## Sickness absence and return to work in workers with major depressive disorder

Vlasveld, M.C.

2012

***document version***
Publisher's PDF, also known as Version of record

# Chapter 7

# Cost-utility analysis of a collaborative care intervention for major depressive disorder in an occupational healthcare setting

This chapter was based on:
Goorden M., Vlasveld M.C., Anema J.R., van Mechelen W., Beekman A.T.F., Hoedeman R., van der Feltz-Cornelis C.M., Hakkaart-van Roijen L. Cost-utility analysis of a collaborative care intervention for major depressive disorder in an occupational healthcare setting. (Submitted)

**ABSTRACT**

**Background** Major depression is a prevalent disorder in the Dutch working population and is associated with high levels of absence and reduced productivity. Therefore the costs to society are high. Research showed that collaborative care may be a cost-effective treatment. The aim of this study was to evaluate the cost-utility of collaborative care for major depressive disorder compared to care as usual in an occupational healthcare setting. A societal perspective was taken.
**Methods** In this randomised controlled trial, 126 sick-listed workers with MDD were included (65 collaborative care, 61 care as usual). Baseline measurements and follow up measures (3, 6, 9 and 12 months) were assessed by questionnaire. We applied the TiC-P, the SF-HQL and the EQ-5D respectively measuring the health care utilization, production losses and general health related quality of life.
**Results** The average annual direct medical costs in the collaborative care group were € 3.874 (6.953) compared to € 4.583 (7.532) in the care as usual group. The average quality of life years (QALY's) gained were lower in the collaborative care group, 0.05 Qaly. The majority of the ICERS (69 %) indicated that collaborative care is less costly but also less effective than care as usual. Including the productivity costs did not change this result.
**Conclusion** The cost-utility analysis showed that collaborative care generated reduced costs and a reduction in effects compared to care as usual and was therefore not a cost-effective intervention.
**Trial registration:** ISRCTN78462860

## INTRODUCTION

Among the Dutch working population, major depressive disorder (MDD) is one of the most prevalent mental disorders, occurring in more than 4% of this population [1]. Because of the high rate of absenteeism, reduced efficiency at work (i.e. presenteeism) and difficulties in job performance, the associated burden of MDD is high for the patient as well as for society. A recent study showed that due to productivity loss, encompassing sick leave and diminished efficiency at work, Dutch employees with MDD work 30 days per year less than their colleagues without this disorder [1].

The importance of productivity loss due to depression was already emphasised in several studies. The incidence of depression is the highest in middle aged individuals (25-45) [2], which may indicate that depression strongly affects society's productivity, especially in light of the recurrent nature of the disease. Productivity costs are known to be a large part of the total costs of depression [3,4]. In the case of depressive disorder, the productivity costs amount to €242 million per million workers [1] and on average account for 60-70 % of the total costs [3,4]. Therefore, effective interventions that may reduce productivity loss due to depression are potentially cost-effective. Although evidence-based treatments for MDD are available, these treatments are not always implemented correctly and experience obstacles, especially in the occupational healthcare setting. Dutch employees on sickness absence due to mental health problems have access to an occupational physician (OP) and general practitioner (GP). However, as a consequence of the separation of treatment and sickness certification in the Dutch social legislation, there is a lack of communication and agreement between them [5]. In addition, there are long waiting lists for specialized treatments of sick-listed employees with mental health problems. Finally, there is lack of monitoring of treatment, and effective treatment methods are insufficiently applied [6]. The collaborative care model is introduced to address these problems, by actively monitoring employees and increasing the collaboration between healthcare professionals. Research showed that the collaborative care model is an effective intervention, on short- and long-term outcomes in MDD [7]. According to a recent systematic review, there is evidence that collaborative care may also be a cost-effective approach for MDD [8]. However, until now, research has only focussed on the collaborative care model in the primary care setting and not in the occupational healthcare setting. A recent study among workers with common mental disorders showed that linking the expertise of OPs with that of a consultant psychiatrist resulted in a faster return to work [9]. The findings of Vlasveld et al. indicated that although collaborative care with an integrated workplace intervention in the occupational healthcare setting reduced the time until response, it did not have a significant effect in terms of time to remission, duration to return to work and the intensity of depressive symptoms in the occupational healthcare setting [10]. Consequently, the reduced time until response in the collaborative care group is not the only element that affected return to work. It is possible that although the increased response in the collaborative care group did not influence return to work, it may have a positive influence on quality of life, measured in Quality of Life Years (QALY's) gained, an outcome measure often used in economic evaluations. Because the duration until return to work did not differ significantly between both groups, a difference in productivity costs between them might not be expected. However, collaborative care may work in a more efficient way in terms of resource use, because of the low intensity in the first steps of treatment and therefore may lead to lower direct costs compared to care as usual [11]. Therefore, the aim of this

