On this basis, Overcoming Bulimia Online does not qualify as a medical device and does not need medical device regulation.

	and states *This educational life skills course is not about diagnosis. It's not about medical treatment, nor about completing diagnostic questionnaires.* *Nor do we provide direct clinical support: if you are struggling with symptoms please contact your doctor or emergency services.*	
Worth Warrior	The Worth Warrior app is intended to support individuals with low self-worth, poor body image, and early-stage eating difficulties. It may be used for those with a diagnosed mild-to-moderate eating disorder on a **self-guided basis.** For individuals with moderate-to-severe eating disorders, the app should only be used under the guidance of a health professional, or as part of a licensed eating disorder service. The application does not provide: • diagnosis, prevention, monitoring, prediction, prognosis, treatment or alleviation of disease • diagnosis, monitoring, treatment, alleviation of, or compensation for, an injury or disability • investigation, replacement or modification of the anatomy or of a physiological or pathological process or state The application is **NOT** a medical device (SaMD) based on the guidance.	Worth Warrior App Functionality 1. Intended Function and Clinical Basis Worth Warrior delivers a structured digital adaptation informed by Cognitive Behavioural Therapy for Eating Disorders (CBT-E), a NICE-recommended treatment for eating disorders. While it does not replace clinical care, it is intended as a self-guided early wellness tool to: • Improve body image, • Reduce disordered eating behaviours, • Promote self-regulation and emotional resilience, • Prevent progression to clinical thresholds requiring specialist intervention. Modules are sequenced and interactive, incorporating evidence-based components such as psychoeducation, behavioural activation, self-monitoring, and cognitive restructuring. 2. Algorithms and Decision Logic Worth Warrior does not employ AI or machine learning for clinical decision-making. All decision logic is deterministic and rule-based, validated against clinical input.

		• Progression Algorithm: Module advancement is controlled by predefined logic based on user inputs (e.g. engagement, reflection responses). • Risk Identification Algorithm: A rule-based logic model identifies markers of concern (e.g. no change in thoughts, behaviours or emotions) and flags risk for signposting, not diagnosis. 3. Clinical Safety and Risk Management • The product has undergone a full Clinical Risk Assessment compliant with digital clinical safety standard DCB0129, including the creation of a Clinical Safety Case Report and Hazard Log. • A qualified Clinical Safety Officer (CSO) has overseen both the app development and risk assessment. • Escalation protocols are clearly defined for risk of harm, with safeguarding signposting to NHS 111, Childline, and emergency services, as appropriate. 4. Data Privacy and Security • The app has been developed in accordance with the NHS Digital Technology Assessment Criteria (DTAC), with a strong focus on data privacy and security. • The app doesn't collect or process any user personal data. • We are compliant with the NHS Data Security and Protection Toolkit Assessment (DSPT). • The app is compliant with UK GDPR and a Data Protection Impact Assessment (DPIA) has been completed.

		• We have Cyber Essentials certification and robust technical controls are in place to safeguard all data interactions and protect against unauthorised access or breaches. • We have developed the app in accordance with the ICO's Age-Appropriate Design Code (Children's Code). 5. Technical Functionality and Usability • The app is available on iOS and Android devices and underwent a rigorous testing process. • We have incorporated accessibility best practices into our app development process. • Includes journaling, goal setting, self-reflection tools, and visual feedback on progress. • Offline access supported for previously viewed modules. • Usability has been evaluated with iterative testing involving over 30 young people aged 13–18. • Regular app reviews are undertaken to ensure ongoing compliance with clinical safety standards, maintain high levels of performance and usability, and incorporate user feedback for continuous improvement.

Patient Group Submission Template for Diagnostic Technologies

National Institute for Health and Care Excellence

Digital support for children and young people with eating disorders

Please read the accompanying guide fully before completing this submission template.

Information about your organisation	
Organisation name	Beat
Organisation type	Patient/carer organisation ☒ (a registered charity)
Organisation purpose (tick all that apply)	Advocacy ☐ Education ☒ Campaigning ☒ Service provider ☒ Research ☐

What is the membership of your organisation (number and type of members, region that your organisation represents, demographics, etc)?

Beat is the UK's eating disorder charity, originally founded in 1989 as the Eating Disorders Association. We exist to end the pain and suffering caused by eating disorders. We support people of all ages, UK-wide, who are affected by eating disorders, those who care for them, and professionals working in this field. Our services are delivered by staff and volunteers across the UK through our helpline, support programmes, training and education initiatives, and policy and campaigning work. In 2023/24, we delivered 70,396 support sessions, helped 91,000 people via our helpfinder, and helped 1.3 million website visitors to access information themselves and take the first step to accessing support. In 2023, our helpline estimated that 2,909 people needed extra support to challenge and reverse decisions related to denial of treatment for their eating disorder.

Please note, all submissions will be published on the NICE website alongside all evidence the committee reviewed. Identifiable information will be redacted.

If you haven't already, please register as a stakeholder by completing the stakeholder registration form and returning it to medtech@nice.org.uk

Patient Group Submission Template for Diagnostic Technologies

Further information about registering as a stakeholder is available on the NICE website.

Did you know NICE meetings are held in public? You can register on the NICE website to attend a meeting up to 20 working days before it takes place. Registration will usually close 10 days before the meeting takes place. Up to 20 places will be available, depending on the size of the venue. Where meetings are oversubscribed NICE may need to limit the number of places we can offer.

Sources of information

What is the source of the information about patients' and carers' experiences and needs that are presented in this submission?

This submission is informed by:

- Anonymised feedback from service users via Beat's helpline and recovery stories
- Insights gained from delivering support programmes, overseen by programme officers and supervised by a clinician
- Consultation with Beat staff
- Published research (both by Beat and externally)
- Quotes and case studies from our campaign work
- Our wider work with professionals

Patient Group Submission Template for Diagnostic Technologies

Impact of the symptoms, condition or disease

1. How do symptoms and/or the condition or disease affect people's lives or experiences?

Eating disorders are serious and complex mental health illnesses. Symptom experience can vary however people with eating disorders typically use disordered eating behaviour as a way to cope with difficult situations or feelings. This behaviour can include limiting the amount of food eaten, eating very large quantities of food at once, getting rid of food eaten through unhealthy means (e.g. making themselves sick, misusing laxatives, fasting, or excessive exercise), or a combination of these behaviours.

Eating disorders profoundly affect every aspect of a person's life, including physical health, psychological wellbeing, relationships, employment, education, and social life. A 2021 study by Beat found that 92% of people reported their eating disorder negatively affected family and close relationships, while 72% said it had harmed their personal finances. Interference to psychosocial functioning is part of the diagnostic criteria for ARFID outlined in the DSM-5, and for bulimia nervosa and binge eating disorder the ICD-11 states "There is marked distress about the pattern of binge eating or significant impairment in personal, family, social, educational, occupational or other important areas of functioning" as part of the diagnostic criteria. This highlights the impact that eating disorders have beyond physical and mental health.

Additionally, research confirms a significant link between eating disorders and other mental health conditions, including mood disorders, Obsessive Compulsive Disorder, and Emotionally Unstable Personality Disorder, and with neurodivergence. Such co-occurring conditions can often create or exacerbate difficulties related to an eating disorder. Although the exact prevalence is yet to be ascertained, research indicates that a high proportion of people with eating disorders are also autistic. Despite this, many services do not have the appropriate provisions to support or adapt treatment for the needs of this patient group. We are often asked about this subject by both people affected by eating disorders and professionals.

Physical health complications are also common, and can impact all bodily systems. For example, malnutrition, electrolyte imbalances, constipation, amenorrhoea, osteoporosis, dehydration, and dental damage often occurs alongside eating disorders. A common and often diagnostic consequence from restrictive eating habits displayed in ARFID for example, is weight loss, compromised growth, significant malnutrition, vitamin and mineral deficiencies, and/or a dependence on supplements.

2. How do symptoms and/or the condition or disease affect carers and family?

For carers and families, the emotional toll is immense, often involving worry, disrupted routines, and a sense of helplessness. Families may face financial strain due to the cost of treatment if they are unable to access support on the NHS, or the loss of income when a carer or family members reduces work or leaves employment to care for their loved one.

One individual with binge eating disorder shared with Beat, "I've been unemployed for over two years because my binge-eating disorder has been uncontrollable... I'm still struggling to find a job."

In addition, mealtimes can become highly stressful, social activities are often avoided, and relationships within the family may be challenging, especially when siblings or partners feel neglected.

Carers and family place a crucial role in their loved one's recovery journey, often actively involved in care and treatment plans - particularly when the individual is a child or young person - by supporting with mealtimes, behavioural monitoring, and emotional support. Supporting their loved one to navigate the health care system can also be challenging, especially where advocating for appropriate treatment, or dealing with issues around consent and confidentiality become necessary.

Overall, this can lead to a reduced quality of life with carers reporting feelings of isolation, frustration, grief for the person their loved one was before the illness. There is also an increased risk of anxiety, depression, and burnout for this group of people, as they try to support a loved one through a serious and complex mental health illness.

3. Are there groups of people that have particular issues in managing their condition?

Yes, certain groups face particular challenges in managing eating disorders due to a combination of cultural, social, economic, and systemic factors. These challenges often relate to access to care, misdiagnosis, and the different ways symptoms can manifest across groups.

1. **Minoritised Ethnic Backgrounds**: People who are part of a minority ethnic group are less likely to/less frequently seek help, get a referral to an ED service, be diagnosed or receive treatment. Misconceptions about who gets eating disorders, culturally insensitive diagnostic criteria, additional risk factors (acculturative factors, minority stress, racial discrimination), a lower perceived need for treatment, and different presentations are some of the factors research cites as contributing to disparities Additionally, the lack of research in minority populations, often based on clinical rather than community samples, makes it more difficult to develop tailored interventions and supports.

2. **Socioeconomic Status**: The Health Survey for England 2019 into eating disorders found that as household income decreased, the proportion of adults who screened positive for a possible eating disorder increased. Studies also show positive associations between food insecurity and disordered eating behaviours, for children, adolescents, and adults. Despite data suggesting an increased prevalence, there is research which shows that shows that those from less affluent backgrounds are less likely to perceive a need for treatment and are also less likely to receive treatment compared to those from more affluent backgrounds. Household stress, social isolation and poor social support can also be risk factors in combination with others that can contribute to the development and maintenance of an eating disorder.

3. **LGBTQ+ Community**: Those within the LGBTQ+ community are also at an elevated risk of eating disorders, with higher rates than those who are cisgender or heterosexual. Further disparities exist within different subgroups, including those who identify as transgender or non-binary, who may be at higher risk.

   Higher rates may be related to discrimination, internalised stigma, a lack of social support, and having to conceal one's identity. Barriers to accessing and benefitting from treatment including concerns about mistreatment and judgement, and a lack of professional understanding about how gender or sexual identity may be linked to an eating disorder.

Existing measures for eating disorders may not be accurate for transgender or non-binary people. Social acceptance and access to medical care have been posited as protective factors.

4. **Men**: It is estimated that around in 1 in 4 people with eating disorders are men, and our own research indicates that misconceptions exist about who can be affected, a lack of awareness, delays in seeking support, and a need for better access to and tailored treatment. In a survey Beat conducted in 2023, results indicated clear themes emerged around men experiencing stigma, and a sense of shame about vulnerability and seeking help. Some of the responses addressed the additional barriers men can face in seeking treatment for an eating disorder and addressed the importance of challenging this stigma. This is supported by studies, which show that men are less likely to perceive a need for treatment, to receive a diagnosis, and be treated, and that there are differences in presentation which may be misunderstood. Research also shows that men experience gender-specific barriers which contribute to societal understandings and impact help-seeking, indicated in the low proportion of men who seek help from services. Overall, males are largely underrepresented in eating disorders research, and hence, marginalised.

5. **Co-occurring Conditions**: Individuals with co-occurring conditions, such as type 1 diabetes or those who are autistic, face additional barriers to accessing and benefitting from eating disorder support. For example, those with diabetes may struggle with managing both their eating disorder and their medical condition. These groups often experience poorer treatment outcomes. Considering cooccurring conditions alongside protected and other characteristics is crucial.

6. **Autism:** Autistic people are more likely to experience an eating disorder. They are also more likely to have poorer treatment outcomes and face unique challenges. This includes different triggers that contribute to the development and maintenance of an eating disorder, significant waiting times for an autism assessment/diagnosis, and a lack of understanding of the way the two are related. ARFID is more common in autistic individuals, for which there are additional barriers to receiving the right diagnosis and support. Sensory sensitivities and rigid eating habits are features of ARFID and are often associated with autism. Nonetheless it is important to recognise ARFID as a separate diagnosis from autism, not all autistic individuals experience eating difficulties. Conversely not all individuals with ARFID are autistic. Those with ADHD are also at an increased risk of developing an eating disorder, with research on the topic still in its infancy.

7. **ARFID:** Avoidant/restrictive Food Intake Disorder (ARFID) is a severe feeding and eating disorder marked by food avoidance and/or restricted food intake. Individuals with ARFID can restrict the amount of food eaten, and therefore do not get enough calories, or they can restrict the range of foods eaten and therefore do not get all the nutrients needed for maintaining health. There is ongoing stigmatisation of ARFID symptomatology, particularly around referring to ARFID as “picky eating”. Many people may experience picky eating at some point in their lives, but individuals with ARFID experience severe health and psychological consequences resulting from their disordered eating, which is not the case for picky eating. Also, some individuals with ARFID are not picky about the types of foods they eat, but they limit the amount of food they eat due to low appetite or lack of interest in food.

   Despite its serious impact on quality of life, it remains insufficiently recognised in clinical settings. Current research for evidence-based ARFID treatments is limited. As a result, national clinical guidelines do not provide recommendations on the treatment of ARFID. This perpetuates the limited and variable NHS service provision for ARFID.

People with ARFID also struggle to manage their eating disorder due to barriers to treatment, including lack of awareness and education of the eating disorder, limited access to standardised care pathways, and existing stigma concerning how people perceive (or rather fail to perceive) the severity of ARFID.

Healthcare professionals have not only struggled to characterise or diagnose children with ARFID but also found difficulty in identifying professionals or organisations capable of further assessment, treatment and support. Additionally, the complexity of ARFID symptomatology may contribute towards individuals "falling between the gaps" of specialised healthcare services.

8. **Binge eating disorder:** Findings from a 2021 survey conducted by Beat highlight the significant challenges people with binge eating disorder (BED) face in recognising and managing their condition. On average, it took participants 4.7 years to recognise their condition as an eating disorder and a further 3.5 years to seek professional help. Despite this, only 51% had ever sought professional support. Among those who did, nearly half (48%) felt they were not taken seriously, and 58% said the healthcare professionals they spoke to did not understand the condition or the difficulties they were facing. It took an average of 1.2 years to receive a clinical assessment after seeking help, and only 20% of the entire sample had ever received psychological treatment. These findings illustrate the stigma, lack of awareness, and systemic barriers that prevent people with BED from accessing timely and appropriate care.

Intersectionality: Individuals who belong to multiple underserved or marginalised groups (e.g., racial/ethnic minorities, LGBTQ+ individuals, and those from lower socioeconomic backgrounds) often face compounded challenges in managing their eating disorder. Research suggests that such individuals are at higher risk of eating disorders compared to those from single marginalised groups. Addressing intersectionality is critical to ensuring that treatments are effective and accessible to all individuals, especially those with complex, overlapping needs.

Experiences with currently available technologies

4. How well do currently available technologies work?

Support provided digitally can be beneficial, particularly for people in remote areas who otherwise would face issues accessing support. It allows people to access support quickly and with flexibility, usually in a more discreet way than attending in-person. Accessing support via online platforms, apps or video consultations or other digital technologies can offer a vital first step to people that may not have otherwise sought help.

However, there are some limitations impacting how well they currently work. This includes:

- Lack of tailoring to individual needs e.g., Autistic individuals. One of our autistic supporters stated, “tailored support from health trainers can be beneficial, providing routine, structure, direction, and guidance.” Therefore, digital technologies may lead to some challenges if there is no professional input. Another shared that they feel digital self help is highly inaccessible for him as an autistic person because the amount of information can be overwhelming, stating, “it needs to consider individual needs and nuances including age, gender, and personal preferences. It’s also too easy for me to lose focus and motivation through digital self-help, whereas in person, you are in that professional, supportive environment.”
- Engagement can be difficult due to the reliance on self-motivation, which may be reduced as people with eating disorders often describe an internal battle, where part

of them wants to recover but another part of them is fighting against it. Because of this, it can be important to have input from others to support with ongoing motivation and encouragement.

- Risk of triggering content or metrics (e.g., calorie counts, weight tracking): The individual using digital technologies should not be able to view graphs or otherwise tracking these metrics, as this can cause distress and comparison. Instead, the focus should be placed on emotions and behaviours.
- Limited emotional connection or accountability: Social connection is an important part of recovering from an eating disorder, so it is important that this is incorporated into digital self-help technologies.

One of the main models currently used for eating disorders is CBT-E; which can be delivered digitally using guided self-help. CREDO specify that this is for people with eating disorders who are not underweight, weight supressed, rapidly losing weight, are at risk of self-harm or suicide, or children and young people with bulimia nervosa. Since eating disorders are associated with high risk and rates of suicide and self-harm, digital guided self-help is not appropriate for all individuals.

The NICE guidelines advise incorporating the persons specific developmental needs and creating a personalised treatment plan in eating disorder treatment [1.3.16]. Best practice guidance from NICE also suggests a guided self-help programme to people with binge eating disorder and for adults with bulimia.

Digital technology is not often a topic that comes up within Beat's support services; with support sessions often encompassing action planning towards recovery. Individuals that have accessed our support programmes have shared that it can be difficult to access online support privately and without appropriate access to the internet. However, we do use a digital platform for our Momentum programme for people with binge eating disorder, called Recovery Record. Our Momentum programme is our most in demand programme and offers a clinically recommended self-help programme based on cognitive behavioural therapy and the NICE recommended 'Overcoming Binge Eating' book, while our trained facilitators provide regular guidance sessions. Below are some anonymous testimonials:

- "I'm so surprised that I've been able to tackle my eating disorder and see unhelpful patterns with the help of this programme and create new routines for myself around food. I know it will take a while but I never thought recovery could be possible and now I'm actually believing it is. I'm so incredibly grateful for the programme and think it's works really well."
- "Since starting this programme I feel like I have my life back. I'm shocked at how much I have been able to change my eating habits and the way I think about myself and food. It has been helpful beyond words"
- "I feel free from the all consuming thoughts of my body and food so much so that there are many days where I don't think about it at all. I have developed self awareness and tools that'll I'll be able to use for the rest of my life"

The above feedback highlights how well this digitally delivered guided self-help works. However, some people do drop out of the programme. Reasons for this relate to a lack of time to commit, overwhelm, feeling not mentally ready or worthy of giving themselves the time to focus on the work, or self-doubt.

Patient Group Submission Template for Diagnostic Technologies

To ensure optimum effectiveness of digital technologies in supporting people with eating disorders, they must be evidence-based, tailored to the individual and their unique needs, and used alongside professional support. Beat is frequently approached by developers who have created apps designed for this purpose, but while these apps are often well-intentioned, many lack the necessary evidence base to determine their effectiveness and the impact they could have on eating disorder recovery.

5. Are there groups of people that have particular issues using the currently available technologies?

Groups of people using available technologies that may face particular issues includes:

- **Older Adults**: may have less familiarity with digital technologies, creating a barrier to access. They may struggle with navigating apps or online platforms, potentially limiting the effectiveness of digital interventions. Tailoring the user interface to be more intuitive and providing support for those who are less tech-savvy can help address this.

- **People with Low Digital Literacy**: It may be difficult for some people to engage with digital technologies to support their eating disorder recovery. For example, individuals who have limited experience of using digital technology, those with limited access to the internet, or have lower levels of digital literacy. Offering choice, alternative support, and more accessible digital platforms is vital for these individuals.

- **People with Severe Symptoms**: Those with severe eating disorder symptoms may struggle to engage with digital treatments, and instead require more intensive, in-person treatment. For instance, those with extreme food-related distress may find digital technologies insufficient or triggering. For this group, digital technologies should be in addition to in-person treatment, rather than replacing it, and should be designed to avoid exacerbating harmful behaviours.

- **Underserved Groups**: Digital technologies for eating disorder treatment may not always be designed with the cultural or socioeconomic contexts of diverse groups in mind. Those with lower socioeconomic status or individuals living in areas with limited technologies may have difficulties accessing or benefiting from such treatment methods. Culturally sensitive content and improved access to technology, especially in underserved groups, should be considered at all stages.

- **People with Co-occurring Conditions**: Individuals with other conditions, such as autistic individuals, ADHD, or mental health disorders, may face challenges in using digital interventions effectively. For example, autistic individuals often experience alexithymia, whereby identifying and expressing emotions is difficult, potentially making self-reflection with digital self-help tools challenging. Personalised approaches that account for co-occurring conditions can help make digital technologies more effective for these groups.

- **Transgender and Non-Binary People**: Current digital interventions may not always be designed with the needs of transgender or non-binary people in mind. These individuals may experience problems with misgendering, gendered content, or a lack of understanding about how eating disorders interact with gender identity.

Digital interventions must be inclusive and mindful of gender identity to ensure these groups feel understood and effectively supported.

The current technologies also do not address people with anorexia nervosa, ARFID, underweight individuals, and those with comorbidities such as substance misuse problems or diabetes.

About the medical technology being assessed

6. For those <u>with</u> experience of this technology, what difference did it make to their lives?

On our support programmes whereby individuals receive guided digital self-help delivered remotely, we have found that upon completion, our service users:

- Experience reductions in the EDE-Q scores, with the overall cohort experiencing a reduction in their average global EDE-Q scores to below the clinical threshold.
- Have increased optimism that they can recover from their eating disorder
- Are more aware of their readiness to change, and have a realistic view of eating disorder recovery and the work that must go into it
- Have a reduction in feelings of anxiety and depression
- Have improved understanding of the factors and skills that can aid their recovery, including how to navigate life events around their eating disorder, how to cope and manage any eating disorder thoughts and challenge unhelpful rules
- Are more aware of what their eating disorder thoughts and behaviours are, and the triggers for these
- Have reduced some of their eating disorder associated behaviours
- Have improved their social relationships
- “I feel like my thinking around eating has evolved a lot. I was somewhat apprehensive about strategies like regular eating at first, but over the programme I saw how it can work for me. I was also introduced to some methods for preventing/lessening binging” [Anonymous feedback from our Momentum programme]
- See Q4 answer for further anonymous feedback

There is anecdotal evidence that accessing support via Beat’s online services enables individuals to receive support in an accessible and private way, at their own pace, without fear of judgement or stigma. Some people have reported accessing Beat’s online self-help resources to support themselves during times where they are struggling with their eating disorder, which ultimately has facilitated their continued recovery. In this way, such technologies can reduce eating disorder symptoms and improve healthy coping strategies. It can also provide a sense of accomplishment and autonomy for an individual, which is important for wellbeing.

Beat also run online peer support groups, which highlights how accessible, remote support can help to alleviate feelings of isolation and loneliness:

- “I really do feel heard and less lonely”

- "It's been great to hear from people in a similar situation because I can find this all very isolating"

- "I've taken from the group that im not alone in how im feeling and that theres not something "wrong" with me compared to others in the world"

- "Honestly, I'm just really grateful to be heard and understood. It's so isolating having this tick through my brain 24/7"

7. For those without experience of the technology being assessed, what are the expectations of using it?

Current research suggests that the expectations for individuals without experience of the technology being assessed are as follows:

- The technology should feel trustworthy, to alleviate any concerns around data protection and privacy and ensure ongoing engagement. This can be achieved through transparency in data collection and robust privacy settings.
- Reduction in waiting times and access to early intervention.
- The technology should be accessible and user-friendly, with options to adapt to the needs of neurodiverse people e.g., those with dyslexia. The content should also consider individual learning styles, including a mix of audio, visual, and reading/writing content.
- Language should be compassionate, warm, and easy to understand. It should be supportive and facilitate a sense of social connection and trust.
- Digital self-help technologies should be holistic and tailored to the needs of the individual. This should include unique feedback, adapted strategies to manage their eating disorder, and a personalised user journey where appropriate and possible.

8. Which groups of people might benefit most from this technology?

- This technology could benefit people on NHS waiting lists for treatment, who often experience delays in receiving treatment, in which time their symptoms can worsen. Digital technologies can offer timely access to support while individuals wait for more intensive, face-to-face treatment. This can reduce the risk of worsening symptoms and help maintain engagement with recovery whilst on waiting lists. In some instances, this may remove the need for treatment all together or reduce the intensity of treatment that the individual requires.

- For individuals with subclinical or early-stage symptoms who may not always meet the thresholds for face-to-face treatment or may experience long waiting times, this technology can provide an accessible alternative. This can help prevent the development of clinically diagnosable eating disorders and reduce pressures on the NHS.

- Those who face additional challenges in accessing in-person treatment e.g., People living in areas where eating disorder services are limited, individuals who would prefer remote alternatives, and those who face financial, social, or other challenges

that prevent them from accessing in-person care, such as work or family commitments.

Additional information

6. Please include any additional information you believe would be helpful in assessing the value of the medical technology (for example ethical or social issues, and/or socio-economic considerations)

It is important that medical technologies do not place the full responsibility for recovery on the individual. Instead, they should take a supportive and flexible approach that supplements other forms of treatment. This is particularly important for those who may require more intensive or specialist intervention. Digital interventions must be seen as one part of a broader, holistic care pathway rather than a replacement for face-to-face treatment or multidisciplinary support. This includes patient access to the level of treatment that meets their individual needs; whether that is guided self-help, structured psychological therapies, or more intensive, specialist care. Ensuring choice and access is vital in supporting recovery and improving outcomes.

In line with NICE guidance on shared decision making, patients should be meaningfully involved in discussions about their treatment. Their values, needs, and preferences must be central to care planning, especially when considering whether digital tools are appropriate or effective for them. Providing the opportunity for informed decision making is essential, particularly where eating disorders can often be significantly linked to a sense of control.

To help reduce disparities in access to eating disorder treatment, digital technologies need to be trauma-informed and developed in collaboration with experts by experience. This helps ensure that content is safe, effective, relevant, and avoids inadvertently reinforcing harmful eating disorder themes e.g., perfectionism, calorie focus, or comparison. Early intervention should be prioritised even if they do not meet diagnostic thresholds; the earlier someone receives support, the better their chance of making a full and sustained recovery.

Any one of any weight can have an eating disorder and many people with eating disorders do not present with a low BMI. Overly rigid criteria can result in delayed or denied treatment, so services and technologies must avoid relying solely on BMI or other single measures (such as frequency of binging or purging) as a determinant for access to care, in line with NICE guidance (NG69, Rec. 1.2.8).

Finally, interventions should be culturally sensitive, inclusive, and responsive to the needs of underserved groups, including those from minoritised ethnic backgrounds, LGBTQ+ individuals, people with co-occurring conditions such as autism or diabetes, and those from lower socioeconomic backgrounds.

Key messages

7. In up to five statements, please list the most important points of your submission.

Patient Group Submission Template for Diagnostic Technologies

- **Digital self-help for eating disorders must be timely, accessible, and inclusive:** These technologies may help address gaps in access, but they must be part of a wider effort to ensure that anyone affected by an eating disorder can access timely, appropriate and tailored care.
- **Patient choice and shared decision-making are essential**: People should be supported to access the level and type of treatment that best meets their needs, in line with NICE's shared decision making guidance.
- **Digital self-help for eating disorders must support, not replace, specialist care.**
- **Digital self-help for eating disorders must be developed in collaboration with people with lived experience.**
- **Underserved groups face additional barriers and tailored approaches are needed:** People from minoritised ethnic backgrounds, LGBTQ+ groups, those with co-occurring conditions or from lower-income backgrounds are less likely to be recognised, referred, or treated. This must be addressed through more inclusive and culturally sensitive approaches, including adaptations for autistic individuals.

Thank you for your time. Please return your completed submission to medtech@nice.org.uk

Patient Group Submission Template for Diagnostic Technologies

National Institute for Health and Care Excellence

Digital support for children and young people with eating disorders

Please read the accompanying guide fully before completing this submission template.

Information about your organisation	
Organisation name	Diabetes UK
Organisation type	Patient/carer organisation (e.g. a registered charity) ☒ Informal self-help group ☐ Unincorporated organisation ☐ Other, please state:
Organisation purpose (tick all that apply)	Advocacy ☒ Education ☒ Campaigning ☒ Service provider ☐ Research ☒ Other, please specify:
What is the membership of your organisation (number and type of members, region that your group represents, demographics, etc)? Thousands of people living with diabetes, families and carers. Also thousands of health care professionals working in diabetes care and research.	

Declarations	
Do you have any conflicts of interest? NO	
Did anyone outside your organisation help you prepare this submission?	Yes ☐ No ☒
If yes – who helped you and in what way? Please tell us if the people helping you were paid and if they have any conflicts of interest.	

Patient Group Submission Template for Diagnostic Technologies

Are you willing for this submission to be shared on our website?	Yes ☒ No ☐
We may invite you to a scoping meeting where this technology is to be discussed. Would a member of your group be willing to join such a meeting (this may be in person or virtually)?	Yes ☒ No ☐

Patient Group Submission Template for Diagnostic Technologies

Impact of the symptoms, condition or disease on patients
1. How do symptoms and/or the condition or disease affect patients' lives or experiences?
Impact of the symptoms, condition or disease on family and carers
2. How do symptoms and/or the condition or disease affect carers/unpaid care-givers and family?
Experiences and availability of current diagnostic technologies
3. What role do currently available diagnostic technologies play in helping patients manage their symptoms and/or the condition or disease?
4. What unmet information needs do people currently have due to the lack of an available diagnostic technology for their symptom or condition?

Patient Group Submission Template for Diagnostic Technologies

About the diagnostic technology being assessed
5. What are the most important things people would like to gain from the information provided by, and/or the use of, the diagnostic technology being assessed?
6. For those people <u>with</u> experience of this diagnostic technology, what difference did the information provided by, and/or the use of, the technology make in their lives or the lives of family and carers?
7. For those <u>without</u> experience of this diagnostic technology, but who are aware of studies or other sources of evidence of value, what are the expectations/limitations of having the information provided by the diagnostic technology and/or using the diagnostic technology?

Patient Group Submission Template for Diagnostic Technologies

Additional information

8. Please include any additional information you believe would be helpful in assessing the value of the diagnostic technology (e.g. equality issues, ethical or social issues and/or socio-economic considerations).

We do not have any comments specifically from people living with diabetes and eating disorders to answer the above questions. However, we just wanted to mention that it should be clearly stated, if this guidance goes ahead, that people with type 1 diabetes using insulin and an eating disorder, AKA T1DE, should not be considered appropriate for this type of intervention as this should always be considered a more severe type of eating disorder.

However, the online CBT courses and other technologies may be appropriate for people with nondiabetic hyperglycaemia (NDH) or type 2 diabetes and mild/moderate disordered eating, such as binge eating disorder or bulimia nervosa. Sensitive consideration could therefore be given at time of diagnosis of these conditions when giving dietary advice/referring to a dietitian to enquire whether this type of technology may also be appropriate, and later during management if signs of disordered eating become apparent.

Key messages

9. In up to five statements please list the most important points of your submission.

- Please ensure it is clearly stated in the guidance that people with type 1 diabetes and disordered eating (T1DE) should never be considered appropriate candidates for this type of technology as they require specialist secondary care input
- This type of intervention may have a place for people living with type 2 diabetes or NDH and mild/moderate disordered eating where referral times are prolonged/face to face services aren't available and where people are agreeable to this type of technology
-
-
-

HealthTech Programme

Digital self-help for people with eating disorders: early value assessment

Professional organisation submission

Thank you for agreeing to give us your organisation's views on this technology or procedure and its possible use in the NHS.

The final scope for digital self-help for people with eating disorders: early value assessment is available on the topic website. The final scope should be read before completing this submission.

You can provide a unique perspective on the technology or procedure in the context of current clinical practice that is not typically available from the published literature.

To help you give your views, please use this questionnaire. You do not have to answer every question – they are prompts to guide you. The text boxes will expand as you type.

Information on completing this submission

- Please do not embed documents (such as a PDF) in a submission because this may lead to the information being mislaid or make the submission unreadable
- We are committed to meeting the requirements of copyright legislation. If you intend to include **journal articles** in your submission you must have copyright clearance for these articles. We can accept journal articles in NICE Docs.

