OCD-NET for adults with obsessive compulsive disorder

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Summary

- The technology described in this briefing is OCD-NET. It is an online programme designed to treat obsessive compulsive disorder (OCD).
- The scope for this briefing is to consider the use of OCD-NET in a model of care where a therapist supports the user, in adult Improving Access to Psychological Therapies (IAPT) services, for the NHS England evaluation of digitally enabled psychological therapies for IAPT.
- The intended place in therapy would be as an alternative to brief individual or group cognitive behavioural therapy (CBT) with exposure response prevention (ERP) in adults with mild OCD, or instead of drug treatment or high-intensity CBT with ERP in adults with moderate OCD.
- The main points from the evidence summarised in this briefing are from 1 randomised controlled trial (reported in 4 publications) including a total of 101 adults in Sweden. It showed that OCD-NET is more effective than email support from a therapist in adults with mild to severe OCD.
- Key uncertainties around the evidence or technology are that there is currently no evidence comparing OCD-NET with face-to-face therapy.
- The cost of OCD-NET is expected to be around £176 per user (including cost of therapist time and VAT). The resource impact would be less than brief individual CBT with ERP and more than group CBT or drug treatment.
- The IAPT expert panel recommended that OCD-NET apply for development funding from NHS England to address issues identified in the assessment of this technology. After this development work is completed, OCD-NET will be reconsidered for the evaluation in practice phase of the NICE IAPT assessment programme.
The technology

OCD-NET is an online programme designed to treat obsessive compulsive disorder (OCD) using the principles of cognitive behavioural therapy (CBT). The core intervention of the programme is exposure and response prevention (ERP); it also includes psychoeducation, cognitive restructuring and a relapse-prevention programme (Andersson et al. 2012).

The programme comprises 10 modules that are intended to be completed in 12 weeks. Each module contains written information (which can also be downloaded as MP3 files) and homework tasks such as worksheets, ERP exercises and additional reading. The therapist grants the user access to each new module.

Modules 1 to 4 focus on psychoeducation, cognitive restructuring of metacognitions and establishing an individual ERP hierarchy. Users are expected to complete these first modules in 4 weeks. Modules 5 to 8 focus on different types of ERP and common difficulties with ERP. In module 9, users establish long-term goals based on their personal values. Module 10 summarises the treatment and establishes a relapse-prevention programme. There is no set order for these modules to be completed; instead, the therapist gives access to the most relevant modules for each user’s OCD subtype.

- Module 1 – CBT and OCD explained: describing OCD and the principles of online CBT. Examples of obsessions and compulsions are presented in the form of fictional characters (washing, checking, symmetry or violent thoughts). Users can choose to follow 1 or all 4 of these characters through the programme.
- Module 2 – Assessing OCD symptoms with the CBT model: linking OCD symptoms to the OCD cycle and how to functionally analyse OCD problems.
- Module 3 – Cognitive restructuring: explaining, registering and discussing common OCD metacognitions.
• Module 4 – Establish treatment goals and exposure hierarchy: introducing different strategies for ERP, giving examples of treatment goals and exposure hierarchies for the 4 characters.

• Module 5 – Exposure with response prevention: describing different aspects of ERP.

• Modules 6 to 8 – ERP exercises: focusing on daily ERP with additional exercises.

• Module 9 – Long-term goals and values: establishing values-based goals and understanding how to apply these to daily tasks.

• Module 10 – Treatment summary: summarising the treatment and explaining the difference between relapse and setback. Establishing a relapse-prevention programme.

OCD-NET is accessed through an online platform that contains the programme modules and all homework.

**Regulatory status**

The technology owner has stated that the platform that runs OCD-NET is CE marked as a class I medical device.

**Current usage and reach**

OCD-NET is not currently in use in the UK. The Swedish language version has been used by around 300 people since launching in 2007. Access to OCD-NET is provided by healthcare professionals and it cannot be accessed or downloaded outside of the healthcare system.