study was to evaluate the cost-utility of a collaborative care intervention in sick-listed employees with MDD. A cost-utility analysis is a specific form of a cost-effectiveness analysis. The advantage of this analysis is that the intervention is not only comparable to interventions in the mental health care system, but also to interventions outside the mental health care system. The analysis was conducted from a societal perspective, meaning that all relevant costs and effects were taking into account. The intervention was applied by an OP acting as care manager and was compared to care as usual.

## METHODS

### Randomization and recruitment

The cost-utility analysis was conducted along a randomised controlled trial (RCT), evaluating the effectiveness of collaborative care versus care as usual in the Dutch occupational healthcare setting. Results of this RCT on the effectiveness of collaborative care have been described elsewhere [10,12]. Computer-generated randomisation took place at employees' level. In both groups, employees received sickness guidance as usual by their company's OP. In addition, employees in the intervention group received collaborative care treatment from an OP-care manager, who was guided by a web-based stepped care protocol and a consultant psychiatrist. OP-care managers were recruited via the occupational health service. They received training prior to the start of the study and close supervision during the study to fulfil the role as care manager. Employees in both groups were free to engage in any other treatment as well.

Employees sick-listed between 4 and 12 weeks due to mental disorders were screened for depressive symptoms with the 9-item depression subscale of the Patient Health Questionnaire, the PHQ-9. If they scored screen positive, the mini-International Neuropsychiatric interview (MINI PLUS International Neuropsychiatric interview) was administered [13]. At inclusion, employees were immediately sent the baseline questionnaire. The study protocol was approved by the Medical Ethics Committee (METC) of the VU University Medical Center and is described in greater detail elsewhere [14]. This RCT was part of the Depression Initiative, a national initiative to improve depression management in the Netherlands [15]. The study progress was monitored by a steering group and advisory board on a 3 monthly basis.

### Collaborative care

The intervention consisted of manual guided self-help, 6–12 sessions of Problem Solving Treatment (PST), a workplace intervention and if considered necessary, antidepressant medication. These elements of the intervention ran parallel to each other. Every 2 weeks, treatment progress was monitored, and if necessary, was intensified by adding extra sessions PST, by adding antidepressant medication to the treatment plan or by increasing or changing the antidepressant medication. If symptoms were persistent after 18 weeks of treatment, the employee was referred to secondary mental health care. OP-care managers received a training of 2, 5 day in collaborative care and were supported by a web-based tracking system to monitor and follow the protocol, and by a psychiatrist for possible consultation. Treatment given by the OP-care manager was separated from the sickness guidance as usual given by the company's OP.

**Care as usual**

Dutch employees visit their company's OP in the first 6 weeks of their sickness absence. A company's OP is supposed to operate according to the OP guidelines of the Dutch Board of Occupational Medicine [16]. However, there is known to be a high fluctuation in the care that is actually delivered. In the care as usual group, the OP received no extra training and after one year, actual care delivered was assessed by questionnaire.