About the organisation

Organisation name	Health Innovation Network
Are you (please highlight Yes or No):	An employee or representative of a healthcare professional organisation that represents clinicians. No A specialist in the treatment of people with this condition? No A specialist in the clinical evidence base for this condition or technology? No Other (please specify): A specialist in spread and adoption of evidenced innovations
Please provide a brief description of the organisation (including where funding comes from)	Health Innovation Network (HIN) here are 15 health innovation networks across England, established by NHS England in 2013 to spread innovation at pace and scale – improving health and generating economic growth.
Has the organisation received any funding from any company with a technology related to the evaluation in the last 12 months? **If so, please state the name of company, amount, and purpose of funding**	No
Does the organisation have any direct or indirect links with, or funding from, the tobacco industry?	No

Current care pathway and unmet need

1. Please describe the current standard of care that is used in the NHS. Please note any clinical guidelines used in the NHS which are relevant to the care pathway. What setting would this technology be used in (primary care, general hospitals, specialist centres for example).	
2. Does this procedure or technology have the potential to replace current standard care, or would it be used as an addition to existing standard care? **Where would the technologies or procedure fit in the care pathway?**	The technologies would be best placed to be part of a blended approach to clinical care . HIN SL have engaged with the public on the subject of DMHTs . Please see link below . The clinician has a vital role in public confidence and trust for the DMHT. Patients need to feel confident that a DHT is not a second-best option Report: what do the public think about digital technologies for mental health? - Health Innovation Network
3. Is there an unmet need for patients with the condition or disease, or healthcare professionals managing the condition or disease?	Yes , from our experience of working with Kings college London and South London and Maudsley NHS Trust on the spread and adoption of the early intervention eating disorders programme FREED , there is currently insufficient workforce in the system to meet demand . As before we would recommend a blended clinician led approach to the introduction of DMHTs and for the DMHT to be embedded in the clinical care pathway , whether that is in primary or secondary care . Early intervention eating disorders - The Health Innovation Network

The technology

4. What are the potential benefits for patients and healthcare professionals from this technology (consider the potential clinical benefits, cost benefits, benefits to quality of life, and any wider benefits)?	
5. Are there any groups of patients who would particularly benefit from this procedure/technology? Are there any groups in which the technology would be less effective or would be less likely to benefit?	
6. How would healthcare resource use differ between the technology and current standard care?	
7. Describe any system changes that would be needed if the NHS were to adopt the technology. Are there any potential barriers to the adoption of the	Currently , medics nurses and allied health professionals receive little training on integrating DHTs into clinical pathways , this may lead to a lack of confidence by health professionals in recommending DHTs and a subsequent poor take up of the DHT by patients . Health Innovation Networks have experience of

technology or any changes that may be needed to enable implementation of the technology in the NHS?	DHT implementation the opportunities and barriers , you can read a recent DHT implementation report here Oxleas-CYP-MH-Final-Report.pdf and also here Focus ADHD - The Health Innovation Network It will also be important to gather evidence on ROI of the digital solutions as without this investment by the health and care system in these DMHTs is unlikely.
8. Are there any side effects or adverse effects associated with the technology?	

Equality considerations

9. Are there any equality issues that should be considered for this assessment?	Socio economics continues to pay a large part in the inequality of access to digital . The Good Things Foundation is a helpful organisation /website https://www.goodthingsfoundation.org/policy-and-research/research-and-evidence/research-2024/health-inequalities-digital-exclusion.html
10. Could the technologies reduce or increase health inequalities? How?	

Key messages

In up to 5 bullet points, please summarise the key messages of your submission	• Health Innovation Network advocates a blended clinician led approach to introducing patients to digital health technologies • DMHTS need to be embedded in the clinical pathway to support patients with their care • There is a role for DMHTs in supporting people with bulimia and binge eating disorders – as workforce capacity is currently stretched • There is an urgent need to train our medical , nursing, and allied health professionals in DHTs , so they can be confident in recommending a digital health product to the target population. Patients need to feel confident that the DHT is not a second-best option • Evidence of ROI will be critical to health and care system investing in these digital products

Thank you for completing the submission.

Please log in to your NICE Docs account to upload your completed submission.

Your privacy

The information that you provide on this form will be used to contact you about the topic above.

Please highlight **YES** if you would like to receive information about other NICE topics - YES or NO

For more information about how we process your personal data please see our privacy notice.

HealthTech Programme

Digital self-help for people with eating disorders: early value assessment

Professional organisation submission

Thank you for agreeing to give us your organisation's views on this technology or procedure and its possible use in the NHS.

The final scope for digital self-help for people with eating disorders: early value assessment is available on the topic website. The final scope should be read before completing this submission.

You can provide a unique perspective on the technology or procedure in the context of current clinical practice that is not typically available from the published literature.

To help you give your views, please use this questionnaire. You do not have to answer every question – they are prompts to guide you. The text boxes will expand as you type.

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About the organisation

Organisation name	The British Dietetic Association (BDA) Mental Health Specialist Group
Are you (please highlight Yes or No):	An employee or representative of a healthcare professional organisation that represents clinicians? Yes or No A specialist in the treatment of people with this condition? Yes or No A specialist in the clinical evidence base for this condition or technology? Yes or No Other (please specify):
Please provide a brief description of the organisation (including where funding comes from)	The British Dietetic Association (BDA) Mental Health Specialist Group is a professional network of UK-based dietitians specialising in mental health, eating disorders, learning disabilities, child and adolescent mental health services (CAMHS), forensic settings, and autism. As a Specialist Group of the BDA, it operates under the Association's umbrella, providing a platform for members to share expertise, develop best practices, and advocate for the role of dietitians in mental health care. Funding for the group primarily comes from BDA membership fees and any additional income generated through events or educational activities
Has the organisation received any funding from any company with a technology related to the evaluation in the last 12 months? **If so, please state the name of company, amount, and purpose of funding**	No
Does the organisation have any direct or indirect links with, or funding from, the tobacco industry?	No

Current care pathway and unmet need

1. Please describe the current standard of care that is used in the NHS. Please note any clinical guidelines used in the NHS which are relevant to the care pathway. What setting would this technology be used in (primary care, general hospitals, specialist centres for example).	The current standard of care for eating disorders in the NHS is guided by NICE guideline NG69 (2017), which recommends early identification, referral, and the provision of evidence-based psychological therapies such as CBT-E, MANTRA, SSCM, and family-based therapy. Care is typically delivered within a stepped-care model across primary care, community eating disorder services (CEDS), and specialist mental health services, with input from multidisciplinary teams including psychologists, dietitians, and medical professionals. The NHS England Access and Waiting Time Standards (2015) and the Royal College of Psychiatrists' MEED guidance (2022) further support timely and safe care, particularly for high-risk individuals. Digital self-help tools would most appropriately be used in primary care or community settings to support early intervention, reduce waiting times, and serve as guided self-help for those with mild-to-moderate eating disorders. These tools may also function as adjuncts to specialist care for relapse prevention or during transitions in treatment but are not suitable as stand-alone interventions for individuals with severe or medically unstable presentations.
2. Does this procedure or technology have the potential to replace current standard care or would it be used as an addition to existing standard care? **Where would the technologies or procedure fit in the care pathway?**	This technology is not expected to replace current standard care but would serve as an addition to existing care pathways, particularly in the context of early intervention, stepped care, and improving accessibility. Digital self-help tools offering NICE-recommended psychological therapies, such as CBT-E, have the potential to complement traditional services by supporting individuals with mild-to-moderate eating disorders, especially during periods of long waiting times or in areas with limited specialist provision. These technologies would most appropriately fit at the front end of the care pathway, particularly in primary care or community settings, where they could be offered as: • Early-stage interventions while patients await formal assessment or treatment, • Guided self-help options within IAPT or community eating disorder services, and • Adjunctive tools to support ongoing therapy, relapse prevention, or discharge planning in specialist services. They may also be beneficial in preventing progression to more severe illness, thereby alleviating pressure on overstretched specialist services. However, for individuals with high clinical risk, severe malnutrition, or complex needs, these tools should not be used as a substitute for multidisciplinary, specialist-led care.

3. Is there an unmet need for patients with the condition or disease, or healthcare professionals managing the condition or disease?	Yes, there is a significant unmet need for both patients with eating disorders and the healthcare professionals managing their care. For patients, the primary unmet needs include: • Long waiting times for access to specialist treatment, often exceeding NHS targets—particularly for adults. • Limited early intervention options, especially for those with subthreshold symptoms or mild-to-moderate presentations. • Geographical inequities in service availability, with some areas lacking sufficient community eating disorder services. • Barriers to engagement, including stigma, lack of awareness, or reluctance to access in-person care. For healthcare professionals, key unmet needs include: • Insufficient capacity within specialist services to manage the growing number of referrals, especially since the COVID-19 pandemic. • Limited tools for early intervention in primary care and general mental health settings. • Inadequate digital resources to provide scalable, evidence-based support, particularly when managing patients during waiting periods or in stepped-care models. • Need for flexible, low-intensity interventions that can be delivered without specialist training, yet still adhere to NICE recommendations.

The technology

4. What are the potential benefits for patients and healthcare professionals from this technology (consider the potential clinical benefits, cost	Digital self-help technologies for eating disorders offer a range of potential benefits for both patients and healthcare professionals. For patients, they can improve access to early intervention, especially for those facing long waiting times or living in areas with limited services. These tools promote flexibility, privacy, and self-efficacy, allowing individuals to engage in treatment from home at their own pace. Clinically, they have shown potential to

benefits, benefits to quality of life, and any wider benefits)?	reduce disordered eating behaviours in people with mild-to-moderate symptoms and may help prevent progression to more severe illness. For healthcare professionals, digital tools can alleviate pressure on overstretched services by supporting lower-risk patients and enabling more efficient triage within stepped-care models. They also allow clinicians to focus their time on complex cases, potentially improving service quality overall. From a system perspective, digital interventions are generally cost-effective, scalable, and may reduce the need for more intensive or emergency care. Wider benefits include improved equity of access, opportunities for data-driven service improvement, and additional support for carers and families. When safely implemented, these technologies could enhance the quality, reach, and sustainability of eating disorder care within the NHS.
5. Are there any groups of patients who would particularly benefit from this procedure/technology? Are there any groups in which the technology would be less effective or would be less likely to benefit?	Digital self-help technologies for eating disorders are likely to be most beneficial for individuals with mild-to-moderate conditions, such as bulimia nervosa, binge eating disorder, or OSFED, who may not require intensive specialist care. They are particularly useful for patients on waiting lists, those in geographically isolated or underserved areas, and individuals with time or mobility constraints who might struggle to access in-person services. Younger people and those comfortable with digital platforms may also find these tools more engaging and accessible. However, the technology is less suitable for individuals with severe eating disorders, such as anorexia nervosa with medical instability, or those with significant comorbidities like suicidality or substance misuse, who require close multidisciplinary supervision. Additionally, people with low digital literacy, limited internet access, or neurodivergent needs may face barriers to effective use unless tools are specifically adapted. Therefore, while digital self-help can play a valuable role in expanding access and supporting early intervention, it must be implemented thoughtfully, with clear boundaries around its appropriate use.

6. How would healthcare resource use differ between the technology and current standard care?	Healthcare resource use would differ significantly between digital self-help technologies and current standard care, primarily in terms of intensity, workforce demand, and cost. Digital self-help tools typically require fewer clinical resources than standard face-to-face treatment. Most digital interventions are designed to be low-intensity, often requiring minimal or no input from specialist staff. This contrasts with the current standard care model, which relies heavily on multidisciplinary teams—psychologists, dietitians, psychiatrists, and medical staff—to deliver evidence-based therapies and monitor physical health. As a result, digital tools can reduce clinician time per patient, lower the burden on overstretched services, and support more efficient triage and stepped care. In addition, these technologies could help prevent illness progression and reduce reliance on high-cost interventions, such as inpatient or intensive day-patient care, by offering early intervention and relapse prevention. They may also reduce hospital admissions and emergency presentations, particularly for conditions like binge eating disorder and bulimia nervosa, where earlier symptom management can prevent escalation. However, effective implementation of digital self-help still requires some infrastructure, including IT support, clinical governance, and training for guided interventions, as well as robust risk protocols to ensure patient safety. Importantly, digital tools do not replace the need for high-resource care in more severe cases but can redirect clinical resources to where they are most needed.

	In summary, while digital self-help technologies are associated with lower healthcare resource use per patient, their value lies in optimising resource allocation, reducing unnecessary escalation of care, and increasing system capacity without compromising clinical standards.
7. Describe any system changes that would be needed if the NHS were to adopt the technology. Are there any potential barriers to the adoption of the technology or any changes that may be needed to enable implementation of the technology in the NHS?	To adopt digital self-help technologies for eating disorders, the NHS would require several system-level changes to ensure safe and effective implementation. These tools would need to be integrated into existing stepped-care pathways, with clear protocols for use, risk assessment, and escalation to more intensive services when necessary. Workforce training is essential to equip clinicians with the knowledge to support patients using digital interventions, particularly in primary care, IAPT, and community eating disorder services. Robust governance structures and data protection compliance would be needed, along with reliable digital infrastructure and efforts to ensure equitable access for all patients, including those at risk of digital exclusion. Commissioning and funding pathways must be clearly defined, and real-world monitoring systems established to evaluate outcomes and maintain quality assurance. However, potential barriers include clinician hesitancy, variations in digital readiness across regions, safety concerns around risk monitoring, and challenges regulating a growing market of digital tools. Addressing these issues will require national coordination, investment in digital inclusion, and ongoing evaluation to ensure that digital self-help tools enhance rather than disrupt the delivery of high-quality, evidence-based care.
8. Are there any side effects or adverse effects	Although digital self-help technologies for eating disorders are generally low-risk, there are several potential adverse effects that warrant attention. If used inappropriately, such as with individuals requiring urgent or intensive

associated with the technology?	care, these tools may delay access to appropriate treatment, potentially worsening clinical outcomes. A lack of real-time oversight can make it difficult to detect physical or psychological deterioration, including suicidality or severe restriction. Patients may also misinterpret therapeutic content without adequate guidance, which could lead to unhelpful behaviours. The absence of a therapeutic relationship may reduce engagement or limit the development of trust, both of which are important in recovery. Additionally, some users may find certain content distressing or triggering, particularly if not sensitively designed. There are also concerns about data privacy, especially if platforms are not compliant with NHS standards. Lastly, users may experience digital fatigue or disengagement, reducing treatment adherence and effectiveness. Therefore, while digital tools offer promising benefits, they must be implemented with careful patient selection, embedded safety features, and appropriate clinical oversight to minimise risks.

Equality considerations

9. Are there any equality issues that should be considered for this assessment?	Yes, there are several important equality issues that should be considered in the assessment of digital self-help technologies for eating disorders, to ensure the intervention is accessible, effective, and inclusive for all population groups. Firstly, digital exclusion is a key concern. Individuals from lower socio-economic backgrounds, older adults, people experiencing homelessness, or those without access to reliable internet, smartphones, or computers may be

	unable to use digital tools, widening health inequalities. Similarly, patients with low digital literacy, learning difficulties, or cognitive impairments may struggle to engage with the technology unless adapted or supported. Language and cultural barriers must also be addressed. Many digital interventions are available only in English and may not reflect culturally diverse experiences of body image, food, or mental health, potentially limiting engagement or relevance for ethnic minority groups. Tools should be inclusive and culturally sensitive, ideally co-designed with input from diverse users. People with neurodevelopmental conditions (e.g. autism, ADHD) may have different communication needs or find standard digital interfaces difficult to use. Tailored design features and flexible content delivery are important to make interventions more accessible to these groups. Additionally, eating disorders are under-recognised and under-treated in certain populations, such as males, LGBTQ+ individuals, and people of colour. If digital tools rely on outdated or narrow representations of eating disorders (e.g. focusing only on thin, white, female users), they may reinforce stigma and discourage engagement.
10. Could the technologies reduce or increase health inequalities? How?	Digital self-help technologies for eating disorders have the potential to both reduce and increase health inequalities, depending on how they are designed and implemented. On one hand, they could reduce disparities by improving access to care for individuals in rural or underserved areas, shortening waiting times, and offering flexible, stigma-free support—particularly beneficial for groups less likely to engage in traditional services, such as men or ethnic minorities. However, these benefits may be undermined by digital exclusion, as people without access to reliable technology, those with limited digital literacy, or individuals from lower-income backgrounds may be unable to engage with these tools. Additionally, if the content is not culturally sensitive, linguistically diverse, or

	inclusive of underrepresented groups such as LGBTQ+ individuals, people of colour, or those in larger bodies, the tools risk reinforcing existing biases in eating disorder care. Accessibility challenges may also arise for those with disabilities or neurodevelopmental conditions if interfaces are not appropriately adapted. Therefore, to reduce health inequalities, it is essential that these technologies are inclusively designed, equitably implemented, and supported by targeted strategies to reach those most at risk of exclusion.

Key messages

In up to 5 bullet points, please summarise the key messages of your submission	• Digital self-help technologies should complement, not replace, existing NHS care • These tools have the potential to increase access, reduce service pressure, and improve patient engagement • Adoption will require system-level changes • Equity and inclusion must be central to design and implementation • Digital tools can offer significant clinical, economic, and quality-of-life benefits

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Early value assessment report: Digital self-help for people with eating disorders: early value assessment

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Version number	Brief description of changes	Author/reviewer (e.g. J Smith)	Date (DD/MM/YY)	Date sent to NICE (if applicable)
1.0	Draft report	All	03/06/2025	03/06/2025
1.0	Final report	All	17/06/2025	17/06/2025
2.0	Final report slightly revised based on the lead team and stakeholders' comments, figures of 2-way scenario analyses updated.	All	04/07/2025	04/07/2025

Digital self-help for binge eating disorder and bulimia: early value assessment

External assessment report

[GID-HTE10058]

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Contains confidential information: Yes**,** AIC (Academic In Confidence) information within the report is highlighted in yellow and underlined.

Number of attached appendices: Seven

Purpose of the early value assessment report

The purpose of this external assessment report (EAR) by an external assessment group (EAG) for early value assessment is to review the evidence currently available for technologies within the decision problem and advise what further evidence should be collected to help inform future decisions on whether the technologies should be widely adopted in the NHS. NICE has commissioned this work and provided the template for the report. The report forms part of the papers considered by the Committee when it is making decisions about the early value assessment.

Declared interests of the authors

None

Acknowledgements

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Responsibility for report

The views expressed in this report are those of the authors and not those of NICE. Any errors are the responsibility of the authors.

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Abbreviations

Term	Definition
ARFID	Avoidant restrictive food intake disorder
BED	Binge eating disorder
BN	Bulimia nervosa
BMI	Body mass index
CBT-ED	Cognitive Behavioural Therapy for Eating Disorders
CE	Conformité Européene
CI	Confidence interval
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
EAG	External assessment group
EAR	External assessment report
EDE	Eating Disorder Examination questionnaire
EDNOS	Eating disorder not otherwise specified
EVA	Early value assessment
FAQ	Frequently asked questions
FE	Fixed effect
GP	General Practitioner
HADS	Hospital Anxiety and Depression Scale
HR	Hazard ratio
ICER	Incremental cost-effectiveness ratio
ICO	Information Commissioner's Office
IQR	Interquartile range
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NMA	Network meta-analysis
NMB	Net monetary benefit
OBO	Overcoming Bulimia Online
OSFED	Other specified feeding or eating disorder
PHQ-9	Patient Health Questionnaire-9
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
QALY	Quality-adjusted life year
RCT	Randomised controlled trial
RE	Random effects

ReBIP	Review Body for Interventional Procedures
ROBUST-RCT	Risk Of Bias instrument for Use in SysTematic reviews for Randomised Controlled Trials
ROI	Return on Investment
RR	Relative Risk
SD	Standard deviation
WHOQOL	World Health Organisation Quality of Life

Executive summary

Background

This Early Value Assessment (EVA), commissioned by NICE and conducted by the Aberdeen HTA Group, reviews the clinical and economic evidence for three digital self-help technologies for eating disorders: digital CBTe (Credo Therapies), Overcoming Bulimia Online (OBO, Five Areas Ltd), and Worth Warrior (stem4). These technologies aim to improve access to care for individuals with bulimia nervosa (BN), binge eating disorder (BED), and other specified feeding or eating disorders (OSFED), reducing delays and easing NHS service pressures.

Clinical Evidence

Digital CBTe

- Evidence comes from 3 UK-based cohort studies (no RCTs).
- Demonstrated statistically significant reductions in binge-eating episodes and improvements in global eating disorder severity (EDE scores), but all studies had high attrition rates and lacked comparators.
- Limited data on non-respondents and on participant diversity and generalisability.
- User feedback was largely positive regarding usability, but some requested a more personalised approach and highlighted technical issues.

Overcoming Bulimia Online (OBO)

- Strongest evidence base, with 3 RCTs and 6 additional qualitative/cohort studies, although some evidence related to older (CD-ROM) versions of the technology.
- RCTs showed significant improvements in binge eating frequency, eating disorder symptom severity (EDE), and depression scores (HADS).
- Meta-analysis of trials of the online version trials [redacted] improvement in Global EDE scores compared to controls.

- Users appreciated privacy, flexibility, and additional support. Motivation and adherence improved with guided support, while engagement was more difficult for some using the programme independently. Some participants saw the programme not as a complete solution to their eating problems, but as an initial step toward further treatment.

Worth Warrior

- Only one small cohort study with a high attrition rate ([redacted]; 5 completed follow-up).
- Insufficient data to draw any meaningful conclusions.
- Preliminary user feedback reveals conflicting views on the app's interactivity.

Economic Evidence

- Literature searches did not identify any existing economic evaluations of the candidate technologies. Supplementary literature searches were conducted to identify existing economic models of interventions for the prevention and treatment of eating disorders to inform the development of an early economic model for this assessment. Ten decision models were identified (9 from literature searches, 1 from existing NICE guidance), with most models structured around the achievement of remission.
- There was insufficient evidence to inform a full cost-effectiveness evaluation. Instead, based on the review of existing eating disorder cost-effectiveness literature, an early decision-tree economic model was developed to assess the potential for the technologies to offer net cost savings to the NHS over a 12-week treatment phase and one-year follow-up under a range of plausible assumptions. The model included events for remission, relapse and onward referral in the treatment pathway.
- The decision model was coded to include the option to assign different resource use and event probabilities for binge eating disorder or bulimia nervosa, across both populations specified in the NICE scope.
- Cost data were modelled for OBO compared to usual care for adults with bulimia nervosa. On average, OBO was estimated to have an

intervention cost of £5.91 per person, based on the purchase of bulk licences. Intervention costs are likely to be offset by increase in remissions, meaning that there is good potential for OBO to be a cost-saving intervention for the NHS. The magnitude of cost savings that might be achieved is subject to substantial uncertainty regarding the magnitude of effect size that might be achievable, and uncertainty around the resource use that might be expected for managing poorly controlled symptoms and relapse in UK clinical practice. The results of the economic modelling are based on resource use data obtained from clinical expert opinion for adults. Costs for children may be substantially higher.

- As there were no comparative data for the risk of remission for digital CBTe and Worth Warrior, it was not possible to estimate cost savings for these technologies. Two-way scenario analyses illustrate the combination of intervention cost and hypothetical remission effect size that might be required for the technologies to demonstrate cost savings for BN and BED across both the primary care and eating disorder services populations.
- Results of the economic modelling should be interpreted cautiously, given the significant parameter uncertainty. A further, long-term Markov model, with health states of remission (absence of symptoms), non-remission (eating disorder symptoms), relapse and death is conceptualised but not coded. Health states should consider sub-states, particularly for those in non-remission states, to reflect frequency and severity of eating disorder episodes (e.g., purging for bulimia nervosa).

Evidence Gaps

- Lack of RCTs for digital CBTe and Worth Warrior.
- High attrition rates across all studies – including RCTs.
- Lack of within-trial or decision model-based economic evaluations of the candidate technologies.

Incomplete data on:

- Long-term effectiveness and relapse rates.
- On relevant outcome measures such as remission, relapse, health-related quality of life, social functioning and reasons for not completing treatment, especially for CBTe and Worth Warrior
- Acceptability and non-respondents
- Effectiveness of the technology used exclusively as self-help intervention (with only limited non-randomised, non-comparative evidence available for CBTe)
- Health inequalities and accessibility

Key Points for Decision Makers

Digital CBTe

- Shows promise, but current evidence is limited to small, non-comparative cohort studies with high attrition.
- Lacks comparative and randomised data
- User feedback indicates a need for more tailored content and technical improvements.
- Insufficient information to parameterise the early economic model. Based on an average intervention cost of £95 per person, a relative risk of remission of 1.7 would be required to attain net NHS cost savings for BN in eating disorder services. Effect sizes for BED and for both BN and BED in primary care might need to be considerably higher. Results apply to the most conservative set of EAG parameter inputs and should be interpreted cautiously, considering the significant uncertainty.

Overcoming Bulimia Online (OBO)

- Supported by moderate to high-quality RCT evidence, with measurable clinical improvements.
- Attrition rate remains a concern.
- The CD-ROM version, although included in earlier studies, is unlikely to be relevant in current clinical practice due to its outdated delivery format.
- High user acceptability, particularly when support is provided during the programme.

- Based on an average intervention cost of £5.91, early economic modelling shows good potential for cost savings to the NHS if the observed clinical benefit on remission (RR=1.86) is generalisable to UK clinical practice. Results apply even with the most conservative set of EAG parameter inputs for resource use. The exact magnitude of cost savings from the decision tree model is subject to significant uncertainty around the magnitude of benefit, the potential for reducing referrals in the pathway and resource use parameter uncertainty.

Worth Warrior

- Early in development, insufficient evidence from which to draw meaningful recommendations.
- There is a lack of clinical or economic evidence to support adoption.
- Insufficient information to parameterise the early economic model. There are some uncertainties regarding the intervention cost that would be incurred in NHS practice, which would be dependent on whether support packages for the technology were purchased, and what population size would be assigned per trust. At an average intervention cost of £19 per person (best estimate for BED), a relative risk of remission of between 1.4 and 1.5 might be sufficient to attain net NHS cost savings for BED in the eating disorder and primary care services populations, respectively. At an average intervention cost of £71 for bulimia nervosa per person, a relative risk of remission of >3 for the primary care populations or 1.6 for the eating disorder services populations may be sufficient to achieve cost savings. Differences in intervention cost are due to differences in the underlying prevalence of BED and BN.

General considerations

- All technologies face limitations around long-term outcome data, cost-effectiveness, and representativeness across patient groups.
- Support (e.g. guided or hybrid use) is preferred by some participants and seems to improve engagement and outcomes, suggesting that standalone use may not be optimal.

- Further research, especially well-powered RCTs, is essential to inform future NICE guidance and NHS adoption.
- Future trials should include embedded within-trial economic evaluations, based on patient-reported NHS resource use and HRQoL based on a generic preference-based measure such as EQ-5D-5L.

1. Decision problem

The decision problem is described in the scope https://www.nice.org.uk/guidance/gid-hte10058/documents/final-scope and the protocol https://www.nice.org.uk/guidance/gid-hte10058/documents/final-protocol. The EAG made no further changes or comments.

2. Technologies

A brief description of the technologies can be found in Table 1. Please see the scope for further details.

Table 1 Description of the technologies

Technology	Key Features
Digital CBTe (Credo Therapies)	***Target condition*** • Binge eating disorder • Bulimia • other specified feeding or eating disorder (OSFED) with symptoms similar to binge eating disorder or bulimia ***Type of therapy*** Self-help programme (guided and independent use), individual Cognitive Behavioural Therapy for Eating Disorders (CBT-ED) (self-help mode) ***Intended age group*** 18 years and above ***Technology format*** • Smartphone app • Online ***Duration*** 12 sessions ***Contraindications*** people who have a low body weight (BMI under 18.5), who are weight suppressed, rapidly losing weight or at risk of suicide or self-harm. Digital CBTe has a medical device regulation class 1 CE mark.
Overcoming Bulimia Online (OBO) (Five Areas Ltd)	***Target condition*** • Binge eating disorder • Bulimia

	• OSFED with symptoms similar to binge eating disorder or bulimia ***Type of therapy*** Self-help programme (guided and independent use), individual CBT-ED (self-help mode) ***Intended age group*** 16 years and above ***Technology format*** • Online ***Duration*** 8 sessions ***Contraindications*** people with high severity eating disorder or risk that would make more specialist and more monitored 1-to-1 support appropriate. It is currently not intended for anorexia nervosa. The technology does not require regulatory approval.
Worth Warrior (stem4)	***Target condition*** • Anorexia • Avoidant restrictive food intake disorder (ARFID) • Binge eating disorder • Bulimia • OSFED with symptoms similar to the above conditions ***Type of therapy*** Self-help programme (guided and independent use), individual CBT-ED (self-help mode) ***Intended age group*** 12 years and above (under 12 with adult guidance) ***Technology format*** • Smartphone app ***Duration*** 4 main activities over 7 weeks ***Contraindications*** The independent use of the app is suitable for a mild to moderate eating disorders. If a moderate-severe eating disorder has been diagnosed, the app should be used under the guidance of a health professional. The technology does not require regulatory approval.

3. Clinical context

In NHS clinical practice, the identification, risk assessment and treatment of eating disorders follow the NICE eating disorder guideline (National Institute for Health and Care Excellence, 2017a), NICE eating disorders quality standard (National Institute for Health and Care Excellence, 2018), NHS England access and waiting time standard for children and young people with an eating disorder (NHS England, 2015), NHS England guidance for adult eating disorder services (NHS England, 2017), and Royal College of Psychiatrists guidance on medical emergencies in eating disorders (Royal College of Psychiatrists, 2022). Appendix A of the NICE scope contains a list of related NICE guidance.

A GP will often conduct an initial assessment. After this initial assessment, people with a suspected eating disorder should be immediately referred to a community-based, age-appropriate eating disorder service for further assessment or treatment. Children and young people considered at high risk should have an assessment and start NICE-recommended treatment within 1 week, or within 4 weeks for routine (non-urgent) cases. Starting times for treatment for adults should follow a locally agreed-upon timeframe.

Guided self-help programmes are the first treatments to offer or consider for all people with binge eating disorder or other specified feeding or eating disorder (OSFED) with similar symptoms and adults (people aged 18 or over) with bulimia or OSFED with similar symptoms. Guided self-help is not recommended for children and young people with a diagnosis of bulimia.

Digital self-help programmes are designed to support individuals working through CBT-ED-based treatment without supportive sessions or the involvement of a healthcare professional. Because digital therapies do not depend on healthcare professional capacity, they could offer people with BED, BN or OSFED faster access to eating disorder therapy and, consequently, reduce associated in-patient hospital admissions. Digital therapies could also reduce barriers to and improve acceptability of treatment for people with BED/BN/OSFED. It is, therefore, important to establish the clinical and cost-effectiveness, and acceptability of digital CBT-ED self-help therapies.

Further information about assessment, diagnosis and treatment are provided in the NICE scope.

3.1 Equality issues

Equality issues and considerations for this early value assessment are described in the equality impact assessment alongside the scope [https://www.nice.org.uk/guidance/gid-hte10058/documents/801]. No additional equality issues have been identified during the assessment.

4. Clinical evidence

Full details of the review methods are available from the assessment protocol (available at https://www.nice.org.uk/guidance/gid-hte10058/documents/final-protocol).

4.1 Search strategies and study selection

Search methods for identification of studies

A sensitive literature search strategy was developed by an Information Specialist to identify published peer-reviewed studies. The following major electronic databases were searched from inception to 24 April 2025: MEDLINE, Embase, PsycInfo, Cochrane Library, CINAHL, and the International HTA Database. There were no restrictions on language or study type. The reference lists of included studies were screened for additional studies. Relevant systematic reviews were obtained, and lists of included studies were screened for additional studies. Major clinical trial registries, manufacturer websites, professional organisations, regulatory bodies and HTA organisations were searched to identify relevant ongoing trials and reports. Any additional information on potentially relevant evidence provided by the manufacturers of the technologies of interest was considered. The MEDLINE search is detailed in Appendix A. The MEDLINE search was adapted to search other electronic databases. Searches were supplemented

by scoping search results conducted by NICE and relevant reports provided by the manufacturers of the technologies. A comparison between the Overcoming Bulimia online programme and similar information delivered in book format was beyond the scope of this appraisal. Consequently, no searches were conducted to identify evidence regarding the clinical effectiveness of information delivered in book format.

Study selection and data extraction strategies

One reviewer (CR) screened all citations identified by the search strategies, and a second reviewer (KL) screened a random 20% sample to ensure consistency. Both reviewers independently screened all potentially relevant full-text articles. Data were extracted for each eligible study by one reviewer (CR) and checked for accuracy by a second reviewer (KL, MB or NWS) using a customised data extraction form developed specifically for this assessment.

Quality assessment strategy

We used the Risk Of Bias instrument for Use in SysTematic reviews for Randomised Controlled Trials (ROBUST-RCT) to assess the methodological quality of randomised controlled trials (Wang et al., 2025). Optional items 5, 7 and 8 concerning the validity of outcome assessment measurement, selective reporting, and whether trials were terminated early for benefit were considered to be less relevant for an early value assessment. An amended version of the checklist developed by the Health Services Research Unit (now Aberdeen Centre for Evaluation), University of Aberdeen, in partnership with the NICE Review Body for Interventional Procedures (ReBIP) was used to assess the quality of non-randomised evidence (Centre for Reviews and Dissemination, 2009, Downs et al., 1998, Jackson et al., 2006, Verhagen et al., 1998). Because this evaluation concerns interventions delivered online without the involvement of a healthcare professional or treatment facilities, ReBIP items 8 and 9 were considered irrelevant for this evaluation because they evaluate the experience of the person providing the intervention and the suitability of the facilities where patients receive treatment. The quality of qualitative evidence was assessed through the Joanna Briggs Institute Checklist for Qualitative Research (Lockwood et al., 2015). One reviewer (CR) conducted the quality

assessment for the included studies, and a second reviewer (KL or MB) independently verified and validated the judgments made by the first reviewer.

