Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.
eTable 1. Descriptions of Simulation Parameters: Training

| Tasks                              | Quantity/duration                  | Cost                                                                 |
|------------------------------------|------------------------------------|----------------------------------------------------------------------|
| **Initial**                        |                                    |                                                                      |
| Training courses                   | 45 hours per counselor             | $1150 tuition plus counselor time and ancillary (e.g., transportation) costs |
| One-on-one motivational interviewing training | 4 hours per counselor             | Counselor (trainee) time, psychologist (trainer) time               |
| Program staff training             | 40 hours x 1 research assistant    | Research Assistant (trainee) time, psychologist (trainer) time       |
| **Ongoing**                        |                                    |                                                                      |
| Counselor supervision               | 1 hour per counselor per week      | Counselor time, psychologist time                                    |

Note: Site A employed 3 counselors, Site B employed 2 counselors.
| Pre-enrollment activities                                         | Site A | Time (hours) | Site B | Time (hours) |
|------------------------------------------------------------------|--------|--------------|--------|--------------|
| Screen daily clinic schedule for potential eligible participants | n/a    | n/a          | 12137  | 0.02         |
| Chart screen those who are identified as potential eligible participants | 3274   | 0.17         | 1435   | 0.13         |
| Introductory phone calls to potential participants (includes multiple calls, missed calls) | 7954   | 0.17         | 3312   | 0.08         |
| Recruitment activities at clinic visit                           | 582    | 0.15         | 485    | 0.5          |

*In practice, role might be fulfilled by a social worker and/or medical assistant.*
eTable 3. Descriptions of Simulation Parameters: Counseling Delivery

| Counseling sessions (counseling and documentation) | Overall | Site A | Site B |
|----------------------------------------------------|---------|-------|-------|
|                                                   | % Sessions completed | Average duration (hours) | % Sessions completed | Average duration (hours) | % Sessions completed | Average duration (hours) |
| Session 1                                          | 100%    | 1.23  | 100%  | 1.87  | 100%  | 0.84  |
| Session 2                                          | 89%     | 0.82  | 86%   | 1.31  | 91%   | 0.54  |
| Session 3                                          | 76%     | 0.77  | 74%   | 1.21  | 77%   | 0.51  |
| Session 4                                          | 65%     | 0.75  | 55%   | 1.26  | 70%   | 0.50  |
| Session 5                                          | 73%     | 0.85  | 67%   | 1.42  | 76%   | 0.53  |
| Session 6                                          | 56%     | 0.78  | 44%   | 1.36  | 63%   | 0.52  |
| Session 7                                          | 54%     | 0.69  | 25%   | 1.52  | 72%   | 0.51  |
| Session 8                                          | 51%     | 0.65  | 18%   | 1.36  | 71%   | 0.54  |
| Session 9                                          | 61%     | 0.76  | 47%   | 1.32  | 69%   | 0.52  |
| Session 10                                         | 51%     | 0.66  | 33%   | 1.15  | 62%   | 0.50  |
| Session 11                                         | 47%     | 0.60  | 25%   | 1.12  | 61%   | 0.46  |
| Call attempts                                       |         |       |       |       |       |       |
| Ad hoc counseling/ urgent issues: psychologist time |         |       |       |       |       |       |
|                                                    | Occurs for 3.3% of completed sessions | 0.50 | Occurs for 6.4% of completed sessions | 0.50 |
| Ad hoc counseling/ urgent issues: counselor time    |         |       |       |       |       |       |
|                                                    | Occurs for 1.9% of completed sessions | 0.17 | Occurs for 0.8% of completed sessions | 0.17 | Occurs for 2.4% of completed sessions | 0.17 |
**eTable 4. Descriptions of Simulation Parameters: Medication Costs (per Fill)**

| Description                                      | Overall, $ (n) | Site A, $ (n) | Site B, $ (n) |
|--------------------------------------------------|----------------|---------------|---------------|
| Varenicline, 0.5mg and 1mg starter pack, 53 tablets | $282.39 (19)   | $282.39 (7)   | $282.39 (12)  |
| Varenicline, 1mg, continuing, 56 tablets          | $385.20 (27)   | $385.20 (12)  | $385.20 (15)  |
| Bupropion, 150mg, 60 tablets                      | $229.12 (15)   | $229.12 (2)   | $229.12 (13)  |
| Nicotine patch, 7mg or 14mg or 21mg, 14 patches   | $51.96 (156)   | $51.96 (43)   | $51.96 (113)  |
| Nicotine lozenges, 2mg or 4mg; 81 pieces          | $22.19 (163)   | $22.19 (36)   | $22.19 (127)  |
| Labor\(^c^\) and shipping                        | $27.35 (380)   | $17.53 (100)  | $47.49 (280)  |

