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7 **Understanding the “Black Box” of Employer Decisions about**  
8 **Health Insurance Benefits: The Case of Depression Products**

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19  
20 **Abstract:** In a randomized trial of two interventions on employer health benefit decision-making, 156  
21 employers in the evidence-based (EB) condition attended a two hour presentation reviewing scientific  
22 evidence demonstrating health benefits that increase high quality treatment of depression in the workforce  
23 (depression products) provide the employer a return on investment. One hundred sixty nine employers  
24 participating in the usual care (UC) condition attended a similar length presentation reviewing scientific  
25 evidence supporting Healthcare Effectiveness Data and Information Set (HEDIS) monitoring. This study  
26 described the decision-making process in 264 (81.2%) employers completing 12 month follow-up. The  
27 EB intervention did not increase the proportion of employers who discussed depression products with  
28 others in the company (29.2% versus 32.1%,  $p>.10$ ) but it did significantly influence the content of the  
29 discussions that occurred. Discussion in EB companies promoted the capacity of a depression product to  
30 realize a return on investment (18.4% versus 4.7%,  $p=.05$ ) and to improve productivity (47.4% versus  
31 25.6%,  $p=.06$ ) more often than discussions in UC companies. Almost half of EB and UC employers  
32 reported that return on investment has a large impact on health benefit decision making. These results  
33 demonstrate the difficulty of influencing employer decisions about health benefits using group  
34 presentations.

35  
36 **Keywords:** health benefits; insurance; depression; employers; return on investment; productivity;  
37 absenteeism; collaborative care

1

2 **1. Introduction**

3 Health insurance purchasers need to actively support efforts to enhance primary care depression treatment  
 4 to translate science to practice [1] because intervention models that improve outcomes [2-3] also increase  
 5 the direct costs of care[4], at least initially [5]. Employers represent a substantial segment of purchasers,  
 6 offering health insurance coverage to 88.8% of individuals in the workforce [6]. Employers suffer when  
 7 7.6% of the workforce suffers a major depressive episode [7] because the illness substantially reduces  
 8 work functioning [8-9]. Employers interested in ensuring their workers receive these intervention models  
 9 can purchase depression products from their health plans or disease management companies [10].  
 10 Randomized trials demonstrate that these models improve absenteeism and productivity at work [11]  
 11 sufficiently for selected employers to realize a return on investment [12] with competitive pricing.

12

13 The objective of the study is to test a randomly assigned intervention to influence employers to purchase  
 14 depression products for their employees. In the trial, 156 EB employers attended a presentation describing  
 15 the scientific evidence supporting depression products, and 169 UC employers attended a presentation  
 16 describing the scientific evidence supporting Healthcare Effectiveness Data and Information Set (HEDIS)  
 17 monitoring. The EB presentation provided employers specific arguments to support the purchase of a  
 18 depression product, including company-specific estimates derived from the scientific literature for return  
 19 on investment [13]. The objective of this study is to test EB intervention impact on decision-making about  
 20 depression products in the year following the presentation. Key content areas included arguments made  
 21 for and against the purchase of a depression product, triggers to the future purchase of a depression  
 22 product, and the importance of return on investment in the company's health benefit decision-making.

23 **2. Results and Discussion**24 **2.1 Sample**

25

26 The sample consisted of 264 employers who responded at 12 month follow-up (81.2% of the baseline  
 27 sample). The organizational characteristics of responding employers are described in Table 1.

28

29 Table 1. Organizational Characteristics (n=264)+

30

31 *Structural Characteristics*32 **Size**

33	% small (100 to 500 employees)	35.2
34	% medium (501 to 2500 employees)	33.0
35	% large (2501 plus employees)	31.8

36 **Type**

1	% for-profit	54.2
2	% not-for-profit	26.3
3	% public sector	19.5
4	Company age (SD)	73.6 (47.5)
5	Mean number of health plan carriers (SD)	1.9 (2.1)
6	Insurance Risk	
7	% fully insured	24.3
8	% self-insured	51.0
9	% mixture of full and self-insured	24.7

10

11 Although the EB and UC cohorts contained companies of statistically comparable size ( $p > .10$ ), large  
 12 employers were more likely to complete 12 month follow-up ( $p < .05$ ). Thus, we controlled for company  
 13 size in the comparisons we present in this manuscript. At 12 months, 29.2% ( $n=38$ ) of EB employers  
 14 reported internal discussion of depression products by email exchange, telephone call, in-person meeting  
 15 or group meeting with other employees of organization only, compared to 33.1% ( $n=43$ ) of UC employers  
 16 ( $p=.82$ ).