Any disagreements between reviewers during study selection, data extraction and quality assessment were resolved through consensus by CR and KL.

Methods of analysis/synthesis

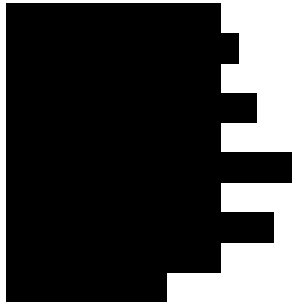
When appropriate, we summarised the results of relevant RCTs assessing the clinical effectiveness of digital CBT-ED self-help technologies using standard meta-analysis methods (Higgins et al., 2024). For meta-analyses of two studies, we have used fixed effect (FE) models due to the difficulty in estimating the tau squared parameter, but have also reported random effects (RE) models as a sensitivity analysis whenever there was substantial statistical heterogeneity between the studies (Deeks et al., 2024). If important clinical or methodological heterogeneity was observed between studies, we instead conducted a narrative synthesis of results. Qualitative data were analysed using a framework approach for data whereby quotes were grouped under broad themes of acceptability, satisfaction and other relevant perspectives. Broad themes were then grouped according to common sub-themes identified across the relevant studies. We also provided a detailed description of any gaps in the evidence base and of its methodological limitations. This will help inform recommendations for future evidence generation and requirements for a full assessment.

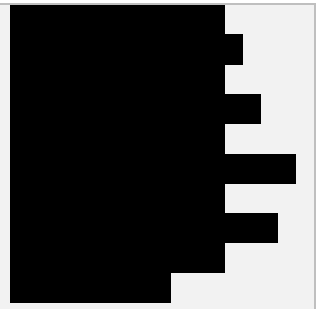
4.2 Included and excluded studies

The search identified 85 titles and abstracts. Fifteen reports were retrieved for full-text assessment, of which four were included in the review. Four further full-text reports were identified from citation screening, and 13 were provided by the companies. Of these additional reports, 11 were eligible for inclusion (all provided by the companies). Fifteen reports from 11 studies were included in the review. All studies were conducted in the UK. The PRISMA flow diagram is provided in Appendix A, and the list of excluded studies is provided in Appendix B. Details of the included studies are provided in Table 2.

Table 2 Description of key studies in the evidence base

Technology (manufacturer)	Study name, design and location	Participant and setting	Intervention and comparator	Outcomes	EAG comment
Digital CBTe Credo Therapies	Murphy (2025) (Murphy et al., 2025) Single-arm pilot intervention study Conducted in the UK Participants' Country of residence, n (%): United Kingdom 80 (72.7) United States 15 (13.6) Canada 5 (4.5) Australia 4 (3.6) New Zealand 4 (3.6) Republic of Ireland 2 (1.8)	93 (85%) participants with self-reported features that resembled BED, 9 (8%) with self-reported features that resembled BN, and 8 (7%) with self-reported features that resembled atypical bulimic disorder were recruited through an advertisement on the beat[a] website.	***Intervention*** n=110 Full match to scope ***Additional support*** Digital CBTe was offered as a fully automated (pure "self-help" or "self-guided") intervention. Participants could email a researcher for asynchronous technical assistance if needed ***Comparator*** None	Binge eating episodes Global EDE CIA Treatment completion Patient acceptability and satisfaction	The manufacturer of the technology was associated with the study. RM is a founder, shareholder, and consultant of Credo Therapies. ELO is a part-time employee of Credo Therapies. The study had high attrition (50% at end of treatment and 58.2% at 6-months). 55 (50%) participants were included in the end of treatment analysis. 46 (41.8%) participants were included in the 6-month follow-up analysis. The intervention and setting match the NICE scope.
Digital CBTe	Dorset Healthcare NHS Foundation Trust report (2024)	51 patients with BED and BN were referred / self-referred to the Dorset Healthcare University NHS	***Intervention*** n=51 Full match to scope	Binge eating episodes Global EDE CIA	The manufacturer of the technology was

Credo Therapies	(Lees, 2024) Osborne et al (unpublished study submitted by Credo Therapies) Mixed methods (cohort study, semi-structured interviews with patients, and a staff survey) UK	Foundation Trust All Age Eating Disorders Service and were on the waiting list for assessment. The service is primarily accessed by GP referral, referral by any health or social care professional, self-referral, and parental referral.	***Additional support*** None - Pure self-help. ***Comparator*** None	PHQ-9 Treatment completion Patient acceptability and satisfaction	associated with the study.  The authors thanked Credo Therapies Limited for their operational support and their advice on the evaluation specification and analysis. The study has high attrition rate (72.5%).14 (27.5%) participants were included in the end of treatment analysis. The intervention and setting match the NICE scope.
Digital CBTe Credo Therapies	Kent and Medway All Age Eating Disorders Service report (2025) (Lees et al., 2025)	36 patients with BED were referred/self-referred to the All Age Eating Disorders Service for Kent and Medway North East London NHS Foundation Trust. A clinician	***Intervention*** n=36 Partial match to scope ***Additional support***	Binge eating episodes Global EDE CIA PHQ-9 Treatment completion	The manufacturer of the technology was associated with the study.

	Osborne et al (unpublished study submitted by Credo Therapies) Mixed methods (cohort study, semi-structured interviews with patients, and a patient and staff survey) UK	carried out a brief assessment with the patient. Patients diagnosed with binge eating disorder were accepted by the service and assigned a Mental Health and Wellbeing Practitioner to act as a Supporter, who invited the patients to digital CBTe via an email link. In those cases where the screening suggested that digital CBTe was suitable, patients were invited to use digital CBTe, alongside a series of online support sessions with their Supporter.	The technology is described by the authors as “Supported Digital CBTe.” Patients received online support sessions from the Mental Health and Wellbeing Practitioner. ***Comparator*** None	Patient acceptability and satisfaction	 The authors thanked Credo Therapies Limited for their operational support and their advice on the evaluation specification and analysis. Sixteen patients had completed active treatment (sessions 1-9) and completed the end of programme questionnaires. Six patients were still working through digital CBTe at the close of data collection and were not included in the analysis. The intervention and setting match the NICE scope.

Overcoming Bulimia Online Five Areas Ltd	Schmidt (2008) (Schmidt et al., 2008) RCT UK	33/49 (67.3%) BN and 16/49 (32.7%) EDNOS intervention participants, and 27/48 (56.2%) BN and 21/48 (43.8%) EDNOS control participants were recruited from GP patient referrals to the adult Eating Disorders Out-patients Service in the South London and Maudsley National Health Service (NHS) Foundation Trust between 2003 and 2006.	***Intervention*** n=49 ***Version*** CD-ROM Partial match to scope ***Additional support*** Participants used the CD–ROM package in a private, designated room in the out-patient department of the eating disorders unit. No practitioner support or guidance was offered during the time the individual used the CD–ROM ***Comparator*** n=48 Full match to scope Waiting-list control group. Participants had a 3-month wait before they started a full course of one-to-one CBT for bulimia nervosa.	Binge eating episodes Global EDE EDE Vomit episodes EDE Weight concern EDE Shape concern EDE Eating concern EDE Dietary restraint Treatment completion Abstinence Remission	The manufacturer of the technology associated with the study. C Williams received royalties for the CD–ROM intervention The study intervention is a predecessor version of the technology The study has moderate attrition (28.6% intervention group and 18.8% control group). 35 intervention participants and 39 control participants were included in the end of treatment analysis. The intervention and setting match the NICE scope. People with learning disabilities were excluded from the study, thus limiting the generalisability of findings for people who may have difficulty accessing the technologies.

Overcoming Bulimia Online Five Areas Ltd	Sánchez-Ortiz (2011) (Sánchez-Ortiz et al., 2011) RCT UK	20 (52.6%) BN and 18 (47.4%) EDNOS intervention participants and 19 (50%) BN; 19 (50%) EDNOS control participants were recruited from six higher education institutions (HEIs) in London between December 2005 and January 2007	***Intervention*** n=38 ***Version*** Calipso online Partial match to scope ***Additional support*** Participants were supported by e-mails from two cognitive-behavioural therapists with eating disorder experience. Their remit was to support and encourage participants to use the package. Therapists sent e-mails once every 1–2 weeks and responded to any e-mails received from participants. ***Comparator*** n=38 Full match to scope Waiting List/Delayed Treatment Control Group.	Binge eating episodes Global EDE EDE Vomit episodes EDE Purge episodes EDE Weight concern EDE Shape concern EDE Eating concern EDE Dietary restraint HADS anxiety HADS depression WHOQOL physical WHOQOL psychological WHOQOL social WHOQOL environmental Treatment completion Abstinence	The manufacturer of the technology associated with the study. C Williams is one of the developers of the OBO treatment package and receives associated royalties. The study has moderate attrition (5.2% intervention group and 18.4% control group). 36 intervention participants and 31 control participants were included in the end of treatment analysis. The intervention and setting match the NICE scope.
Overcoming Bulimia Online Five Areas Ltd	Sánchez-Ortiz (2010) (Sanchez-Ortiz et al., 2011) Qualitative semi-structured interviews and survey questionnaire on views and perceptions of the technology UK	3 (33.3%) BN and 6 (66.7%) EDNOS semi-structured interview participants and 64 questionnaire participants were recruited from the Sánchez-Ortiz 2011 RCT	***Intervention*** Semi-structured interviews, n=9; Survey questionnaire, n=64 ***Version*** Calipso online Partial match to scope ***Additional support*** See Sánchez-Ortiz 2011 ***Comparator*** None	Patient acceptability and satisfaction	The manufacturer of the technology associated with the study. See Sánchez-Ortiz 2011 The intervention and setting match the NICE scope. Outcomes include patient experience only

Overcoming Bulimia Online Five Areas Ltd	McClay et al (unpublished study submitted by Five Areas Ltd) (in PhD dissertation, McClay, 2017) RCT UK	27 (61.4%) BN and 17 (38.6%) EDNOS intervention participants and 20 (51.3%) BN and 19 (48.7%) EDNOS control participants. Participants were initially recruited to participate in an online survey about attitudes to self-help for eating disorders from various community sources [redacted]	***Intervention*** n=57 ***Version*** Calipso online Partial match to scope ***Additional support*** Participants were given the choice of weekly email, telephone or text support over the 8–10-week intervention period. The support workers were [redacted] trained researchers. The support sessions did not involve any formal therapy as the support workers were not qualified therapists. The aim of the support sessions was to encourage, motivate and support participants while they used the online package. ***Comparator*** n=46 Full match to scope Delayed access group: Participants received access to the online package after a 10-week delay.	Binge eating episodes Global EDE EDE Vomit episodes HADS anxiety HADS depression [redacted] Social adjustment	The manufacturer of the technology associated with the study. [redacted] The intervention and setting match the NICE scope.
Overcoming Bulimia Online Five Areas Ltd	McClay (2013) (McClay et al., 2013) Qualitative study: semi-structured interviews	8 participants with BN or ENDOS were recruited from the McClay et al (unpublished) RCT	***Intervention*** n=8 ***Version*** Calipso online Partial match to scope ***Additional support*** See McClay (unpublished)	Patient acceptability and satisfaction	The manufacturer of the technology associated with the study. See McClay et al (unpublished)

	UK		***Comparator*** None		The intervention and setting match the NICE scope. Outcomes include patient experience only.
Overcoming Bulimia Online Five Areas Ltd	Pretorius (2010) (Pretorius et al., 2010) Qualitative: semi-structured interviews UK	7 BN and 4 EDNOS participants were recruited. Ten participants were recruited from beat and one was recruited via a specialist eating disorders outpatient clinic.	***Intervention*** n=11 ***Version*** Calipso online Partial match to scope ***Additional support*** Electronic message boards were available for participants and parents. E-mail support was provided by a named email therapist, who provided flexible weekly support and advice. Therapists were experienced clinicians working in specialist eating disorders clinics, or members of staff from beat who were trained in providing email support for people with eating disorders. The number of emails sent by participants to their therapist ranged from three to fourteen. ***Comparator*** None	Patient acceptability and satisfaction	The manufacturer of the technology associated with the study. C Williams is one of the developers of the OBO package. The intervention and setting match the NICE scope. Outcomes include patient experience only.
Overcoming Bulimia Online Five Areas Ltd	Graham and Walton (2011) (Graham et al., 2011)	33 (50%) BN and 33 (50%) BED participants were recruited. Participants were initially recruited from a waiting list and then from a	***Intervention*** n=66 ***Version*** CD-ROM Partial match to scope	Eating Disorder Inventory-3 (EDI-3)	The study intervention is a predecessor version of the technology

	Cohort UK	consecutive series of new referrals to an NHS outpatient Eating Disorders Service in Burnley, East Lancashire.	***Additional support*** Participants accessed the treatment at the eating disorder service. Participants had scheduled contact with a clinician during the introductory meeting, and again at the fourth session and at two weeks following session eight. ***Comparator*** None	Clinical Outcomes in Routine Evaluation System (CORE) Client satisfaction questionnaire Numbers completing treatment	The study has high attrition (39.4%). 40 participants were included in the end of treatment analysis The intervention and setting match the NICE scope.
Overcoming Bulimia Online Five Areas Ltd	Pretorius (2009) (Pretorius et al., 2009) Cohort UK	Sixty-one (60.4%) participants with a diagnosis of BN and 40 (39.6%) with EDNOS were recruited from 1/9 specialist eating disorders clinics or from beat. Ten clinic participants were recruited, and sixty-one participants were recruited from beat.	***Intervention*** n=101 ***Version*** Calipso online Partial match to scope ***Additional support*** Peer support was available for participants via electronic message boards. Message boards and web-based material on how best to support adolescents were available for parents ***Comparator*** None	Objective binge eating episodes Vomit episodes Laxative episodes Global EDE score BMI Treatment completion List of liked and disliked elements Use of services and supports Days missed from work/school Food expenditure	The study has high attrition (48.5% at the end of treatment and 37.6% at 6-months). 52 participants were included in the end of treatment analysis and 63 were included in the 6-month follow-up analysis. The intervention and setting match the NICE scope.
Overcoming Bulimia Online Five Areas Ltd	Bara-Carril (2004) (Bara-Carril et al., 2004) Cohort UK	Forty-five participants with BN were recruited from Eating Disorders Unit at the South London and Maudsley NHS Trust. Patients were either recruited from GP referrals (and were on the waiting list for assessment) or at	***Intervention*** n=45 ***Version*** CD-ROM Full match to scope ***Additional support*** Patients accessed the treatment	Short Evaluation of Eating Disorders Symptoms (SEEDS) Attendance Number of episodes of bingeing Vomiting Laxative/diuretic use	The study intervention is a predecessor version of the technology The manufacturer of the technology associated with the study. C Williams is one of the

		the initial assessment in the eating disorders unit.	program in the eating disorder unit. Patients had no contact with a clinician during the period in which they were using the programme. ***Comparator*** None	Food restriction Exercise	developers of the OBO package The study has moderate attrition (13.3%). 39 participants were included in the end of treatment analysis. The intervention and setting match the NICE scope.
Worth Warrior stem4	Edwards and Krause (unpublished study submitted by stem4) Cohort UK	[redacted] participants with [redacted] eating disorders were recruited [redacted] via advertising campaigns in local communities, [redacted] website and [redacted] social media [redacted]	***Intervention*** [redacted] Full match to scope ***Additional support*** None ***Comparator*** None	Global EDE EDE restraint EDE eating concern EDE shape concern EDE weight concern Rosenberg [redacted] Patient acceptability Patient useability Patient safety	[redacted] [redacted] 5 participants were included in the end of treatment analysis. [redacted]

					The intervention and setting match the NICE scope.

BED, binge eating disorder; BMI, body mass index; BN, bulimia nervosa; EDE, Eating Disorder Examination questionnaire; EDNOS, eating disorder not otherwise specified; HADS, Hospital Anxiety and Depression Scale; PHQ-9, Patient Health Questionnaire-9; WHOQOL, World Health Organisation Quality of Life

[a.] beat is a UK charity that provides resources for people with eating disorders

5. Clinical evidence review

5.1 Quality appraisal of studies

The study level assessments of the included studies are provided in Appendix C.

The non-randomised evidence for the digital CBTe and Worth Warrior studies was of reasonable methodological quality; however, it was difficult to judge the representativeness of participants due to inadequate reporting of demographic characteristics in these studies. The high attrition rates in the studies increase the potential risk of bias.

Overall, the RCT evidence for the Overcoming Bulimia Online technology was of good methodological quality. However, attrition rates varied across trials, with some exhibiting high dropout/non-responder levels that may have increased the risk of bias.

The EAG have no serious concerns regarding the methodological quality of the qualitative studies. The authors of all studies did not report statements regarding reflexivity. The influence of the research teams' perspectives and values on the qualitative study findings is, therefore, uncertain.

5.2 Results from the evidence base

Digital CBTe (Credo Technologies)

Four eligible reports of digital CBTe from three cohort studies were included in the review (Murphy et al., 2025, Lees, 2024, Lees et al., 2025, Osborne, unpublished). No randomised studies were identified. All the studies were conducted in the UK. Most participants were female (93.2%) and white (93.2%). The mean (SD) age of the participants in the study conducted by Murphy et al (2025) was 39.7 (10.9) years (range 20 to 63 years), [redacted] years (range [redacted] years) in the Dorset Healthcare Trust study (Osborne, unpublished) and [redacted] years (range [redacted] years) in the Kent and Medway

study (Osborne, unpublished). The study authors did not report whether they collected data on the transgender status of participants, and did not report data for the participants' socioeconomic status or other participant characteristics that are associated with the accessibility of the technologies. Details of the study characteristics and participant demographics are provided in Appendix D, Table 19.

Digital CBTe clinical effectiveness results

A summary of the clinical effectiveness results is provided in Table 3.

All three cohort studies provided information about outcomes at baseline and at the completion of treatment. In addition, Murphy et al (2025) reported results for those who completed follow-up at six months. These studies had high rates of attrition. In the Murphy et al. (2025) study, although 69 of 110 (63%) participants completed active treatment sessions, only 55/110 (50%) and 46/110 (42%) participants provided data on treatment completion and 6-month follow-up, respectively. For the Dorset Healthcare Trust study, data on treatment completion were only available for 14 of 50 (28%) participants (Osborne, unpublished). In the Kent and Medway study, 6 of the 36 participants who met suitability criteria were in the process of completing the CBTe sessions during the evaluation period and were not included in the follow-up evaluation. Sixteen of the remaining 30 participants (53%) completed the programme and the follow-up questionnaires (Osborne, unpublished).

Although the maximum number of sessions was 12, the mean number of sessions completed in the Kent and Medway study was eight. In the other two studies, the mean number of sessions completed was six.

In both studies, the number of binge-eating episodes in the past 28 days reduced between baseline and treatment completion. Considering those with data at both time points, the mean (SD) number of episodes fell from 14.1 (8.1) to 5.5 (5.1) in the Murphy study (n=55, $p<0.001$) (Murphy et al., 2025), fell from 12.9 to 6.1 in the Dorset Healthcare Trust study (n=14, SD not

reported, p=0.004) (Osborne, unpublished) and fell from 18.9 to 1.9 in the Kent and Medway study (n=16, SD not reported, p<0.0001) (Osborne, unpublished). In Murphy et al. (2025), the mean (SD) number of episodes at 6-month follow-up was 5.8 (6.6).

All three studies also showed statistically significant improvements in the Global EDE and CIA – both condition-specific instruments (Table 3). In the Dorset and Kent studies, scores for the PHQ-9 depression scale also improved.

The only available data identified for digital CBTe came from three small non-randomised cohort studies, all with high rates of attrition. Even with additional support, most of the participants considered eligible failed to complete all the sessions, and no follow-up data were available for over half of those recruited.

If confirmed, the magnitude of the improvements shown after digital CBTe may be clinically important. In all three studies, there were large reductions in the number of binge-eating episodes, and participants had a mean Global EDE score of less than 2.8 at the end of treatment, which has been considered a clinical cut-off for this scale (Mond et al., 2008). Improvements in the Global EDE and CIA scores were above reported diagnostic changes (Ekeroth et al., 2014), and final scores for CIA and PHQ-9 were below reported clinical cut-offs of 16 and 10, respectively (Osborne, unpublished). However, it is also worth noting that, as the studies follow a cohort design, participants might have improved for reasons other than the intervention. In the RCTs for OBO reported below, for example, scores often improved by relatively large margins in the control group.

No meta-analyses were undertaken to combine the clinical effectiveness results for this technology due to differences in inclusion criteria and the level of support received by participants.

Table 3 Summary of the Digital CBTe clinical effectiveness evidence

Outcome	Timepoint (n)	**Murphy 2025 Murphy et al., 2025**	Timepoint (n)	**Dorset Healthcare Trust study 2024** (Lees, 2024)	Timepoint (n)	**Kent and Medway All Age Eating Disorders Service study 2025** (Lees et al., 2025)
Binge eating episodes[a]	Baseline (n=110)	14.1 (8.1)	Baseline (n=50) Baseline (n=14)	[redacted] 12.9 (NR)	Baseline (n=36) Baseline (n=16)	[redacted] 18.9 (NR)
	Completed treatment (n=55)	5.5 (5.1)	Completed treatment (n=14)	6.1 (NR)	Completed treatment (n=16)	1.9 (NR)
	Completed 6-months follow up (n=46)	5.8 (6.6)	-			
Global EDE[a]	Baseline (n=110)	3.7 (0.9)	Baseline (n=50) Baseline (n=14)	[redacted] 3.7 (NR)	Baseline (n=36) Baseline (n=16)	[redacted] 3.9 (NR)
	Completed treatment (n=55)	2.3 (0.9)	Completed treatment (n=14)	2.7 (NR)	Completed treatment (n=16)	1.9 (NR)
	Completed 6-months follow up (n=46)	2.5 (1.2)	-	NR		
CIA[b]	Baseline (n=110)	28.0 (8.9)	Baseline (n=50) Baseline (n=14)	[redacted] 27.3 (NR)	Baseline (n=36) Baseline (n=16)	[redacted] 30.8 (NR)
	Completed treatment (n=55)	18.2 (10.4)	Completed treatment (n=14)	21.2 (NR)	Completed treatment (n=16)	12.6 (NR)
	Completed 6-months follow up (n=46)	18.0 (12.2)	-			
PHQ-9[c]	Baseline (n=110)	NR	Baseline (n=50) Baseline (n=14)	[redacted] 12.4 (NR)	Baseline (n=36) Baseline (n=16)	[redacted] 12.1 (NR)

	Completed treatment (n=55)	NR	Completed treatment (n=14)	8.14	Completed treatment (n=16)	4.8 (NR)
	Completed 6-months follow up (n=46)	NR				
Completed active treatment, n (%)[d]		69/110 (62.7)	-	19/51 (37.3)		17/30 (56.7)
Completed all sessions, n (%)		55/110 (50)	-	NR		NR
Mean number of sessions completed [e]		6	-	6		8
Number discharged from service, n (%)		NR	-	9/12 (75)		NR
Number receiving post-self-help specialist treatment, n (%)		NR	-	1/12 (8.3)		NR
Number still on waiting list, n (%)		NR	-	2/12 (16.7)		NR

EDE, Eating Disorder Examination questionnaire; CIA, Clinical Impairment Assessment questionnaire; PHQ-9, Patient Health Questionnaire-9
a. Outcome was assessed over the past 28 days. Higher scores indicate more problematic eating difficulties; b. Outcome was assessed over the past 28 days. Higher scores indicate a higher level of impairment; c. Outcome was assessed over the past 2 weeks. Scores represent 0-4 points: No depression, 5-9 points: Mild depression, 10-14 points: Moderate depression, 15-19 points: Moderately severe depression, 20-27 points: Severe depression. A score of 10 is used as a threshold for further investigation or treatment; d. Active treatment sessions were defined as completing sessions 1-9; e. The maximum number of sessions was 12
All data are means (standard deviation) unless otherwise specified
Source: Murphy et al (2025); Dorset Healthcare Trust report (Lees, 2024); Osborne (unpublished); Kent and Medway report (Lees, 2025); Osborne (unpublished)

Digital CBTe Service user acceptability, views, experience and satisfaction

Participants' opinions on using digital CBTe technology were evaluated in all three studies.

Participants in the Murphy et al (2025) study completed the "view of progress" question in the final session of digital CBTe (n=56), and those who completed all sessions (n=53) were invited to complete a survey on their satisfaction with the programme. The survey contained some items from the Client Satisfaction Questionnaire adapted to internet-based interventions (CSQ-I) and questions that were specific to digital CBTe. Participants who did not complete all sessions (n=10) were invited to complete a brief survey asking about their reasons for stopping.

Of those participants who completed the view of progress question, 21% (n = 12) reported that "my binge eating problem is much better", 39% (n = 22) that it is "somewhat better", 34% (n = 19) that it is "a bit better", and 5% (n = 3) that "my binge eating problem isn't any better".

Of those who completed all sessions and responded to the satisfaction survey, most participants found the technology "very helpful" (n = 22, 42%) or "moderately helpful" (n = 18, 34%) with the remainder finding it "somewhat helpful" (n = 13, 25%).

Of the 10 participants (18% of those who did not complete all 12 sessions of digital CBTe) who completed the "Stopping Digital CBTe" questionnaire, the most common pre-defined response option for stopping the programme was "digital CBTe was not helping me" (n = 5, 50%). The authors report that free text responses from the participants included the research study being at an inconvenient time, struggling with technical issues with the technology, and wishing that the programme was more tailored to their individual needs.

The opinions of patients in the Dorset Healthcare Trust and Kent and Medway All Age Eating Disorders Service studies were a set of *'Your View'* questions

related to the perceived effects on users' understanding of their eating disorder (n=14 and n=16, respectively). Semi-structured interviews were also conducted with four patients in the Dorset Healthcare Trust study to understand their experiences of using digital CBTe as a self-help strategy whilst they were waiting for assessment and treatment by the All Age Eating Disorders Service. All patients who were interviewed had completed or nearly completed the course. Both the 'Your View' questions and the semi-structured interview guide were developed by Credo Therapies Limited. Similarly, eight patients in the Kent and Medway All Age Eating Disorders Service were interviewed about their experiences of using supported digital CBTe.

Most respondents to the 'Your View' questions in the Dorset and Kent and Medway studies felt that the current state of their binge eating problem was somewhat better (57.1% and 43.8%, respectively) or much better (28.6% and 56.3%, respectively) (Lees, 2024, Lees et al., 2025). In the Dorset study, one participant (7.1%) felt that their binge eating problem was the same, and one participant (7.1%) felt that their binge eating problem was much worse (Lees, 2024). Similarly, most respondents in the Dorset and Kent studies felt that their understanding of their binge eating problem was somewhat better (57.1% and 37.5%, respectively) or much better (21.4% and 62.5%, respectively) (Lees, 2024). Three participants (21.4%) in the Dorset study felt that their understanding was the same (Lees, 2024).

All Dorset interview respondents appreciated the offer of digital CBTe while they were waiting to be seen by a clinician, and the offer helped them to feel that "they had not been forgotten" (Lees, 2024). One respondent stated that she was pleased to receive the offer of digital CBTe as she felt that it would provide an opportunity for her to consolidate the self-help activities that she had been undertaking whilst on the waiting list and another participant stated that being able to use the app made them feel more in control while they were on the waiting list. One participant had concerns that their progress would not be monitored by someone with human understanding, and two participants indicated that the "lack of the human side" to the technology was problematic if they had questions or missed a session due to being unwell (Lees, 2024). Nearly all the patients in the Kent and Medway study initially felt skeptical

about the offer of a hybrid model of digital self-guided material and remote support sessions, but felt positive about the therapy after they completed the treatment (Lees et al., 2025).

Interview participants in both the Dorset and Kent and Medway studies found the technology accessible and easy to use and particularly liked that the technology was available as a mobile app, although some users felt that the visual appearance was ‘flat’ and colours were ‘sombre’ and suggested that alternatives to reading through sessions could make them more engaging. Participants also stated that they would prefer the programme to be more personalised.

Participants liked that information was added incrementally and that they could use the app regularly on a weekly or daily basis. One participant in the Kent and Medway study noted that having a regular check-in and knowing that “*someone was checking what I would do*” helped to keep them “*on track*” and “*accountable*” (Lees et al., 2025). Similarly, patients noted that having a supporter helped them to stick with the programme, and they would have lost interest otherwise. The participants also reported that they found the support sessions valuable for sharing difficult feelings or concerns. Most participants felt that completing the programme had positive effects on their eating habits, although one participant in the Dorset study recognised that they did not feel “cured” at the end of the programme and that they would need professional support to help them implement what they had learned (Lees, 2024). Similarly, some participants in the Kent and Medway study felt that they needed further support after completing the treatment (Lees et al., 2025).

Overcoming Bulimia Online (Five Areas Ltd)

Three eligible RCTs (Schmidt et al., 2008, Sánchez-Ortiz et al., 2011, McClay, unpublished), three cohort studies (Bara-Carril et al., 2004, Pretorius et al., 2009, Graham et al., 2011), and three qualitative studies (Pretorius et al., 2010, Sanchez-Ortiz et al., 2011, McClay, unpublished), all conducted in the UK, were identified for the assessment of Overcoming Bulimia Online (OBO)

technology. Summary study characteristics and participant demographics are presented in Appendix D, Table 20.

RCTs are the gold standard for evaluating the effectiveness of interventions (National Institute for Health and Care Excellence, 2022). The EAG, therefore, reports the key randomised evidence for the OBO technology in this section. Results from the non-comparative evidence, which show improvements in key outcomes following OBO treatment, are reported in Appendix E, Tables 22 to 25. The evidence from these RCTs is also prioritised for inclusion in the economic modelling.

The RCTs conducted by Sánchez-Ortiz et al (2011) and McClay et al (unpublished) evaluated the Calipso online version of OBO, while the RCT conducted by Schmidt et al (2008) evaluated the CD-ROM version of OBO. Most participants in the RCTs were female (97.8%). The youngest reported mean (SD) age in the study treatment groups was 22.7 (3.1) years, and the oldest was 30.5 (8.0) years. Most participants in the Schmidt et al (2008) trial were white British (73.3%), and 59.2% of participants in the Sánchez-Ortiz et al (2011) trial were described as British. Ethnicity and nationality were not reported in McClay (unpublished). Only the McClay (unpublished) trial reported the employment status of the participants. Most participants were either in full-time employment (48.5%), were students (22.2%) or were in part-time employment (14.1%). The remaining trials did not report other data for the participants' socioeconomic status or participant characteristics that are associated with the accessibility of the technologies. People with learning disabilities were excluded from the Schmidt et al (2008) trial. This may limit the generalisability of findings for this group of people, who might have difficulties accessing the technology. The authors of all studies did not report whether they collected data on the transgender status of participants.

Participants in the Schmidt et al (2008) intervention group were reviewed by a clinician at the end of treatment (at 3 months) and were offered either shorter or longer face-to-face therapy, while participants in the waiting list control group started a full course of one-to-one CBT for bulimia nervosa at 3 months. The comparative post-3-month data from this trial were considered ineligible

for the evaluation of clinical effectiveness evidence. Similarly, the control participants in the Sánchez-Ortiz et al (2011) and McClay (unpublished) trials received the OBO intervention at the end of the 3-month wait period, at which point the intervention group had completed their treatment. Consequently, although these time points could be used to evaluate the effect of early versus delayed start of OBO, the comparative post-3-month data from these trials were not considered eligible for the evaluation of clinical effectiveness evidence when comparing OBO versus control.

Overcoming Bulimia Online (OBO) clinical effectiveness results from RCTs

A summary of the randomised clinical effectiveness evidence is provided in Table 4. A summary of the longer-term, non-comparative data for the Sánchez-Ortiz et al (2011) and McClay et al (unpublished) trials is reported in Appendix E, Table 22. Two of the three available RCTs (Sánchez-Ortiz et al., 2011 and McClay, unpublished) reported results for the online version of OBO. The other study (Schmidt et al., 2008) evaluated the CD-ROM version, and participants undertook the sessions in a designated room. Due to these differences in delivery, we decided to present the results for the Calipso online and CD-ROM versions separately. When considered appropriate, meta-analyses of the two Calipso online studies have also been undertaken.

[redacted] (Table 4). A meta-analysis of the two Calipso online studies showed [redacted] (Appendix F). In the CD-ROM study, the OBO group experienced fewer episodes than the control group at the end of treatment (median 3 vs 6).

All three studies reported the Global EDE score, with six other EDE subscales reported by at least one study. In a meta-analysis of the two Calipso online trials, the mean Global EDE at the end of treatment was [redacted]

[redacted] for OBO compared with control (Appendix F).

For all six EDE subscales, in the Sánchez-Ortiz trial, there was also evidence of improved scores for participants in the OBO group compared with those in the control group (Table 4). However, there was a different interpretation for the CD-ROM trial (Schmidt et al, 2008) with no clear evidence of between-group differences for either the Global EDE score or the other four subscales evaluated.

HADS anxiety and depression scores were available for the two Calipso online trials. Overall, there was evidence of improved mean depression scores for OBO at the end of treatment [redacted] (Appendix F). [redacted]

Four WHOQOL subscales were reported in one Calipso online study (Sánchez-Ortiz et al., 2011). Although scores improved more in the intervention group, there were no statistically significant differences between groups.