An English language version is available and has been trialled in the US (Patel et al. 2017). This non-comparative study reported results similar to those reported for the Swedish version of the programme.

**Current care pathway**

The NHS England Adult Improving Access to Psychological Therapies (IAPT) programme aims to provide evidence-based treatments for people with common psychological conditions such as anxiety and depression. IAPT
services offer evidence-based psychological therapies given by accredited practitioners, with routine monitoring and regular outcomes focused supervision.

The care pathway for OCD is described in the NICE guideline on obsessive-compulsive disorder and body dysmorphic disorder: treatment. Treatment is based on a stepped care model in which the most effective, least intrusive intervention should be provided first. If a person does not benefit from the intervention initially offered, or declines an intervention, they should be offered an appropriate intervention from the next step.

OCD-NET could be used in a therapist-guided care model in primary care, secondary care or in IAPT services in step 3 of therapy. It would be offered as a treatment option alongside other step 3 therapies, and is not anticipated that any changes would be needed to the current care pathway.

**Population, setting and intended user**

OCD-NET could be used in any setting in which the user has access to the internet, including in the home or in outpatient clinics. It would be used by adults with OCD with mild functional impairment, guided by an appropriately trained therapist. In IAPT services this would likely be an appropriately trained high intensity therapist.

The technology owner states that no special training is needed for patients using OCD-NET. Therapists would need training in its use; this would be provided by the technology owner, likely in the form of initial workshops and ongoing support during the test phase. The cost for this training is not yet clear and will depend on the resources needed.

**Equality considerations**

NICE is committed to promoting equality, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others. In producing guidance and advice, NICE aims to comply fully with all legal obligations to: promote race and disability equality and equality of opportunity between men and women, eliminate unlawful
discrimination on grounds of race, disability, age, sex, gender reassignment, marriage and civil partnership, pregnancy and maternity (including women post-delivery), sexual orientation, and religion or belief (these are protected characteristics under the Equality Act 2010).

Digital technologies such as OCD-NET may be unsuitable for people with visual impairment or learning disabilities. Disability is a protected characteristic under the Equality Act.

The content

Care model
Following a face-to-face assessment for a person’s suitability for OCD-NET, the therapist provides the user with access to the programme. The therapist guides the user through the programme, and can be contacted freely by the user though the secure, 2-way messaging platform built into the programme.

The therapist guides the treatment, reviewing the user’s homework and answering any questions. After the user has completed each module the therapist reviews their progress and provides access to the next module.

The therapist also reviews the user’s depressive symptoms using the MADRS-S questionnaire. If the user’s scores are 4 or more out of 6 on the suicide item of the MADRS-S then the therapist contacts them immediately. There is also a flagging system to notify the therapist if the user has been inactive in the programme.

The technology owner estimates that the therapist would spend around 10 minutes per week reading and answering messages from each user.

Outcome measures
OCD-NET uses the PHQ-9 and obsessive compulsive inventory (OCI) outcome measures, which are the required outcome measures used for assessing people with OCD in IAPT. In addition, the MADRS-S questionnaire is used for risk-flagging.
Content assessment

The therapeutic content of OCD-NET was assessed using a framework designed to measure how closely its content maps to the standard principles of CBT for OCD.

The content assessors reported that OCD-NET is overall comprehensive, well-structured and consistent with a framework for CBT to treat OCD. It includes clear advice and support to the user, both throughout the course and on how to maintain good mental health in the longer term.

The assessors noted the following points about OCD-NET:

- There are limited interactive elements in the programme and it can feel like a workbook rather than a programme. The assessors noted that the interactive elements enhance the effectiveness of digital therapy interventions.
- There is currently no therapist manual for OCD-NET and the assessors regarded this as an important issue. A therapist manual should provide guidance to help therapists use the programme, respond to users and manage risk. The assessors concluded that it is essential for the technology owner to develop a therapist manual.
- Some important concepts are not well explained in the text, but would likely be understood by users so long as they look at the case studies as well as reading the text.
- The programme uses graphs in some places to illustrate concepts and these may be difficult for some people to understand without further explanation.
- Sections of the programme can be downloaded as audio files and the assessors judged this to be very helpful.
- The text can be somewhat dense in parts and some people may find it hard to follow.
**Scalability**

The technology owner has considered the challenges of scalability if the demand for OCD-NET increases substantially. It has stated that the current platform is designed to manage over 10,000 concurrent users.