17

## 18 2.2 Arguments Made In Support of and Against Depression Product Purchase

19

20 Employers reporting internal discussion were asked about arguments made in support of and against  
 21 depression product purchase. As Table 2 demonstrates, EB and UC employers reported their discussions  
 22 included generally similar arguments in support of purchasing a depression product. Given that the EB  
 23 presentation emphasized the scientific evidence demonstrating that depression products increase  
 24 productivity and provide a return on investment, it was not surprising that these arguments occurred more  
 25 often in EB than UC discussions.

26

27 Table 2: Arguments Made in Support of Depression Product Purchase ( $n=81$ )

28

“What kinds of arguments were made in support of purchasing a depression product?”	Percentage of EB Employer Responses by Theme ( $n=38$ )	Percentage of UC Employer Responses by Theme ( $n=43$ )
Greater productivity**	47.4%	25.6%
Want to provide for employee’s needs	29.0%	20.9%
Consider depression to be valuable and a needed product	26.3%	16.3%

Healthy workforce	21.1%	20.9%
Company costs/return on investment (ROI)*	18.4%	4.7%
Concerns about health care costs	15.8%	27.9%
Having a depression product helps meet employer's goals	7.9%	11.6%
A product is already available	5.3%	4.7%
No arguments made in support	5.3%	11.6%
Co-morbid physical and mental health issues	0%	4.7%

1 \*p=.05, \*\*p= .06

2

3 One EB employer indicated that “associates who are directly or indirectly impacted by depression need  
4 some type of assistance to help them through the depression” and then went on to say that “in addition to  
5 direct health care costs...there can be lower productivity for the associate and co-workers.” Another EB  
6 employer indicated that offering a depression product “benefits us as the employer because the employee  
7 can get the help they need to get well and ultimately return to work as a major contributor.” A third EB  
8 employer succinctly stated that having a product would “keep overall costs down and production up.”  
9 UC employers echoed these arguments when they noted a “healthier workforce and less absenteeism  
10 (equals) greater productivity,” and the importance of “(keeping) employees healthy” in order to “keep  
11 medical costs from going up due to untreated depression.”

12

13 As Table 3 demonstrates, the arguments made against a depression product purchase were generally  
14 comparable in EB and UC discussions.

15

16 Table 3: Arguments Made Against Depression Product Purchase (n=81)

17

“What kinds of arguments were made against purchasing a depression product?”	Percentage of EB Employer Responses by Theme (n=38)	Percentage of UC Employer Responses by Theme (n=43)
No arguments made	47.4%	30.2%
Cost or benefit to employer	31.6%	46.5%

Confidentiality concerns	18.4%	11.6%
Value is not certain	15.8%	7.0%
It is (or should be) covered by health insurance	7.9%	7.0%
Not needed or used by employees	7.9%	20.9%
Government mandate	0%	4.7%
Too stigmatized an issue for employer to offer for employees	0%	4.0%
Not employer's business	0%	2.3%
Less valuable than other health conditions	0%	2.3%
Not sure how to publicize	0%	2.3%

1  
 2 One EB employer reflected the information in the presentation by noting “this [purchasing a depression  
 3 product] is a no brainer.” Contradicting information in the presentation, a second EB employer  
 4 commented that “depression products are so person to person specific [that] it is impossible to gauge what  
 5 will be helpful and what will not” and a third commented “does anything work?” Many UC employers,  
 6 who had not been educated about the product’s return on investment indicated that “cost” was an  
 7 argument made against depression product adoption without elaborating; however, one employer  
 8 considered the benefits of a depression product to be a “poor performer [with regard to] costs.”  
 9