**Data collection and outcome measures**

Data was collected at 3 months interval by the Netherlands Institute of Mental Health and Addiction (NIMHA). The follow-up was 1 year and measurements took place at baseline (T0) and after 3 (T1), 6 (T2), 9 (T3) and 12 (T4) months. The send questionnaires were anonymously processed by researchers, meaning that they were essentially blinded and that all confidential information was treated according to the medical confidentiality rules and employees' names were coded. Cost-utility was determined by calculating the medical costs, the productivity costs and the quality of life. The Trimbos/iMTA questionnaire for Costs associated with Psychiatric Illness (TiC-P) and the EuroQol (EQ-5D) were respectively used. Finally, cost utility was expressed in cost per QALY [17,18].

***Quality of life***

We applied the EuroQol (EQ-5D) to estimate the utilities [18]. This generic health index is a standardized, validated instrument and encompasses five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each dimension consists of three levels: no problems, some problems and extreme problems, therefore defining a total of 243 different health states. To obtain one utility score per employee, the area-under-the curve method (AUC) was applied [19].

***Health care utilization costs***

Part 1 of the TiC-P is a validated instrument that measures the direct medical costs by measuring the number of contacts with health care services during the last three months, which can then be multiplied by the reference unit prices of 2009 of these services [20].

***Productivity costs***

The second part of the TiC-P contains the SF-HLQ [21]. This part questions about productivity losses that are caused by absence, reduced efficiency at work and difficulties in job performance. Productivity losses were valued according to the average value added per worker by age and gender per day and per hour. If respondents indicated that they had been absent for the entire recall period, data were collected from the time when the period of long-term absence started. This additional information was used to value the production losses according to the "friction cost method" [22]. This method takes into account the economic circumstances that limit the losses of productivity to society, which are related to the fact that a formerly unemployed person may replace a person who becomes disabled. Sickness absence for less than 1 month was defined as short-term absence and sickness absence for more than 1 month as long-term absence.

***Incremental Cost-Effectiveness Ratio***

An incremental cost-effectiveness ratio was calculated to obtain the costs per Quality Adjusted Life Year (QALY). The incremental cost-effectiveness ratio was calculated by dividing the incremental costs by the incremental effects.

**Cost-utility analyses**

Analyses were conducted using Statistical Package for the Social Sciences 19.0 (SPSS 19.0), Statistical Analysis System (SAS 9.2) and Excel 2010. First, the direct costs and quality of life scores were calculated by SPSS and normalized using Box-Cox transformations and power transformations [23]. Because of the extremely high skewness in the productivity costs, it was not possible to normalize them by time unit, so we normalized the total. Next, the missing values in productivity costs, direct costs and quality of life scores per time unit were imputed with a Markov Chain Monte Carlo Multiple Imputation in SAS. Different variables, like scores of the PHQ-9, age and gender were included to get a better estimate. There was a backwards transformation of productivity costs, direct costs and quality of life scores. The uncertainty in the analysis was assessed using bootstrapping in Excel, with 10000 iterations. This was expressed in a cost-effectiveness plane.

**RESULTS**

**Participants and baseline characteristics**

At baseline, 126 employees were included, who had been absent for 4 to 12 weeks: 65 employees were randomised in the collaborative care group and 61 in the care as usual group. Table 1 summarizes the baseline demographic and clinical employees' characteristics for the care as usual group and collaborative care group. No significant differences between them were found.

**Table 1. Baseline characteristics of the employees.**

| | Collaborative care (n=65) | Care as usual (n=61) |
|---|---|---|
| Age (years) | 41.9 (SD=11.4) | 43.4 (SD=11.4) |
| Gender (% male) | 46.2 | 45.9 |
| Marital status (% single) | 26.1 | 19.7 |
| Dutch nationality (%) | 95.4 | 91.8 |
| Depressive symptoms (PHQ-9, range 0-27) | 16.1 (SD=5.4) | 15.9 (SD=4.9) |
| Quality of life (range 0-1) | 0.60 (SD=0.21) | 0.56 (SD=0.27) |
| Paid work (n) | 62 | 60 |

**Quality of life**

The scores at baseline did not differ significantly between both groups. The quality of life scores improved significantly over time for both groups, see table 2, but the improvement did not differ significantly between both groups.