**Technical standards**

*Technical assessment*

OCD-NET has undergone a technical evaluation using sections of the Digital Assessment Questions (DAQ), a pilot tool currently available to developers in beta form. The evaluation included 5 domains of the DAQ: privacy and confidentiality, security, usability and accessibility, interoperability and technical stability.

OCD-NET met the digital standards set out in the DAQ, after remediation plans were provided by the technology owner to address issues identified in all 5 domains of the DAQ. The technical assessors noted that the remediation plans involve significant work, and suggested that the technology owner may need support in putting these plans in place.

**Clinical evidence**

A literature search was carried out for this briefing in accordance with the process and methods statement. This briefing includes the most relevant or best available published evidence relating to the clinical effectiveness of the technology.

This briefing summarises 1 randomised controlled trial (reported in 4 publications), including a total of 101 adults. Table 1 summarises the clinical evidence as well as its strengths and limitations.

**Overall assessment of the evidence**

The trial initially reported by Andersson et al. (2012) compared OCD-NET with supportive email communication from a therapist, and went on to examine the effects of a booster programme based on OCD-NET. This trial was well-
designed although the booster studies were underpowered to detect small changes between the groups. The comparator (non-directive supportive email communication from a therapist) does not represent standard care in the UK. However, it does allow the effect of general email contact with a therapist to be differentiated from the effect of the therapeutic content provided by OCD-NET.

Tables 1-4 show the summary of evidence from 4 studies.

**Table 1** Andersson et al. 2012

<table>
<thead>
<tr>
<th>Study size, design and location</th>
<th>Randomised controlled trial, n=101. Sweden.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention and comparator(s)</td>
<td>Patients were randomised to either OCD-NET (n=50) or online non-directive supportive therapy (email communication with a therapist; n=51).</td>
</tr>
<tr>
<td>Population</td>
<td>Adults with OCD in Sweden, recruited through primary care, mental health professionals and self-referral, with a YBOCS score 13–30 (mild to severe OCD).</td>
</tr>
<tr>
<td>Key outcomes</td>
<td>The primary outcome was clinician-administered YBOCS score. Both groups had a statistically significant improvement in YBOCS scores. There was a large between-group effect size (d=1.12) in favour of the OCD-NET group. A clinically significant improvement was defined as an improvement of 2 or more SDs from the pre-treatment score, where the post-treatment score is 2 SD below the pre-treatment mean. 60% of people in the OCD-NET group had a clinically significant improvement, compared with 6% in the email support group.</td>
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</table>

Mean YBOCS scores (SD) were:

- **OCD-NET group**: baseline 21.42 (4.59); post-treatment 12.94 (6.26); 4-month follow-up 12.56 (7.34).
- **Email support group**: baseline 20.8 (4.04); post-treatment 18.88 (4.18); 4-month follow-up not reported because this group had started OCD-NET by that stage.

Secondary outcomes were the OCI-R, MADRS-S, GAF and CGI-S. The OCD-NET group had statistically significant improvements in all 4 of these measures from baseline to post-treatment. The
email support group had a statistically significant improvement in the GAF measure only.

| Strengths and limitations | The study was adequately powered and assessors were blinded to which treatment was given. YBOCS and GAF were clinician-administered and so may be more objective than self-reported measures. The study was relatively short and there was no follow-up data collected for the control group. |