\(^b^\) Prescription medication (varenicline, bupropion) costs are 2018 average wholesale prices minus 20% from the MicroMedex Red Book. Over-the-counter medication (nicotine patch, lozenge) are based on the lowest price identified through online vendors (e.g., CVS, Wallgreens, Target, Walmart). Costs were the same for both sites.

\(^c^\) Research assistant time [both sites] and psychiatrist time [Site B medication reconciliation only]
### eTable 5. Descriptions of Simulation Parameters: Other Resources

|                                | Overall                              | Site A                              | Site B                              |
|--------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|
| Written patient materials      | $27.26 per enrolled participant      | $48.67 per enrolled participant     | $13.72 per enrolled participant     |
| (printing, postage)            |                                      |                                     |                                     |
| Office space and related       | $281.25 per FTE per month            | $281.25 per FTE per month           | $281.25 per FTE per month           |
| overhead                       |                                      |                                     |                                     |

*Per enrolled participant costs include costs of screening participants who did not enroll; site-specific variation reflects the differences in enrollment yield at the two sites.*
| Wages (32% fringe included) | Rate   | Role                                           | Notes                                                                 |
|-----------------------------|--------|------------------------------------------------|----------------------------------------------------------------------|
| Psychologist                | $82.02 | Training and supervising the counseling and administrative staff | Wage is 90th percentile of national average, reflecting the training/expertise required for the role. |
| Social worker               | $28.54 | Counselors                                     | Site B only                                                          |
| Nurse practitioner          | $67.93 | Counselors                                     | Site A only                                                          |
| Psychiatrist                | $134.73| Medication reconciliation                      | Site B only; mean but not median wage is reported for psychiatrists – median is imputed based on the ratio mean:median wages for other physicians |
| Research Assistant          | $29.59 | Program administration and support, participant identification and recruitment, medication delivery | In practice, role might be fulfilled by a social worker and/or medical assistant. |

*Based on 2018 U.S. national median wages obtained from the U.S. Bureau of Labor Statistics (www.bls.gov/oes/current/oes-nat.htm), except where noted.*
### Table 7. Descriptions of Simulation Parameters: Stochastic Parameters

| Parameter                              | Distribution | Source     | Notes                                                                 |
|----------------------------------------|--------------|------------|----------------------------------------------------------------------|
| Number of medications filled           | Beta         | Assumed    | Separate draws for each medication for each simulated analysis       |
| Medication cost                        |              |            | Independent cost multipliers for each medication.                    |
| Wage multiplier                        | Beta         | Assumed    | One multiplier applies to all wages in a simulated analysis (i.e., variation is correlated across wages) |
| Written patient materials              | Beta         | Assumed    |                                                                      |
| Office space and related overhead      | Beta         | Assumed    |                                                                      |
| Time to screen patients                | Beta         | Assumed    |                                                                      |
| Number of patients screened            | Beta         | Assumed    |                                                                      |
| Counseling prep time                   | Beta         | Assumed    |                                                                      |
| Counseling sessions attended           | Normal       | Observed mean and standard error                                 |
| Duration of counseling sessions        | Normal       | Observed mean and standard error                                 |
| Duration of documentation time         | Normal       | Observed mean and standard error                                 |
| Call attempts                          | Beta         | Assumed    |                                                                      |

Where distributions were assumed we used multipliers drawn from a beta distribution to add stochastic variability to a simulation parameter. All multipliers randomly drawn from a beta distribution with a mean of 1 and a 99% confidence interval of 0.9 to 1.1. As an example, the mean cost of nicotine patches was $51.96; the value used in a simulation was $51.96 multiplied by the randomly-drawn multiplier.