Social adjustment was reported by only one study (McClay et al, unpublished). There was greater improvement in the OBO group, [redacted]

Table 4 Summary of the Overcoming Bulima Online randomised clinical effectiveness evidence

Outcome	Timepoint	Schmidt 2008		Sánchez-Ortiz 2011[a]		McClay (unpublished)	
		OBO (CD-ROM version)	Control	OBO (Calipso online version)	Control	OBO (Calipso online version)	Control
Binge eating episodes [b]	Baseline	n=49 12.0 (14.0) [c]	n=48 9.0 (25.5) [c]	n=38 23.1 (24.3) [d]	n=38 16.9 (14.6)	[redacted]	[redacted]
	End of treatment	n=41 3.0 (14.0) [c]	n=40 6.0 (29.0) [c]	n=31 7.7 (12.9)	n=36 12.7 (12.3)	[redacted]	[redacted]
Global EDE [b]	Baseline	n=49 3.5 (1.2)	n=48 3.3 (1.1)	n=38 3.4 (1.1)	n=38 3.8 (1.1)	[redacted]	[redacted]
	End of treatment	n=35 3.1 (1.5)	n=39 3.0(1.1)	n=31 2.0 (1.1)	n=36 3.3 (1.0)	[redacted]	[redacted]
EDE Vomit episodes [b]	Baseline	n=49 14.0 (19.0) [c]	n=48 13.5 (32.5) [c]	n=38 20 (28.7)	n=38 20.2 (27.9)	[redacted]	[redacted]
	End of treatment	n=41 7.5 (16.5) [c]	n=40 15.0 (19.0) [c]	n=31 8.4 (17.4)	n=36 14.7 (20.7)	[redacted]	[redacted]
EDE purge episodes [b]	Baseline	NR	NR	n=38 28.3 (36.8)	n=38 25.0 (29.2)	[redacted]	[redacted]
	End of treatment	NR	NR	n=31 10.4 (21.5)	n=36 17.0 (21.8)	[redacted]	[redacted]
EDE weight concern [b]	Baseline	n=49 3.7 (1.5)	n=48 3.3 (1.4)	n=38 3.4 (1.3)	n=38 3.9 (1.3)	[redacted]	[redacted]

	End of treatment	n=36 3.4 (1.6)	n=39 3.2 (1.3)	n=31 2.4 (1.3)	n=36 3.6 (1.4)	[redacted]	[redacted]
EDE shape concern [b]	Baseline	n=49 4.1 (1.4)	n=48 4.1 (1.3)	n=38 3.9 (1.3)	n=38 4.2 (1.2)	[redacted]	[redacted]
	End of treatment	n=35 3.6 (1.8)	n=39 3.8 (1.3)	n=31 2.5 (1.3)	n=36 4.0 (1.2)	[redacted]	[redacted]
EDE eating concern [b]	Baseline	n=49 2.8 (1.5)	n=48 2.6 (1.3)	n=38 2.7 (1.5)	n=38 3.0 (1.2)	[redacted]	[redacted]
	End of treatment	n=36 2.3 (1.5)	n=39 2.0 (1.4)	n=31 1.2 (1.2)	n=36 2.3 (1.1)	[redacted]	[redacted]
EDE dietary restraint [b]	Baseline	n=49 3.5 (1.3)	n=48 3.3 (1.4)	n=38 3.6 (1.1)	n=38 4.1 (1.2)	[redacted]	[redacted]
	End of treatment	n=36 2.8 (1.6)	n=39 2.9 (1.3)	n=31 2.0 (1.3)	n=36 3.2 (1.4)	[redacted]	[redacted]
HADS anxiety [e]	Baseline	NR	NR	n=38 11.1 (3.6)	n=38 11.8 (3.5)	[redacted]	[redacted]
	End of treatment	NR	NR	n=31 7.8 (2.5)	n=36 11.0 (4.3)	[redacted]	[redacted]
HADS depression [e]	Baseline	NR	NR	n=38 6.4 (3.6)	n=38 6.9 (4.3)	[redacted]	[redacted]
	End of treatment	NR	NR	n=31 4.3 (3.0)	n=36 8.2 (4.1)	[redacted]	[redacted]
WHOQOL physical [f]	Baseline	NR	NR	n=38 14.1 (2.8)	n=38 13.6 (3.1)	[redacted]	[redacted]
	End of treatment	NR	NR	n=31 16.6 (1.8)	n=36 13.2 (3.8)	[redacted]	[redacted]

WHOQOL psychological [f]	Baseline	NR	NR	n=38 10.9 (2.3)	n=38 10.9 (2.8)	[redacted]	[redacted]
	End of treatment	NR	NR	n=31 12.8 (2.4)	n=36 10.3 (3.1)	[redacted]	[redacted]
WHOQOL social [f]	Baseline	NR	NR	n=38 11.9 (3.9)	n=38 12.3 (4.1)	[redacted]	[redacted]
	End of treatment	NR	NR	n=31 14.3 (2.8)	n=36 11.8 (4.0)	[redacted]	[redacted]
WHOQOL environmental [f]	Baseline	NR	NR	n=38 13.6 (2.4)	n=38 13.4 (2.9)	[redacted]	[redacted]
	End of treatment	NR	NR	n=31 14.0 (2.5)	n=36 13.4 (2.9)	[redacted]	[redacted]
Social adjustment [g]	Baseline	NR	NR	NR	NR	[redacted]	[redacted]
	End of treatment	NR	NR	NR	NR	[redacted]	[redacted]
Abstinent, n/N (%) [h]	Baseline	3/49 (6.1)	0/48 (0)	1/38 (2.6)	0/38 (0)	[redacted]	[redacted]
	End of treatment	5/41 (12.2)	4/40 (10)	8/31 (25.8)	5/36 (13.9)	[redacted]	[redacted]
Subclinical, n/N (%) [i]	Baseline	NR	NR	7/38 (18.4)	4/38 (10.5)	[redacted]	[redacted]
	End of treatment	NR	NR	12/31 (38.7)	8/36 (22.2)	[redacted]	[redacted]
Clinical, n/N (%) [j]	Baseline	NR	NR	30/38 (78.9)	34/38 (89.5)	[redacted]	[redacted]
	End of treatment	NR	NR	11/31 (35.5)	23/36 (63.9)	[redacted]	[redacted]
Below DSM–IV threshold/remission [k]	Baseline	8/49 (16.3)	11/48 (22.9)	0/38 (0)	0/38 (0)	[redacted]	[redacted]
	End of treatment	16/41 (39.0)	10/40 (25.0)	7/31 (22.6)	1/36 (2.8)	[redacted]	[redacted]
	End of treatment low adherence group	11/33 (33.3)	NA	NR	NA	[redacted]	[redacted]

	End of treatment high adherence group	5/8 (62.5)	NA	NR	NA	[redacted]	[redacted]
Mean (SD) number of sessions completed [l]		NR	NR	5.5 (2.5)	NA	[redacted]	[redacted]
Median number of sessions completed [l]		NR	NR	NR	NR	[redacted]	[redacted]
Maximum number of sessions completed [l]		NR	NR	NR	NR	[redacted]	[redacted]
Low adherence (attended 0-4 sessions), n/N (%)		33/41 (80.5%)	NR	NR	NR	[redacted]	[redacted]
High adherence (attended 4-8 sessions), n/N (%)		8/41 (19.5%)	NR	NR	NR	[redacted]	[redacted]

EDE, eating disorder examination questionnaire; DSM-IV, Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition; HADS, Hospital Anxiety and Depression Scale; NA, not applicable; NE; data were not eligible; NR, not reported; OBO, Overcoming Bulimia Online; WHOQOL, World Health Organization Quality of Life

Data are means and standard deviations unless reported otherwise. End of treatment timepoints were reported as 3 months in Schmidt et al (2008) and Sánchez-Ortiz et al (2011), and 10 weeks in McClay et al (unpublished)

a. The numbers of intervention and control participants included in the analysis for the end of treatment timepoint reported in Sánchez-Ortiz et al (2011) were reported inconsistently in Figure 1 and Table 4 of the article. The numbers of intervention and control participants reported in Table 4 of the article have been assumed for all outcomes at the end of treatment timepoint; b. Outcome was assessed over the past 28 days. Higher scores indicate more problematic eating difficulties; c. Data are median (interquartile range); d. Reported as 23.0 in Table 1 and 23.1 in Table 2 of the publication. The standard deviations are the same in both tables; e. Higher scores indicate higher severity; f. Higher scores indicate better quality of life; g. Social functioning impairment was measured by the Work and Social Adjustment Scale (WSAS). Scores >20 indicate moderately severe or worse psychopathology, Scores between 10 and 20 are associated with significant functional impairment but less severe clinical symptomatology. Scores <10 are associated with subclinical populations; h. Abstinent was defined as no objective binges, episodes of vomiting and laxative use in the past 28 days (Schmidt et al 2008) or month (Sánchez-Ortiz et al 2011); i. Subclinical was defined as episodes of bingeing, vomiting and/or laxative use occurred, on average, less than twice a week. j. Clinical was defined as episodes of bingeing and vomiting or laxative use occurred, on average, twice a week in the past month; k. Remission was defined in Schmidt et al (2008) as being below DSM–IV threshold (i.e. bingeing, vomiting and laxative misuse present less than twice a week) over the previous 28 days; l. The OBO intervention has a total of 8 sessions

Source: Schmidt et al (2008); Sánchez-Ortiz et al (2011); McClay et al (unpublished)

Overcoming Bulimia Online user acceptability, views, experience and satisfaction

Three studies (McClay et al (2013), Sánchez-Ortiz et al (2010), and Pretorius et al (2010) reported data concerning participants' opinions of using the OBO technology. Both Sánchez-Ortiz et al (2010) and McClay et al (2013) were secondary publications of the Sánchez-Ortiz et al (2011) and McClay (unpublished) RCTs reported above. Pretorius et al (2010) is a qualitative study that recruited participants from recruited via specialist eating disorders clinics or via the UK charity, beat. All studies conducted semi-structured interviews. Thirty-one (48.4%) of the 64 participants who completed at least one session in the wider Sánchez-Ortiz et al (2011) RCT also completed a questionnaire asking them about their views and perceptions of the technology. The EAG notes that the ages of four of the participants in Pretorius et al (2010) study ranged from 16 to 19 years, therefore, it is possible that some participants with BN were aged under 18 years.

Most questionnaire respondents (60%) in the Sánchez-Ortiz et al (2010) study indicated that it was important to them that the treatment was delivered anonymously over the internet rather than face-to-face, and 80% felt that it was important that they had the flexibility to use the programme when they wanted. The treatment package was considered user-friendly by 79% of respondents, and 69% felt supported during the treatment, with 67% responding that they felt email support was useful. Just over half (55%) of the respondents found it difficult to find the motivation to stick with the programme, but responses indicated that most respondents felt they had improved their knowledge about eating problems and increased their confidence in overcoming their eating problems and recognising and challenging problem thoughts.

Responses to Yes/No questions in the questionnaire revealed negative aspects of the technology, including technical difficulties (N=19; Yes 68%), difficulty having privacy (N=19; Yes 32%) and aspects of the treatment package that seemed irrelevant (N=28; Yes 46%). Suggested improvements included: more personal support (N=24; Yes 33%), more email support (N=24;

Yes 29%), other support (N=24; 38%) and the flexibility to be able to skip over sections that weren't relevant (N=27: Yes 52%).

Common themes identified in the semi-structured interviews across the McClay et al (2013), Sánchez-Ortiz et al (2010) and Pretorius (2010) studies are presented below.

Privacy

Participants indicated that privacy and confidentiality was a positive aspect of the technology and welcomed being able to access treatment with other people's knowledge or feeling judged by other people, although some participants felt that there was a lack of discretion when using the technology because the 'Overcoming Bulimia' banner on the web pages made it obvious that the package was about bulimia. This meant that some participants only felt comfortable using the technology when they were alone because they felt self-conscious that other people would discover they had an eating disorder. Some participants noted that the desire for secrecy and privacy associated with their condition was damaging and that completing the programme had made them more open to talking to other people about their eating problems.

Accessibility

Participants found the technology easy to use and understand, although some experienced technical difficulties. Problems loading video and audio components were mentioned as some of the technical difficulties that participants experienced. One participant in the McClay et al (2013) study felt frustrated that they had lost their work due to an accident with the technology.

Convenience and flexibility

Participants welcomed the flexibility of the technology in terms of time and place of access. Some participants noted that being able to complete sessions at their convenience made them feel less pressured. They also noted that not having fixed treatment appointments meant that they didn't have to be absent from their usual commitments, such as University classes, or travel long distances to attend in-person treatment sessions. Some participants contradicted their comments on favouring the flexibility of the

technology by stating that having fixed sessions each week helped them to stick to a routine. Other participants noted that the flexibility of the programme was problematic because this made it harder for them to maintain self-discipline and made it easier to postpone completing the treatment sessions.

Programme content

Most participants found the programme content was appropriate and helped them to increase their understanding of their problems and provided them with useful skills and tools for managing their eating problems. Planning and goal setting, understanding triggers and problem solving were highlighted as useful parts of the programme. Other participants found the content repetitive and that the content was not new to them, and some participants found it difficult to implement some aspects of the programme, such as healthy eating, using the anxiety control training, and challenging unhelpful thoughts. Some participants found that the content was not personalised enough and that they were unable to express their feelings to a computer. Some participants noted that it would have been useful to complete the programme in conjunction with seeing a counsellor to address feelings as well as eating symptoms.

Some participants struggled to keep up with the suggestion of completing one session per week. Some participants disliked not being able to complete only half a session and come back to it, although one participant in the Pretorius et al (2010) study reported that they liked this, as it meant that they had to complete the whole session.

Many participants noticed improvements in their symptoms and felt they had more control and personal responsibility over their eating. Some participants also noticed improvements in anxiety, self-esteem, happiness and their relationships with other people. Some participants acknowledged that the programme couldn’t completely solve their eating problems and viewed the technology as a “stepping stone” to further treatment.

Motivation

As detailed in Table 1, the participants in the three studies were able to access additional support, such as email, text or telephone support. Support workers were often mentioned as a key factor in helping the participants to maintain motivation to complete the treatment programme. Some participants felt that they would have lacked the motivation to complete the programme without the support because “it’s just a computer” and that there was no one to “disappoint” if they did not complete the treatment sessions. The participants valued knowing that someone was watching their progress. Other participants felt that the additional support caused pressure to complete the sessions, and this could lead to feelings of guilt if they had not progressed with the treatment sessions, and some participants felt that they did not need the additional support.

Participants in the Pretorius et al (2010) study could access message boards. Some participants welcomed knowing that other people were in a similar situation to themselves; however, other participants reported negative aspects of the message boards, such as content that gave them ideas on how to lose weight or upsetting content about other people’s distress.

Worth Warrior (stem4)

One eligible cohort study conducted in the UK by Edwards and Krause (unpublished) was included in the review. Edwards and Krause report data for five participants whose ages ranged from 19 to 25 years. [redacted] participants were female, and [redacted] was non-binary. All participants were [redacted] of participants were in full-time employment, [redacted]

The study authors did not report other data for the participants’ socioeconomic status or participant characteristics that are associated with the accessibility of the technologies. [redacted] This may limit the generalisability of findings for this group of people. Details of the study characteristics and participant demographics are provided in Appendix D, Table 21.

Worth Warrior clinical effectiveness results

A summary of the clinical effectiveness results from the unpublished study by Edwards and Krause is provided in Table 5. Data were collected at baseline, at one week after familiarisation with the application, and at six-week follow-up. Of the [redacted] individuals who consented to take part, [redacted] began the study, [redacted] provided results at final follow-up and only [redacted] provided data at 1 week after starting the intervention.

At follow-up, [redacted] However, due to the limited sample size, it is not possible to draw any reliable conclusions about the effectiveness of the Worth Warrior technology.

Table 5 Summary of the Worth Warrior clinical effectiveness evidence

Outcome	Timepoint	Edwards and Krause (unpublished) n=5
Global EDE[a]	Baseline	[redacted]
	Week 1 [redacted]	[redacted]
	End of treatment	[redacted]
EDE restraint[a]	Baseline	[redacted]
	Week 1 [redacted]	[redacted]
	End of treatment	[redacted]
EDE eating concern[a]	Baseline	[redacted]
	Week 1 [redacted]	[redacted]
	End of treatment	[redacted]
EDE shape concern[a]	Baseline	[redacted]
	Week 1 [redacted]	[redacted]
	End of treatment	[redacted]
EDE weight concern[a]	Baseline	[redacted]
	Week 1 [redacted]	[redacted]
	End of treatment	[redacted]
Rosenberg Self-Esteem Scale[b]	Baseline	[redacted]
	Week 1 [redacted]	[redacted]

	End of treatment	[redacted]
Acceptability	Week 1 [redacted]	[redacted]
	End of treatment	[redacted]
Useability	Week 1 [redacted]	[redacted]
	End of treatment	[redacted]
Safety	Week 1 [redacted]	[redacted]
	End of treatment	[redacted]
Completed active treatment, n (%)		[redacted]

EDE, Eating Disorder Examination questionnaire
a. Outcomes were assessed over the past 28 days. Higher scores indicate more problematic eating difficulties; b. Higher scores indicate higher levels (better) self-esteem
All data are means (standard deviation) unless otherwise specified
Source: Edwards and Krause (unpublished)

Worth Warrior user acceptability, views, experience and satisfaction

Participants' opinions of using Worth Warrior were [redacted] Edwards and Krause (unpublished) study. [redacted] The EAG calculated the mean (SD) scores for safety, acceptability and useability from the individual participant data reported in the Edwards and Krause (unpublished study) and these are reported in Table 5 above.

The authors report [redacted] with the Worth Warrior app collected from the [redacted] participants, and these data are summarised by the EAG.

[redacted]

[redacted]

[redacted]

5.3 Adverse events and clinical risk

The studies did not report adverse event data associated with the digital technologies. Two OBO studies reported negative psychological effects associated with the additional support that was available to participants. This is discussed earlier in the context of the acceptability of OBO treatment in section 5.2.

Safeguarding measures

A summary of the company's reported potential safeguarding risks and associated mitigations of the technologies is reported in Table 6.

Table 6 Summary of the safeguarding features of the technologies

Technology and company	Potential risk/safeguarding issue	Associated mitigation
Digital CBTe **Credo Therapies Limited**	Clinical risks • Delayed or missed care due to foreseeable misuse, system outages or system errors. • Sub-optimal care delivered due to foreseeable misuse, system outages or system errors.	• Patients are assigned a personal and private programme to help with their eating disorder. • Patients will interact only with an NHS Trust assigned member of staff and Credo Therapies Ltd for support. • A built-in suitability questionnaire includes questions around notable risk factors. The responses to these questions can be set at pre-determined levels (as agreed with a partner NHS Trust) and lead to the individual being sent an unsuitability message when appropriate. The content of these messages will be agreed in conjunction with the NHS Trust and Credo Therapies Ltd. • Patients are instructed to ensure that all information provided within the programme is accurate and correct. Providing false or incorrect information may impact the effectiveness of the programme or result in delayed or suboptimal care. • Access to the programme ends if patient users take more than 14 days to complete the first session after registration, and/or they are inactive for more than 21 days. • Additional sources of support are detailed on the product site, which all customer users (patients and staff) can access. • End-of-programme and follow-up signposting is provided to patient users where the risk of self-

		harm is identified (using Question 9 of the PHQ-9 as the marker). Free text boxes within the programme are accompanied by signposting information.
	Technical • Incorrect information or care received causing emotional distress due to foreseeable misuse, system outages or system errors. • Breach of personal information and other data safety risks causing emotional distress due to human error or malicious activity.	• The company has a support policy which details the management of technical support requests. All Credo Therapies staff who may provide technical support to digital CBTe users have received safeguarding training (to a minimum of Level 2) to ensure that they can identify and appropriately handle any safeguarding concerns that may arise. • The technology is compliant with the DCB0129 standard, and its Clinical Safety Report can be provided on request and is available for partnering NHS Trusts. • The company has a policy statement relating to Safeguarding which applies to all staff working on behalf of the organisation and can also be made available to partners and NHS Trusts. • Users should only access the technology via the web URL (https://digitalcbte.co.uk/) or the digital CBTe app and are advised not to share their login details with anyone and to be cautious of phishing scams and online threats. All communications from email addresses ending in @digitalcbte.co.uk or @credotherapies.com.
Overcoming Bulimia Online **Five Areas Ltd**	Clinical • possible distress to users when learning about eating issues.	• Clarity of what is offered in the Terms and Conditions, FAQ and product advert sections to notify users that the product is a Lifestyle/Wellness app to support mental wellbeing, help users adopt healthier habits, and

		does not claim to diagnose, treat, prevent, or monitor a disease or medical condition. This includes a notification that the App does not provide direct clinical support and signposts users to contact their doctor or emergency services or see the app's directory of further support resources if users are struggling with panic attacks or feeling suicidal. • Weekly automated emails have been recently added to point people to contact their health worker if they need medical help.
	Technical • no safety alerts or issues.	• Data is covered by the company's Privacy Policy. Data is automatically deleted 18 months after login has occurred. The technology is NHS Toolkit and ICO registered. • Company servers are based in the UK and the site has been tested with Penetration testing in 2024. Security is protected using complex passwords, Captcha, and security by design. Data is encrypted at rest and when transferred. • Minimal data is collected and only emails (and not participant names) are recorded at registration.
Worth Warrior stem4	Clinical • Worsening of Symptoms: If users misunderstand content or apply strategies inappropriately, they may reinforce disordered behaviours or thinking patterns. • Lack of Crisis Support: Users may be in acute distress or at high risk (e.g., suicidality, self-harm) and although the app promotes escalation	• Clear disclaimers and referral mechanisms. • Mood or safety check-ins with automated alerts or nudges to seek help. • Crisis resources visibly placed (e.g., helplines, service details). • Regular review of content by clinical experts.

	pathways and clear guidelines on suitability and risk indicators, some may not seek timely intervention. • Over-reliance on the App: Individuals might use the app as a substitute for professional treatment. • Poor Personalisation: Generic advice may not match the severity or type of eating issues, potentially resulting in ineffective or harmful outcomes.	• In-app pop-up links to sources of additional support and physical warning signs that indicate a need to see a doctor when a user has found app activities repeatedly unhelpful. • Users are provided with a hierarchy of risk symptoms necessitating medical support. • It is recommended a GP should be consulted in the first instance to ensure physical health is not at risk. The app is not a substitute for assessment and intervention by a mental health professional.
	Technical • Technical Malfunctions: App crashes, bugs, or inaccessible features can interrupt therapeutic momentum or frustrate users.	• Data encryption and transparent privacy policies. • Very low data usage. • The app does not collect identifiable information or require user accounts, can be passcode protected, is regularly reviewed • The app is compliant with regulatory standards such as the National Health Service clinical safety standard DCB0129.

PHQ-9, Patient Health Questionnaire-9; FAQ, frequently asked questions; ICO, Information Commissioner's Office

The following safeguarding issues and mitigations were reported by the studies included in the clinical effectiveness review:

The digital CBTe study by Murphy et al (2025) reported that self-report assessments were either integrated into the technology or monitored and participants were signposted to appropriate resources if their assessments indicated a need for additional support. The authors also reported that the digital CBTe technology is subject to penetration testing and vulnerability tests by an external independent agency to ensure the programme's security and resilience.

The OBO study by McClay et al (unpublished) reported that [redacted]

5.4 Clinical evidence summary and interpretation

It is worth noting that the identified studies included participants who were referred to specialist eating disorders services and/or were recruited from advertisements in the community. The EAG are unable to comment on whether the clinical effectiveness evidence matched the two populations outlined in the final scope due to the mixed participant populations; however, all participants were screened at study entry for their suitability for CBT-ED treatment. Very little participant demographic data were reported by the study authors for all three technologies. The EAG are, therefore, unable to comment on the effectiveness or acceptability of the technologies for any of the relevant patient subgroups. Similarly, very little data regarding treatment non-completion or non-adherence were reported. The included studies did not report clinical effectiveness data for people who may have restarted or repeated treatment.

Below is a narrative synthesis and interpretation of the identified evidence for the three technologies.

Digital CBTe (Credo Technologies)

The identified evidence for the effectiveness of this technology came from three recent cohort studies. However, all studies had small sample sizes, and a relatively low proportion of screened participants were considered eligible for inclusion and went on to undertake digital CBTe sessions and provide data at the end of treatment. Out of a maximum of 12 sessions, participants in the Dorset study attended an average of six sessions, while those in the Kent and Medway study attended an average of eight. A considerable proportion of participants did not complete the programme, raising concerns about the high attrition rate and the reliability and generalisability of the study results to the broader population with this condition.

Of those who completed treatment, digital CBTe was associated with large reductions in the mean number of binge-eating episodes and improvements in condition-specific outcomes. These improvements appeared to be sustained at 6-month follow-up in one study.

Most study participants found the technology easy to use and perceived it as helpful for addressing their binge-eating habits. However, many expressed a desire for a more personalised approach. Moreover, some acknowledged that they did not feel fully 'cured' and felt they needed ongoing support after completing the programme.

Overcoming Bulimia Online (Five Areas Ltd)

Three RCTs, three cohort studies and three qualitative studies were identified. The EAG focused on the randomised evidence for OBO, which consisted of one trial of the CD-ROM version and two trials of the Calipso online version, one of which came from an unpublished PhD thesis. Participants across these trials received varying levels of support, which may not reflect what would happen in clinical practice.

[redacted] In the CD-ROM trial, the median number of episodes in the previous 28 days was 3 and 6 for the OBO and control groups, respectively. A meta-analysis of the two Calipso online trials suggested [redacted]

For the Calipso online studies, binge-eating symptoms as measured using the Global EDE and its subscales were improved for OBO compared with control, but the evidence was not as clear for the CD-ROM study. For Calipso online, there was evidence of improved HADS depression scores, but evidence for [redacted] WHOQOL subscales was less clear.

Randomised evidence was limited to the end of the treatment period, as in the two Calipso online trials, participants in the control group received OBO after this point as a delayed intervention.

It is worth noting that the attrition rate was generally high across these trials. In the CD-ROM trial, 80.5% of participants demonstrated low adherence, attending only 0 to 4 sessions. Similarly, one of the Calipso online trials reported a mean attendance of just 3.4 sessions.

Overall, study participants generally found OBO easy to use. However, some experienced technical difficulties, and many expressed the need for additional support to complete the programme and manage eating-related symptoms. Privacy when using the technology was identified as an important aspect for many participants. While most participants agreed that the programme content was appropriate and helpful, they felt it was not personalised enough. Moreover, some participants recognised that the programme could not fully resolve their eating disorders and viewed the technology as a “stepping stone” toward further treatment.

Worth Warrior (stem4)

A single eligible cohort study (previously unpublished) was identified. [redacted] only five provided data at follow-up. [redacted] there was insufficient evidence that this technology was effective. [redacted]

6. Economic evidence

6.1 Existing economic evidence

Search for economics studies of the candidate technologies.

Search methods to identify full economic evaluation studies of the candidate technologies, as defined in the EAG protocol, followed the same process described in Section 4.1 for the clinical evidence searches. In addition to the databases searched for clinical evidence, the following databases were added to the economics searches to identify additional cost-effectiveness studies.

- ProQuest EconLit
- Cost-Effectiveness Analysis (CEA) Registry

The search strategies did not identify any economic evaluations of the candidate interventions. Therefore, the process stopped at this point without identification of any studies. Search strategies are provided in Appendix G.

Further information submitted by companies in response to NICE requests for information were also considered by the EAG.

Evidence submitted by the companies.

One company (Credo Therapies) provided some early cost projections in response to NICE's request for information for their digital CBTe product. The cost projections were provided based on an assumption that digital care would be cheaper to deliver compared to guided self-help, initiated in UK clinical practice. The calculations assumed that 3 hours of staff time for assessment and reporting, 3 hours of clinician contact time (agenda for change band 5), 1.5 hours of note taking, 2 hours for questionnaires and £35 for a printed programme would be saved by adopting the digital technologies, leading to cost savings of £134.66 per person.

The EAG considers the evidence submitted by the company to be an exploration of potential resource use rather than an evidence-based assessment of relevant costs. It was unclear how the resource use estimates provided by the company were

derived, but the EAG considers these to be quite high for the settings of care considered in the NICE scope for this assessment. The EAG are therefore not convinced that the approval of digital technologies would completely replace usual care monitoring of patients with eating disorders, who had already presented at primary care or ED specialists. An alternative assumption that digital technologies would be used alongside healthcare services rather than replacing them would be more feasible. Clinical expert opinion sought by the EAG indicated that the impact of the use of the technologies on existing monitoring of patients as part of usual care was unclear. Some experts felt it might be reasonable to assume that digital technologies could facilitate a more efficient monitoring process of patients, perhaps through reduced frequency of check-in appointments with assistant psychologists. However, others were more cautious about assuming reductions in the frequency of patient monitoring. Instead, all experts felt that the impact of technologies on resource use would most likely be achieved through any impact on the successful control of symptoms that could be achieved. Some reductions in NHS service use as part of usual care are considered in the EAG's economic modelling as a scenario analysis, but it should be noted that the magnitude of intervention cost savings that could be achieved relative to usual care is an area of residual uncertainty that requires further research.

Relevant economic models

Given the lack of cost or cost-effectiveness information for the candidate technologies, the EAG conducted supplementary scoping searches of Medline, PsychInfo, and HTA databases to identify any studies reporting economic evaluations of prevention or treatment for eating disorders that could inform the development of a *de novo* model for this assessment. All types of eating disorders were considered eligible for the search. Only studies reported in the English language between 2015 and 2025 were included. Taking a targeted approach to literature identification, we first searched for existing literature reviews of economic evaluations and identified one relevant systematic review (Faller et al., 2024). Faller et al. (2024) report the findings of a systematic review of economic evidence for the prevention and treatment of eating disorders. The review identified and summarised N=28 studies obtained from the combination of the findings of an earlier systematic review by Le et al., 2018 (N=13 studies identified up until March 2017) with an

updated review searching for articles published from March 2017 up until April 2023. The published review therefore covers all eating disorder economic evaluations and return on investment (ROI) studies published from the date of database inception up until April 2023. The EAG have supplemented this review with a targeted search for economic evaluations, conducted in Medline, PsycInfo, Econlit, HTA databases to identify any more recent economic evaluations published between 2023 and April 2025 (Appendix G). Screening articles from 2023 – 2025 identified a further N=3 economic evaluation studies of eating disorder treatment or prevention strategies (Akers et al., 2024, Pardey et al., 2025, Melisse et al., 2023), leading to N=31 economic evaluation studies in total.

The 31 identified studies covered a range of eating disorders-related areas, including prevention (N=10), anorexia nervosa (N=7), Bulimia (N=5), BED (N=6) and other non-specific ED studies (N=3). Studies classified as decision analysis models under the categories of prevention, BN, BED, or Other were retained as they were deemed relevant for the conceptualisation of a long-term decision analysis model that could be used to address future research gaps. A total of N=9 decision analysis models were identified in the review, of which BED (n=1 model), BN treatment (N=1), AN treatment (N=2), ED prevention (N=5). Decision models were conducted in Australia (N=3), USA (N=5), and Sweden (N=1). The review did not identify any published decision models that were conducted within the UK setting. However, those identified models may be considered useful for conceptualising future economic models from a UK NHS and PSS perspective.

In addition to the decision models retrieved through literature searching, the EAG were aware of the existing decision analysis model conducted for NICE clinical guideline (NG69), on eating disorders recognition and treatment. As part of the guidance, Appendix S of the guidance materials describes methods and results of a decision tree economic model for bulimia nervosa and binge eating disorder (National Institute for Health and Care Excellence, 2017b). The methods of all ten decision models (nine from literature review, one guideline document) identified by the EAG are summarised in Table 7. The models are summarised with respect to the population, decision model type, country, and modelled health states. EAG commentary is added to reflect the relevance of the respective models to the current decision problem, and the information retrieved is used to conceptualise a Markov

cohort decision model that could be used in future evaluations of BED / BN treatments.

Studies classified as economic evaluations or return on investment (ROI) studies conducted alongside randomised controlled trials conducted in the UK were retained for inspection of resource use estimates that could potentially be used to inform the resource use parameters in the EAG decision tree model for this assessment. Four studies were conducted in the UK, none of which were decision modelling studies. UK studies covered OSED (N=2), BED treatment (N=0), BN treatment (N=0), AN treatment (N=2), EDP (N=0), limiting the availability of useful data to populate the present decision analysis model. As none of the retrieved economic evaluations provided sufficient resource use data to inform the present model, it was necessary to rely on clinical expert advice to inform model resource use and costs.

Table 7 Summary of decision analysis models identified in systematic review (reproduced and adapted from Faller et al.)