**Table 2. Mean utility scores (SD) for the employees.**

| | Collaborative care | Care as usual |
|---|---|---|
| Baseline | 0.60 (0.21) | 0.56 (0.27) |
| After 3 months | 0.67 (0.22) | 0.70 (0.20) |
| After 6 months | 0.73 (0.17) | 0.73 (0.15) |
| After 9 months | 0.75 (0.19) | 0.77 (0.19) |
| After 12 months | 0.77 (0.17) | 0.80 (0.18) |

**Health care costs**

The average direct medical costs were about €3.900 for the collaborative care group, compared o nearly €4.600 for the care as usual group. Mental health care was responsible for the largest part of the costs, see table 3.

**Productivity costs**

Repeated measurement analysis showed that over time the percentage of employees having reduced efficiency and the percentage of employees experiencing long-term absence remained the same for both groups. However, short-term absence decreased for both groups ($p<.05$). Summarized: both treatments did not have any effect on long-term sickness absence and reduced efficiency and although short-term sickness absence decreased over time in both groups, there was no difference in decline between the groups. The mean indirect costs for the care as usual group were €11.627 (SD=18.744) and for the collaborative care group €10.110 (SD=11.444).

**Incremental Cost-Effectiveness Ratio**

The average quality of life years (QALY's) gained was higher in the care as usual group. The direct medical costs were lower in the collaborative care group, leading to an incremental cost effectiveness ratio (ICER) of € 14.589, see table 4.

The uncertainty in the data was presented in the cost-effectiveness plane in figure 1. The majority of the incremental cost-effect ratio (69 %) falls in the south-west quadrant of the incremental cost-effectiveness plane, demonstrating that collaborative care is less costly but also less effective than care as usual. 27 % of the cost-effect ratio falls in the north-west quadrant, indicating that collaborative care is inferior, meaning, it is more expensive and less effective than care as usual. Only 3 % of the ratio's fall into the south-east quadrant and 1 % in the north-east quadrant, respectively meaning a combination of higher effectiveness and fewer costs (dominant) and a combination of more effects and more costs for collaborative care compared to care as usual. Including the productivity costs did only slightly change the outcome of the analysis: 75% of the costs now fall in the south-west quadrant, 21% in the north-west quadrant, 3% in the south-east quadrant and 2% in the north-east quadrant.

**Sensitivity analysis**

A sensitivity analysis was performed on admission to (part-time) day care and admission to psychiatric hospital. These costs were relatively high in the care as usual group but the number of contacts was relatively low. Omitting these costs did not affect the outcome of this study. There was only a slight change in the incremental costs per QALY. In addition, the majority of the cost-effect ratio's (70%) still fall in the south-west quadrant, 24% fall in the north-west quadrant, 4% in the south-east quadrant and 1% in the north-east quadrant.