Table 2  **Andersson et al. 2014**

| Study size, design and location | Follow-up from Andersson et al. 2012, including 93 of the 101 original patients. |
| Intervention and comparator(s) | Patients were randomised to either a 3-week booster programme based on OCD-NET or to no booster. The booster programme comprised 3 modules: retrospective analysis of treatment progress, incorporating external stimuli and establishing long-term goals. Therapist support was similar to that provided in the main programme of OCD-NET. |
| Population | As for Andersson et al. 2012. |
| Key outcomes | The primary outcome was clinician-administered YBOCS. People were assessed at 4, 7, 12 and 24 months after each group had initial treatment with OCD-NET. People having the booster programme showed an improvement in OCD symptoms at 7 months which was not seen in the control group. There was a significant interaction effect from 4–7 months favouring the booster group. At 12 and 24 months there was no statistically significant difference between groups. Mean YBOCS (SD) were: |
| Mean YBOCS (SD) were: | • Booster group: 4 months 13.6 (6.42); 7 months 11.37 (6.61); 12 months 12.53 (6.21); 24 months 10.72 (5.75). |
| | • No booster group: 4 months 11.41 (6.41); 7 months 12.05 (6.63); 12 months 11.48 (5.75); 24 months 10.59 (5.51). |
| The proportion of people deemed to be in recovery was: | • Booster group: 7 months 56%; 12 months 51%; 24 months 68%. |
None of the study authors declared any relevant conflicts of interest.

Abbreviations: CGI-S, clinical global impression scale – severity; GAF, global assessment of functioning scale; MADRS-S, Montgomery-Åsberg depression rating scale; OCI-R, obsessive compulsive inventory (short version); YBOCS, Yale-Brown obsessive compulsive scale.
Recently completed and ongoing studies

The following ongoing trial on the use of OCD-NET for people with OCD was identified in the preparation of this briefing:

- **NCT02541968** – Internet-based vs Face-to-face Cognitive Behavioural Therapy for Obsessive Compulsive Disorder. Recruitment is expected to complete in early 2018 and initial results are expected in late 2018.

Cost and resource impact

Two economic studies were identified for OCD-NET, both set in Sweden. The first ([Andersson et al. 2015d](#)) was based on the trial by Andersson et al. (2012). This compared the cost effectiveness of OCD-NET with supportive email therapy. The total cost of therapy using OCD-NET was more expensive than supportive email therapy ($1,594 compared with $1,092) but had better clinical effectiveness. The incremental cost-effectiveness ratios (ICERs) for OCD-NET were $931 per additional remission and $7,186 per quality-adjusted life year gained (both from a societal perspective).

The second economic study ([Andersson et al. 2015e](#)) was based on the follow-up Andersson et al. trial (2014). There were no statistically significant within- or between-group cost changes from baseline to 24-month follow-up. The ICERs for both groups were $1,489 per additional relapse.

Technology costs

OCD-NET is not yet in use in the UK, but the technology owner estimates that the cost to the NHS of using this technology would be around £120 per user (including VAT). Around 2 hours of high intensity therapist time would be needed per patient, per course of treatment, bringing the total cost to £176 including therapist time.
Resource impact compared with standard care

Table 2 Costs per treatment per person of OCD-NET compared with current treatments for OCD

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Existing cost</th>
<th>Cost using OCD-NET</th>
<th>Cost / saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief individual CBT (including ERP) with self-help materials</td>
<td>£282</td>
<td>£176</td>
<td>£106 saved</td>
</tr>
<tr>
<td>Brief individual CBT (including ERP) by telephone</td>
<td>£282</td>
<td>£176</td>
<td>£106 saved</td>
</tr>
<tr>
<td>Group-based CBT (including ERP)</td>
<td>£138</td>
<td>£176</td>
<td>£38 cost</td>
</tr>
<tr>
<td>Course of SSRI for treating OCD</td>
<td>£75</td>
<td>£176</td>
<td>£101 cost</td>
</tr>
<tr>
<td>More intensive CBT</td>
<td>£902</td>
<td>£176</td>
<td>£726 saved</td>
</tr>
</tbody>
</table>

Abbreviations: CBT, cognitive behavioural therapy; ERP, exposure and response prevention; SSRI, selective serotonin reuptake inhibitor.