10 **2.3 Triggers to Depression Product Purchase**

11  
 12 All employers not currently in the purchasing process were asked what would trigger their organization’s  
 13 purchase of a depression product. As Table 4 demonstrates, EB and UC employers reported similar  
 14 triggers might stimulate the purchase of a depression product. The most commonly reported trigger in  
 15 both groups was a visible episode of depression in the company, often referred to as a “poster child.”  
 16 Other common triggers were company-specific data on lost productivity, (further) increases in health care  
 17 costs, management change, and economic/financial improvement.  
 18

19 Table 4: Triggers to Depression Product Purchase (n=246)

20

“Your organization has not purchased a depression	<b>Percentage of EB</b>	<b>Percentage of</b>
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product. Image that two year from now, your organization decided to purchase a depression product. Can you describe the changes that must have occurred for your employer to make that decision?"	<b>Employer Responses by Theme (n=122)</b>	<b>UC Employer Responses by Theme (n=124)</b>
Visible (public) depression episode, or otherwise demonstrated need	25.4%	20.2%
Data showing lost productivity or poor performance	21.3%	17.7%
Increased health care costs	17.2%	14.5%
Change in/support from management	10.7%	13.7%
Economy/company finances have to change	11.5%	5.7%
Demonstrated return on investment (ROI) or cost-benefit analysis	8.2%	5.7%
None, does not apply or no response	7.4%	5.7%
Better products made available	6.6%	2.4%
Need additional information, understanding or training	5.7%	4.8%
Products should be part of health package	4.9%	7.3%
Company has or is taking steps to implement program	3.3%	4.8%
No need for product/need would have to be demonstrated	3.3%	6.5%
Not sure	2.5%	2.4%
Requests from employees	1.6%	2.4%
Change in provider network	1.6%	0%
Confidentiality	1.6%	0%
Want to offer support to employees	1.6%	0%
Other more urgent health issues must be resolved first	0.8%	0.8%
Government mandate	0.8%	1.6%

Better relationship with HMO/providers	0.8%	0%
A depression product should be simple to use	0.8%	0%
Do not want to appear to encourage treatment for depression	0%	0.8%

1  
 2 One EB employer noted: “huge increase in costs related to depression—or a tragedy like the suicide of one  
 3 of our employees due to depression.” Another responded: “obvious loss of productivity clearly tied to  
 4 incidents of prolonged depression.” Despite having received an estimate of the return on investment for  
 5 his/her company for a depression product, a third EB employer said: “the demand for the product and  
 6 impact on productivity must have been identified and the cost of now providing the product estimated to  
 7 be higher than the cost.” One UC employer responded: “a trend where employees are absent more  
 8 frequently using short term disability pay with the diagnosis of depression.” Another said: “We are 100%  
 9 self-insured. Until we recover financially, we will not be able to purchase any product. It is purely  
 10 financial.” A third said “depression would have to be in our top 5 chronic conditions for us to purchase a  
 11 depression DM product.”

12  
 13 **2.4 Influence of Return on Investment in Benefit Decision-Making**

14  
 15 All employers were asked about how return on investment impacted benefit decision-making. Reflecting  
 16 the organizational comparability of EB and UC companies, it is not surprising the two groups reported  
 17 that return on investment had a similar impact on decision-making about additional health benefits. As  
 18 shown in Table 5, close to half of employers in each group reported return on investment had a large  
 19 impact, while 20% indicated it had no impact or failed to answer the question.

20  
 21 Table 5: Influence of Return on Investment in Benefit Decision-Making (n=257)

22

“Some health benefits/initiatives have a positive return on investment to the organization, while others do not. During the past 12 months, to what degree did return on investment influence your decision-making about additional health benefits/initiatives?”	Percentage of EB Employer Responses by Theme (n=127)	Percentage of UC Employer Responses by Theme (n=130)
Large influence/this is an important issue	44.1%	45.4%
None/did not answer	21.3%	14.6%

Some influence	19.7%	17.7%
Not sure	11.0%	16.9%
Hard to calculate, but trying to determine	6.3%	6.2%
Does not apply	3.9%	6.9%
Hard to calculate and not trying to determine	3.9%	2.3%
Have other priorities now	2.4%	3.9%