**Table 3. Average cost per year of health care providers based on 2009 unit prices.**

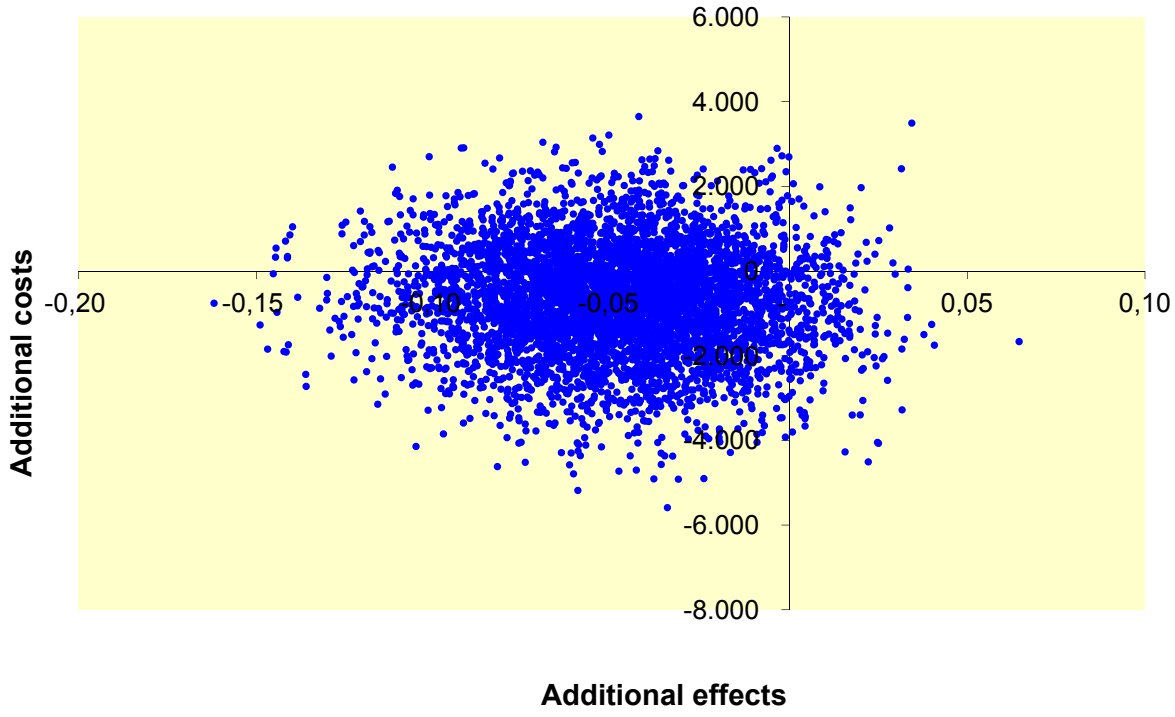
| | Collaborative Care | | | | Care as usual | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean costs (SD)[1] | Costs (%) | Mean number contacts | % of partici-pants using the service | Mean costs (SD) [1] | Costs (%) | Mean number contacts | % of partici-pants using the service |
| GP | € 251(234) | 9,1 | 4,5 (4,2) | 70,1 | € 261 (231) | 7,2 | 4,7 (4,1) | 82 |
| Mental health care institute | € 740 (2900) | 26,8 | 4,3 (16,9) | 26,2 | € 766(1589) | 21,1 | 4,5 (9,2) | 34,4 |
| Private psychologist /psychiatrist | € 482 (613) | 17,5 | 5,5 (7) | 53,8 | € 594 (696) | 16,4 | 6,8 (7,9) | 59 |
| Psychologist /psychiatrist | € 189(1076) | 6,9 | 1,2 (6,4) | 7,7 | € 187 (817) | 5,2 | 1,2 (4,8) | 13,1 |
| OP | € 238 (175) | 8,6 | 4,2 (3,1) | 73,8 | € 260 (225) | 7,2 | 4,6 (3,9) | 80,3 |
| Specialist | € 118 (227) | 4,3 | 1,3 (2,5) | 32,3 | € 81 (136) | 2,2 | 1,2 (1,6) | 45,9 |
| Paramedic | € 99 (207) | 3,6 | 2,8 (5,8) | 27,7 | € 159 (305) | 4,4 | 4,4 (8,5) | 39,3 |
| Social worker | € 76 (225) | 2,8 | 1,2 (3,5) | 12,3 | € 64 (180) | 1,8 | 1,0 (2,8) | 18,0 |
| Alternative medicine | € 76 (220) | 2,8 | 1,4 (4) | 15,4 | € 31 (99) | 0,9 | 0,6 (1,8) | 14,8 |
| Self help group | € 11 (63) | 0,4 | 0,2 (1,2) | 0 | € 75 (278) | 2,1 | 1,4 (5,3) | 11,5 |
| Day care | € 0 (0) | 0 | 0 (0) | 0 | € 505 (1757) | 13,9 | 3,8 (12,1) | 13,1 |
| (Psychiatric) hospital days | € 232 (1721) | 8,4 | 0,1 (0,7) | 0 | € 600 (4187) | 16,5 | 1,6 (11,4) | 4,9 |
| OP-care manager | € 208 (246) | 7,5 | 3,7 (4,3) | 49,2 | 0 | 0 | 0 (0) | 0 |
| Medication | € 37 (69) | 1,3 | - | 71 | € 43 (77) | 1,2 | - | 77 |

