Institution: University of Oxford		
Unit of Assessment: 4 – Psychology, Psychiatry and Neuroscience		
Title of case study: Prevention of Recurrent Major Depression with Mindfulness-Based Cognitive Therapy		
Period when the underpinning research was undertaken: 2003-2019		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	**Role(s) (e.g. job title):**	**Period(s) employed by submitting HEI:**
Willem Kuyken	Professor of Mindfulness and Psychological Science	Nov 2014 – present
Mark Williams	Professor of Clinical Psychology	2003 – 2013
Catherine Crane	Senior Research Fellow	2003 – 2019
Period when the claimed impact occurred: 1 August 2013 – 31 December 2020		
Is this case study continued from a case study submitted in 2014? N		

1. Summary of the impact

The WHO estimates that 264,000,000 people globally suffer from major depression, making it a leading cause of disability. For many patients it is a recurrent condition. Research at the University of Oxford has validated and extended a novel preventive approach (Mindfulness-based Cognitive Therapy – MBCT) that specifically targets the processes that increase risk of recurrent depression. The Oxford research (a) identified the mechanisms contributing to recurrence of depression that need to be targeted in the most severe patients; (b) showed that mindfulness homework practice in MBCT is an essential component of its effectiveness; and (c) demonstrated that MBCT is as effective as antidepressant medications at preventing relapse.

MBCT is now one of the recommended interventions in many current international clinical guidelines including the USA, Canada, England, Scotland and Wales. Patients in the UK have benefitted through the NHS Improving Access to Psychological Therapies (IAPT) programme. The Oxford team have built capacity, set standards and delivered training to over 1,000 MBCT therapists nationally and internationally, with impact in parliaments, prisons, the workplace, and health systems around the world. During the REF period, their three self-help manuals have been translated into 26 languages and sold over 950,000 copies.

2. Underpinning research

Although there are effective treatments for major depression, the majority of people with depression either receive no treatment or, if treated, are treated with antidepressants. Moreover, the majority of people seeking treatment suffer recurrent depression, and relapse prevention is a major public health challenge. To meet this challenge, MBCT had been developed specifically to prevent depressive recurrence by Mark Williams (then at Bangor) with colleagues in Cambridge (Teasdale) and Toronto (Segal) prior to Williams' move to Oxford in 2003. MBCT targets mood-activated negative thoughts implicated in depressive relapse, teaching people to decentre (to view thoughts as passing mental events) using mindfulness and CBT exercises. Williams' and Kuyken's considerable body of research at Oxford has been fundamental to understanding the factors affecting its effectiveness and its role in preventing recurrence in the most severely-affected patients. This research has led to a number of insights and advances, as follows.

The importance of prevention in recurrent suicidal depression: Williams' research at Oxford on the psychological processes underlying vulnerability revealed a troubling feature of recurrent depression. Although most symptoms of depression vary from one episode of depression to the

next, suicidality in one episode highly predicts suicidality in the next. Such patients carry a latent predisposition to react to even relatively mild changes in mood with large increases in suicidality [1]. This means that clinicians should not wait until people begin to get depressed and then rely on a symptom-based treatment such as antidepressants: instead, they need to intervene early to prevent the next episode. Williams' team found that MBCT reduces the association between mood and suicidality [4] – particularly important for populations highly vulnerable to suicide such as prisoners.

Importance of meditation in MBCT: Despite the hypothesised importance of meditation practice in MBCT, earlier work had relied on meditation exercises from the USA developed for other clinical groups. Accordingly, Williams' research following his move to Oxford included its practical expression in the form of a definitive set of meditation practices for using MBCT with recurrent depression. Prior to the start of Williams' research at Oxford, two trials of MBCT for recurrent depression had evaluated MBCT, but only with treatment-as-usual controls. These early trials had shown it was effective, but could not demonstrate that mindfulness meditation was critical to the success of the approach. The Oxford team conducted the only trial to use a dismantling design, in which the control treatment retained all elements of MBCT but without the meditation [3]. The trial showed that the mindfulness practice was indeed a critical element of MBCT, with further analysis of trial data showing that relapse over the next 12 months was less likely for those who did more meditation practice during initial treatment, independently of patients' ratings of the plausibility of the treatment.