Study Author, Year	Condition (AN, BED, BN, EDP, OSED)	Country	Econ eval.	Decision model type	Time horizon	Events (decision tree) / States (Markov) included	EAG commentary on relevance for conceptualisation of a long-term model
Martínez de Alva et al., 2023	ED prevention	Sweden	CUA and ROI	DT and MM	8Y	At risk / remission ED Death	Model structure informative for current assessment and conceptualisation of long-term model
Le et al., 2017 [A]	ED prevention AN BN	Australia	CUA	MM	10Y (EDP) 6Y (AN) 2Y (BN)	ED Remission / recovered Dead	Setting not directly relevant to NICE scope and reference case; MM relevant for conceptualising a future long-term decision model.
Long et al., 2022	ED prevention	USA	CUA	MM	30Y	Remission ED (DSM-5)	Setting not directly relevant to NICE scope and reference case; MM relevant for conceptualising a future long-term model.
Wright et al., 2014	ED prevention	USA	CEA/CUA	MM	10Y	Healthy; ED; OSFED; Recovered ED; Recovered OSFED	Setting not directly relevant to NICE scope and reference case; MM relevant for conceptualising a future long-term model.
Wang et al., 2011	ED prevention	USA	CUA	Unclear, likely DT	10Y	Remission (recovery) Relapse Recovery post relapse	Setting not directly relevant to NICE scope and reference case. DM useful to inform short-term evaluations.
Crow et al., 2004	AN	USA	CEA	Unclear, likely cost calculation	Unclear	Alive Dead	AN out with modelling scope for this assessment; insufficient health states to capture all relevant outcomes.
Ágh et al., 2016	BED	USA	CUA	MM	1Y	Non-symptomatic BED (mild behaviour) BED (moderate behaviour) BED (Severe behaviour)	Setting not directly relevant to NICE scope and reference case. DM structure informative, captures both occurrence of events and severity of binge eating behaviours.
NICE 2017b	BED BN	UK	CUA	DT	1Y and 4M (i.e. 16M)	Remission, relapse, booster therapy	Perspective aligned with NICE reference case, model structure

Study Author, Year	Condition (AN, BED, BN, EDP, OSED)	Country	Econ eval.	Decision model type	Time horizon	Events (decision tree) / States (Markov) included	EAG commentary on relevance for conceptualisation of a long-term model
							relevant to decision problem, population, setting and interventions require modification to align with the scope.

Key: AN, anorexia nervosa; BED, binge eating disorder; BN, bulimia nervosa; CUA, cost-utility analysis; DT, decision tree; EAG, external assessment group; EDP, eating disorder prevention; OSED, other specified eating disorder; MM, markov model; NICE, national institute for health and care excellence.
[A] Summary of 3 models from one study

6.2 Early economic model

Model structure

The review of economic evaluations did not identify any decision models directly matching the scope for this assessment. The closest matching decision model retrieved was the one prepared for NICE guidance NG 69. The NG69 model structure was therefore adapted and re-parameterised to align with the current decision problem and NICE scope. The early model for this assessment was developed using Treeage Pro, 2025, R1.1.

The model population, interventions, comparators and position within the care pathway are described in the NICE scope and EAG protocol. Briefly, two populations are considered. Population 1, henceforth labelled as the “primary care population” are people with disordered eating who do not need referral to ED services for assessment and treatment. Population 2, henceforth labelled as the “eating disorder services” population, are people who have been referred to specialist eating disorder services, for whom CBT-based self-help is considered a suitable first line of treatment.

Three candidate technologies are considered (OBO, digital CBTe and Worth Warrior), compared to usual care (minimal intervention, watch and wait, waitlist) in the target populations. Aligned with the available clinical evidence, the early economic model is constructed to incorporate parameters for both bulimia and binge eating disorder.

Whilst the early model was initially structured and coded to estimate incremental costs for both bulimia and binge eating disorder, across the three candidate technologies, in two settings for both adults and children, it was not possible to parameterise all configurations due to a lack of available data. Various scenarios are explored, but the model results are most reliable for a comparison of OBO with usual care for adults with bulimia in the primary care setting. This reflects the balance of available clinical effectiveness evidence. Scenario analyses then explore the impact of alternative settings for OBO vs. UC, but these should be interpreted cautiously. There was insufficient evidence to fully parameterise comparisons of digital CBTe or Worth Warrior

against usual care, or for OBO vs. UC amongst people with binge eating disorder. These latter comparisons are therefore explored in the model using two-way scenario analyses of price vs. relative risk of achieving remission.

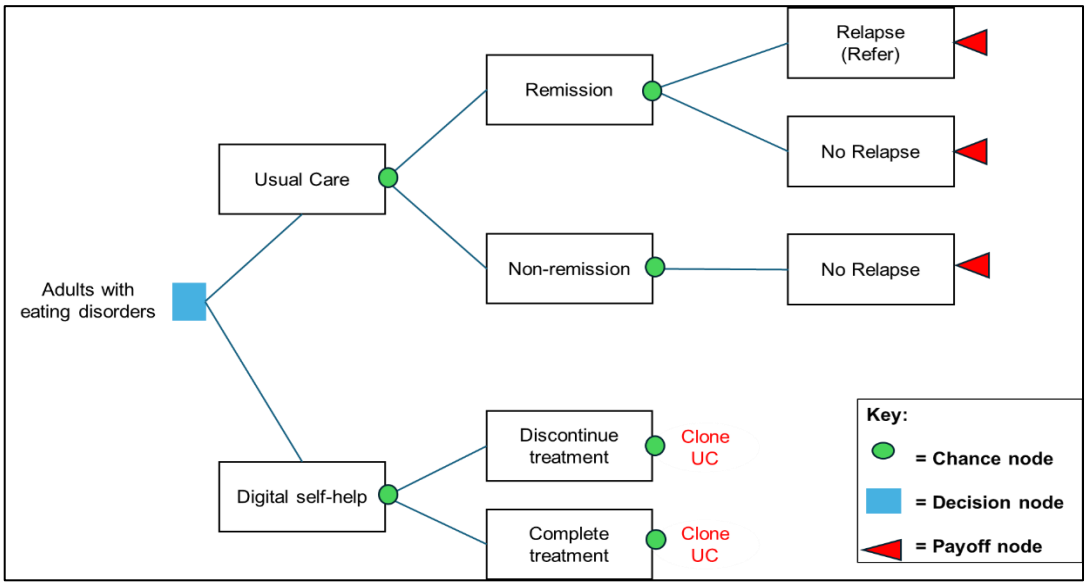
An identical model structure is used for both eating disorders but coded to include different sets of parameters depending on the eating disorder being considered and the position within the care pathway (population 1 or population 2). Given the uncertainty in the evidence base, a full Markov model and presentation of cost-effectiveness results (ICERs) were not feasible.

The EAG EVA model uses a decision tree to capture resource use and costs associated with intervention, remission and relapse of the respective eating disorders being evaluated over a time horizon of 1 year and 3 months. This includes an initial treatment phase (of 3 months, longest treatment intervention period from clinical effectiveness review), and a follow-up period of 1 year to assess the short-term resource use and costs up until the point of referral to the next point in the treatment pathway (e.g. escalation to CBT therapy for people not achieving a remission or experiencing a relapse).

At the end of the 3-month treatment phase, the cohort was classed as treatment completers or non-completers. The proportion of treatment completers was included in the model to enable flexibility to conduct scenario analyses around whether effect sizes applied to treatment completers only, or to a broader population offered the intervention and incurring the interventions costs. Where clinical data were only available for programme completers, the effect sizes were applied only to the proportion who completed treatment in the model, with an assumption that those who did not complete treatment returned to baseline risks. Where effect sizes were assumed to apply to those offered, rather than completing the intervention, they were applied to the whole cohort in the model, regardless of completion status. The approach taken maximises the use of available data but should be considered cautiously because applying an effect size only to treatment completers may under-estimate the total benefit of the treatment (e.g. if partial completers also achieved a partial response).

A Markov model is then conceptualised but not coded or parameterised to capture the longer-term cost and QALY implications of a technology that could help delay progression along the treatment pathway. The model structure is informed by existing literature summarised in Table 7 and designed to capture relevant outcomes studies identified in the literature review. The suggested Markov model structure will require further adaptation and validation with clinical experts before being used to definitively assess cost-effectiveness.

The primary clinical outcome incorporated within the economic model is the abstinence of BED or BN (i.e. assumed to be splitting the cohort into remission/non-remission). The decision tree model structure is outlined in Figure 1 below. The perspective of costs was that of the UK NHS, and costs incurred beyond the first year (i.e. in months 12-15) were discounted at 3.5% per annum in line with the NICE reference case.



Note: Clone UC refers to a treatment pathway that replicates that of usual care. Key treatment specific model parameters are re-defined at the clones (e.g. probability of remission).

Figure 1 Decision tree model structure for usual care and candidate interventions

Model assumptions

Due to a lack of available data to model incremental costs across all interventions, populations, and across both bulimia nervosa and binge eating

disorder, it was necessary to implement several simplifying assumptions. Where significant uncertainty exists, the EAG's assumptions were selected to represent a conservative estimate of the intervention's potential benefit. The following simplifying assumptions were applied:

- The EAG notes that mortality probabilities are higher amongst people with eating disorders compared to the general population norms, particularly when symptoms are severe (Solmi et al., 2024). However, in the absence of any evidence to demonstrate an impact of the interventions on mortality in populations at earlier positions in the care pathway, and given the short time horizon of the model, life years are not included as a modelled output. It is assumed that patients who are at risk of mortality would not be managed through self-help interventions alone in UK clinical practice. However, if digital self-help interventions could reduce the proportion of people moving to more advanced stages of the care pathway, with more severe symptoms, the EAG's exclusion of mortality could be considered a conservative assumption of a technology's impact in the longer term.

- The same clinical pathway is assumed for binge eating and bulimia, but the model is coded to apply alternative parameterisation depending on the condition and position in the pathway (population 1 or population 2). The economic model accounts directly for the presence/absence of bulimia or binge eating episodes (i.e. abstinence) but does not account for any potential impact of a treatment on the frequency or severity of events (e.g. purging, binging) amongst those who do not achieve a full remission. There was insufficient data from the literature to categorise frequency/severity by health state. However, there is some suggestion that the effect size of more relaxed definitions of abstinence may be larger than stricter definitions. The impact of this is explored in scenario analyses. The absence of parameters to capture frequency and severity of episodes within state may under-estimate the cost savings and patient benefit of new technologies that can demonstrate robust evidence of an effect on frequency / severity of events that is independent of remission status. This would be an important area for future research.

- The clinical-effectiveness evidence is unclear with respect to whether treatment effect estimates are measured solely in participants who completed all sessions in an intervention, or amongst the wider population offered an intervention. Furthermore, there is substantial attrition in the clinical studies which increases uncertainty of the true remission effect size for the economic model. The EAG initially adopt a conservative assumption where the full cohort receive the intervention costs, but the treatment benefits are allocated only to those who complete the full course of treatment (i.e. relative risk of remission). This effectively assumes that if treatment is initiated but not completed (with completion defined by study authors from the clinical effectiveness review), then subsequent event probabilities in the decision tree are set equal to usual care (i.e. RR=1). However, this may not fully capture the effectiveness that people may achieve through partial completion of the intervention / ad-hoc use of the technologies. Given the uncertainty with respect to attrition in the studies and a lack of clarity with regards to whether only completers were assessed for effectiveness, the EAG provide a more optimistic scenario analysis where the treatment effects could be observed in everyone offered the intervention, regardless of completion status.

- A time horizon of one year post-treatment completion (longest duration of intervention = 12 weeks) is deemed sufficient to capture the impact of interventions on the proportion of people experiencing a relapse or failing to achieve a remission and associated resource use. This aligns with the longest follow-up of any study in our clinical effectiveness review. The EAG's approach may be conservative for effective interventions because longer-term sequelae are not explicitly modelled (e.g. reductions in resource use required due to a reduction in the proportion requiring professional CBT or other treatments at subsequent stages in the pathway). A conceptualisation of a potential Markov model that could be used in future research to model these uncaptured benefits is provided to inform future research.

- The economic model does not capture the full costs of the treatment pathway and referrals through multiple lines of treatment. It does however capture treatment completion, presence or absence of binge eating/bulimia episodes through remission and relapse parameters and incorporates one-off referral costs in the pathway. Relapse within one year, and non-remission is used as a proxy for the proportion requiring referral to the next stage in the care pathway.

- There is a lack of data from the clinical effectiveness review about the intervention's effect on the probability of relapse following remission (i.e. the duration of a treatment effect on remission longer-term is unclear). It is also unclear whether prior use of the digital self-help interventions would impact on the subsequent risk of relapse following remission, or whether it would impact on the severity of that relapse. Similarly, it is unclear whether re-engaging with a self-help intervention post relapse would achieve the same outcomes in re-achieving remission as the initial use of the technology. There is no data available from the studies to explore this outcome, and the economic model assumes that in the absence of evidence, there would be no further effect (i.e. RR of relapse is assumed equal to 1 compared to usual care). This assumption is also explored in scenario analyses by varying the relative risk applied to the probability of relapse post remission.

Clinical parameters

The key clinical parameters in the economic model are the probability of remission/absence of symptoms and the probability of experiencing a relapse. In terms of the probability of remission, we have used data from the clinical effectiveness review, applying the control arm of Sánchez-Ortiz et al 2011 as a proxy for the usual care probability of remission. In this case, abstinent (or remission) is defined as "no objective binges, episodes of vomiting and laxative use in the past 28 days". As it was the only OBO RCT study to report the probability of absence of events (remission), the relative risk of remission for OBO is also obtained from Sánchez-Ortiz et al 2011 for application in the economic model. The EAG have chosen the strictest definition of remission as

reported in the studies as a conservative estimate of treatment effect. Scenario analysis explores the impact of applying relative risk of remission defined based on DSM IV thresholds, where remission is defined as bingeing, vomiting and laxative misuse present less than twice a week over the previous 28 days.

Unfortunately, there was insufficient evidence for either Worth Warrior or digital CBTe to understand the impact of treatment on the probability of remission. Rather than attempting to estimate incremental costs for digital CBTe or Worth Warrior, two-way scenario analyses are presented instead to indicate the combinations of intervention cost and relative risk of remission that might be required for digital CBTe and Worth Warrior to be considered cost saving for bulimia or binge eating disorder across the two different populations in the NICE scope. Similarly, given that the relative risks from Sánchez-Ortiz et al 2011 apply primarily to a population with bulimia, two-way scenarios are also provided for OBO for binge eating disorder. The relative risk of achieving remission in the model for OBO in bulimia nervosa was obtained from Sánchez-Ortiz et al 2011, rather than from Schmidt 2008 because the latter referred to the CD-Rom version of the technology which the EAG deemed less aligned with the NICE scope for this appraisal.

For the probability of relapse following a remission, there is a dearth of information to populate the model for both usual care and the candidate technologies. Baseline relapse probabilities are sourced from NICE guidance (NG69) and clinical expert interviews. Effect sizes are assumed equal to usual care, again demonstrating a worst-case scenario for the technologies. Scenario analyses explore the impact of applying a hypothetical treatment effect of OBO on the probability of relapse as well.

Parameterisation of the economic model relies on multiple, highly uncertain assumptions, especially for Worth Warrior, digital CBTe and OBO in people with binge eating disorder. Whilst the EAG has more confidence in the evidence base for OBO, particularly in people with bulimia, there are still many uncertainties around the true resource use savings that might be achievable from the technology in UK clinical practice. All the EAG's results should

therefore be interpreted cautiously, not as a definitive assessment of return on investment or cost-effectiveness, and should instead be used as an indication of the potential of the technologies to be cost-effective and as a guide to understanding the most important parameters for collection in future studies of cost-effectiveness. Clinical parameters and treatment effect sizes used in the economic model are summarised in Table 8.

Table 8 Main clinical parameters

Name	Base case	Scenario	EAG notes / commentary	Source
Treatment discontinuation				
OBO	0.805	--	Note: Uncertainty regarding whether effect sizes apply to all participants or only completers. Base case applies effect size to completers only; scenario applies to all randomised.	Schmidt, 2008
Digital CBTe	0.500	--		Murphy 2025
Worth Warrior	--	--	No data available for treatment or session completion for Worth Warrior	--
Remission probability				
Usual Care (BED)	0.200	--	Table 5 of NICE guidance, appendix S (Assumes wait list)	NICE 2017b
Usual Care (BN)	0.139	--	Base case: Control arm of Sanchez Ortez 2011 to preserve randomisation (5/36 participants achieving 'abstinence'	Sanchez Ortez 2011
OBO (BED)	--	--	Insufficient data on the impact of OBO on remission for people with binge eating disorder. A range of hypothetical RRs are explored in two-way scenario analyses.	--
OBO (BN)	RR=1.86	RR=8.07	RR from Sanchez Ortez 2011, only RCT evidence for OBO (delivered online) Base case defined as proportion abstinent; scenario defined as proportion meeting DSM-IV threshold.	Sanchez Ortez 2011
Digital CBTe (BED)	--	--	No available data to inform effect sizes. A range of hypothetical relative risks are explored in two-way scenario analyses.	--
Digital CBTe (BN)	--	--		--
Worth Warrior (BED)	--	--		Assumption
Worth Warrior (BN)	--	--		Assumption
Relapse probability				
Usual Care (BED)	0.075	--	Midpoint of range reported by N=2 clinical experts (expert survey group 1)	Assumption
Usual Care (BN)	0.075	--		
OBO (BED)	--	--	No available data on the impact of technologies on risk of relapse post remission; base case assume equal to usual care. Scenario analyses explore a range of possible RRs (0.7, 0.8 and 0.9)	Assumption
OBO (BN)	--	--		
Digital CBTe (BED)	--	--		
Digital CBTe (BN)	--	--		
Worth Warrior (BED)	--	--		
Worth Warrior (BN)	--	--		

Key: BED, binge eating disorder; BN, bulimia nervosa; RR, relative risk.

Resource use and cost parameters

Intervention resource use and costs were provided by the companies. None of the retrieved publications described the costs of intervention delivery. Intervention delivery costs consisted mainly of software costs and sign-ups for patients. All intervention costs are reported exclusive of VAT. It is assumed that no additional contacts with healthcare professionals would be required to deliver the support from the apps over and above that already provided in UK clinical practice as part of usual care. It is also assumed that the interventions would not displace routine monitoring costs (e.g. regular check-ups with health services), but scenario analysis explores the potential to replace the costs of a self-help booklet costed at £20.

Training is available as an optional additional cost to health services, but it is unclear whether these would be incurred in routine practice. Training costs for OBO are £550 per team for a half-day training session, digital CBTe training costs were not provided, and Worth Warrior indicated that training costs would be included within the PCN level license cost. It is unclear whether additional training costs of the technologies would be incurred in UK clinical practice, and these are therefore excluded from the costing.

Intervention cost details and further assumptions are summarised in Table 9.

Table 9 Intervention costs

Technologies	Cost per patient in £	Duration of intervention	Source
Usual care	£0; £20 cost of a self-help booklet included as scenario analysis	-	
Digital CBTe	£95 per patient licence for software, assumed to be a one-off cost per person	8-12 weeks	Credo Therapies, company RFI (Murphy et al 2025)
OBO	Cost per person, based on a bulk licence (500+) = £5.91 per patient (12-month)[A]	8-12 weeks	Five Areas Ltd company Schmidt et al 2008; Sanchez-Ortiz et al 2011; McClay et al 2017 from Five Areas Ltd
Worth Warrior	£12,000 for PCN level licence in year 1 + £6,500 per year thereafter. Based on prevalence of BED and BN in each PCN, total cost per person: - BED: yr1 = £12,000/632 = £18.99; yr1+: £6500/632 = £10.28 per annum. [A] - BN: yr1 =£12,000/168 = £71.43; yr1+: £6,500/168 = £38.69 per annum. [A]	7 weeks	Stem 4, company RFI Binge Eating Disorder | UKAT (UK Addiction Treatment Centres, 2025) Beat Eating Disorder (How many people have an eating disorder in the UK? - Beat) (BeatED, n.d.) Edwards et al (unpublished) from stem4

[A] Based on prevalence calculations of N=632 users per PCN, the largest bulk purchase available from the company is assumed for cost calculation. Variation in pricing is available, depending on number of licences purchased at a trust level, as follows: 2-5 licences £19.34; 6-10 licences £13.44; 11-25 licences £10.75; 26-50 licences £9.14; 51-99 licences £7.79; 100-499 licences £6.72; 500+ licences £5.91;
[B] Costs are based on maximum possible number of users of the technology, on average, in each Primary Care Network (PCN) in England. **BED:** prevalence BED x average number of people per PCN x proportion of population adults (UK Addiction Treatment Centres, 2025, Office for National Statistics, 2024, NHS England, 2025) = 0.02*40,000*0.79 = 632; **BN:** prevalence BN (age and sex adjusted weighted average) x average number of people per PCN x proportion of population adults = 0.005325157*40,000*0.79 =168.

Resource use beyond the intervention period for the 1 year of follow-up (i.e. for remission, non-remission and relapse events) was obtained from clinical expert opinion in two interviews held with NICE specialist committee members (interview 1, N=2 participants; interview 2, N=4 participants). Clinical experts noted that it was difficult to place definitive estimates on the resource use required for BN and BED amongst people experiencing relapse or non-remission. However, the following general points were raised and guided the EAG's approach to costing in the economic model:

- People with BN would require more frequent contact with healthcare professionals compared to those with BED because they would be more likely to have acute events requiring care, driven by purging episodes that might, in some cases, require urgent attention. A caveat for BED is that the resource use estimates provided by the experts relate to the eating disorder specifically, and not to co-morbidities such as obesity related disease/complications.
- People in remission would have minimal or no contact with health professionals at the stage of the treatment pathway specified in the NICE scope.
- The population (i.e. primary care or ED services) might not always reflect the severity of the eating disorder, and instead often reflects availability of and access to services, which vary widely across the UK.
- Whilst not included explicitly within the economic model, it was noted that resource use for children and adolescents, particularly for bulimia nervosa, might be anticipated to be much higher than for the adult population.

Table 10 provides the resource use estimates provided by clinical experts from each interview. The impact of resource use parameters informed by both expert groups are considered in the economic model. Where experts provided a range of opinion (e.g.1-2%), the midpoint of the range is used for costing. Unit costs applied to healthcare resource use estimates are obtained from national average unit costs from PSSRU for primary care, community mental health services and from NHS reference costs for secondary care contacts. Unit costs are detailed in Table 11.

Table 10 Resource use estimates based on clinical expert opinion

	Clinical expert group 1 (N=2)				Clinical expert group 2 (N=4)			
	BN		BED		BN		BED	
Resource use item	Primary care	Following ED service assessment	Primary care	Following ED service assessment	Primary care	Following ED service assessment	Primary care	Following ED service assessment
Remission (n contacts per year)								
GP visits, n	0	0	0	0	1	1	0	0
Practice nurse visits, n	0	0	0	0	1	1	0	0
Other primary care, n	0	0	0	0	0	0	0	0
Non remission (n contacts per year)								
GP visits, n	1 to 2	1 to 2	0 - 1	0 - 1	max: 26	max: 26	0 - 1	0 - 1
Practice nurse visits, n	0 - 1	0 - 1	0 - 1	0 - 1	0	0	0 - 1	0 - 1
Blood tests, n	0 - 1	0 - 1	0 - 1	0 - 1	max: 26	max: 26	0 - 1	0 - 1
Other primary care, n	0	0	0	0	2 dentist + 50% (2 x CMHT)	2 dentist + 50% (2 x CMHT)	0	0
Proportion requiring A&E treatment	5%	5%	0- 1 %	0- 1 %	(1-2%) x (4-6 visits)	(1-2%) x (4-6 visits)	0- 1 %	0- 1 %
Proportion requiring hospitalisation	1 - 2%	1 - 2%	0- 1 %	0- 1 %	(1-2%) x (4-6 visits)	(1-2%) x (4-6 visits)	0- 1 %	0- 1 %
Relapse (contacts per relapse)								
GP visits, n	1 to 2	1 to 2	0 - 1	0 - 1	4	4	0 - 1	0 - 1
Practice nurse visits, n	0 - 1	0 - 1	0 - 1	0 - 1	0	0	0 - 1	0 - 1
Blood tests, n	0 - 1	0 - 1	0 - 1	0 - 1	4	4	0 - 1	0 - 1
Other primary care, n	0	0	0	0	1 X CMHT	1 X CMHT	0	0
Proportion requiring A&E treatment	5%	5%	0- 1 %	0- 1 %	1-2% x 1 visit	1-2% x 1 visit	0- 1 %	0- 1 %
Proportion requiring hospitalisation	1 - 2%	1 - 2%	0- 1 %	0- 1 %	1-2% x 1 visit	1-2% x 1 visit	0- 1 %	0- 1 %

Key: A&E, accident and emergency; BED, binge eating disorder; BN, bulimia nervosa; CMHT, community mental health teams; ED, eating disorder; GP, general practitioner.

Table 11 Unit costs of healthcare resource use

	Unit cost (£)	Source	Notes
GP visits	£45.00	PSSRU, 2023/2024	Per surgery consultation lasting 10 minutes (Jones et al., 2025)
Nurse Visits	£13.25	Calculated	Calculated based on £53 nurse appointments per hour per qualification (PSSRU, 2023/2024) and 15.5 minutes contact duration (PSSRU, 2015) Unit Costs of Health and Social Care 2024 Manual - Kent Academic Repository (Jones et al., 2025) Unit Costs of Health and Social Care 2015 | PSSRU (Curtis et al., 2015)
Dental care costs	£32.25	Calculated	Based on an assumed value of 1 unit of dental activity for the cost of a band 1 treatment in England (assumes full cost incurred by NHS).
Blood test	£6.00	National Cost Collection 2023/2024 (NHS England, 2024)	Direct access pathology services, phlebotomy, code PATH08 (NHS England, 2024)
CMHT	£280.00	PSSRU, 2023/2024	Community Mental Health Service – Functional unit cost.
A&E attendance	£273.00	National Cost Collection 2023/2024 (NHS England, 2024)	A weighted average of all emergency medicine episodes except those for patient was dead on arrival (NHS England, 2024)
Inpatient hospitalisation costs:			
Non-remission (BED)	£578.00	National Cost Collection 2023/2024 (NHS England, 2024)	Non-Elective Inpatient - short Stay of WD04 reference code for BED, and Non-Elective Inpatient - Short Stay of FF05 reference code for BN.
Non-remission (BN)	£1,064.00		
Relapse (BED)	£578.00		
Relapse (BN)	£1,064.00		
Costs of referral to next stage in the pathway (applied as one-time payoff at the terminal nodes in the decision model)			
BED – population 1	£320.00	PSSRU, 2023 / 2024; NICE Guideline	BED and BN population 1: referral to community eating disorder services, 2023/24 values
BED – population 2	£316.90		
BN – population 1	£320.00		
BN – population 2	£1,247.25		

	Unit cost (£)	Source	Notes
		Template (NICE, 2017b)	Population 2: NICE Guideline NG69; For BED: £316.90 (Table 10, Group CBT-ED); For BN: £1,247.25 (Table 2, CBT-ED individual). All values reported in 2015 prices inflated to 2023/2024 value before being used in the model (Jones et al., 2024).

Key: A&E, accident and emergency; BED, binge eating disorder; BN, bulimia nervosa; CMHT, community mental health teams; GP, general practitioner; PSSRU, personal and social services research unit.

Health state utilities

The early economic model conducted for this assessment does not include QALY outcomes. Several studies in the review of economic models included HSUVS for presence/absence of eating disorders but provided varying results of the utility impact of eating disorder symptoms. One study suggested eating disorders could lead to a 15-20% reduction in utility for BED and BN (Long et al., 2022). Another study found that the presence of eating disorder symptoms, defined using DSM-IV criteria, was associated with a reduction in utility measured by the SF-6D, from 0.82 to 0.79. NICE NG69 modelled utilities, based on SF-36, converted to EQ-5D for BED of 0.79 and 0.69 for remission and non-remission states, respectively. Utilities of 0.78 and 0.68, from the same source, were used for remission and non-remission for BN (National Institute for Health and Care Excellence, 2017b).

Notably, none of the economic modelling studies provided estimates of health state utilities measured using EQ-5D. Consideration should be given in future studies whether EQ-5D-5L is likely to be sufficiently sensitive to capture outcomes of importance to people with eating disorders and if so, should be included in future studies. Future economic modelling studies would benefit from health state utilities of achieving remission or not, (complete abstinence and DSM-IV threshold definitions), the negative utility impact of relapses and the impact of episode frequency and severity on utility. For future evaluations by NICE, it would be helpful if these utility studies aligned with the NICE

reference case, in that quality of life is reported by patients and valued using UK general population value sets.

Model validation

Parameter estimates were obtained from and discussed and validated with specialist committee members for the assessment. Parameters were included in the model by one health economist and cross-checked to source by a second health economist on the team. However, it should be noted that many modelled parameters were obtained from uncertain evidence, and many assumptions were required. Therefore, the external validity of the model predictions is highly uncertain, and any estimates of incremental costs should be interpreted cautiously. The economic model was further assessed for internal and face validity by applying a range of extreme value tests on model parameters and assessing the impact on incremental costs.

Presentation of results

It was not possible to deliver a full assessment of cost-effectiveness over a long-term time horizon as part of this appraisal. Instead, a simple decision tree was used to explore the potential cost implications of interventions with varying degrees of effectiveness 1-year follow-up post-treatment.

Due to a lack of clinical effectiveness data, it was not possible to present results for digital CBTe or Worth Warrior, given the lack of randomised evidence and reported outcomes aligned with the model structure. It was also not possible to report results for OBO in people with BED. For these comparisons, a range of two-way scenario analyses is provided that vary the technology cost against the probability of achieving a remission to illustrate potential cost implications of a technology's use at varying effectiveness.

Incremental cost results over the decision tree time horizon are reported for the use of OBO compared to usual care in adults with bulimia. Due to the uncertainties of the clinical effectiveness evidence base, uncertainties around resource use implications in NHS practice and missing parameter information to populate all model parameters, it was not possible to define a definitive

base case analysis. Instead, results for OBO vs. usual care in adults with bulimia are first presented with a set of the most conservative assumptions. Then, several more optimistic data inputs and assumptions are applied to illustrate the potential range of cost savings that might be achievable with OBO, if they could be evidenced in future research.

6.3 Results from the economic modelling

Cost-effectiveness results (OBO versus usual care, adults with BN)

A range of plausible incremental cost estimates is reported in Table 12 for OBO vs. usual care for adults with bulimia nervosa. Results are first presented based on conservative assumptions, reflecting the substantial uncertainty surrounding many model parameters and assumptions.

The scenario analyses show that, due to the low per person average intervention cost for OBO, it is likely that OBO could generate cost savings to the NHS, if estimates of remission benefit observed in Sanchez Ortiz, 2011 can be obtained in UK clinical practice, even when adopting a set of potentially conservative assumptions about the technology's benefit in terms of remission/relapse. The most important drivers of the magnitude of cost savings that might be achievable are:

- Whether the average magnitude of effect reported in the studies could be achieved in all people receiving the digital self-help who incur the costs, or only amongst those who complete the programme. The EAG note substantial attrition in the reporting of outcomes, which raises concerns about the magnitude of effect size that might be achievable in real-world NHS practice.

- The magnitude of downstream cost savings associated with downstream service referrals avoided that could be achieved using the technologies. For example, there is uncertainty about what treatments would be offered after referral in UK clinical practice. If less costly alternatives were offered, such as guided self-help, this would reduce the magnitude of potential cost savings from digital technologies in our model, but that should be interpreted cautiously and with

acknowledgement that the full pathway of all relevant long-term costs is not incorporated in our model. Whilst important for the decision tree model over one year of follow-up, these cost considerations would likely also be crucial in a full assessment of cost-effectiveness, alongside utility estimates.

- The resource use that might be incurred in routine NHS practice for the management and treatment of eating disorders. There was wide variability in the magnitude of service contacts between clinical experts, and further research would help reduce that uncertainty for future economic modelling.

Table 12 Incremental cost results for OBO vs. UC (Bulimia Nervosa)

No.	Scenario	Population 1 (Primary care)		Population 2 (ED services)	
		Total cost (£)	Incremental cost (£)	Total cost (£)	Incremental cost (£)
1 (Con)	**Expert 1, effect size completers only**				
	UC	461.69	-	1,848.47	-
	OBO	456.17	-5.52	1,808.61	-39.86
2	**Expert 2**				
	UC	1,546.97	-	2,933.74	-
	OBO	1,515.01	-31.96	2,867.45	-66.3
3	**Effect size ITT**				
	UC	461.69	-	1,848.47	
	OBO	409.02	-52.67	1,619.83	-228.64
4	**Scenarios 2 and 3 combined**				
	UC	1,546.97	-	2,933.74	-
	OBO	1,358.79	-188.17	2,569.60	-364.14
5	**RR remission = 8.07***				
	UC	461.69	-	1,848.47	-
	OBO	385.27	-76.42	1,524.74	-323.72
6	**RR relapse = 0.7**				
	UC	461.69	-	1,848.47	-
	OBO	455.57	-6.12	1,806.20	-42.26
7	**RR relapse = 0.8**				
	UC	461.69	-	1,848.47	-
	OBO	455.77	-5.92	1,807.01	-41.46
8	**RR relapse = 0.9**				
	UC	461.69		1,848.47	-
	OBO	455.97	-5.72	1,807.81	-40.66
9	**Add a cost of £20, reflecting potential to provide a printed booklet as part of the comparator, usual care arm.**				
	UC	481.69	-	1,868.47	-
	OBO	456.17	-25.52	1.808.61	-59.86
10	**Optimistic scenario combination (Scenarios 4, 5, 6, and 9 combined)**				
	UC	1,566.97	-	2,953.74	-
	OBO	131.94	-1,435.03	215.49	-2,738.25

Key: ED, eating disorder; OBO, overcoming bulimia online; UC, usual care
[A] The probability of remission is capped at 1 in the model

For the remaining technologies, whilst it was not possible to estimate cost savings due to a lack of data on the probability of remission, two-way scenario analyses are presented to illustrate the potential effect size that might be required at varying technology prices to retain the potential for the technologies to be cost saving. The two-way scenario analyses presented in figures 2-5 illustrate the results for BED and BN, in both the primary care and ED services populations specified in the NICE scope. Two-way sensitivity analyses are applied to the EAG conservative estimate of modelled costs, i.e. with treatment effects applied to completers only.