*[1] The sum of the mean costs of health care providers is not equal to the average total costs, because multiple imputation was performed on the costs after calculating the total costs on different points in time.*

**Table 4. QALY's gained, mean direct medical costs, and the incremental costs per QALY.**

| | Collaborative care (n=65) | Care as usual (n=61) |
|---|---|---|
| Average direct medical costs | € 3.874<br>(95 % CL, 2778 to 5718) | €4.583<br>(95 % CL, 3108 to 6794) |
| Incremental utility | -0,05<br>(95 % CL , -0.11 to 0) | |
| ICER | € 14.589 | |

**Figure 1. Cost-effectiveness plane.**




## DISCUSSION

This study is the first cost-utility analysis comparing collaborative care to care as usual for MDD in the occupational healthcare setting. The lower costs and lower effects in the collaborative care group, compared to care as usual, lead to an ICER of €14.589 per QALY. Collaborative care was less expensive compared to care as usual, mainly caused by lower direct costs, however this was at cost of quality of life gain. So, acceptance of our collaborative care intervention in the occupational healthcare setting is not to be expected for this particular diagnosis and for this particular study population. It is interesting that in this study, the costs of collaborative care were lower than the costs of care as usual, and that, as shown by Vlasveld et al., the severity of depressive symptoms did not differ between both groups [10]. However, quality of life in the care as usual group increased more than in the collaborative care group, and although this difference was not significant, the combination of costs and effects resulted in an ICER that is called

questionable. In the incremental cost-effectiveness plane, the large majority of the incremental cost-effect ratio fell in the quadrants of 'fewer costs, but less effective' and 'higher costs and less effective'. Exploring the incremental cost-utility for the total costs (thus, the inclusion of the productivity costs as well) resulted in comparable findings.

The differences in the direct medical costs were mainly due to higher costs for admission to a (part-time) hospital and admission to a psychiatric hospital in the care as usual group compared to collaborative care. However, the number of people that received such care was too low to draw any conclusions. The sensitivity analysis showed that these costs did not have a large effect on the ICER. The collaborative care group did have higher costs concerning the OP-care manager, but the total costs remained lower in the collaborative care group. As was expected, since the duration until return to work did not differ significantly between both groups, no difference was observed in reduction in long-term absence, short-term absence and reduced efficiency. There was also no effect on long-term absence and reduced efficiency for both groups. It is possible that this was caused by the relatively low number of respondents in the study. Consistently, the productivity costs did not differ much between both groups. As discussed earlier, symptom reduction does not automatically lead to return to work and therefore it is interesting to look at the different aspects that are of influence. Studies already showed that even if care as usual and the intervention under study effect psychological symptoms to the same extent, return to work can be effected differently [24-27]. Applying the biopsychosocial model, sickness absence and return to work not only depend on a health condition, but can be explained by a number of different factors (like personal characteristics, the environment, the workplace, the compensation system and the healthcare delivery system) [28,29]. More research should be conducted to identify these associated non-medical factors [30,31].

Over time, the quality of life improved in both groups, but the quality of life in the care as usual group increased more, although this effect was not significant. This finding corresponds with the results of the Vlasveld et al. regarding the 9-item depression subscale of the Patient Health Questionnaire (PHQ-9), a continuous outcome measure [10]. In this study, it was argued that the increased response in the collaborative care group might have influenced the quality of life in the collaborative care group, without having an effect on return to work. In our study, no such effect was found.

A number of important limitations need to be considered. Only 2/3 of the collaborative care group visited the OP-care manager and almost no one received the workplace intervention [10]. This may be caused by the waiting lists that came into existence as many employees entered the study concurrently. Secondly, because some employees in the collaborative care group already received psychological treatment, it is also possible that some employees found the additional collaborative care treatment too intensive. Thirdly, because of the separation of treatment and sickness certification in the Dutch legislation, employees may not be used to the treatment role of the OP–care manager. With respect to the workplace intervention, they may have felt uncomfortable to have meetings with their employer and OP-care manager together. According to a recent report of the OECD, that pleads for more integration of the occupational and mental health care system, occupational care can be improved by an increased collaboration between caregiver and employer [32].

