Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.
eMethods. Survey questions

Data were obtained from a 2018 survey on patient experiences with access to outpatient mental health services. Screener and survey questions for relevant outcome variables are presented below. For words in green, the participant was able to mouse or hover over the word for a definition, available at the end of this Appendix.

Screener

For more detail on sample selection see eAppendix 2. A series of screener questions was sent to panelists ages 18-64 to identify participants enrolled in a private health insurance plan with a provider network. Our study sample consisted of privately insured English-speaking adults ages 18-64 reporting that they used both an outpatient mental health provider in the last year and an outpatient medical provider in the last year.

The following questions were used to obtain the sample. The first three questions restricted the sample to individuals with private health insurance with a provider network that had seen a mental health provider in the past year. We oversampled individuals that had used out-of-network mental health care (determined by the fourth question noted).

1. These questions ask about your own health care, not a family member’s. If you need help understanding one of the words that is in green, you can hover over it for more information.

   Private health insurance can be through an employer or union, bought directly by you, or bought from a state or federal health insurance marketplace. It does not include private Medicare or Medicaid plans.

   Do you currently have private health insurance?
   o Yes
   o No

2. An insurer provider network is a group of doctors or hospitals that takes your insurance. Usually you pay less (or nothing) for services from providers in the network.

   Does your health insurance plan have a provider network?
   o Yes
   o No

3. A MENTAL HEALTH provider is a professional specifically trained to diagnose and treat emotional or mental health problems, including psychiatrists, therapists, psychologists, mental health nurse practitioners, and social workers.

   In the last 12 months, have you seen a MENTAL HEALTH provider in an office or clinic or by telemedicine?
   o Yes
   o No

4. A provider is considered out-of-network if they are not in your insurer’s provider network. Some of these providers do not accept any private insurance.

   Were any of these MENTAL HEALTH providers you saw out-of-network?
   o Yes
   o No

5. A MEDICAL provider is a doctor, nurse practitioner, or physician assistant. For this survey, it does not include mental health providers, including psychiatrists. For this survey, it also does not include dental, chiropractic, naturopathic, or homeopathic care.

   In the last 12 months, have you seen a MEDICAL provider in an office or clinic or by telemedicine? Do not include providers you saw in the emergency room or while overnight in the hospital.
   o Yes
6. Were any of these MEDICAL providers you saw out-of-network?
   o Yes
   o No

Questions related to network adequacy

Do you agree or disagree with the following statements?

My insurer has done a good job of making enough in-network mental health providers available.
   o Strongly disagree
   o Disagree
   o Neither agree or disagree
   o Agree
   o Strongly agree
   o Don’t know

Do you agree or disagree with this statement?

My insurer has done a good job of making enough in-network medical providers available. Please do not consider your experiences with your insurer’s mental health provider network.
   o Strongly disagree
   o Disagree
   o Neither agree or disagree
   o Agree
   o Strongly agree
   o Don’t know

We coded reports of inadequate or insufficient networks as a binary variable equal to one if the respondent chose ‘disagree’ or ‘strongly disagree’. Participants noting “Don’t know” or refused the question were coded as missing.

Questions related to plan choice

Now we are going to ask you some questions about your experiences with your health insurance plan.

When choosing your insurance plan, did you try to determine if a specific provider was in-network before making a decision? The provider may have been for care for you or a family member. This could have been a primary care provider, mental health provider, specialist or hospital.
   o Yes
   o No
   o Not applicable. I did not have a choice of plan.

What type of provider was it?
   o Primary care provider (family doctor, general practitioner, pediatrician)
   o Mental health provider
   o Specialist (for example, a cardiologist or gynecologist)
   o Hospital

We then asked the following question separately substituting provider type (primary care provider, mental health provider, specialist and hospital) for each provider selected in the question above.

Did the availability of the [provider type] impact your choice of insurance plan?
   o Yes
   o No
Questions related to plan continuity

In the past three years, did you ever have a provider (either medical or mental health) you were seeing leave your insurer’s provider network?