Understanding drop-out: Research at Oxford sought to determine the variables that distinguish those who complete an adequate 'dose' of treatment from those who drop out, amongst people with a history of suicidality. From their randomised controlled trial (n=68), they concluded that patients at risk of dropping out are still likely to have the most to gain from a course of MBCT, so need to be especially prepared and supported to engage fully in the treatment [2].

Establishing effectiveness: MBCT has been evaluated in trials throughout the world, but at Oxford Kuyken led the only individual patient data meta-analyses of all studies to date (n= 1,258) confirming the effectiveness of MBCT. Importantly, by combining data from four trials, he also showed for the first time that MBCT is an effective alternative to maintenance antidepressant treatment [5]. In addition, meta-analysis of mechanisms showed that the effects of MBCT are mediated through its hypothesised mechanism of increasing mindfulness, particularly the ability to decentre from negative thoughts and feelings [6]. The randomized controlled trials contributing to the meta-analyses were carried out at several UK universities (Oxford, Cambridge, Bangor, and Exeter) as well as universities in Canada, Belgium, Switzerland and the Netherlands. All the trials (UK and abroad) used the Oxford MBCT materials or translations thereof.

3. References to the research (authors in bold employed in Oxford at the time of the research; Citations from Google Scholar to Dec 2020)

1. **Williams, J.M.G.,** van der Does, A.J.W. **Barnhofer, T**., **Crane, C**., & Segal, Z.V. (2008) Cognitive reactivity and suicidal ideation: testing a differential activation theory of suicidality. *Cognitive Therapy & Research* 32, 83-104. DOI: 10.1007/s10608-006-9105-y. Citations 112
2. **Crane, C.** and **Williams, J.M.G.** (2010). Factors Associated with Attrition from Mindfulness-Based Cognitive Therapy in Patients with a History of Suicidal Depression. *Mindfulness*, 1, 10-20. DOI: 10.1007/s12671-010-0003-8. Citations 107.
3. **Williams, J.M.G., Crane, C., Barnhofer, T., Brennan, K., Duggan, D.S., Fennell, M.J., Hackmann, A., Krusche, A., Muse, K., Von Rohr, I., Shah, D**., Crane, R.S., Eames, C., Jones, M., Radford, S., Silverton, s., Sun, Y., Weatherly-Jones, E., Whitaker, C. J., Russell, D., & Russell, I. T., (2014). Mindfulness-based cognitive therapy for preventing relapse in recurrent depression: a randomised dismantling trial. *Journal of Consulting and Clinical Psychology, 82*, 275-286. DOI: 10.1037/a0035036. Citations 351
4. **Barnhofer, T., Crane, C., Brennan, K., Duggan, D.S.,** Crane, R.S., Eames, C., Radford, S., Silverton, S., **Fennell, M.J.**, **Williams, J.M.G.** (2015) Mindfulness-based cognitive therapy (MBCT) reduces the association between depressive symptoms and suicidal cognitions in patients with a history of suicidal depression. *Journal of Consulting and Clinical Psychology*;83(6):1013-20. DOI:10.1037/ccp0000027. Citations 55

5. **Kuyken, W.,** Warren, F.C., Taylor, R.S., Whalley, B., **Crane, C.,** Bondolfi, G., Hayes, R., Huijbers, M., Ma, H., Schweizer, S., Segal, Z.V., Speckens, A., Teasdale, J.D., Van Heeringen, K., **Williams, J.M.G,** Byford S., Byng, R. & Dalgleish, T.D. (2016). Efficacy of mindfulness-based cognitive therapy in prevention of depressive relapse: an individual patient data meta-analysis from randomised trials. *JAMA Psychiatry*, 73, 565-574. DOI:10.1001/jamapsychiatry.2016.0076. Citations 444.
6. Van der Velden A.M., **Kuyken W.**, Wattar U., **Crane, C**., Pallesen, J., Dahlgaard, J., Fjorback, L.O., & Piet, J. (2015). A systematic review of mechanisms of change in mindfulness-based cognitive therapy in the treatment of recurrent major depressive disorder. *Clinical Psychology Review* 2015; **37**: 26-39. DOI:10.1016/j.cpr.2015.02.001. Citations 310.