## CONCLUSION

This study has been unable to demonstrate the cost-utility of collaborative care in an occupational healthcare setting. Widespread implementation of collaborative care in the occupational healthcare setting, as was operationalized in this study, is therefore not justified. Perhaps collaborative care in this setting may be (cost-) effective when adjustments are made, for example in having the treatment administered by a different occupational healthcare professional including proper implementation of the workplace intervention. However, this should be examined in further research adapted to the Dutch occupational healthcare setting.

**Acknowledgement**
This study was part of the Depression Initiative, a national program aimed at supporting depression care in the Netherlands. This study was funded by the Foundation for Innovation of Health Insurers ('Innovatiefonds Zorgverzekeraars') in the Netherlands.

## REFERENCES

1. De Graaf R, Tuithof M, Van Dorsselaer S, Ten Have M. Verzuim door psychische en somatische aandoeningen bij werkenden: Resultaten van de 'netherlands mental health survey and incidence study-2 (NEMESIS-2). Utrecht: Trimbos-Instituut; 2011.

2. van 't Land H, Schoemaker C, editors. Trimbos zakboek psychische stoornissen. 2nd ed. Utrecht: Uitgeverij de Tijdstroom; 2008.

3. Krol M, Papenburg J, Koopmanschap M, Brouwer W. Do productivity costs matter?: The impact of including productivity costs on the incremental costs of interventions targeted at depressive disorders. Pharmacoeconomics 2011 Jul;29(7):601-19.

4. Smit F, Cuijpers P, Oostenbrink J, Batelaan N, de Graaf R, Beekman A. Costs of nine common mental disorders: Implications for curative and preventive psychiatry. J Ment Health Policy Econ 2006 Dec;9(4):193-200.

5. Anema JR, Jettinghoff K, Houtman I, Schoemaker CG, Buijs PC, van den Berg R. Medical care of employees long-term sick listed due to mental health problems: A cohort study to describe and compare the care of the occupational physician and the general practitioner. J Occup Rehabil 2006 Mar;16(1):41-52.

6. Bodenheimer T. Helping patients improve their health-related behaviors: What system changes do we need? Dis Manag 2005 Oct;8(5):319-30.

7. Gilbody S, Bower P, Fletcher J, Richards D, Sutton AJ. Collaborative care for depression: A cumulative meta-analysis and review of longer-term outcomes. Arch Intern Med 2006 Nov 27;166(21):2314-21.

8. van Steenbergen-Weijenburg KM, van der Feltz-Cornelis CM, Horn EK, van Marwijk HW, Beekman AT, Rutten FF, Hakkaart-van Roijen L. Cost-effectiveness of collaborative care for

the treatment of major depressive disorder in primary care. A systematic review. BMC Health Serv Res 2010 Jan 19;10:19.

9. van der Feltz-Cornelis CM, Hoedeman R, de Jong FJ, Meeuwissen JA, Drewes HW, van der Laan NC, Ader HJ. Faster return to work after psychiatric consultation for sicklisted employees with common mental disorders compared to care as usual. A randomized clinical trial. Neuropsychiatr Dis Treat 2010 Sep 7;6:375-85.

10. Vlasveld MC, van der Feltz-Cornelis CM, Adèr HJ, Anema JR, Hoedeman R, van Mechelen W, Beekman ATF. Submitted 2012.

11. Bower P, Gilbody S. Stepped care in psychological therapies: Access, effectiveness and efficiency. narrative literature review. Br J Psychiatry 2005 Jan;186:11-7.

12. Vlasveld MC, van der Feltz-Cornelis CM, Ader HJ, Anema JR, Hoedeman R, van Mechelen W, Beekman AT. Collaborative care for major depressive disorder in an occupational healthcare setting. Br J Psychiatry 2012; 200:510-511.

13. van Vliet IM, Leroy H, van Megen HJM. De MINI-internationaal neuropsychiatrisch interview: Een kort gestructureerd diagnostisch interview voor DSM-IV en ICD-10 psychiatrische stoornissen. .

