

October 2013

Collaborative Primary Care: Preliminary Findings for Depression and Anxiety

The Washington State Institute for Public Policy (WSIPP) was directed by the 2013 Legislature to prepare an inventory of evidence-based, research-based, and promising practices for prevention and intervention services for adult behavioral health.¹ This brief report presents our preliminary findings on collaborative primary care for depression and anxiety. Final results for collaborative care will be published in May 2014.

Program Description.

Collaborative care integrates mental health services into primary care. This approach involves collaboration between the care manager, the patient, the general practitioner, and usually a mental health specialist. After screening patients for depression and/or anxiety, the care manager provides, at a minimum, an initial assessment of patient health and subsequent follow-ups by phone and/or in person regarding patient treatment. In one form of the intervention, the care manager treats a comorbid medical condition in addition to depression or anxiety. We examined three forms of the intervention including collaborative care for patients diagnosed with depression, depression and a comorbid medical condition, or anxiety.

Findings.

Our findings indicate that collaborative care can reduce mental health symptoms. Collaborative care is particularly effective for depressed patients who also suffer from a medical condition.

In addition to reviewing the research evidence, we examined the benefits and costs of collaborative care (see inset for our research approach). The benefit-cost analysis determined that the benefits of collaborative care exceed the costs.² The risk analysis shows that benefits from collaborative primary care exceed the costs 100% of the time. The detailed results are summarized on the following page.

Research Approach

WSIPP's research approach to identifying evidence-based programs and policies has three main steps.

- ✓ First, we determine "what works" (and what does not work) to reduce mental & physical health symptoms, using a statistical technique called meta-analysis.
- ✓ Second, we calculate whether the benefits of collaborative primary care exceed its costs. This economic test demonstrates whether the monetary value of collaborative primary care benefits justifies its expenditures.
- ✓ Third, we estimate the risk of investing in a collaborative primary care by testing the sensitivity and uncertainty of our modeling assumptions. Risk analysis provides an indication of the likelihood that, when key estimates are varied, the benefits consistently exceed costs.

¹ Second Substitute Senate Bill 5732, Chapter 338, Laws of 2013.

² See Technical Appendix I, from WSIPP Report: Return on Investment: Evidence-Based Options to Improve Statewide Outcomes April 2012 Update, for an in-depth description of WSIPP's benefit-cost analysis.

Meta-Analysis Methods.

We conducted a systematic review of research studies to determine if, on average, collaborative primary care reduces depression, anxiety, and other health symptoms. We located 53 unique studies with sufficient research rigor to include in our review. Of these studies, 39 examined collaborative care for patients with depression, 11 examined collaborative care for patients with depression and a comorbid medical condition, and three examined collaborative care for patients with anxiety.

Intervention	Outcomes measured	No. of effect sizes	Unadjusted effect size (random effects model)			Adjusted effect size and standard error used in cost-benefit analysis		
			ES	SE	p-value	ES	SE	p-value
Collaborative Care for Anxiety	Anxiety	4	-0.459	0.123	0	-0.393	0.123	0
Collaborative Care for Depression	Depression	48	-0.269	0.034	0	-0.224	0.034	0
	Suicidal ideation	2	-0.229	0.104	0.027	-0.217	-0.229	0.104
Collaborative Care for Depression w/Comorbid Medical Condition	Depression	11	-0.395	0.076	0	-0.352	0.076	0
	Blood pressure	4	-0.369	0.182	0.043	-0.352	0.182	0.043
	Blood sugar	3	-0.254	0.134	0.059	-0.213	0.134	0.059

Benefit-Cost Analysis.

We collected collaborative care cost information from recent cost-effectiveness analyses. We adjusted these costs to fit the average form of collaborative care found in our meta-analysis of the literature. The sum of the estimated benefits, along with the costs, provides a statewide view on how collaborative care produces benefits that exceed costs. For more information on our benefit-cost methods, please reference WSIPP's Technical Manual.³

Topic area/program	Last updated	Monetary benefits			Costs	Summary statistics		
		Total benefits	Taxpayer	Non-taxpayer		Benefits minus costs (net present value)	Benefit to cost ratio	Odds of a positive net present value
Benefits and costs are life-cycle present-values per participant, in 2012 dollars. Some programs achieve benefits that we cannot monetize.								
Collaborative Primary Care Interventions								
Collaborative Care for Depression	Sep. 2013	\$6,882	\$2,162	\$4,720	(\$789)	\$6,093	\$8.73	100%
Collaborative Care for Depression with a Comorbid Medical Condition	Sep. 2013	\$5,999	\$1,945	\$4,054	(\$832)	\$5,167	\$7.21	100%
WSIPP is currently reviewing benefit-cost results for collaborative care for anxiety								

³ Washington State Institute for Public Policy, (2013). *Benefit-cost technical manual: methods and user guide*. (Doc. No. 13-09-1201b). Olympia, WA: Author.