Funding from Wellcome Trust: Principal Research Fellowship to Williams '*Psychological processes in suicidal behaviour'*, with Bangor (GR067797, £2,430,766, 2003-07); and 067797/Z/02, £2,445,782 to Oxford, 2008-13); Strategic Award to Williams & Kuyken, '*Promoting mental health and building resilience in adolescence*', with Cambridge and UCL (104908/Z/14, £1,903,293 to Oxford, 2015-19; and 107496/Z/15, £4,616,823 to Oxford, 2015-22).

4. Details of the impact

Pathway to impact prior to REF impact period

Williams' new meditations, a translation of his research into practice, were integrated into the second edition of the widely-used MBCT therapist manual he co-authored, '*Mindfulness-Based Cognitive Therapy for Depression*', published in 2012 (Segal, Williams and Teasdale, [A]). This second edition also drew on his wider body of work for a new chapter, '*How Does MBCT Achieve Its Effects?*', citing 7 of his papers from Oxford work (published 2007 to 2010).
The manual includes detailed guidelines on therapist training; all the resources required for disseminating MBCT with high fidelity; and recordings of his new meditation practices. Other changes drawing on research since the first edition included allowing additional time in the pre-class interview for participants more likely to drop out, citing the determination of the relevant factors in Williams' research [2]. This manual defines MCBT practice internationally, and in what follows, 'MBCT' denotes its formulation in this second edition unless otherwise stated.

Professional training and capacity building in the NHS

In 2016, Kuyken was appointed by NHS England to develop a national curriculum to train NHS staff working in Improving Access to Psychological Therapies (IAPT) to deliver MBCT. This curriculum [B] led to Health Education England directly commissioning training. In its first two years (2018-19), the programme trained 65 NHS staff members to deliver MBCT, with a further 86 places commissioned in 2020. 57% of NHS IAPT services had MBCT trained staff by 2019 [C].

Benefits to patients in the UK via delivery of MBCT

MBCT is now widely accessible to those in need through the Improving Access to Psychological Therapy (IAPT) programme, with care to maintain its potency and fidelity. IAPT services were able to expand MBCT provision significantly (treating 1,807 patients when first recorded separately in 2016-17, growing to 3,957 patients in 2018-19) [Di]. From analysis of IAPT data, Kuyken and team have demonstrated in a study published in 2019 (n=1,554) that outcomes of MBCT in routine clinical practice match those observed in research settings, with 45% of those entering treatment with current depression recovering, and 96% of those entering treatment in remission sustaining their recovery [Dii].

Adoption in international treatment guidelines

MBCT is recommended in many international treatment guidelines, including the 2019 North American APA guidelines [Ei] and the UK 2018 draft updated NHS NICE Guidelines [Eii]. These guidelines are the basis for mental health care in these nations. For example, the APA guideline recommends either second generation antidepressants or psychotherapy, including MBCT in a list of five approaches with comparable effects on long-term outcome. The UK NICE draft updated guideline reaffirms MBCT for people "*who have recovered from more severe depression when treated with antidepressant medication (alone or in combination with a*

psychological therapy) but are assessed as having a higher risk of relapse." The Canadian guidelines [Eiii] recommends MBCT as a first-line maintenance treatment adjunctive to medication. The Oxford-based trial [3] and/or 2016 meta-analysis [5] are cited in the UK, Belgian [Evi], Canadian [Eiii] and Australian/New Zealand guidelines [Ev].