14. Vlasveld MC, Anema JR, Beekman AT, van Mechelen W, Hoedeman R, van Marwijk HW, Rutten FF, Hakkaart-van Roijen L, van der Feltz-Cornelis CM. Multidisciplinary collaborative care for depressive disorder in the occupational health setting: Design of a randomised controlled trial and cost-effectiveness study. BMC Health Serv Res 2008 May 5;8:99.

15. van der Feltz-Cornelis CM. Towards integrated primary health care for depressive disorder in the netherlands. the depression initiative. Int J Integr Care 2009 Jun 15;9:83.

16. NVAB. Handelen van de bedrijfsarts bij werkenden met psychische problemen. 2007.

17. Hakkaart-van Roijen L. Manual Trimbos/iMTA questionnaire for costs associated with psychiatric illness (in dutch). J Consult Clin Psychol 2002;59(1):12-9.

18. Cheung K, Oemar M, Oppe M, Rabin R. EQ-5D user guide, basic information on how to use EQ-5D. EuroQol Group; 2009.

19. Matthews JNS, Altman DG, Campbell MJ, Royston P. Analysis of serial measurements in medical research. British Medical Journal 1990;300:230-5.

20. Hakkaart-van Roijen L, Tan SS, Bouwmans CAM. Handleiding voor kostenonderzoek: Methoden en standaard kostprijzen voor economische evaluaties in de gezondheidszorg. Diemen: College voor zorgverzekeringen; 2010.

21. van Roijen L, Essink-Bot ML, Koopmanschap MA, Bonsel G, Rutten FF. Labor and health status in economic evaluation of health care. the health and labor questionnaire. Int J Technol Assess Health Care 1996;12:405-15.

22. Koopmanschap MA, Rutten FF, van Ineveld BM, van Roijen L. The friction cost method for measuring indirect costs of disease. J Health Econ 1995 Jun;14(2):171-89.

23. Box GEP, Cox DR. An analysis of transformations. Journal of the Royal Statistical Society 1964;26:211-34.

24. Blonk RWB, Brenninkmeijer V, Lagerveld SE, Houtman ILD. Return to work: A comparison of two cognitive behavioural interventions in cases of work-related psychological complaints among the self-employed. Work & Stress 2006;20(2):129-44.

25. van der Klink JJ, Blonk RW, Schene AH, van Dijk FJ. Reducing long term sickness absence by an activating intervention in adjustment disorders: A cluster randomised controlled design. Occup Environ Med 2003 Jun;60(6):429-37.

26. Schene AH, Koeter MW, Kikkert MJ, Swinkels JA, McCrone P. Adjuvant occupational therapy for work-related major depression works: Randomized trial including economic evaluation. Psychol Med 2007 Mar;37(3):351-62.

27. Adler DA, McLaughlin TJ, Rogers WH, Chang H, Lapitsky L, Lerner D. Job performance deficits due to depression. Am J Psychiatry 2006 Sep;163(9):1569-76.

28. World Health Organization. Towards a common language for functioning, disability and health: 2002.

29. Loisel P, Durand M, Berhelette D, Vezina N, Baril R, Gagnon D, Lariviere C, Tremblay C. Disability prevention: New paradigm for the management of occupational back pain. Dis Manage Health Outcomes 2001;9(7):351-60.

30. Lagerveld SE, Bultmann U, Franche RL, van Dijk FJ, Vlasveld MC, van der Feltz-Cornelis CM, Bruinvels DJ, Huijs JJ, Blonk RW, van der Klink JJ, et al. Factors associated with work participation and work functioning in depressed workers: A systematic review. J Occup Rehabil 2010 Sep;20(3):275-92.

31. Dekkers-Sanchez PM, Hoving JL, Sluiter JK, Frings-Dresen MH. Factors associated with long-term sick leave in sick-listed employees: A systematic review. Occup Environ Med 2008 Mar;65(3):153-7.

32. OECD. Sick on the job? myths and realities about mental health and work. Mental Health and Work, OECD Publishing; 2012.