Citations Used in the Meta-Analysis Mental Health Interventions in Primary Care

Collaborative Primary Care for Depression

- Adler, D. A., Bungay, K. M., Wilson, I. B., Pei, Y., Supran, S., Peckham, E., . . . Rogers, W. H. (2004). The impact of a pharmacist intervention on 6-month outcomes in depressed primary care patients. *General Hospital Psychiatry, 26*(3), 199-209.
- Aragones, E., Lluís, P. J., Caballero, A., Lopez-Cortacans, G., Casaus, P., Maria, H. J., . . . Folch, S. (2012). Effectiveness of a multi-component programme for managing depression in primary care: A cluster randomized trial. The INDI project. *Journal of Affective Disorders, 142*(1-3), 297-305.
- Berghöfer, A., Hartwich, A., Bauer, M., Unützer, J., Willich, S. N., & Pfennig, A. (2012). Efficacy of a systematic depression management program in high utilizers of primary care: A randomized trial. *BMC Health Services Research, 12*(298).
- Blanchard, M. R., Waterreus, A., & Mann, A. H. (1995). The effect of primary care nurse intervention upon older people screened as depressed. *International Journal of Geriatric Psychiatry, 10*(4), 289-298.
- Bruce, M. L., Ten, H. T. R., Reynolds, C. F., Katz, I. I., Schulberg, H. C., Mulsant, B. H., . . . & Alexopoulos, G. S. (2004). Reducing suicidal ideation and depressive symptoms in depressed older primary care patients: A randomized controlled trial. *The Journal of the American Medical Association, 291*(9), 1081-1091.
- Buszewicz, Marta, Griffin, Mark, Beecham, Jennifer, Bonin, Eva-Maria, & Hutson, Madeline. (2011). ProCEED: Report of a study of proactive care by practice nurses for people with depression and anxiety.
- Capoccia, K. L., Boudreau, D. M., Blough, D. K., Ellsworth, A. J., Clark, D. R., Stevens, N. G., . . . Sullivan, S. D. (2004). Randomized trial of pharmacist interventions to improve depression care and outcomes in primary care. *American Journal of Health-System Pharmacy, 61*(4), 364-372.
- Chew-Graham, C. A., Lovell, K., Roberts, C., Baldwin, R., Morley, M., Burns, A., . . . Burroughs, H. (2007). A randomised controlled trial to test the feasibility of a collaborative care model for the management of depression in older people. *The British Journal of General Practice : The Journal of the Royal College of General Practitioners, 57*(538), 364-370.
- Datto, C. J., Thompson, R., Horowitz, D., Disbot, M., & Oslin, D. W. (January 01, 2003). The pilot study of a telephone disease management program for depression. *General Hospital Psychiatry, 25*(3).
- Dietrich, A. J., Oxman, T. E., Williams, J. J. W., Schulberg, H. C., Bruce, M. L., Lee, P. W., . . . Nutting, P. A. (2004). Primary care - Re-engineering systems for the treatment of depression in primary care: Cluster randomised controlled trial. *British Medical Journal, 329*(7466), 602.
- Dobscha, S. K., Corson, K., Hickam, D. H., Perrin, N. A., Kraemer, D. F., & Gerrity, M. S. (2006) Depression decision support in primary care: A cluster randomized trial. *Annals of Internal Medicine, 145*(7), 477-487.
- Fortney, J., Pyne, J., Edlund, M., Williams, D., Robinson, D., Mittal, D., & Henderson, K. (2007). A randomized trial of telemedicine-based collaborative care for depression. *Journal of General Internal Medicine, 22*(8), 1086-1093.
- Gensichen, J., von Korff, M., Peitz, M., Muth, C., Beyer, M., Güthlin, C., . . . Gerlach, F. M. (2009). Case management for depression by health care assistants in small primary care practices: a cluster randomized trial. *Annals of Internal Medicine, 151*(6), 369-378.
- Hedrick, S. C., Chaney, E. F., Felker, B., Liu, C.-F., Hasenberg, N., Heagerty, P., . . . Katon, W. (2003). Effectiveness of collaborative care depression treatment in veterans' affairs primary care. *Journal of General Internal Medicine, 18*(1), 9-16.
- Huijbregts, K. M., de Jong, F. J., van Marwijk, H. W. J., Beekman, A. T., Adèr, H. J., Hakkaart-van Roijen, . . . Van der Feltz-Cornelis, C. M. (2013). A target-driven collaborative care model for Major Depressive Disorder is effective in primary care in the Netherlands. A randomized clinical trial from the depression initiative. *Journal of Affective Disorders, 146* (3), 328-37.
- Katon, W., Robinson, P., Von, K. M., Lin, E., Bush, T., Ludman, E., . . . Walker, E. (1996). A multifaceted intervention to improve treatment of depression in primary care. *Archives of General Psychiatry, 53*(10), 924-932.
- Katon, W., Von Korff, M. & Lin, E. (1995). Collaborative management to achieve treatment guidelines: Impact on depression in primary care. *Journal of the American Medical Association, 273*(13), 1026-1031.
- Katon, W., Von, K. M., Lin, E., Simon, G., Walker, E., Unützer, J., Bush, T., . . . Ludman, E. (January 01, 1999). Stepped collaborative care for primary care patients with persistent symptoms of depression: a randomized trial. *Archives of General Psychiatry, 56*(12), 1109-15.

