APPENDIX

Vignette Examples

Here we present the vignettes for participants screened into the mental health disorder group. Vignettes for alcohol abuse and drug abuse were analogous. The vignette shown to participants randomized to usual care arm for mental health care in a specialty treatment setting read:

> *Effective mental health treatment options are currently available. Treatment in a specialty mental health treatment center would involve being evaluated and getting on-going counseling, medication or both. If care in a mental health treatment center were free to you and available in your area with appointments open, would you enter this treatment?*

The vignette shown to those randomized to primary care-based treatment for the mental health arm read:

> *Effective mental health treatment options are currently available. Some primary care doctors have experience providing mental health treatment. Treatment in the primary care office would involve being evaluated and getting on-going counseling, medication or both. You would be receiving your mental health treatment in a medical care setting where you could also get care for other medical issues. If you needed more intensive services, your primary care doctor would give you the name of a mental health specialist in your area to schedule an appointment. If mental health treatment in a primary care physician's office were free to you and available in your area with appointments open, would you enter this treatment?*

Finally, the vignette shown to those randomized to collaborative care in a primary care setting for the mental health arm read:

> *Effective mental health treatment options are currently available. Some primary care doctors have experience providing mental health treatment. Treatment in the primary care office would involve being evaluated and getting on-going counseling, medication or both. You would be receiving your mental health treatment in a medical care setting where you could also get care for other medical issues. A nurse care manager would work with your primary care doctor to coordinate your treatment and to provide additional counseling. If you were having difficulty controlling your symptoms or if you had an urgent need for a visit, the care manager would be available. You could also call the care manager if you were having a problem scheduling an appointment. If you needed more intensive services, the care manager would work closely with you to link you to a mental health specialist and to help coordinate those services. If mental health treatment in a primary care physician's office with additional care management were free to you and available in your area with appointments open, would you enter this treatment?*

Methodological Approach

There were three steps to estimating the dollar-denominated differences in consumers' average valuation of usual care, primary care and collaborative care.

First, we calculated the proportion of patients willing to enter treatment at each price point. Consumer demand at zero price ($D_{p=0}$) was calculated as the proportion of all respondents who said they were willing to enter treatment when it was free to them. Only those respondents who were willing to enter free treatment were asked about their willingness to pay for treatment (i.e., price > $0), and only those respondents who declined to enter free treatment were asked about their willingness to accept payment for treatment (i.e., price < $0). Thus, to calculate the proportion of the whole sample willing to enter treatment at a given positive price (e.g., $10), we multiplied the proportion of respondents willing to enter treatment at that positive price (among those who were asked) by $D_{p=0}$. Likewise, we scaled the proportion of respondents willing to enter treatment at a negative price (conditional on being asked) by the proportion of all respondents who were not willing to enter treatment when it was free, $1-D_{p=0}$, to obtain the overall unadjusted proportion of respondents willing to enter treatment at a given negative price. We performed these calculations separately for usual care, primary care and collaborative care (Figure 1).

Second, we adjusted consumer demand, as measured by the simple proportions of patients willing to enter treatment conditional on price, to account for the potential influence of other factors. Because treatment vignettes were assigned randomly across patients within each of the three conditions, we needed to adjust only for the participant's medical condition (i.e., drug, alcohol or mental health disorder). To do so, we estimated three binary logit models of a patient's willingness to enter treatment given the price per visit: one for zero price that included all respondents, one for positive prices that only included respondents who were willing to enter treatment at zero price, and one for negative prices that only included respondents who were not willing to enter treatment at zero price. Each model specification included indicators for the participant's medical condition and the randomly-assigned treatment type (usual care, primary care, or collaborative care). The positive and negative price models also included indicators for price and interactions between price and the treatment model indicators. We substituted the predicted probabilities generated from the logit models when calculating the adjusted proportions of patients willing to enter treatment at a given price (as described above).

Third, we assumed that the adjusted inverse consumer demand curves were linear and parallel, which forced the distance between any two lines, our measure of incremental value, to be constant. To do so, we estimated a linear regression of the adjusted proportion of respondents willing to enter treatment as a function of price (measured as a continuous variable) and dichotomous indicators for treatment model. We used these results to invert the linearized inverse demand function and solve for the average incremental value of primary care and collaborative care relative to usual care.[a]

[a] Let 1, 2 and 3 denote the three treatment models, and let Q represent the proportion of respondents willing to enter treatment and P the price. The model specification is $Q = a + a_2 + a_3 + bP + e$, with coefficients a and b. After transformation, we solved for the mean prices as: $P_1 = (Q - a) / b$, $P_2 = (Q - a - a_2) / b$, and $P_3 = (Q - a - a_3) / b$.

Then, for example, $P_2 - P_1 = -a_2/b$, which we tested for equality with zero using a nonlinear Wald test (i.e., the *nlcom* command in Stata).