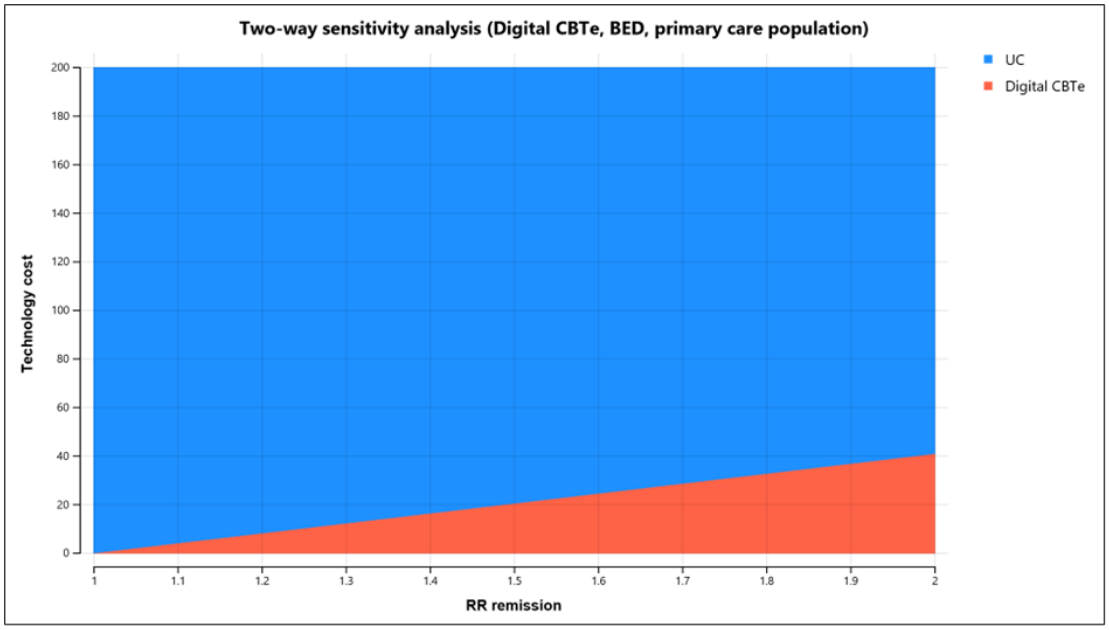


Figure 2 Two-way sensitivity analysis, BED, primary care population

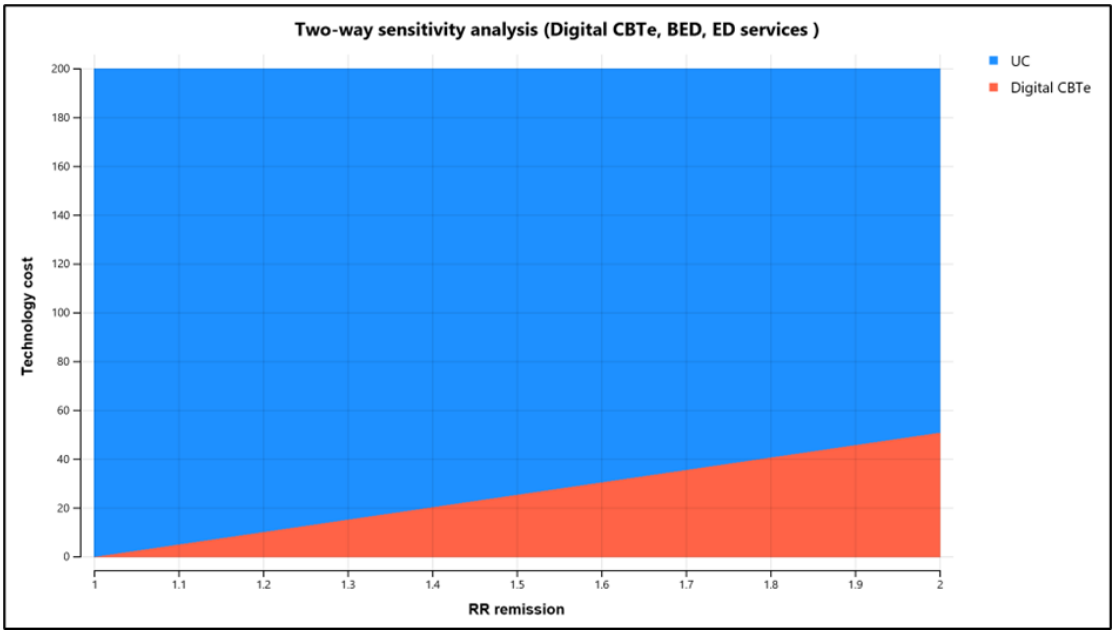


Figure 3 Two-way sensitivity analysis, BED, ED services population

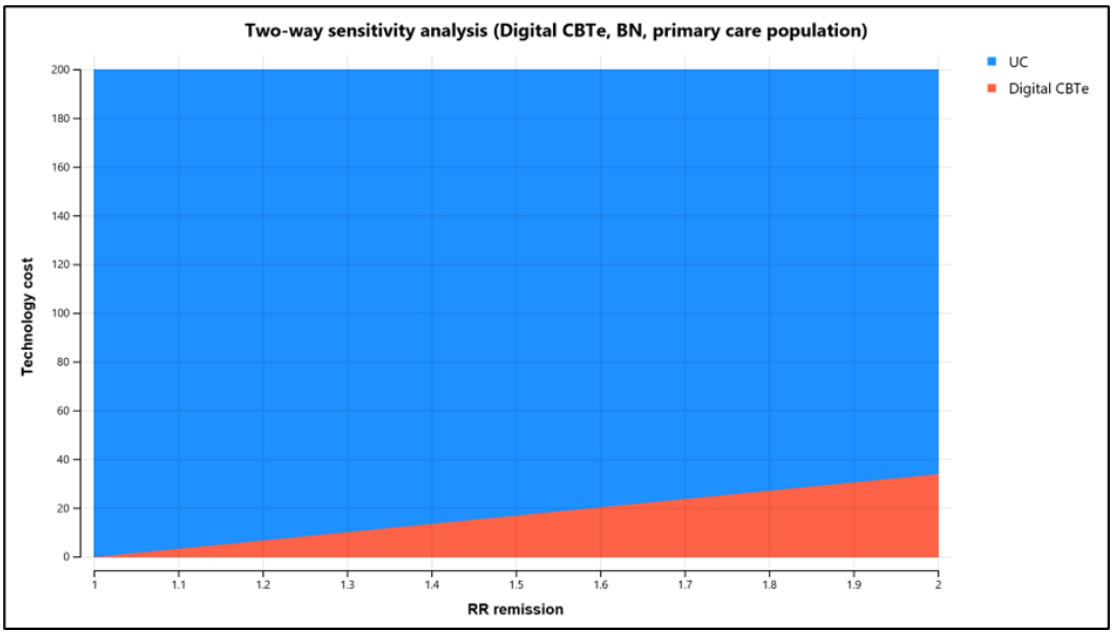


Figure 4 Two-way sensitivity analysis, BN, primary care population

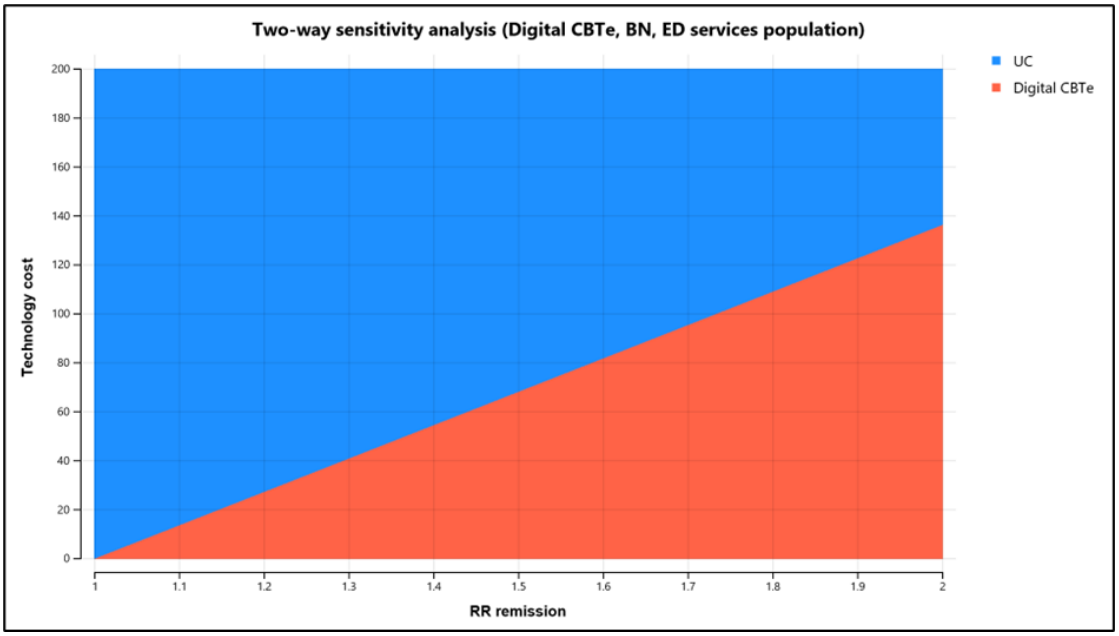


Figure 5 Two-way sensitivity analysis, BN, ED services population

6.4 Summary and interpretation of the economic evidence

All the technologies have a reasonably low intervention cost, especially if cost savings for bulk purchases can be achieved for use in NHS practice. Early economic modelling shows that OBO has the potential to be a cost-saving intervention to the NHS for adults with bulimia nervosa and that this potential could be realised under a range of scenarios. However, there remains substantial uncertainty surrounding the magnitude of cost savings that might be achievable, and future studies should endeavour to collect healthcare resource use across the treatment pathway for people with eating disorders. The model identified the following as key drivers of potential cost-savings (probability of remission, NHS resource use for management of eating disorder symptoms and relapses, and the probability of referral for further in-person psychological support). Longer-term costs in the treatment pathway are likely to be substantial, and any interventions that can prevent progression to more intensive treatments could achieve significant cost savings for the NHS and quality of life benefits for patients. Whilst there was insufficient evidence to populate the decision tree for digital CBTe and Worth Warrior, if effect sizes observed with OBO could be replicated for the remaining technologies, they would have a good potential for generating cost-savings to

the NHS. It is likely that, if interventions are effective, they would also have a positive impact on QALYs, so there is good potential for digital self-help technologies to also be cost-effective, pending future evidence generation. However, further within trial economic evaluations of the technologies, better understanding of NHS resource use, and cost-effectiveness modelling are required before definitive cost-effectiveness conclusions can be reached.

7. Integration into the NHS

This section explores the potential integration of the evaluated digital self-help technologies into current NHS services for individuals with eating disorders. Some technologies have already been used in clinical settings, often as part of pilot schemes or integrated into existing care pathways. Usually, digital technologies are used to support individuals while they wait for specialist treatment or as a complement to face-to-face therapy. Table 13 summarises stakeholder-reported information regarding how each technology has been or could be embedded into NHS services, helping to highlight enablers, barriers, and current levels of engagement across different settings.

It is worth noting that since some of the candidate technologies will be freely accessible online, it is important to ensure that participants are screened for eligibility before they begin using them.

Table 13 Company responses to NICE questions on the clinical context and current use of the technologies in the NHS

NICE question	Digital CBTe Credo Therapies Limited response	Overcoming Bulima Online Five Areas Ltd response	Worth Warrior stem4 response
Is the technology available to the NHS?	Yes	Yes	Yes, as a paid version.
If yes, is the technology currently in use in the NHS? Describe the current use of the technology in the NHS (e.g. names of hospitals using technology). If no, please state if there are any plans to launch the product to the NHS and the approximate launch date.	The technology is being used within NHS secondary care eating disorders services.	Yes, used in a variety of locations.	The technology is used in Birmingham and Solihull Children and Women's Eating Disorder Service to pilot its effectiveness. There is a plan to launch a paid-for version for the NHS, which provides localised information to the user and population metrics and trends to services later in 2025.
Describe how this technology fits into the clinical care pathway(s) in the NHS. What care setting is the technology used in?	The digital programme-led approach could fit into the NHS care pathway at multiple stages, offering flexibility and enhancing care delivery across various settings. To date, it has been used in two ways in the NHS: as a waiting list intervention for a specialist eating disorder service and as a guided self-help first line treatment in this specialist setting. It has	Public health, NHS Talking therapies (IAPT) Specialist eating disorders settings Used directly by the public	The Worth Warrior app fits into NHS clinical care pathways in several ways, complementing both primary and secondary care services. 1. Eating identification and prevention (primary care and schools). Examples: GPs recommend; School and College Mental Health Teams (MHSTS) for students at risk or as part of a stepped care approach before referral to specialist care services; Community Health Services and Youth Mental Health Hubs for early intervention 2. Specialist Eating Disorder Services (Secondary Care), Child and Adolescent Mental Health Services (CAMHS) & Adult Eating Disorder Services; Worth Warrior can be a support tool for patients on waiting

	the potential for wider use, for example in a primary care setting.		lists, offering psychoeducation and self-management strategies while they await specialist treatment. 3. Tiered/Stepped Care Approach: NHS eating disorder pathways often involve stepped care models, where lower-intensity interventions are used first. The app can be used in guided self-help models, either as a standalone digital intervention or in combination with therapist-led support. 4. Bridging the Transition Gap: It can help support individuals transitioning from CAMHS to adult services, ensuring continuity of care and self-management during what is often a challenging period. 5. Post-Treatment & Relapse Prevention (Tertiary Care & Aftercare) Post-Discharge Support: After treatment (e.g., from inpatient or day-care settings), Worth Warrior can serve as a relapse prevention tool, offering structured support to maintain recovery and prevent deterioration. 6. Long-Term Condition Management: Some individuals may experience chronic eating disorder symptoms, and digital tools like Worth Warrior can be embedded in long-term follow-up pathways to offer ongoing self-management support alongside periodic clinical reviews.
Describe any system changes that would be needed if the NHS were to adopt the technology. Are you aware of any barriers to the adoption of your technology or any	No	No, it is already used in the NHS. There are a number of implementation issues that would vary across staff and patient/client type and setting, and the purpose of the service.	Digital Integration & Interoperability • Integration with NHS Systems (e.g., NHS App, GP Records, and e-Referrals) ○ Worth Warrior could be linked to GP and CAMHS systems, allowing clinicians to track engagement and

changes that could assist uptake?			outcomes. Also added to referrals systems such as AccuRx used by GPs o Already integrated into NHS-approved digital platforms like Orcha, enabling direct referral or signposting by NHS professionals. Data Security & Compliance o The app meets NHS Digital and Data Security standards, including compliance with DTAC (Digital Technology Assessment Criteria) and GDPR (General Data Protection Regulation) for patient data protection. Clinical Training & Awareness • Training for NHS Professionals o GPs, CAMHS clinicians, MHSTs, and school nurses would require training to understand how the app fits within existing care pathways and when to recommend it. o Inclusion in Clinical Commissioning Group (CCG) and Integrated Care Board (ICB) training programmes. • Incorporation into NICE Guidelines & Clinical Protocols o For widespread adoption, Worth Warrior would benefit from being recognised within NICE-recommended stepped-care approaches for eating disorders Funding & Commissioning NHS Commissioning & Reimbursement Models • The app would need to be commissioned by NHS trusts, ICBs, or through a national framework (e.g., NHS England or a regional digital mental health fund). o Possible funding through ICS (Integrated Care Systems) digital transformation budgets. • Prescribable Digital Therapeutics Model o If positioned as a self-help tool within NHS services, a model where GPs or mental health professionals

			can ‘prescribe’ the app (similar to IAPT digital CBT tools) could be explored. Barriers to Adoption & Changes to Assist Uptake: *Digital Approval & Bureaucratic Processes* • NHS procurement and approval for digital tools can be slow, with DTAC and other assessments required. *Clinician Awareness & Acceptance* • Some clinicians may be hesitant to adopt digital interventions. *Funding Constraints* • Without a clear commissioning pathway, uptake may be limited. *Digital Exclusion & Accessibility* • Some users (especially those from disadvantaged backgrounds) may lack access to smartphones or reliable internet, although the app is built to accommodate low data usage and no Wi-Fi.
Describe any training (for healthcare professionals and patients) that would be needed if the NHS were to adopt the technology.	Training and training materials would be required to inform and educate NHS staff on how to deliver digital CBTe in its supported form. This includes training on enrolling patients, supporting patients and operating the software. Credo Therapies Ltd will provide this training.	The company recommends that if the resource is introduced and the intention is to provide brief support, they will provide training if: a. Practitioners have low/little knowledge of eating disorders b. Practitioners/supporters are **in**experienced in introducing and supporting people using low-intensity-style	The app is easy to use and comes with an embedded ‘tour’ within the app, as well as downloadable guides for three different audiences. Further training will benefit medical practitioners to know how to recommend the app and to both demonstrate and work with the youth person in ensuring uptake and best application. Training for GPs, practice nurses, and primary care staff will help identify appropriate patients and confidently recommend the app. Equipping mental health professionals within CAMHS and specialist teams (psychiatrists, psychologists, therapists,

		CBT-life skills-based online resources. Typically, staff working in NHS specialist eating disorder centres **don't** need any training. IAPT staff often benefit from training in a. above. Staff in public health/General practice might benefit from a. and b. But this will depend on the person and how they choose to deliver the content.	dietitians, and nurses) to integrate the app into stepped-care treatment models will help make it relevant. Helping A&E and other medical staff understand how the app works and in recommendations Training school-based mental health professionals to introduce and support students using the app will help in embedding the app within a whole-school approach. Enabling youth workers, helpline staff, and charity teams to recommend Worth Warrior as a self-help tool. Helping parents and carers support their child or young person's use of the app and to understand its role in early intervention.

Two NHS pilot studies of digital CBTe collected data on staff opinions of the technology. The Dorset study survey aimed to elicit staff views on the offer of digital CBTe to patients on the waiting list (Lees, 2024). Eight survey responses were elicited from staff directly involved with the CBTe pilot, out of a distribution of 67 (a response rate of 12%). The staff roles represented were CBT therapist, community services manager, research assistant, administrator, consultant psychiatrist, eating disorder specialist practitioner, and mental health support worker. In the Kent and Medway study (Lees et al., 2025), interviews were conducted with two supporter workers plus a total of six qualitative survey responses, from a distribution of ten staff involved with the Supported digital CBTe pilot, (a response rate of 60%).

Respondents to the staff survey in the Dorset study (Lees, 2024) indicated that treatment with digital CBTe could act as a starting point and a precursor to therapeutic intervention that increases patients' readiness for professional therapy or could result in a reduction in the intensity of subsequent treatment. Some staff also felt that digital CBTe may be sufficient help for patients and could reduce the need for support from the service. A small number of staff survey respondents suggested that the use of digital CBTe could be brought forward in the recovery journey, ahead of referral to or assessment by a specialist service. Staff respondents in the Kent and Medway study (Lees, 2025) gave their views on supported delivery of CBTe. Staff felt that supported digital CBTe reduced contact time per patient, allowing them to manage larger caseloads. Staff in both studies noted that the digital CBTe is not suitable for all patients; thus, patient reach is limited. For example, support staff who were interviewed in the Kent and Medway (Lees, 2025) study suggested that reasons for patient withdrawal from the treatment tended to be due to personal stressors or co-occurring conditions, such as mental health problems and low mood, which could act as a barrier to engagement and motivation and, therefore, the technology may not be suitable for patients with mental health challenges without the inclusion of additional support strategies and safeguarding.

8. Evidence gap analysis

8.1 Ongoing studies

The EAG identified two ongoing studies of digital CBTe (described in Table 14). The EAG did not identify any ongoing studies for Overcoming Bulimia Online or Worth Warrior.

Table 14. Digital CBTe ongoing studies and their relevance to the decision problem

Ongoing study	Alignment with scope	Indicated study end date	EAG comments
BE-GUIDED (Binge Eating - Guided): a feasibility randomised controlled trial to compare digital guided self-help against a waitlist control Clinical Study Registry: ISRCTN18273703	Intervention: Full match to scope Comparator: Full match to scope Participants: Full match to scope Setting: Full match to scope Outcomes: Full match to scope	December 2025	This is a single-centre feasibility unblinded two-arm parallel-group randomised controlled pilot trial comparing the digital CBTe self-help intervention (n=35) with a delayed access waiting list control (n=35) in people aged 18 years or above who have repeated episodes of binge eating. Primary outcomes include the effectiveness and acceptability of the recruitment process and treatment acceptability. Secondary outcomes include: Binge eating frequency, measured using the Eating Disorder Examination Questionnaire (EDE-Q); Severity of general eating disorder features measured using the Eating Disorder Examination Questionnaire (EDE-Q); Severity of secondary psychosocial impairment, measured using Clinical Impairment Assessment (CIA); Severity of depressive features, measured using Patient Health Questionnaire (PHQ-9); Self-reported productivity & healthcare costs, measured using a bespoke Costs & Resources Measure; Harms & adverse effects of

Ongoing study	Alignment with scope	Indicated study end date	EAG comments
			intervention, measured using a bespoke intervention questionnaire.
A Supported Digital Programme-Led Intervention for Binge Eating: A Pilot Study Entirely remote, online, in a real-world community setting.	Intervention: Partial match to scope Comparator: None Participants: Full match to scope Setting: Full match to scope Outcomes: Full match to scope	December 2025	This is a single-arm pilot intervention study that will evaluate supported digital CBTe for adults who self-reported recurrent binge eating recruited from the community. Assessments were carried out at baseline (pre-intervention), post-intervention, and after a 6-month open follow-up period. The primary outcome is the frequency of objective binge eating episodes over the past 28 days. Secondary outcomes include eating disorder psychopathology and secondary impairment.

8.2 Evidence gap analysis

The EAG presents their interpretation of the available evidence and gap analysis in Table 15. No randomised evidence was identified for the digital CBTe and Worth Warrior technologies. A small single centre unblinded pilot randomised trial comparing digital CBTe with waiting list is currently ongoing (see section 8.1). Randomised evidence was identified from three RCTs for OBO. One of these RCTs evaluated the CD-ROM version of the technology. Following the initial intervention treatment phase, delivery of intervention and control treatment in the RCTs deviated from that outlined in the scope. There is, therefore, limited long-term randomised evidence for the OBO technology. The evidence for all three technologies is limited by small sample sizes and high attrition in the studies. None of the studies included embedded economic evaluations, meaning the true resource use implications and the cost-effectiveness of the assessed technologies are uncertain.

Table 15 Evidence gap analysis

Outcomes	Digital CBTe	Overcoming Bulimia Online	Worth Warriors
Intermediate outcomes			
Time to treatment	Red No studies of any design	Red No studies of any design	Red No studies of any design
Treatment completion rate	**Green** Three cohort studies Murphy et al (2025), the Dorset study (Lees, 2024) and the Kent and Medway study (Lees, 2025) reported numbers of participants completing the treatment programme.	**Green** Three RCTs and two cohort studies Schmidt et al (2008), Sánchez-Ortiz et al (2011), and Bara-Carril (2004) reported the numbers of participants completing the treatment programme; McClay et al (unpublished) reported [redacted] Graham and Walton (2011) reported the number of participants who dropped out of the study.	Red One cohort study Edwards and Krause (unpublished) reported [redacted]
Reasons for not completing treatment	Red One cohort study	Red No studies of any design	Red No studies of any design
Treatment adherence and/or compliance	**Green** Three cohort studies Murphy et al (2025), the Dorset study (Lees, 2024) and the Kent and Medway study (Lees, 2025) reported the mean number of sessions completed and the number of active sessions completed by participants.	**Green** One RCT and one cohort study MClay et al (unpublished) reported the [redacted] Barra-Carril et al (2004) reported the numbers of participants attending treatment. sessions	Red No studies of any design

Proportion of people who need further treatment or no longer need support	Amber One cohort study The Dorset study (Lees, 2024) reported the numbers of participants who were discharged from service, receiving post-self-help specialist treatment, those still on waiting list after completing the treatment programme.	Red No studies of any design	Red No studies of any design
Size and duration of eating disorder waiting list	Red No studies of any design	Red No studies of any design	Red No studies of any design
Clinical outcomes			
Eating disorder pathology	Amber Three cohort studies Murphy et al (2025), the Dorset study (Lees, 2024) and the Kent and Medway study (Lees, 2025) reported Global EDE scores.	Amber Three RCTs and three cohort studies Schmidt et al (2008), Sánchez-Ortiz et al (2011), and Pretorius et al (2009) reported Global EDE scores. McClay et al (unpublished) reported Global EDE scores. Graham and Walton (2011) reported SEEDs and EDI-3, Barra-Carril et al (2004) reported SEEDS.	Red One cohort study Ewards and Krause (unpublished) reported Global EDE scores
Time to improvement in eating disorder pathology	Red No studies of any design	Red No studies of any design	Red No studies of any design
Binge eating episodes	Amber Three cohort studies Murphy et al (2025), the Dorset study (Lees, 2024) and the Kent and Medway study (Lees, 2025)	Amber Three RCTs and three cohort studies Schmidt et al (2008), Sánchez-Ortiz et al (2011), Graham and Walton (2011), Pretorius et al (2009), and Barra-Carril et al	Red No studies of any design

	reported objective binge eating episodes.	(2004) reported objective binge eating episodes. McClay et al (unpublished) reported objective binge eating episodes.	
Compensating for binge eating	Red No studies of any design	**Amber** Three RCTs and three cohort studies Schmidt et al (2008) reported the dietary restraint EDE subscale. Sánchez-Ortiz et al (2011) reported the vomit and purge EDE subscales. McClay et al (unpublished) reported [redacted]. Graham and Walton (2011) reported SEEDS vomit and dieting scales, Pretorius et al (2009) reported the vomit, laxatives EDE subscales. Bara-Carril et al (2004) reported SEEDS vomit, laxatives/diuretics, food restriction, and exercise scales.	Red One cohort study Ewards and Krause (unpublished) reported the dietary restraint EDE subscale.
General functioning	**Amber** Three cohort studies Murphy et al (2025), the Dorset study (Lees, 2024) and the Kent and Medway study (Lees, 2025) reported CIA and PHQ-9.	**Amber** One cohort study Graham and Walton (2011) reported CORE.	Red No studies of any design
Social, occupational or family functioning	Red No studies of any design	**Amber** Two RCTs Sánchez-Ortiz et al (2011) reported WHOQOL social scale. McClay et al (unpublished) reported the WSAS.	Red No studies of any design

Remission	Red No studies of any design	**Amber** Two RCTs Schmidt et al (2008) and Sánchez-Ortiz et al (2011) reported the numbers of participants who were abstinent and those who were Below DSM–IV threshold after completing the treatment programme.	Red No studies of any design
Relapse	Red No studies of any design	Red No studies of any design	Red No studies of any design
Depression	Red No studies of any design	**Amber** Two RCTs Sánchez-Ortiz et al (2011) reported the HADS depression scale. McClay et al (unpublished) reported the HADS depression scale.	Red No studies of any design
Anxiety	Red No studies of any design	**Amber** Two RCTs Sánchez-Ortiz et al (2011) reported the HADS anxiety McClay et al (unpublished) reported the HADS anxiety scale.	Red No studies of any design
Weight	Red No studies of any design	**Amber** One cohort study Pretorius et al (2009) reported BMI change.	Red No studies of any design
Bariatric surgery	Red No studies of any design	Red No studies of any design	Red No studies of any design

Dental outcomes	Red No studies of any design	Red No studies of any design	Red No studies of any design
Mortality	Red No studies of any design	Red No studies of any design	Red No studies of any design
Patient-reported outcomes			
Health-related quality of life	Red No studies of any design	**Amber** One RCT Sánchez-Ortiz et al (2011) reported WHOQOL physical, psychological, environmental scales.	Red No studies of any design
Service user acceptability, views, experience and satisfaction	**Green** Three cohort studies Murphy et al (2025), the Dorset study (Lees, 2024) and the Kent and Medway study (Lees, 2025) reported participants' opinions and experiences of the programme.	**Green** One cohort and three qualitative studies Pretorius et al (2009), Sánchez-Ortiz et al (2010), McClay et al (2013), and Pretorius et al (2010) reported participants' opinions and experiences of the programme.	Red One cohort study Ewards and Krause (unpublished) reported participants' opinions and experiences of the programme.
Parent and carer acceptability, views, experience and satisfaction	Red No studies of any design	Red No studies of any design	Red No studies of any design
Economic outcomes			
Cost of technology	Amber No studies measured intervention costs, but information was provided by the company.	Amber No studies measured intervention costs, but information was provided by the company.	Amber No studies measured intervention costs, but information was provided by the company.
NHS resource use / costs in different settings	Red No studies of any design	Red No studies of any design	Red No studies of any design

QALYs / health state utility values	Red No studies of any design	Red No studies of any design	Red No studies of any design
Cost-effectiveness	Red No studies of any design	Red No studies of any design	Red No studies of any design

EDE, Eating Disorder Examination questionnaire; EDI-3, Eating disorder Inventory-3; CIA, Clinical Impairment Assessment questionnaire; CORE, Clinical Outcomes, Research and Evaluation; DSM-IV, Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition; HADS, Hospital Anxiety and Depression Scale; PHQ-9, Patient Health Questionnaire-9; SEEDS, Short Evaluation of Eating Disorders Symptoms; WSAS, Work and Social Adjustment Scale (WSAS);; WHOQOL, World Health Organization Quality of Life
Red is defined as no evidence, very limited evidence, or evidence that is at high risk of bias; **Amber** is defined as well-conducted non-comparative data or randomised evidence with some methodological limitations or limited follow-up data, or qualitative data with some methodological limitations (for economic outcomes, Amber refers to no studies, but information provided by companies); **Green** is defined as well-conducted randomised or non-randomised comparative evidence with long-term follow-up data where appropriate or well-conducted qualitative evidence.
Items in bold are identified by the EAG as key priority areas

8.3 Key areas for evidence generation

The clinical evidence reviewed in this assessment highlighted important limitations and gaps that need to be addressed to support future decision-making regarding the adoption of digital self-help technologies for eating disorders in the NHS. There was no economic evidence explicitly collecting cost-effectiveness data for the candidate technologies. The following are the key areas for evidence generation identified by the EAG:

High-quality comparative evidence

Most of the current clinical evidence comes from small, non-randomised or uncontrolled studies, particularly for digital CBTe and Worth Warrior. There is a need for well-designed controlled studies that compare digital self-help interventions against standard care. Ideally, studies of a randomised design should be considered to reduce biases and allow for clear attribution of any observed effect to the digital programme itself. Non-randomised evidence in the form of matched control cohorts can provide complementary trial evidence. The populations and settings in the current existing studies vary and may not reflect current NHS practice. Future studies should enrol patients who are representative of those seen in routine care, including those seen in primary care who do not need referral to ED services as well as people who have been referred to specialist eating disorder services.

Effectiveness as a self-help intervention

Levels of support provided in the current studies (especially for OBO and Digital CBTe) varied and may not be replicable in NHS settings. If these technologies are to be offered as purely self-help interventions, further evidence is needed on their effectiveness and acceptability in this format.

Long-term effectiveness and outcomes

Data on long-term outcomes (beyond 3–6 months) are lacking, and we found no evidence for many of the outcomes specified in NICE's scope. Future studies should evaluate the sustainability of treatment effects, including remission and relapse rates, NHS resource use, health-related quality of life, long-term symptom change, as well as reasons for not completing treatment. Notably, improvements were also observed in the control groups of the included RCTs, highlighting the need for randomised evidence with larger sample sizes to mitigate the effects of study attrition, with a clearly defined population, longer follow-up and inclusion of key outcome measures. Some technologies showed promising reductions in binge-eating episodes and other condition-specific measures, suggesting that moderate-sized RCTs may be sufficient to confirm these effects.

Attrition and engagement

High attrition was a consistent issue across the evidence base, introducing substantial uncertainty into the effect size estimates used in economic modelling. Future research should investigate reasons for non-completion, using qualitative data collection, and explore strategies to improve engagement and adherence to digital interventions. Quantitative studies should also collect information on the characteristics of people who do not complete treatment. Additionally, studies should clearly define the estimation sample used to provide outcome data.