- Katzelnick, D. J., Simon, G. E., Pearson, S. D., Manning, W. G., Helstad, C. P., Henk, H. J., . . . Kobak, K. A. (2000). Randomized trial of a depression management program in high utilizers of medical care. *Archives of Family Medicine, 9*(4), 345-351.
- Klinkman, M. S., Bauroth, S., Fedewa, S., Kerber, K., Kuebler, J., Adman, T., & Sen, A. (2010). Long-term clinical outcomes of care management for chronically depressed primary care patients: A report from the depression in primary care project. *Annals of Family Medicine, 8*(5), 387-396.
- Landis, S. E., Gaynes, B. N., Morrissey, J. P., Vinson, N., Ellis, A. R., & Domino, M. E. (2007). Generalist care managers for the treatment of depressed medicaid patients in North Carolina: A pilot study. *BMC Family Practice, 8*(1), 7-11.
- Liu, C. F., Hedrick, S. C., Chaney, E. F., Heagerty, P., Felker, B., Hasenberg, N., . . . Katon, W. (2003). Cost-effectiveness of collaborative care for depression in a primary care veteran population. *Psychiatric Services, 54*(5), 698-704.
- Mann, A., Blizard, R., Murray, J., Smith, J., Botega, N., MacDonald, E., & Wilkinson, G. (1998). An evaluation of practice nurses working with general practitioners to treat people with depression. *The British Journal Of General Practice: The Journal Of The Royal College Of General Practitioners, 48*(426), 875-879.
- McCusker, J., Sewitch, M., Cole, M., Yaffe, M., Cappeliez, P., Dawes, M., . . . Latimer, E. (2008). Project Direct: Pilot study of a collaborative intervention for depressed seniors. *Canadian Journal of Community Mental Health, 27*(2), 201-218.
- McMahon, L., Foran, K. M., Forrest, S. D., Taylor, M. L., Ingram, G., Rajwal, M., . . . McAllister-Williams, R. H. (2007). Graduate mental health worker case management of depression in UK primary care: A pilot study. *British Journal of General Practice, 57*(544), 880-885.
- Patel, V., Weiss, H. A., Chowdhary, N., Naik, S., Pednekar, S., Chatterjee, S., . . . Kirkwood, B. R. (2010). Effectiveness of an intervention led by lay health counsellors for depressive and anxiety disorders in primary care in Goa, India (MANAS): A cluster randomised controlled trial. *Lancet, 376*(9758), 2086-2095.
- Richards, D. A., Hill, J. J., Gask, L., Lovell, K., Chew-Graham, C., Bower, P., . . . Barkham, M. (2013). Clinical effectiveness of collaborative care for depression in UK primary care (CADET): Cluster randomised controlled trial. *British Medical Journal (Clinical Research Ed.), 347*.
- Richards, D. A., Lovell, K., Gilbody, S., Gask, L., Torgerson, D., Barkham, M., . . . Richardson, R. (2008). Collaborative care for depression in UK primary care: A randomized controlled trial. *Psychological Medicine, 38*(2), 279-287.
- Rost, K., Nutting, P., Smith, J., Werner, J., & Duan, N. (2001). Improving Depression Outcomes in Community Primary Care Practice. A Randomized Trial of the QuEST Intervention. *Journal of General Internal Medicine, 16*(3), 143-149.
- Shippee, N. D., Shah, N. D., Angstman, K. B., DeJesus, R. S., Wilkinson, J. M., Bruce, S. M., & Williams, M. D. (2013). Impact of collaborative care for depression on clinical, functional, and work outcomes: A practice-based evaluation. *The Journal of Ambulatory Care Management, 36*(1), 13-23
- Simon, G. E., Ludman, E. J., Tutty, S., Operskalski, B., & Von, K. M. (2004). Telephone psychotherapy and telephone care management for primary care patients starting antidepressant treatment: a randomized controlled trial. *The Journal of the American Medical Association, 292*(8), 935-42.
- Simon, G. E., VonKorff, M., Rutter, C., & Wagner, E. (February 26, 2000). Randomised trial of monitoring, feedback, and management of care by telephone to improve treatment of depression in primary care. *British Medical Journal, 320*(7234), 550-554.
- Smit, A., Kluiters, H., Conradi, H. J., van der Meer, K., Tiemens, B. G., Jenner, J. A., . . . Ormel, J. (2006). Short-term effects of enhanced treatment for depression in primary care: Results from a randomized controlled trial. *Psychological Medicine, 36*(1), 15-26.
- Swindle, R. W., Rao, J. K., Helmy, A., Plue, L., Zhou, X. H., Eckert, G. J., & Weinberger, M. (2003). Integrating clinical nurse specialists into the treatment of primary care patients with depression. *International Journal of Psychiatry in Medicine, 33*(1), 17-37.
- Uebelacker, L. A., Marootian, B. A., Tigue, P., Haggarty, R., Primack, J. M., & Miller, I. W. (2011). Telephone depression care management for Latino Medicaid health plan members: A pilot randomized controlled trial. *The Journal of Nervous and Mental Disease, 199*(9), 678-683.
- Unutzer, J., Katon, W., Callahan, C. M., Williams, J. W., Hunkeler, E., Harpole, L., Hoffing, M., . . . Lin, E. H. B. (2002). Collaborative Care Management of Late-Life Depression in the Primary Care Setting: A Randomized Controlled Trial. *Journal of American Medical Association, 288*, 2836-2845.
- Vera, M., Perez-Pedrogo, C., Huertas, S. E., Reyes-Rabanillo, M. L., Juarbe, D., Huertas, A., . . . Chaplin, W. (2010). Collaborative care for depressed patients with chronic medical conditions: A randomized trial in Puerto Rico. *Psychiatric Services, 61*(2), 144-150.