Building new capacity internationally

The positive results of multiple MBCT clinical trials, including [3], and Kuyken's patient-level meta-analysis [5] have resulted in clinicians and health commissioners from many countries implementing MBCT. From 2014 onwards Kuyken, Williams and their Oxford team have delivered much of this international training to build capacity in countries where no established MBCT services existed, including China, Hong Kong, Brazil, Taiwan, Singapore, Japan, Czech Republic, India, Hungary, Uruguay and Poland, following guidelines based on the therapists' manual. In Hong Kong, Taiwan, Brazil, Uruguay and Singapore there are now established self-sustaining centres. Together these initiatives have trained over 1,070 MBCT therapists (including, 456 in mainland China; 158 in Hong Kong,150 in Spain, and 84 in Brazil) [F].

Benefits of new programmes for prisoners and prison staff

Williams' work has shown that MBCT prevents future episodes in those who are most vulnerable, including patients with suicidality [4]. Its evidence-based nature was cited as one of the reasons that led prison healthcare staff in Pentonville Prison, UK (a remand prison housing 1,300 male prisoners where suicide is high) to invite Williams to initiate a pilot project in their Wellbeing Unit [G]. The project included running MBCT groups for vulnerable prisoners (2017-18) as well as training prison staff to deliver MBCT (2018-19) to ensure sustainability. The initial pilot project had 39 prisoners and with significant positive change for those involved, with a mean self-reported score of 8.8 out of 10 for importance [G]. Resulting changes in behaviour included reduction in self-harm, fewer conflicts with prison staff, and better sleep [G]. It also reached 26 prison staff including staff from other prisons, of whom 16 trained to be MBCT therapists. As a result, MBCT is now taught in prisons not only at Pentonville, but also at Brixton, Wormwood Scrubs, and Springhill (Bucks) [G]. The same factors prompted a prison project in Taiwan where four prisons have introduced MBCT. To date, MBCT has been taught to over 400 prisoners in Taiwan and benefits to them have been summarised as "*more positive thinking, self-confidence, and hopes for their future life"* [G].

Broadening the reach of MBCT to new populations and contexts

Engagement with wider public: Williams has co-developed a number of more accessible lower-intensity and self-help programmes for people who experience sub-threshold symptoms of depression, or have major depression but are not accessing health services [G]. Williams collaborated with Penman in *Mindfulness: Finding Peace in a Frantic World* (2011). Translated into 26 languages, since 2013 it has sold more than 743,000 copies worldwide since 2014 [H], is rated as 4.6/5 on Amazon with over 5,000 reviews, and has been in the top ten for lifestyle/mental health on Amazon throughout the REF period. Since 2014 it has been used in schools, universities, workplaces, parliaments [K] and corporate settings, and is the basis for training those who wish to deliver MBCT to staff in these settings (>700 trained in Oxford). Four research trials have demonstrated its acceptability and effectiveness in these contexts [I], an evidence-base that is unusual for a self-help guide. The earlier *Mindful Way Through Depression* (2007) has sold over 103,000 copies since 2014 and *The Mindful Way Workbook* (2014) provided a new, highly accessible, self-help format of MBCT for depression and has sold over 104,000 copies [H]. Finally, the Oxford Mindfulness Centre has developed a series of digital resources designed for direct access by people with an interest in mindfulness and MBCT. Its website has been accessed by over 1,500,000 people since 2018 [J].

Engagement with policy makers and public service provision: Following a successful pilot by Williams and Oxford colleagues in spring 2013, a termly series of mindfulness courses to members of parliament, based on Williams & Penman (2011) was established and have continued throughout the impact period. These courses have now reached a total of 286 parliamentarians in Lords and Commons, and been extended to 480 of their staff, with benefits reported in both work and personal contexts [K]. In 2014 parliamentarians who had been through these groups formed the Mindfulness All-Party Parliamentary Group (MAPPG). The MAPPG

President spearheaded international political engagement and dissemination of the model of MBCT used in the UK parliament to 39 other countries. He has assisted Parliaments in The Netherlands, Ireland, Denmark, France, Estonia, Wales, Scotland and Iceland to establish similar mindfulness initiatives [K]. In 2015 the MAPPG commissioned the first UK Mindful Nation Report [L] to review evidence and best practice. The report cited Oxford research [3] and the MBCT manual and its recommendations have led to increased work to bring mindfulness into education, the criminal justice system and workplaces [G,K]. More broadly, the MAPPG President credited the "*meticulous work Mark Williams, Willem Kuyken and his colleagues have undertaken in scientific research on preventing depression*" as the biggest reason for mindfulness practice being 'normalised' [K].