Generalisability and population diversity

Study participants were typically white (where ethnicity was reported), female, and of working age. More inclusive studies are needed to evaluate effectiveness across age groups (particularly those aged under 18 years,

especially for digital CBTe), different ethnicities, genders (including gender-diverse populations), and socio-economic backgrounds.

Acceptability and user experience in routine NHS settings

Although qualitative data indicate that users generally found the technologies acceptable, most of these data came from research contexts. Some participants expressed a desire for more personalised content and additional support, and some highlighted technical issues. Future studies should assess user experience and feasibility in real-world NHS settings.

Economic evaluation and cost-effectiveness

The early economic model relied on multiple simplifying assumptions due to a lack of clinical effectiveness data on remission/relapse for digital CBTe and Worth Warrior in particular. Evaluation of all technologies was subject to a lack of evidence about real-world cost and resource use associated with treating eating disorders in NHS practice. Future studies should embed within-trial economic evaluations and include data collection on NHS resource use, quality of life data (based on a generic preference-based measure such as EQ-5D-5L) and long-term outcomes, including mortality and referrals along the treatment pathway, to support full cost-effectiveness assessments. The EAG has proposed the structure of a long-term Markov model that could be used in future studies to estimate long-term costs and outcomes of eating disorder interventions, with key health states of: A) remission; B) non-remission (symptomatic eating disorders), and C) death. Health states could also include sub-states or functionality to incorporate resource use, cost and utility implications of different levels of episode frequency and severity within a non-remission state to capture partial responses to treatment. Alternative definitions of remission should be explored in scenario analyses (e.g. DSM-IV and complete abstinence). A suggested Markov model structure is detailed in Figure 6.

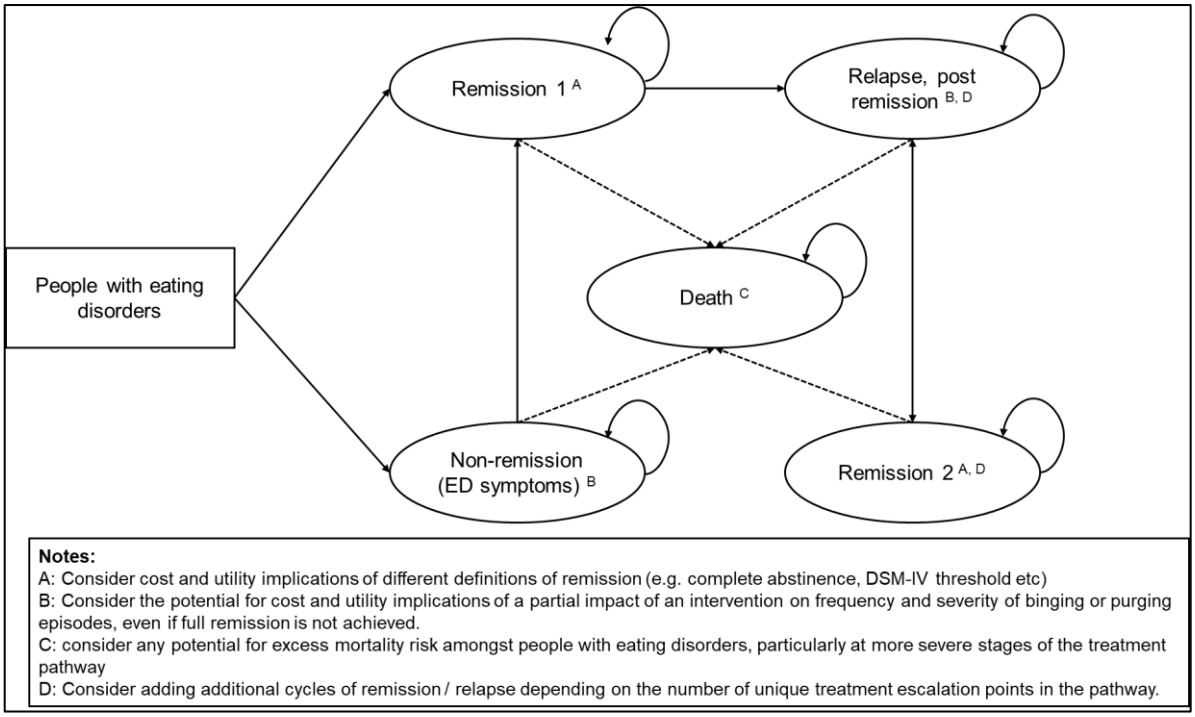


Figure 6 Suggested Markov model structure and consideration for future cost-effectiveness modelling studies

Impact on service utilisation and care pathways

Evidence is needed on how digital tools influence access to care, waiting times, demand for face-to-face services, and transitions to more intensive treatment in routine NHS practice. For example, there is no current evidence on whether digital tools would directly reduce the frequency of monitoring in NHS practice, and whether any change in service utilisation would impact on clinical or patient outcomes. This includes whether digital self-help tools can prevent symptom deterioration or reduce inpatient admissions.

Equity and accessibility concerns

At present, there is little evidence addressing digital literacy or accessibility challenges. Future research should evaluate how accessible these technologies are for underserved and marginalised populations. This includes individuals with limited digital literacy or restricted access to devices, as well as those who may struggle with digital self-help tools - such as people with neurodiverse conditions, learning disabilities, visual or hearing impairments,

cognitive difficulties, or reduced manual dexterity. Ensuring that digital solutions are inclusive and equitable is essential to avoid health disparities.

These evidence gaps should guide the design of future research, particularly pragmatic and implementation-focused studies, to support the potential adoption of digital self-help tools in NHS services.

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10. Appendices

Use the appendices to describe additional data and information as needed – we've given some examples as a guide.

List the titles of the appendices here.

Appendix A Search strategies

Electronic databases

Clinical Effectiveness Search strategies

Ovid MEDLINE(R) ALL <1946 to April 24, 2025>

1 "Feeding and Eating Disorders"/

2 Anorexia Nervosa/ or Bulimia Nervosa/ or Binge-Eating Disorder/ or Avoidant Restrictive Food Intake Disorder/

3 (anorex* or bulimi* or (bing* adj3 eating)).tw,kf.

4 ((eating or feeding or food) adj3 disorder).tw,kf.

5 ((avoidant or restrictive) adj3 food).tw,kf.

6 (ARFID or EDNOS or OSFED).tw,kf.

7 or/1-6

8 (digital cbte or CREDO or "Centre for Research on Eating Disorders at Oxford").af.

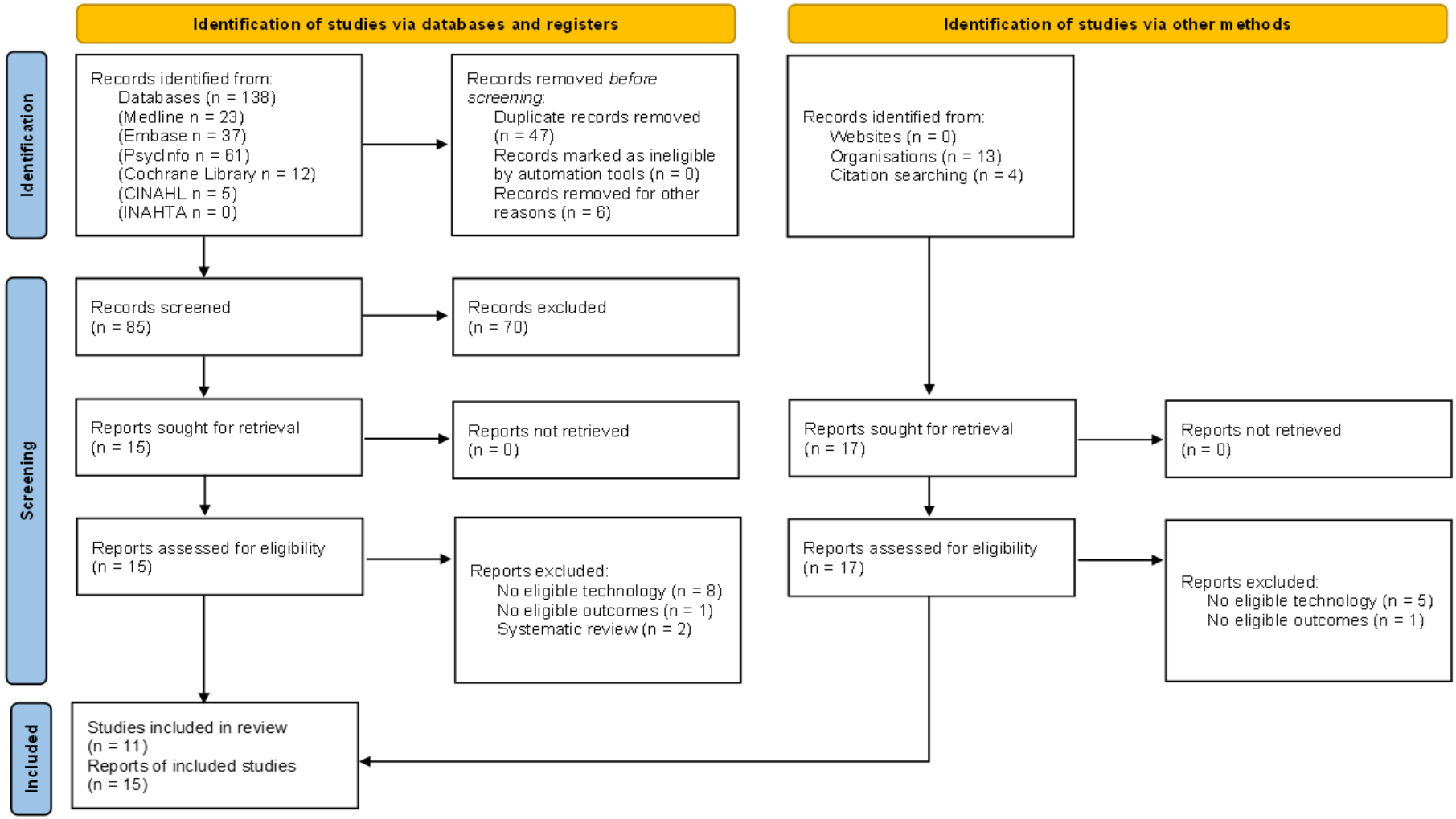
9 ("overcoming bulimia online" or "Five Areas").af.

10 (Worth Warrior or Stem4).af.

11 8 or 9 or 10

12 7 and 11

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only



Appendix B Excluded studies

Publications excluded after review of full text articles n=17

The study did not evaluate an eligible technology n=13

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Ruwaard, J., Lange, A., Broeksteeg, J., Renteria-Agirre, A., Schrieken, B., Dolan, C.V. and Emmelkamp, P. (2013) Online cognitive–behavioural treatment of bulimic symptoms: A randomized controlled trial. Clinical Psychology & Psychotherapy 20(4): 308-318

Wagner, G., Penelo, E., Wanner, C., Gwinner, P., Trofaier, M.L., Imgart, H., Waldherr, K., Wöber-Bingöl, Ç. and Karwautz, A.F. (2013) Internet-delivered cognitive-behavioural therapy v. conventional guided self-help for bulimia nervosa: long-term evaluation of a randomised controlled trial. The British Journal of Psychiatry 202(2): 135-141

Wilkinson, M.L., Presseller, E.K., Lampe, E.W., Trainor, C., Sinex, R., Manasse, S.M. and Juarascio, A.S. (2024) The relationship between non-purging compensatory behaviors, clinical severity, and treatment outcomes in adults with binge-spectrum eating disorders. Eating Disorders 32(2): 212-222

The study did not report eligible outcomes n=2

Murray, K., Pombo-Carril, M.G., Bara-Carril, N., Grover, M., Reid, Y., Langham, C., Birchall, H., Williams, C., Treasure, J. and Schmidt, U. (2003) Factors determining uptake of a CD-ROM-based CBT self-help treatment for bulimia: patient characteristics and subjective appraisals of self-help treatment. European Eating Disorders Review 11(3): 243-260

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The study is a systematic review n=2

Fairburn, C.G. and Murphy, R. (2015) Treating eating disorders using the internet. Current Opinion in Psychiatry 28(6): 461-467

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Appendix C Critical appraisal

Table 16 Study level critical appraisal of the non-randomised studies

ReBiP domain	Digital CBTe			Overcoming Bulimia Online			Worth Warrior
	Murphy (2025)	Dorset Healthcare Trust report (Lees, 2024)	Kent and Medway All Age Eating Disorders Service report (Lees,2025)	Graham and Walton (2011)	Pretorius (2009)	Bara-Carril (2004)	Edwards and Krause (unpublished)
Were participants a representative sample selected from a relevant patient population?	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Were the inclusion/exclusion criteria of participants clearly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Were participants entering the study at a similar point in their disease progression?	Yes	Yes	Yes	No	Unclear	No	Yes
Was selection of patients consecutive?	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Unclear
Was data collection undertaken prospectively?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Were the groups comparable on demographic characteristics and clinical features?	NA	NA	NA	NA	NA	NA	NA
Was the intervention (and comparison) clearly defined?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Were any of the important outcomes considered?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Were objective (valid and reliable) outcome measures used, including satisfaction scale?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Was the assessment of main outcomes blind?	NA	NA	NA	NA	NA	NA	NA
Was follow-up long enough to detect important effects on outcomes of interest?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Was information provided on non-respondents, dropouts?	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Were the withdrawals/drop-outs having similar characteristics as those completed the study and therefore unlikely to cause bias?	Unclear	No	No	No	No	Unclear	No
Was length of follow-up similar between comparison groups?	NA	NA	NA	NA	NA	NA	NA
Were the important prognostic factors identified, e.g. age, duration of disease, disease severity?	Yes	No	No	Yes	Yes	Yes	No
Were the analyses adjusted for confounding factors?	NA	NA	NA	NA	NA	NA	NA

NA, not applicable. Items in italics are only relevant for comparative studies

Table 17 Study level critical appraisal of the Overcoming Bulimia Online RCTs

ROBUST domain	Schmidt 2008	Sánchez-Ortiz 2011	McClay unpublished
Core item 1: Random sequence generation	Definitely low	Definitely low	Definitely low
Core item 2: Allocation concealment	Definitely low	Definitely low	Definitely low
Core item 3: Blinding of participants	Probably high	Probably high	Probably high
Core item 4: Blinding of healthcare providers	Probably high	Probably high	Probably low
Core item 5: Blinding of outcome assessors	Probably low	Definitely high	Probably low
Core item 6: Outcome data not included in the analysis	Definitely high	Probably high	Definitely high
Optional item 1: Whether baseline prognostic factors were balanced between groups	Definitely yes/Low	Definitely yes/low	Probably no/high
Optional item 2: Whether co-interventions were balanced between groups in blinded trials	NA	NA	NA
Optional item 3: Whether outcome assessment or data collection differed between groups	Probably yes/low	Probably yes/low	Probably yes/low
Optional item 4: Whether follow-up time, frequency, or intensity of outcome assessment differed between groups	Probably yes/low	Probably yes/low	Probably yes/low
Optional item 6: When investigators conducted an as treated analysis, was the percentage of participants not analysed in the groups to which they were randomised sufficiently low	Definitely yes/low	Definitely yes/low	Definitely yes/low

Table 18 Study level critical appraisal of the qualitative Overcoming Bulimia Online studies

JBI domain	McClay 2013	Sánchez-Ortiz 2010	Pretorius 2010
Is there congruity between the stated philosophical perspective and the research methodology?	Unclear	Unclear	Yes
Is there congruity between the research methodology and the research question or objectives?	Yes	Yes	Yes
Is there congruity between the research methodology and the methods used to collect data?	Yes	Yes	Yes
Is there congruity between the research methodology and the representation and analysis of data?	Yes	Yes	Yes
Is there congruity between the research methodology and the interpretation of results?	Yes	Yes	Yes
Is there a statement locating the researcher culturally or theoretically?	No	No	No
Is the influence of the researcher on the research, and vice-versa, addressed?	Unclear	Unclear	Unclear
Are participants, and their voices, adequately represented?	Yes	Yes	Yes
Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	Yes	Yes	Yes
Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	Yes	Yes	Yes
Overall appraisal	Include	Include	Include

JBI, Joanna Briggs Institute

Appendix D Summaries of study characteristics and baseline participant demographics data

Table 19 Summary of the Digital CBTe study characteristics and baseline participant demographics

Study ID and study design	Setting	Participant baseline characteristics	Technology	Comparator	Was the manufacturer of the technology associated with the study
Murphy et al (2025) Single-arm pilot intervention study	Participants were recruited through an advertisement on the beat[a] website. People who responded to the advertisement completed a brief self-report suitability screening assessment to assess eligibility criteria.	***Number recruited*** 110 ***Number analysed*** Completers analysis n=55 Last observation carried forward analysis n=110 ***Condition, n (%)*** • Self-reported features that resembled binge eating disorder: 93 (85) • Self-reported features that resembled bulimia nervosa: 9 (8) • Self-reported features that resembled atypical bulimic disorder:8 (7) ***Age, years, mean, SD (range)*** 39.7, 10.9 (20 to 63) ***Female, n (%)*** 102 (92.7) ***Male, n (%)*** 8 (7.3)	***Duration*** 8 to 12 weeks ***Number of sessions*** 12 Sessions were made available at fixed time intervals, with later sessions having larger gaps between them ***Additional support*** Digital CBTe was offered as a fully automated (pure “self-help” or “self-guided”) intervention. Participants could email a researcher for asynchronous technical assistance if needed	None	Yes RM is a founder, shareholder, and consultant of Credo Therapies. ELO is a part-time employee of Credo Therapies.

		Ethnicity, n (%) White 102 (92.7) Asian 3 (2.7) Black 1 (0.9) Mixed 1 (0.9) Prefer not to say 3 (2.7) ***BMI, mean, SD (range)*** 27.7, 5.3 (18.1 to 39.2) ***Binge eating episodes, mean, SD*** 14.1 (8.1); Completers: 14.9 (8.1) ***Time since diagnosis, years, mean, SD (range)*** 22.8, 12.6 (1 to 51) ***Prior treatment, n (%)*** Yes 28 (25.5); No 82 (74.5)			
Dorset Healthcare NHS Foundation Trust report (Lees, 2024) **Osbourne et al (unpublished)** Mixed methods (cohort study, semi-structured interviews with patients, and a staff survey)	Patients were referred or self-referred to the Dorset Healthcare University NHS Foundation Trust All Age Eating Disorders Service and were on the waiting list for assessment. The service is primarily accessed by GP referral, referral by any health or social care professional, self-referral, and parental referral.	***Number recruited*** 51 ***Number analysed*** 14 ***Condition, n (%)*** All patients had either binge eating disorder or bulimia nervosa ***Age, years, mean, SD (range)*** [redacted] ***Female, n (%)*** [redacted] ***Male, n (%)*** [redacted] ***Ethnicity, n (%)***	***Duration*** 8 to 12 weeks ***Number of sessions* 12** ***Additional support*** None - Pure self-help.	None	Yes [redacted] The authors thank Credo Therapies Limited for their operational support and their advice on the

		[redacted] ***BMI, mean, SD (range)*** [redacted] ***Binge eating episodes, mean, SD*** (range) N=50: 12.72, 10.85 (1 to 56); N=14: 12.86, NR (NR) ***Time since diagnosis, years, median (range)*** [redacted] ***Prior treatment, n (%)*** [redacted]			evaluation specification and analysis.
Kent and Medway All Age Eating Disorders Service report (Lees, 2025) **Osbourne et al (unpublished)** Mixed methods (cohort study, semi-structured interviews with patients and staff, and a patient and staff survey)	Patients with BED were referred or self-referred to the All Age Eating Disorders Service for Kent and Medway North East London NHS Foundation Trust.	***Number recruited*** 36 ***Number analysed*** 16 ***Condition, n (%)*** All patients had binge eating disorder ***Age, years, mean, SD (range)*** [redacted] ***Female, n (%)*** [redacted] ***Male, n (%)*** [redacted] ***Ethnicity, n (%)*** [redacted] ***BMI, mean, SD (range)*** [redacted]	***Duration*** 8 to 12 weeks ***Number of sessions*** **12** ***Additional support*** The technology is described by the authors as “Supported Digital CBTe.” Patients received online support sessions from a Mental Health and Wellbeing Practitioner.	None	Yes [redacted] The authors thanked Credo Therapies Limited for their operational support and their advice on the evaluation specification and analysis.

		Binge eating episodes, mean, SD (range) N=36: 16.56, 8.80, 4-50); N=16: 18.91, NR (NR) ***Time since diagnosis, years, average (range)*** [redacted] ***Prior treatment, n (%)*** [redacted]			Sixteen patients had completed active treatment (sessions 1-9) and completed the end of programme questionnaires. Six patients were still working through digital CBTe at the close of data collection and were not included in the analysis. [redacted]

BMI, body mass index; SD, standard deviation
[a.] beat is a UK charity that provides resources for people with eating disorders

Table 20 Summary of the OBO study characteristics and baseline participant demographics

Study ID and study design	Setting	Participant characteristics			Technology	Comparator	Was the manufacturer of the technology associated with the study
Schmidt et al (2008) RCT	Participants were recruited from GP patient referrals to the adult Eating Disorders Out-patients Service in the South London and Maudsley National Health Service (NHS) Foundation Trust between 2003 and 2006.	***Baseline characteristic***	***OBO*** n=49	***Control*** n=48	***Version*** CD-ROM ***Duration*** 8 to 12 weeks ***Number of sessions*** 8 ***Additional support*** Participants used the CD–ROM package in a private, designated room in the out-patient department of the eating disorders unit. No practitioner support or guidance was offered during the time the individual used the CD–ROM Participants were reviewed by a clinician after 3 months and offered either shorter or longer face-to-face therapy.	Waiting-list control group. Participants had a 3-month wait before they started a full course of one-to-one CBT for bulimia nervosa.	Yes. C.W. received royalties for the CD–ROM intervention
		Condition, n (%)	Bulimia nervosa 33/49 (67.3); EDNOS 16/49 (32.7)	Bulimia nervosa 27/48 (56.2); EDNOS 21/48 (43.8)			
		Age, years, mean (SD)	25.6 (6.2)	28.7 (8.6)			
		Female, n (%)	49 (100)	44 (91.7)			
		Male, n (%)	0 (0)	NR			
		Ethnicity, n (%)	White British 27/38 (71.1%); Other 11/38 (28.9%)	White British 28/37 (75.7%); Other 9/37 (24.3%)			
		Binge eating episodes median (IQR)	12.0 (14.0)	9.0 (25.5)			
		BMI, mean (SD)	24.3 (6.2)	22.8 (3.8)			
		Time since diagnosis, years, median (range)	6.0 (0.5 to 30.0)	9.5 (0.5 to 32.0)			
	Participants were recruited from six	***Baseline characteristic***	***OBO n=38***	***Control n=38***	***Version*** Calipso online	Waiting List/Delayed Treatment Control	Yes. C. Williams is one of the

Sánchez-Ortiz et al (2011) RCT	higher education institutions (HEIs) in London between December 2005 and January 2007	Condition, n (%)	BN 20 (52.6); EDNOS 18 (47.4)	BN 19 (50); EDNOS 19 (50)	***Duration*** Participants were encouraged to complete the program over 8–12 weeks, but they continued to have access to the online sessions for 24 weeks. ***Number of sessions*** 8 ***Additional support*** Participants were supported by e-mails from two cognitive-behavioural therapists with eating disorder experience. Their remit was to support and encourage participants to use the package. Therapists sent e-mails once every 1–2 weeks and responded to any e-mails received from participants.	Group. Participants received the OBO intervention after a 3-month wait.	developers of the OBO treatment package and receives associated royalties.
		Age, years, mean (SD)	22.7 (3.1)	25.0 (7.7)			
		Female, n (%)	One participant in the study was male. The treatment group is NR.				
		Male, n (%)					
		Ethnicity, n (%)	British 21 (55) Other 17 (45)	British 24 (63.2) Other 14 (36.8)			
		Binge eating episodes mean (SD)	23.1 (24.3)	16.9 (14.6)			
		BMI, mean (SD)	21.8 (2.6)	22.2 (3.0)			
		Time since diagnosis, years, mean (SD)	5.2 (4)	8.3 (8.6)			
Sánchez-Ortiz et al (2010) Qualitative study: semi-structured interviews	See details for Sánchez-Ortiz 2011	***Number recruited*** 9 ***Number analysed*** 9 ***Condition, n (%)*** Bulimia nervosa n=3; EDNOS n=6 ***Age, years, mean (SD)*** 23.2 (3.5) ***Female, n (%)*** 9 (100)			See details for Sánchez-Ortiz 2011	None	See details for Sánchez-Ortiz 2011

		Male, n (%) 0 (0) ***Ethnicity, n (%)*** 5 British students; 4 International students ***BMI*** NR ***Time since diagnosis*** NR					
McClay et al (unpublished) RCT	Participants were initially recruited to participate in an online survey about attitudes to self-help for eating disorders from various community sources [redacted]	Baseline characteristic	***OBO n=57***	***Control n=46***	***Version*** Calipso online ***Duration*** [redacted] ***Number of sessions*** 8 ***Additional support*** Participants were given the choice of weekly email, telephone or text support over the 8-10 week intervention period. The support workers were [redacted] trained researchers. The support sessions did not involve any formal therapy as the support workers were not qualified therapists. The aim of the support	Delayed access group: Participants received access to the online package after a 10-week delay. [redacted]	[redacted]
		Condition, n (%)	BN 27 (61.4); EDNOS 17 (38.6)	BN 20 (51.3); EDNOS 19 (48.7)			
		Age, years, mean (SD)	29.8 (8.3)	30.5 (8.0)			
		Female, n (%)	57 (100)	45 (98)			
		Male, n (%)	[redacted]	[redacted]			
		Ethnicity, n (%)	[redacted]	[redacted]			
		Binge eating episodes mean (SD)	[redacted]	[redacted]			
		BMI, mean (SD)	24.0 (5.5)	23.3 (4.3)			
		Time since diagnosis	[redacted]	[redacted]			

					sessions was to encourage, motivate and support participants while they used the online package.		
McClay et al (2013) Qualitative study: semi-structured interviews	See McClay et al (unpublished)	***Number recruited*** 9[a] ***Number analysed*** 8 ***Condition, n (%)*** Bulimia Nervosa or EDNOS 8 (100) ***Age, years, mean (range)*** 33.9 (28 to 50) ***Female, n (%)*** 8 (100) ***Male, n (%)*** 0 (0) ***Ethnicity*** NR ***BMI*** NR ***Time since diagnosis, years, mean, SD (range)*** 16.6, 8.6 (2 to 30)			See McClay et al (unpublished)	None	See McClay et al (unpublished)
Pretorius et al (2010) Qualitative: semi-structured interviews	Ten participants were recruited from beat[b] and one was recruited via a specialist eating disorders outpatient clinic.	***Number recruited*** 11 ***Number analysed*** 11 ***Condition, n (%)*** Bulimia nervosa n=7; EDNOS n=4 ***Age, years, n (%)*** *16-19 years: n=4 (36.4)* *20 years: n=7* (63.6) ***Female, n (%)*** 11 (100)			***Version*** Calipso online ***Duration*** NR ***Number of sessions*** 8 ***Additional support*** Electronic message boards were available for participants and parents. E-mail support was provided by a	None	Yes. C Williams is one of the developers of the OBO package

		Male, n (%) 0 (0) ***Ethnicity*** NR ***BMI*** NR ***Time since diagnosis*** NR	named email therapist, who provided flexible weekly support and advice. Therapists were experienced clinicians working in specialist eating disorders clinics, or members of staff from beat who were trained in providing email support for people with eating disorders. The number of emails sent by participants to their therapist ranged from three to fourteen.		
Graham and Walton (2011) Cohort	Participants were initially recruited from a waiting list and then from a consecutive series of new referrals to an NHS outpatient Eating Disorders Service in Burnley, managed by the Clinical Network in Lancashire Care NHS Foundation Trust.	***Number recruited*** 66 ***Number analysed*** 40 ***Condition, n (%)*** 33 (50) BN and 33 (50) BED ***Age, years, mean, (range)*** 33 (16-62) Note: only 1 age 16 <18 ***Female, n (%)*** 60 (90.9) ***Male, n (%)*** 6 (9.1) ***Ethnicity, n (%)*** NR ***BMI, mean, (range)*** NR ***Binge eating episodes, mean, SD* (range)** NR ***Duration of eating disorder, years, median (range)*** 16 (1-42)	***Version*** CD-ROM ***Duration*** 8 weeks ***Number of sessions*** 8 ***Additional support*** Participants had scheduled contact with a clinician during the introductory meeting, and again at the fourth session and then usually two weeks following session eight.	None	Unclear. Media Innovations Limited provided technical support. Media Innovations Ltd have intellectual property rights in the web-based version of the OBO treatment.

		Prior treatment, n (%) 27 (40.9)			
Pretorius et al (2009) Cohort	Recruited from consecutive referrals to one of nine UK specialist eating disorders clinics or via the beat website and newsletter.	***Number recruited*** 101 ***Number analysed*** 3 months (n=52) 6 months (n=63) ***Condition, n (%)*** 61 (60.4) BN and 40 (39.6) EDNOS ***Age, years, mean, SD (range)*** 18.8 (1.6) 13-20 ***Female, n (%)*** 98 (97.0) ***Male, n (%)*** 3 (3.0) ***Ethnicity, n (%)*** Caucasian 88 (87.1) Other or 'mixed' ethnicity 9 (8.9) Missing 4 (4.0) ***BMI, mean, SD*** 22.2 (0.4) ***Full time education, years, mean, SD*** 13.1 (1.6) ***Involvement of parents in the study, n (%)*** 25 (24.8) ***Binge eating episodes, mean, SD*** 22.2 (20.5) ***Duration of illness, years, median*** 3.0 (1.6) ***Prior treatment, n (%)*** NR	***Version*** Calipso online ***Duration*** 8 weeks (one online CBT session per week) ***Number of sessions*** 8 ***Additional support*** Electronic message (bulletin) boards for participants and parents and E-mail support from named email therapist who provided flexible weekly support and advice**.**	None	Yes. C. Williams and Media Innovations Ltd have intellectual property rights in the web-based OBO treatment. Media Innovations did not provide funding or other support for the study.
Bara-Carril et al (2004)	Participants were recruited from a	***Number recruited*** 47	***Version*** CD-ROM	None	Yes. C.J. Williams and

Cohort	consecutive series of new referrals to the Eating Disorders Unit of the South London and Maudsley NHS Trust. Participants were either recruited from GP referrals (and were on the waiting list for assessment) or at the initial assessment in the eating disorders unit.	***Number analysed*** 45 ***Condition, n (%)*** 36/45 (80) BN, 9/45 (20) EDNOS ***Age, years, mean, SD*** 30 (8.6) ***Female, n (%)*** 44 (93.6) ***Male, n (%)*** 3 (6.4) ***Ethnicity, n (%)*** NR ***BMI, mean, SD (range)*** NR ***Binge eating episodes, mean, SD*** 4.3 (1.5) ***Duration of eating disorder, cumulative proportion, n (%)*** Up to 1 year: 0 Up to 2 years: 16% Up to 5 years: 41% Up to 10 years: 59% Up to 15 years: 84% >15 years: 100% ***Prior treatment, n (%)*** NR	***Duration*** 4–8 weeks, working through one to two computer modules per week. ***Number of sessions*** 8 ***Additional support*** None. Patients accessed the treatment programme in the eating disorder unit but they had no contact with a clinician. Treatment was pure self-help with no practitioner support. Patients who participated in the study were offered the option of therapist-aided treatment as usual two months after the CD-ROM treatment.		P.J.R. Harkin share intellectual property rights in the CD-ROM treatment.