- Wells, K. B., Sherbourne, C., Schoenbaum, M., Duan, N., Meredith, L., Unützer, J., . . . Rubenstein, L. V. (2000). Impact of disseminating quality improvement programs for depression in managed primary care: a randomized controlled trial. *The Journal of the American Medical Association*, 283(2), 212-220.
- Yeung, A., Shyu, I., Fisher, L., Wu, S., Yang, H., & Fava, M. (2010). Culturally sensitive collaborative treatment for depressed Chinese Americans in primary care. *American Journal of Public Health*, 100(12), 2397-2402.

Collaborative Primary Care for Anxiety

- Price, D., Beck, A., Nimmer, C., & Bensen, S. (2000). The treatment of anxiety disorders in a primary care HMO setting. *The Psychiatric Quarterly*, 71(1), 31-45.
- Rollman, B. L., Belnap, B. H., Mazumdar, S., Houck, P. R., Zhu, F., Gardner, W., . . . Shear, M. K. (2005). A randomized trial to improve the quality of treatment for panic and generalized anxiety disorders in primary care. *Archives of General Psychiatry*, 62(12), 1332-1341.
- Roy-Byrne, P., Craske, M. G., Sullivan, G., Rose, R. D., Edlund, M. J., Lang, A. J., . . . Stein, M. B. (2010). Delivery of evidence-based treatment for multiple anxiety disorders in primary care: A randomized controlled trial. *The Journal of the American Medical Association*, 303(19), 1921-1928.