1

2 **2.5 Discussion**

3

4 Approximately 30% of employers in both the EB and UC groups raised the idea that their companies  
5 should consider depression products in internal discussions in their organizations. From the glass half  
6 empty perspective, two out of every three EB employers failed to ‘bring home’ any ideas from a two hour  
7 presentation. While the presentation contained one role play between the presenter and the audience, it is  
8 possible that future interventions could be strengthened by utilizing more targeted role plays to increase  
9 employer skill/comfort to lead these discussions. However, we suspect that EB employers who chose to  
10 keep silent speak volumes about their company’s interest in improving depression treatment in the  
11 workforce. Earlier interest may have been ‘knocked off the radar screen’ by the considerable retooling that  
12 health care reform required from already overstretched health benefits professionals. From the glass half  
13 full perspective, the intervention appears to have equipped committed health benefit professionals to be  
14 stronger advocates for depression products. Almost half of EB discussions noted that depression products  
15 can improve productivity; however, that message may be already circulating among health benefit  
16 professionals as one quarter of UC discussions recognized that as an advantage. Also encouraging is that  
17 almost half of participating employers recognized that return on investment had a large influence on new  
18 benefits. Our anecdotal data indicate that future research is needed to deconstruct their understanding of  
19 return on investment and the level of evidence necessary to establish it.

20

21 Employers provided unanticipated perspectives on company changes that would trigger the purchase of a  
22 depression product. While disappointing, it probably should not be surprising that a visible episode of  
23 depression in the workforce (“poster child”) was the most often reported trigger. Visible episodes of  
24 depression are rarely evident in the workplace because depression is more likely to erode performance ‘in  
25 the cubicle’ than in dramatic venues. More surprising was the finding that company-specific data on poor  
26 performance could act as a trigger. Rather than accept findings from ‘somebody else’s company,’  
27 employers may believe that their company is not beset by productivity loss when employees become



1 depressed. While this may be true in some circumstances, national studies [8-9] suggest that reduced  
2 productivity is the rule not the exception.

3  
4 These findings are limited by the purposive sample we studied. Employers represent a group of potentially  
5 early innovators with sufficient interest in the topic to volunteer to participate in a longitudinal study.  
6 Because it should be easier to persuade this group than a nationally representative sample, we do not think  
7 this limitation reduces our certainty about the challenges of influencing employer benefit decisions using  
8 group presentations. Thus, we encourage future researchers to develop more innovative interventions to  
9 motivate employers to translate science to benefit design.

10

### 11 **3. Experimental Section**

12 This manuscript utilizes a cross-sectional design in analyzing the second wave of a three wave study. The  
13 design of the three wave study has been previously published [14]. In brief, the research team  
14 collaborated with 21 National Business Coalition on Health regional coalitions [15] and 12 related  
15 professional associations. Regional coalitions/associations recruited health benefit professionals (referred  
16 to in this manuscript as employers) from their membership who indicated an interest in depression in the  
17 workplace. The data analyzed for this paper are derived from 5 open-ended questions embedded in a 57-  
18 item web-based survey completed by 264 employers (81.2%) approximately 12 months after the  
19 presentations. The second author developed a coding scheme to capture the major themes for each item  
20 before coding each response. Respondents frequently provided answers that identified more than one  
21 theme, so percentages do not add up to 100%. A second analyst coded 20% of responses to the first three  
22 items independently, demonstrating an average inter-rater agreement of 76% or higher. Because EB and  
23 UC employers reported similar organizational characteristics at baseline and were comparably likely to  
24 complete 12 month follow-up, we attribute the differences we observed to the different presentations in  
25 which EB and UC employers participated.

26

### 27 **4. Conclusions**

28 In summary, the EB intervention was not successful in increasing the internal discussion of depression  
29 products, but it did influence the content of discussions that occurred. Discussion in EB companies  
30 promoted the capacity of depression products to improve productivity and to realize a return on  
31 investment more often than discussion in UC companies. Almost half of EB and UC employers reported  
32 that return on investment has a large impact on health benefit decision making. These results demonstrate  
33 the difficulty of influencing employer decisions about health benefits using group presentations.  
34 Alternative intervention strategies need to be developed and tested.

35

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