BED, binge eating disorder; BN, bulimia nervosa; EDNOS, eating disorder not otherwise specified; IQR, interquartile range; SD, standard deviation
a. One interview could not be transcribed due to the poor quality of the recording. Eight interviews were used in the final analysis; b. beat is a UK charity that provides resources for people with eating disorders

Table 21 Summary of the Worth Warrior study characteristics and baseline participant demographics

Study ID and study design	Setting	Participant baseline characteristics	Technology	Comparator	Was the manufacturer of the technology associated with the study
Edwards and Krause (unpublished) Three stage case series	Participants were recruited [redacted] via advertising campaigns in local communities, [redacted] website and [redacted] social media [redacted]	***Number recruited*** [redacted] ***Number analysed*** 5 ***Condition*** [redacted] ***Age, years, n (%)*** [redacted] ***Female, n (%)*** [redacted] ***Non-binary, n (%)*** [redacted] ***Ethnicity, n (%)*** White British [redacted] ***BMI*** [redacted] ***Binge eating episodes*** [redacted] ***Time since diagnosis*** [redacted]	***Duration*** [redacted] ***Number of sessions*** [redacted] ***Additional support*** None	None	[redacted]

BMI, body mass index; SD, standard deviation

Appendix E Summaries of the non-comparative clinical effectiveness evidence for Overcoming Bulimia Online

Table 22 Summary of the long-term clinical effectiveness evidence from the randomised controlled trials

Outcome	Timepoint	Sánchez-Ortiz 2011[a]	McClay (unpublished)
		OBO	OBO
Binge eating episodes [b]	Baseline	n=38 23.1 (24.3) [c]	[redacted]
	6 months	n=23 3.4 (5.7)	[redacted]
	12 months	NR	[redacted]
Global EDE [b]	Baseline	n=38 3.4 (1.1)	[redacted]
	6 months	n=23 1.5 (1.1)	[redacted]
	12 months	NR	[redacted]
EDE Vomit episodes [b]	Baseline	n=38 20 (28.7)	[redacted]
	6 months	n=23 3.5 (5.7)	[redacted]
	12 months	NR	[redacted]
EDE purge episodes [b]	Baseline	n=38 28.3 (36.8)	[redacted]
	6 months	n=23 4.3 (6.4)	[redacted]
	12 months	NR	[redacted]
EDE weight concern [b]	Baseline	n=38 3.4 (1.3)	[redacted]
	6 months	n=23 2.1 (1.5)	[redacted]
	12 months	NR	[redacted]
EDE shape concern [b]	Baseline	n=38 3.9 (1.3)	[redacted]
	6 months	n=23 2.0 (1.4)	[redacted]
	12 months	NR	[redacted]
EDE eating concern [b]	Baseline	n=38 2.7 (1.5)	[redacted]
	6 months	n=23	[redacted]

		0.8 (0.9)	
	12 months	NR	[redacted]
EDE dietary restraint [b]	Baseline	n=38 3.6 (1.1)	[redacted]
	6 months	n=23 1.4 (1.4)	[redacted]
	12 months	NR	[redacted]
HADS anxiety [d]	Baseline	n=38 11.1 (3.6)	[redacted]
	6 months	n=23 6.2 (4.4)	[redacted]
	12 months		[redacted]
HADS depression [d]	Baseline	n=38 6.4 (3.6)	[redacted]
	6 months	n=23 3.3 (3.4)	[redacted]
	12 months	NR	[redacted]
WHOQOL physical [e]	Baseline	n=38 14.1 (2.8)	[redacted]
	6 months	n=23 15.9 (3.3)	[redacted]
	12 months	NR	[redacted]
WHOQOL psychological [e]	Baseline	n=38 10.9 (2.3)	[redacted]
	6 months	n=23 13.5 (2.6)	[redacted]
	12 months	NR	[redacted]
WHOQOL social [e]	Baseline	n=38 11.9 (3.9)	[redacted]
	6 months	n=23 13.6 (3.8)	[redacted]
	12 months	NR	[redacted]
WHOQOL environmental [e]	Baseline	n=38 13.6 (2.4)	[redacted]
	6 months	n=23 15.1 (2.8)	[redacted]
	12 months	NR	[redacted]
Social adjustment [f]	Baseline	NR	[redacted]
	6 months	NR	[redacted]
	12 months	NR	[redacted]

Abstinent, n/N (%) [g]	Baseline	1/38 (2.6)	[redacted]
	6 months	9/23 (39.1)	[redacted]
	12 months	NR	[redacted]
Subclinical, n/N (%) [h]	Baseline	7/38 (18.4)	[redacted]
	6 months	7/23 (30.4)	[redacted]
	12 months	NR	[redacted]
Clinical, n/N (%) [i]	Baseline	30/38 (78.9)	[redacted]
	6 months	7/23 (30.4)	[redacted]
	12 months	NR	[redacted]
Below DSM–IV threshold/remission	Baseline	0/38 (0)	[redacted]
	6 months	12/23 (52.2)	[redacted]
	12 months	NR	[redacted]

EDE, eating disorder examination questionnaire; HADS, Hospital Anxiety and Depression Scale; NA, not applicable; NE; data were not eligible; NR, not reported; OBO, Overcoming Bulimia Online; WHOQOL, World Health Organization Quality of Life
Data are means and standard deviations unless reported otherwise
a. The numbers of intervention and control participants included in the analysis for 6-month treatment timepoint reported in Sánchez-Ortiz et al (2011) were reported inconsistently in Figure 1 and Table 4 of the article. The numbers of intervention and control participants reported in Table 4 of the article have been assumed for all outcomes at the 6-month timepoint; b.Outcome was assessed over the past 28 days. Higher scores indicate more problematic eating difficulties; c. Reported as 23.0 in Table 1 and 23.1 in Table 2 of the publication. The standard deviations are the same in both tables; d. Higher scores indicate higher severity; e. Higher scores indicate better quality of life; f. Social functioning impairment was measured by the Work and Social Adjustment Scale (WSAS). Scores >20 indicate moderately severe or worse psychopathology, Scores between 10 and 20 are associated with significant functional impairment but less severe clinical symptomatology. Scores <10 are associated with subclinical populations (Mundt et al., 2002); g. Abstinent was defined as no objective binges, episodes of vomiting and laxative use in the past 28 days (Schmidt et al 2008) or month (Sánchez-Ortiz et al 2011); h. Subclinical was defined as episodes of bingeing, vomiting and/or laxative use occurred, on average, less than twice a week. i. Clinical was defined as episodes of bingeing and vomiting or laxative use occurred, on average, twice a week in the past month
Source: Schmidt et al (2008); Sánchez-Ortiz et al (2011); McClay et al (unpublished)

Table 23 Summary of the clinical effectiveness evidence from the Graham and Walton (2011) cohort study

Outcome	Statistical significance
Binge eating episodes[a, b]	p=0.080
Vomiting [a, b]	p <0.05
Dieting[a,b]	p < 0.05
Functioning Scale Score[a, c]	p<0.05
Well-being scores[a, c]	p=0.001
Problems Scale Score[a,c]	p=0.001
EDI-3 Bulimia Sub scale[a, d]	p<0.05
	Mean score out of 32 (best possible score)
Client satisfaction questionnaire, mean (n=40)[e]	25.9
	n/N (%)
Number of sessions completed[e] • dropped out before completing session 1 • dropped out between sessions 2-4 • dropped out between session 5-8 • Completed all 8 sessions but didn't return data at the evaluation appointment	 5/66 (7.6) 5/61 (8.2) 10/56 (17.9) 1/46 (2.2)

[a.] Only summary statistics or data in graph format were reported. All results indicate improvement with treatment; [b.]Measured by the SEEDS (Short Evaluation of Eating Disorders Symptoms) 5-point patient self-rating instrument from 1, not at all, to 5, more than once per day within the last month or week. Higher scores indicate greater severity; [c] Measured by the CORE (Clinical Outcomes, Research and Evaluation) tool. Higher scores indicate poorer wellbeing; [d] EDI-3: Eating Disorders Inventory-3, a self-report measure that provides standardized subscale scores on eight dimensions that are clinically relevant to eating disorders. Authors only published the one significant change between pre and post scores for the Bulimia Sub scale (no results are reported for the seven other dimensions); [e.] The number of participants who completed treatment is inconsistently reported
Source Graham and Walton (2011)

Table 24 Summary of the clinical effectiveness evidence from the Pretorius et al (2009) cohort study

Outcome	Timepoint	Pretorius (2009)
Binge eating episodes[a]	Baseline (n=101)	22.2 (2.0)
	3 months (n=52)	12.4 (2.6)
	6 months (n=63)	12.7 (2.4)
Vomit episodes[a]	Baseline (n=101)	34.1 (4.1)
	3 months (n=52)	19.2 (4.4)
	6 months (n=63)	19.0 (3.3)
Laxative episodes[a]	Baseline (n=101)	3.4 (1.3)
	3 months (n=52)	2.7 (1.2)
	6 months (n=63)	1.1 (0.5)
Global EDE score[a]	Baseline (n=101)	3.9 (0.1)
	3 months (n=52)	2.9 (0.2)
	6 months (n=63)	3.1 (0.2)
BMI	Baseline (n=101)	22.2 (0.4)
	3 months (n=52)	21.7 (0.4)
	6 months (n=63)	22.2 (0.4)
Programme acceptability - list of liked and disliked elements for online sessions[b]	Liked • Information about triggers/causes/damage (n = 13) • Convenience (n = 9) • Anxiety control training (ACT) (n = 4) • Useful having summary & review of previous session (n = 3) • Rules/goal-setting (n = 2) • The voiceover (n = 2) • Interactive approach and different media (n = 1) • Clearly set out, calm blue colouring (n = 1) • Simple methods of answering questions (n = 1) • No human contact (n = 1) • Less intimidating than face-to-face (n = 1) • Good to do while on waiting list (n = 1)	Disliked • Repetitive (n = 5) • Impersonal (n = 4) • Felt unmotivated (n = 4) • Talking commentary (n = 4) • Unable to pause halfway through a session (n = 2) • Commitment and time taken (n = 1) • Felt overwhelmed (n = 1) • Writing letters (n = 1) • Pictures of food were too triggering (n = 1) • Auto-plays of voice & video (n = 1) • Assertiveness and motivation training not relevant (n = 1) • Food diary too difficult (n = 1) • Disliked being online; preferred using workbooks (n =1) • Some phrases were patronising (n = 1)

		• Hospital anxiety and depression scale (n = 1)
Use of services and supports - number of contacts with any service or professional[c]	Baseline (n=101)	8.1 contacts over the three months prior to the baseline interview
	3 months (n=51)	5.7 contacts
Number of times help was sought from semi-formal supports[c,d]	Baseline (n=101)	23.0 (91%)
	3 months (n=47)	12.3
Number of times help was sought from family and friends[c]	Baseline (n=101)	20.1 (74%)
	3 months (n=47)	14.4
Days missed from school - 3 months prior to the baseline interview[c]	Baseline (n=101)	4.5 n=26 (0–30)
	Completed treatment (n=52)	Reduced, but not significantly, no data reported
Days missed from work - 3 months prior to the baseline interview[c]	Baseline (n=101)	1.1, n = 58 (0–7)
	Completed treatment (n=47)	Reduced, but not significantly, no data reported
Food expenditure (on items such as food, childcare, and medication)[c]	Baseline (n=101)	£141.63
	3 month follow up interview (n=47)	£57.68
Treatment uptake and compliance		
Did not complete any web-based sessions, n (%)	3 months	17 (17%)
Median number of completed sessions[e]	By 6 months	3

EDE, Eating Disorder Examination questionnaire
[a.];Measured by the EDE in the previous 28 days. Higher scores indicated problematic eating behaviour; [b]. Measured by an Experience of Treatment Questionnaire; [c.] Measured by a Client Service Receipt Inventory used to record contact with services, professionals and other sources of support over the three months prior to each interview; [d]. Semi-formal support included other websites, self-help groups, telephone help-lines, voluntary organisations, books or magazines [e.] Total number of 8 sessions were available
All data are means (standard deviation) unless otherwise specified
Source: Pretorius et al (2009)

Table 25 Summary of the clinical effectiveness evidence from the Bara-Carril et al (2004) cohort study

Outcome	Timepoint	Bara-Carril (2004)
Binge eating episodes[a]	Baseline (n=45)	4.3 (1.5)
	Completed treatment (n=19)	NR
	Completed 2-months follow up (n=39)	3.6 (1.7)
Vomiting [a]	Baseline (n=45)	3.7 (1.8)
	Completed treatment (n=19)	NR
	Completed 2-months follow up (n=39)	2.6 (1.7)
Laxative/diuretic use[a]	Baseline (n=45)	2.0 (1.4)
	Completed treatment (n=19)	NR
	Completed 2-months follow up (n=39)	1.7 (1.2)
Food restriction[a]	Baseline (n=45)	4.5 (1.6)
	Completed treatment (n=19)	NR
	Completed 2-months follow up (n=39)	4.1 (1.8)
Exercise[a]	Baseline (n=45)	2.1 (1.7)
	Completed treatment (n=19)	NR
	Completed 2-months follow up (n=39)	1.8 (1.5)
Completed all 8 sessions CD-ROM, n (%)		19 (42.2)
Number of sessions completed, n (%)	Attended one session Attended two sessions Attended three sessions Attended four sessions Attended five sessions Attended six sessions Attended seven sessions	7 (15.6) 5 (11.1) 4 (8.9) 7 (15.6) 1 (2.2) 1 (2.2) 1 (2.2)
Number discharged from service, n (%)		2 (4.3)[b]
Number receiving post-self-help specialist treatment, n (%) [c]		31/69 (44.9%)

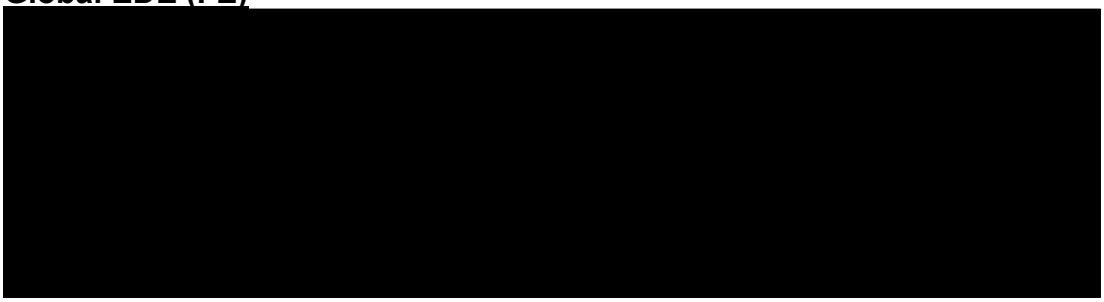
OBO, Overcoming Bulimia Online
[a] SEEDS: Short Evaluation of Eating Disorders Symptoms -rating scale 1 (not at all) to 5 (more than once per day). Higher scores indicate greater severity; b. due to unplanned traumatic pregnancy and termination n=1; serious depression requiring medical intervention n=1; c. Patients who participated in the study were offered the option of therapist-aided treatment as usual after the CD-ROM programme. 31 patients had at least one further appointment with a clinician.
All data are means (standard deviation) unless otherwise specified. While the authors state that "*eating disorder symptoms were assessed at baseline, pre-treatment, after Sessions 3 and 8, and at follow-up 2 months after the end of the CD-ROM treatment*", only results for baseline and 2-month follow-up are presented in the paper.
Source: Bara-Carril et al (2004)

Appendix F: meta-analyses of OBO outcomes (Calipso online studies only)

Analyses were conducted using fixed effect (FE) models. Random effects (RE) models are also reported as a sensitivity analysis for outcomes with substantial heterogeneity (I^2>50%).

Binge eating episodes (FE)

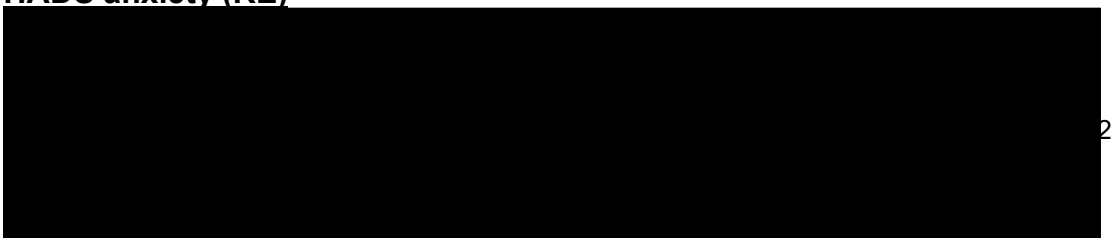
Global EDE (FE)



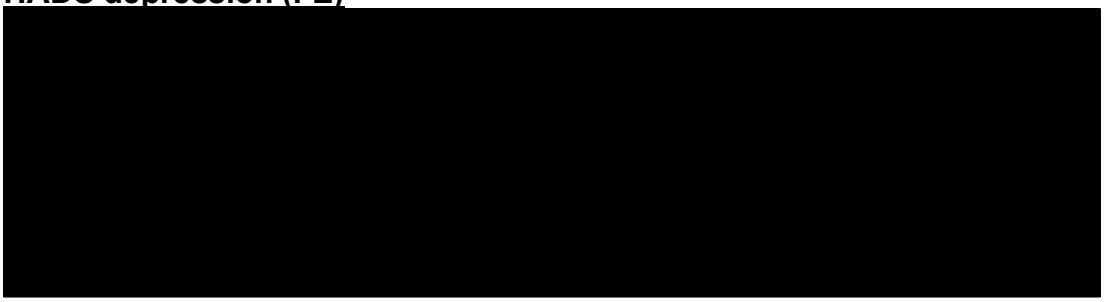
EDE vomit episodes (FE)

HADS anxiety (FE)

HADS anxiety (RE)



HADS depression (FE)



Appendix G Supplementary evidence searches for economic evaluations of eating disorder interventions

Search strategies

Ovid MEDLINE(R) ALL <1946 to May 02, 2025>

1 "Feeding and Eating Disorders"/
2 Bulimia Nervosa/ or Binge-Eating Disorder/ or Avoidant Restrictive Food Intake Disorder/
3 (bulimi* or (bing* adj3 eating)).tw,kf.
4 ((eating or feeding or food) adj3 disorder).tw,kf.
5 ((avoidant or restrictive) adj3 food).tw,kf.
6 (ARFID or EDNOS or OSFED).tw,kf.
7 or/1-6
8 exp "costs and cost analysis"/
9 *economics/
10 exp models, economic/
11 monte carlo method/
12 markov chains/
13 exp technology assessment, biomedical/
14 cost?.ti.
15 (economic? adj3 model$).tw.
16 markov$.tw.
17 monte carlo.tw.
18 (decision$ adj2 (tree? or analy$ or model$)).tw.
19 (resource? adj5 "use").tw.
20 *"Quality of Life"/ or "quality of life".ti.
21 or/8-20
22 7 and 21
23 limit 22 to yr="2015 -Current"
24 limit 22 to ("review" or "systematic review")
25 limit 23 to yr="2023 -Current"
26 25 not 24

APA PsycInfo <2002 to April 2025 Week 4>

1 eating disorders/
2 "avoidant/restrictive food intake disorder"/ or binge eating disorder/ or bulimia/ or "purging (eating disorders)"/
3 (bulimi* or (bing* adj3 eating)).tw.
4 ((eating or feeding or food) adj3 disorder).tw.
5 ((avoidant or restrictive) adj3 food).tw.
6 (ARFID or EDNOS or OSFED).tw.
7 or/1-6
8 "costs and cost analysis"/ 1616
9 *Economics/
10 exp Health Care Economics/
11 exp Markov Chains/
12 exp Health Care Costs/
13 cost?.ti.

14 (economic? adj3 model$).tw.
15 markov$.tw.
16 monte carlo.tw.
17 (decision$ adj2 (tree? or analy$ or model$)).tw.
18 (resource? adj5 "use").tw.
19 "Quality of Life"/
20 *"Quality of Life"/ or "quality of life".ti.
21 or/8-20
22 7 and 21
23 limit 22 to yr="2015 -Current"
24 limit 23 to ("0800 literature review" or "0830 systematic review")
25 limit 23 to yr="2023 -Current"
26 25 not 24

INAHTA

("Avoidant Restrictive Food Intake Disorder"[mh]) OR ("Binge-Eating Disorder"[mh]) OR ("Bulimia Nervosa"[mh])
Limit to 2015-25

EconLit

S1 noft(bulimi* or (bing* N/3 eating))
S2 noft((eating or feeding or food) N/3 disorder)
S3 noft((avoidant or restrictive) N/3 food)
S4 noft(ARFID OR EDNOS OR OSFED)
S5 [S1] OR [S2] OR [S3] OR [S4]
S6 ([S1] OR [S2] OR [S3] OR [S4]) AND pd(20150101-20251231)

CEA Registry

Bulimia
Binge
Eating disorder
Eating disorders
Avoidant
Restrictive

NICE National Institute for Health and Care Excellence

Health Tech Programme

HTE10058 Digital self-help for people with eating disorders

External Assessment Report - Comments collated table:

Any confidential sections of the information provided should be underlined and highlighted. Please underline all confidential information, and separately highlight information that is commercial in confidence' in blue and all that is 'academic in confidence' in yellow.

Comment no.	Stakeholder	Page no.	Section no.	Comment	EAG Response
1	Individual	General	-	Just to say I have thoroughly read through the document and have no changes to make. It delivers what I wanted including and so I am happy for this to go to the next stage as a patient user. Thank you for this opportunity as ever and please continue to include me in any further updates or work needed.	We thank the reviewer for their positive comment. No revision is needed.
2	Five Areas Ltd	1	Para 1	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company).	We have changed this throughout the report as requested.
3	Five Areas Ltd	5	Bullet Point 1	The older CD Rom version is no longer available and was withdrawn as few computers have CD Roms and web delivery provides easier updating and wider access with higher security.	We thank the reviewer for clarifying this.
4	Five Areas Ltd	7	Bottom line of the page	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company).	Changed as requested.

5	Five Areas Ltd	11	Para 1 lines 5-8	There has never has been a book version of OBO.	We have revised the sentence to clarify that “A comparison between the Overcoming Bulimia (OBO) programme and similar information delivered in book format was beyond the scope of this appraisal.”
6	Five Areas Ltd	17	First column Line 3	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company).	Changed as requested.
7	Five Areas Ltd	18	First column Line 3	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company).	Changed as requested.
8	Five Areas Ltd	20	First column Line 3	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company).	Changed as requested.
9	Five Areas Ltd	20	First column Line 6	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company).	Changed as requested.
10	Five Areas Ltd	21	First column Line 3	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company).	Changed as requested.

11	Five Areas Ltd	21	First column Line 6	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company).	Changed as requested.
12	Five Areas Ltd	22	First column Line 3	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company).	Changed as requested.
13	Five Areas Ltd	24	Para 2 lines 2-3	It's not possible to blind participants allocated to the intervention.	We have revised our report and deleted the sentence referring to blinding.
14	Five Areas Ltd	24	Para 2 lines 4-5	It's stated that attrition rates are high - they can be – but also in some settings lower (e.g. CD Rom studies where people travelled to a base). It might be more accurate to state "The attrition rate in the trials is variable …"	We have revised the report to clarify that "attrition rates varied across trials, with some exhibiting high dropout/non-responder levels that may have increased the risk of bias."
15	Five Areas Ltd	31	Final para heading	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company).	Changed as requested
16	Five Areas Ltd	32	First para line 2	McClay et al qualitative paper is omitted.	Thanks for spotting this. McClay has now been added.
17	Five Areas Ltd	39	Para 2 line 8	The sentence needs additional words to fully make sense (e.g. add "the package" after the words "stick with").	Revised to: "…to stick with the programme."
18	Five Areas Ltd	42	Para 2	Just to note message boards are no longer provided/used in the current version of the course.	Thanks for the clarification. However, the text in the report refers to the study by Pretorious et al., where message boards were used. No changes are needed.

19	Five Areas Ltd	49	First column – line 1	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company)	Changed as requested.
20	Five Areas Ltd	52	Title after para 3	Please can you change Five Areas to Five Areas Ltd (Five Areas is a different company)	Changed as requested.
21	Five Areas Ltd	53	Para 4 lines 1-2	It's noted that OBO was generally found to be easy to use, however some experienced technical issues. The package programming has been updated and the current delivery platform is different from that used when technical problems were encountered.	Thanks for the clarification. This additional information will be for the Assessment Committee to consider during their meeting.
22	Five Areas Ltd	70	Column 4 lines 1 and 3	Five Areas Ltd x 2 rather than Five area, or fiveareas	Changed as requested.
23	Five Areas Ltd	78	Section 9	We found the use of the term booklet confusing particularly re Point 4 above. Is this term referring to providing a printed copy of the online worksheets to users? Thank you.	We can clarify that scenario analysis number 9 reflects the addition of a £20 cost to the usual care arm of the model only. This is scenario is intended to reflect the potential that the cost of printed materials might be reduced if digital technologies became standard practice. We have clarified the description of this scenario in Table 12 of the report.
24	Credo Therapies Ltd	1 of 143	Executive summary; Clinical Evidence; Digital CBTe	Thank you for highlighting this important point regarding attrition rates. As you've noted, the evaluations (one real-world study carried out in the community and two service improvement initiatives) did experience assessment attrition rates that could be considered high relative to other	Thank you for your comments and for providing further clarification. The issue related to attrition rates among individuals with eating disorders will be considered by the Assessment Committee during their meeting. It does not require a

				types of research and interventions, such as tightly controlled clinical trials. However, it's helpful to contextualise this by recognising that these attrition rates are typical—and indeed common—in real-world evaluations of digital mental health interventions, particularly those that are self-guided or minimally supported. It is also worth noting that there are different types of attrition, specifically assessment attrition (participants not completing outcome measures) and treatment dropout (participants discontinuing the intervention itself). Assessment attrition, in particular, can be highly variable and considerable. In our evaluations, we intentionally refrained from employing strategies typically used in research trials (such as structured followups, incentives, or intensive researcher contact) to reduce attrition, as we sought to authentically mimic real-world clinical conditions. In digital health evaluations, assessment attrition—where participants do not complete outcome measures—is common and relatively high, with rates varying considerably from zero to 85% (Groot et al., 2023), and generally lower in self-guided or minimally supported interventions. At the same time, many real-world service evaluations also exhibit relatively high rates of assessment attrition. The term "relatively	revision of the EAG final report, which summarises evidence - including reported attrition rates - from the relevant current studies. We do not argue that moderate or high attrition rates are typically observed in certain populations in real-world evaluations; however, interpreting effects becomes challenging when attrition rates are high.

				high" here is important, as it specifically reflects a comparison to attrition rates typically seen in randomised controlled trials (RCTs), which are specifically designed to reduce attrition through structured follow-up, incentives, and researcher contact. While these strategies help ensure high data completion, they do not accurately reflect routine clinical practice. Therefore, the priority in real-world evaluations is not necessarily to minimise attrition but rather to transparently report it and understand its underlying drivers. Although higher assessment attrition rates increase the risk of selection bias—where findings primarily represent the experiences of participants who completed assessments—the Dorset and Kent pilots (Lee et al., 2024 & Lee et al., 2025) retain strong external validity as they were conducted under genuine NHS service conditions. These pilots reflect realistic patterns of uptake, engagement, and dropout, ensuring their findings remain directly relevant and applicable to routine clinical settings. Similarly, the Beat study (Murphy et al., 2025) demonstrates potentially naturalistic patterns of engagement within a community context, capturing how individuals engage with the intervention independently and	

				without institutional involvement. Together, these evaluations provide valuable insights into real-world feasibility, user behaviour, and implementation effectiveness, despite acknowledged limitations related to selection bias. Regarding intervention dropout specifically, the observed rates align closely with those commonly reported in broader digital mental health literature, especially for minimally supported interventions. For instance, a recent meta-analysis indicated that on average, only 36% of participants completed all prescribed modules in digital interventions for eating disorders (Linardon et al., 2020). • Groot, J., MacLellan, A., Butler, M., Todor, E., Zulfiqar, M., Thackrah, T., Clarke, C., Brosnan, M., & Ainsworth, B. (2023). The Effectiveness of Fully Automated Digital Interventions in Promoting Mental Well-Being in the General Population: Systematic Review and Meta-Analysis. JMIR mental health, 10, e44658. https://doi.org/10.2196/44658 • Linardon, J., Shatte, A., Messer, M., Firth, J., & Fuller-Tyszkiewicz, M. (2020). E-mental health	

				interventions for the treatment and prevention of eating disorders: An updated systematic review and meta-analysis. Journal of consulting and clinical psychology, 88(11), 994–1007. https://doi.org/10.1037/ccp0000575	
a25	Credo Therapies Ltd	1 of 143	Executive summary; Clinical Evidence; Digital CBTe	Regarding diversity, it is important to differentiate clearly between having limited data on diversity and having data that demonstrates limited diversity. “Diversity” has many dimensions, including—but not limited to—ethnicity, gender identity, age, and socioeconomic status. In terms of limited data on diversity, data was collected on several key aspects, including ethnicity, gender identity, and age. Note that the full range of gender identity options was always offered. Ethnicity, gender identity, and age were reported in full in Murphy et al. (2025), although only male and female categories were endorsed for gender identity. Age was reported in Osborne et al. (2025, unpublished), but ethnicity and gender identity were only reported for 94% of the sample; the remaining 6% will be reported in the final write-up. The independent evaluation service (Lees et al., 2024, 2025) did not have access to demographic data, as it was not part of their evaluation requirements. In terms of data that demonstrates limited diversity, while overall diversity within the	The statement in the Executive Summary refers to limited data on diversity.

				samples were limited, the participant group was broadly representative of the local community settings. This assessment of diversity of the local population was based on input from service staff and a review of relevant population data from the Office for National Statistics (ONS). In addition, it should also be noted that those who present with eating disorders tend to reflect a demographically skewed population—most commonly women and White individuals. "Generalisability" requires careful definition. Generalisability refers to the extent to which research findings can be applied or transferred to broader populations or different contexts. Achieving broad generalisability was not the objective of any of the real-world evaluations described above. Real-world evaluations typically focus on feasibility, acceptability, implementation effectiveness, and context-specific factors within authentic environments rather than aiming for findings that are broadly generalisable across different populations or settings. However, the high external validity inherent to real-world evaluations does enhance their potential applicability to similar settings and populations	
26	Credo Therapies Ltd	1 of 143	Executive summary; Clinical Evidence;	Regarding the statement about personalisation and technical issues, it does not seem justified to say that "many requested a more personalised approach and highlighted technical issues". In the	We have revised this statement to say that 'some' requested a more personalised approach and highlighted technical issues.

			Digital CBTe	Murphy et al. (2025) study, only two participants reported these as reasons for discontinuation.	
27	Credo Therapies Ltd	of 143	Executive summary; Clinical Evidence; Digital CBTe	It is also important to highlight that Digital CBTe is a direct digital adaptation of two well-established and evidence-based treatments. More specifically, Digital CBTe is directly and closely derived from CBT-E (Enhanced Cognitive Behaviour Therapy), a well-established treatment approach for eating disorders, and its associated printed programme-led version (Overcoming Binge Eating). All three interventions—CBT-E, Overcoming Binge Eating, and Digital CBTe—were developed by the same research group at the University of Oxford's Centre for Research on Eating Disorders (CREDO), which is the leading group, internationally, for the development and evaluation of CBT for eating disorders: https://www.psych.ox.ac.uk/research/credo and https://www.cbte.co/ There are three related versions: 1. (Therapist-led) CBT-E (standard form). 2. Overcoming Binge Eating (printed programme-led CBT-E). 3. Digital CBTe (digital programme-led CBT-E).	Please note that the EAG report focuses on the technologies outlined in the NICE final scope for this assessment.

				CBT-E and Overcoming Binge Eating have support from multiple Randomised Controlled Trials (RCTs) and meta-analyses: For CBT-E • Atwood, M. E., & Friedman, A. (2019). A systematic review of enhanced cognitive behavioral therapy (CBT-E) for eating disorders. Clinical Psychology Review, 70, 1–13. https://doi.org/10.1016/j.cpr.2019.01.002 • De Jong, M., Schoorl, M., & Hoek, H. W. (2018). Enhanced cognitive behavioural therapy for eating disorders: A systematic review. Current Opinion in Psychiatry, 31(6), 436–444. https://doi.org/10.1097/YCO.0000000000000450 For Overcoming Binge Eating • Striegel-Moore, R. H., Wilson, G. T., DeBar, L., Perrin, N., Lynch, F., Rosselli, F., & Kraemer, H. C. (2010). Cognitive behavioral guided self-help for the treatment of recurrent binge eating. Journal of Consulting and Clinical Psychology, 78(3), 312–321. https://doi.org/10.1037/a0018915	

				• Grilo, C. M., & Masheb, R. M. (2005). A randomized controlled comparison of guided self-help cognitive behavioral therapy and behavioral weight loss for binge eating disorder. Behaviour Research and Therapy, 43(11), 1509–1525. https://doi.org/10.1016/j.brat.2004.11.010 • Ghaderi, A., & Scott, B. (2003). Pure and guided self-help for full and sub-threshold bulimia nervosa and binge eating disorder. British Journal of Clinical Psychology, 42(3), 257–269. https://doi.org/10.1348/014466503 60703375 • Carter, J. C., & Fairburn, C. G. (1998). Cognitive-behavioral self-help for binge eating disorder: A controlled effectiveness study. Journal of Consulting and Clinical Psychology, 66(4), 616–623. • Fairburn, C. G. (1995). Overcoming Binge Eating. Guilford Press. • Fairburn, C. G. (2013). Overcoming binge eating (2nd ed.). Guilford Press. On the basis of the evidence, the NICE guideline (NG69) for eating disorders,	

				recommends guided selfhelp based on CBT-ED (CBT-ED GSH) as a first-line treatment for bulimia nervosa and binge eating disorder and therapist-led CBT-ED for all eating disorders. Many of the studies reviewed to inform this recommendation evaluated the effectiveness of Overcoming Binge Eating. By definition, Digital CBTe also meets the NICE recommendation, as CBT-E is the principal exemplar within the umbrella term of “CBTED”. Overcoming Binge Eating provides the most direct evidence-based comparator for Digital CBTe, as Digital CBTe employs the same therapeutic procedures in the same sequence as the printed programme. However, these procedures have been specifically adapted for digital delivery—including reduced text volume, enhanced user engagement and interactivity, and increased customisation tailored to individual eating disorder presentations. Crucially, this capability for personalisation positions Digital CBTe within the medical device category: Digital CBTe is a Class I Medical Device in the UK. The PARD database with the registration for Digital CBTe can be found here: https://pard.mhra.gov.uk/manufacturersearch/credo%20therapies	