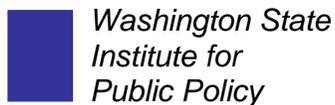
Collaborative Primary Care for Depression w/Comorbid Chronic Conditions

- Bogner, H. R., & de Vries, H. F. (2008). Integration of depression and hypertension treatment: A pilot, randomized controlled trial. *Annals of Family Medicine*, 6(4), 295-301.
- Bogner, H. R., & de Vries, H. F. (2010). Integrating type 2 diabetes mellitus and depression treatment among African Americans a randomized controlled pilot trial. *The Diabetes Educator*, 36(2), 284-292.
- Bogner, H. R., de Vries, H. F., Kaye, E. M., & Morales, K. H. (2013). Pilot trial of a licensed practical nurse intervention for hypertension and depression. *Family Medicine*, 45(5), 323-329.
- Davidson, K. W., Bigger, J. T., Burg, M. M., Duer-Hefele, J., Medina, V., Newman, J. D., . . . Vaccarino, V. (2013). Centralized, stepped, patient preference-based treatment for patients with post-acute coronary syndrome depression: CODIACS vanguard randomized controlled trial. *The Journal of the American Medical Association Internal Medicine*, 173(11), 997-1004.
- Davidson, K. W., Rieckmann, N., Clemow, L., Schwartz, J. E., Shimbo, D., Medina, V., . . . Burg, M. M. (2010). Enhanced depression care for patients with acute coronary syndrome and persistent depressive symptoms: Coronary psychosocial evaluation studies randomized controlled trial. *Archives of Internal Medicine*, 170(7), 600-608.
- Ell, K., Katon, W., Xie, B., Lee, P. J., Kapetanovic, S., Guterman, J., & Chou, C. P. (2010). Collaborative care management of major depression among low-income, predominantly Hispanic subjects with diabetes: A randomized controlled trial. *Diabetes Care*, 33(4), 706-713.
- Katon, W. J., Lin, E. H., Von, K. M., Ciechanowski, P., Ludman, E. J., Young, B., . . . McCulloch, D. (2010). Collaborative care for patients with depression and chronic illnesses. *The New England Journal of Medicine*, 363(27), 2611-2620.
- Katon, W. J., Von Korff, M., Lin, E. H., Simon, G., Ludman, E., Russo, J., . . . Bush, T. (2004). The Pathways Study: A randomized trial of collaborative care in patients with diabetes and depression. *Archives of General Psychiatry*, 61(10), 1042-1049.
- Morgan, M. A. J., Coates, M. J., Dunbar, J. A., Schlicht, K., Reddy, P., & Fuller, J. (2013). The TrueBlue model of collaborative care using practice nurses as case managers for depression alongside diabetes or heart disease: A randomised trial. *British Medical Journal Open*, 3(1).
- Rollman, B. L., Belnap, B. H., LeMenager, M. S., Mazumdar, S., Houck, P. R., Counihan, P. J., . . . Reynolds, C. F. (2009). Telephone-delivered collaborative care for treating post-CABG depression: A randomized controlled trial. *The Journal of the American Medical Association*, 302(19), 2095-2103.
- Williams, L. S., Kroenke, K., Bakas, T., Plue, L. D., Brizendine, E., Tu, W., & Hendrie, H. (2007). Care management of poststroke depression: A randomized, controlled trial. *Stroke*, 38(3), 998-1003.

Suggested citation: Nafziger, M., & Miller, M. (2013).
Collaborative primary care: Preliminary findings for depression and anxiety (Doc. No.13-10-3401). Olympia:
Washington State Institute for Public Policy.

For further information, contact Marna Miller at
(360) 586-2745 or marna.miller@wsipp.wa.gov

Document No. 13-10-3401



The Washington State Legislature created the Washington State Institute for Public Policy in 1983. A Board of Directors—representing the legislature, the governor, and public universities—governs WSIPP and guides the development of all activities. WSIPP's mission is to carry out practical research, at legislative direction, on issues of importance to Washington State.