The following costing assumptions have been made for OCD-NET:

- OCD-NET is expected to cost around £176 per user (including VAT).
- OCD-NET would be delivered by a high intensity IAPT therapist; costs include 2 hours of therapist time per person having treatment.

Overall impact

Using OCD-NET is unlikely to save costs directly but it may free staff time. For example, a reduction in face-to-face CBT is expected to release therapist time.

Cost and resource impact statement from the technology owner

The technology owner has stated that using OCD-NET reduces costs as because less therapist time is needed compared with face-to-face therapy.
IAPT expert panel considerations

The expert panel considered the assessments of therapeutic content, digital technological factors, clinical evidence and resource impact in making their decision that OCD-NET needs further development in order to meet the standards required to progress to the evaluation in practice phase of this programme.

The panel concluded that the technology owner meets the eligibility criteria to apply for development funding from NHS England.

Technical assessment

The panel noted that OCD-NET does not currently meet the technical standards necessary for its use in the NHS. The technical assessment concluded that remediation plans were needed for all 4 domains of the DAQ. The panel agreed with the technical assessors’ conclusion that these plans would involve significant work. The panel suggested that the technology owner may wish to consider partnering with a commercial organisation to apply for NHS England development funding to implement the remediation plans, in order to progress to the evaluation in practice phase of the programme.

Content assessment

The panel discussed the content assessment and agreed with the assessors’ conclusion that OCD-NET is overall comprehensive, well-structured and consistent with a framework for CBT for OCD. They noted that OCD-NET is consistent with framework for CBT to treat OCD but further development is needed for use in IAPT services.

The panel agreed that a therapist manual is needed. The manual should provide guidance to therapists to help them to use the programme, respond to users and manage risk. The panel also noted the content assessors’ recommendation that the programme would benefit from the inclusion of more interactive elements but did not consider this to be essential for progression to evaluation in practice in IAPT services.
The panel noted that the programme uses the PHQ-9 and OCI outcome measures and recommended that the GAD-7 outcome measure would need to be added for use in IAPT services. The panel suggested that this issue would be eligible for inclusion in an application for NHS England development funding.

**Clinical evidence**

The panel considered the main points from the evidence from 1 randomised controlled trial (reported in 4 publications) including a total of 101 adults in Sweden. It showed that OCD-NET is more effective than email support from a therapist, in adults with mild to severe OCD.

**Cost and resource impact**

The panel heard that the cost of OCD-NET is expected to be around £176 per user (including cost of therapist time and VAT). The resource impact would be less than brief individual CBT (including ERP) and more than group-based CBT or SSRI treatment. The panel agreed that the technology has the potential to provide cost-effective digitally enabled therapy.

The panel noted that OCD-NET is not yet in use in the UK, and that the assessment of cost effectiveness may change if the cost of the technology differs from the current technology owner’s estimate of £120 per user (including VAT).

**Development of this briefing**

This briefing was developed by NICE for NHS England’s [assessment of digitally enabled psychological therapies for IAPT](https://www.nice.org.uk/guidance/td67). The briefing was presented to NICE’s IAPT expert panel, who considered OCD-NET for this assessment programme. The [process and methods statement](https://www.nice.org.uk/guidance/td67/resources/12) sets out the process for selecting topics, and how the briefings are developed, quality-assured and approved for publication.
Panel members

- Professor Tim Kendall (chair), national clinical director for mental health, NHS England and NHS Improvement.
- Ms Lauren Aylott, lay member
- Professor Peter Bower, professor of health services research, Manchester University.
- Professor Chris Hollis, professor of child and adolescent psychiatry, University of Nottingham.
- Dr Ifigeneia Mavranezouli, senior health economist, University College London.
- Dr Nicholas McNulty, primary care psychologist, South London & Maudsley NHS Trust.
- Professor Steve Pilling, professor of clinical psychology and clinical effectiveness, University College London.
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