5. Sources to corroborate the impact

A. Segal, Z.V., Williams, J.M.G., & Teasdale, J.D. (2013). *Mindfulness Based Cognitive Therapy for Depression.* (2nd Edition, Guilford). ISBN 9781462507504.

B. Improving Access To Psychological Therapies: National MBCT Training Curriculum https://www.hee.nhs.uk/sites/default/files/documents/MBCT%20in%20IAPT%20curriculum.pdf

C. Email from Senior Project Manager, NHS National Mental Health Programme, reporting data from Health Education England, 17/3/2021.

D. (i) Data from NHS Annual Report on the use of IAPT Services, confirming patients treated with MBCT in 2016-17 and 2018-2019; (ii) Tickell et al, The Effectiveness of Mindfulness-Based Cognitive Therapy (MBCT), *Mindfulness* (2020) DOI:10.1007/s12671-018-1087-9, comparing IAPT outcomes to RCTs (online Jan 2019).

E. International treatment guidelines: (i) American Psychological Association Guideline for the Treatment of Depression (2019). (ii) NICE guideline 2018 draft. (iii) Canadian Network for Mood and Anxiety Treatments (CANMAT) 2016. (iv) Guidance for Delivering Evidence-Based Psychological Therapy in Wales (2017). (v) Australian-New Zealand College of Psychiatrists Treatment Guidelines for Mood Disorders (2020). (vi) Belgian Treatment Guidelines for Depression in Adults (2016).

F. Letters from international partners on MBCT training numbers and impacts: (i) Consultant Psychiatrist, Centre for the Treatment of Anxiety and Depression, Adelaide, (ii) Head of the Mente Aberta Centre, São Paulo, (iii) Head of the Department of Psychology, Charles University, Prague, (iv) Founding Director, Hong Kong Centre for Mindfulness, (v) Director, Meikei Mindfulness Centre, Nagoya University of Economics, (vi) Director of INSELF Center, MBCT Spain, (vii) Director, MBCT Uruguay, (viii) Director, Foundation for Mindfulness Development, Warsaw, (ix) Oxford Mindfulness Centre International Teaching Partner.

G. Letters on provision in prisons from (i) Director of Well-being Services, Pentonville Prison; (ii) Trainer and Supervisor, Mindfulness-Based Caring Association, Taiwan.

H. Sales numbers of Williams and Penman (2011) self help book on MBCT; Mindful Way Through Depression (2007); and Mindful Way Workbook (2014); Amazon ratings.

I. Journal papers reporting trials using Williams & Penman (2011), corroborating effectiveness of MBCT through self-help: (i) Lever Taylor et al, *Behaviour Research and Therapy* (2014) DOI: 10.1016/j.brat.2014.09.007, (ii) Galante et al, *Lancet Public Health* (2018) DOI: 10.1016/s2468-2667(17)30231-1, (iii) Beshai et al, *Mindfulness* (2016) DOI: 10.1007/s12671-015-0436-1, (iv) de Bruin et al, *Mindfulness* (2020), DOI: 10.1007/s12671-018-1029-6.

J. Web analytics data on page views of Oxford Mindfulness Centre website, October 2018 – December 2020.

K. (i) Letter from President of the Mindfulness APPG on parliamentary work in UK and overseas. Extracts from Hansard on (ii) mental health education in schools (Vol 630, 6 Nov 2017), (ii) work-related stress in prison officers (Vol 589, 10 Dec 2014) and (iii) parity of esteem of mental and physical health (Vol 748 10 Oct 2013).

L. Mindful Nation UK Report (The Mindfulness APPG, 2015) https://oxfordmindfulness.org/news/launching-mindful-nation-uk-report-houses-parliament/