- Yes
- No

What type of provider was it? Check all categories that apply.

- Mental health provider (for example, psychiatrist, psychologist, therapist)
- Primary care provider (for example, family doctor, general practitioner, pediatrician)
- Specialist (for example, cardiologist or gynecologist)

We then asked the following question for each provider type selected in the question above:

When the [provider type] left the insurance network, what happened? If more than one [provider type] left your insurance network, choose the one who left most recently.

- I stopped treatment
- I switched to different provider
- I stayed with the same provider and saw them just as frequently
- I stayed with the same provider but saw them less often
- I stayed with the same provider but my insurer continued to treat as in-network

Hover over definitions for survey words in green

**In-network provider:** An in-network provider is in your insurer provider network and takes your insurance. Usually you pay less (or nothing) for services from doctors in the network.

**Medical provider:** A doctor, nurse practitioner, or physician assistant. For this survey, it does not include mental health providers, including psychiatrists. For this survey, it also does not include dental, chiropractic, naturopathic, or homeopathic care.

**Mental health provider:** A professional specifically trained to diagnose and treat emotional or mental health problems, including psychiatrists, therapists, psychologists, mental health nurse practitioners, and social workers.

**Out-of-network provider:** A provider not in your insurer’s provider network. Some of these providers do not accept any private insurance. Usually you pay more for out-of-network providers.

**Primary care provider:** A primary care doctor or provider is the person or place an individual would go to if they had a new health problem, needed preventive health care, or needed a referral to a specialist. Examples of primary care providers include general practitioners, family practitioners, and internists.

**Provider network:** A group of doctors or hospitals that takes your insurance. Usually you pay less (or nothing) for services from providers in the network.

**Specialist:** A provider who specializes in a particular medical field. For example, dermatologists specialize in skin disorders, cardiologists specialize in problems of the heart, etc.

**Telemedicine:** Also called “telehealth”. Rather than seeing a patient in person, a health provider uses remote health care technology (computer, skype) to deliver care.

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eFigure. Sample selection

Sample of survey panelists:
Adults ages 18-64
(N= 29,854)

Completed screener
(N= 19,602)

Non-responders and breakoffs (N= 10,252)
(Study completion rate 66%)\(^a\)

Did not meet screening criteria (N= 9,591)
- Refused screener question (N= 87)
- No private insurance (N= 4,812)
- Private insurance did not have network (N= 891)
- Did not use medical or mental health provider or attempt to use a mental health provider in last 12 months (N= 3,801)

Excluded after enrollment closed when predetermined number of panelists screened in (N= 7,880)\(^b\)

Qualifying Respondents
(Completed Survey)
(N= 2,131)
- Adults ages 18-64
- Private health insurance with a provider network
- Used mental or medical provider or attempted to use a mental health provider in last 12 months

Study Survey Sample
(N= 728)
- Use of both medical and mental health providers in last 12 months

Did not meet current study criteria (N= 1,403)
- No use or attempt to use mental health provider in last 12 months (N= 914)
- No use of medical provider in last 12 months (N= 257)
- Attempted but did not use mental health provider in 12 months (N= 232)

\(^a\) Completion rate, the proportion of panelists assigned to the survey that responded to the invitation and completed the screener (excluding breakoffs), was calculated using the standard American Association for Public Opinion Research (AAPOR) definition for probability-based internet panels. Available from: https://www.aapor.org/AAPOR_Main/media/publications/Standard-Definitions20169theditionfinal.pdf.

\(^b\) Participants who used mental health providers and out-of-network providers were oversampled. Once the predetermined quotas for general medical care and in-network care were filled, participants were no longer asked to complete the full survey.
**eTable: Statistical test results**

**eTable, A: Statistical test results for Figure 1. Percentage of 615 participants rating their plan’s provider networks as inadequate**

|                        | Mental health versus medical provider network | Difference in difference of mental health versus medical provider network across group |
|------------------------|---------------------------------------------|--------------------------------------------------------------------------------------|
|                        | N (weighted percent) | Odds ratio | CI          | p-value | Odds ratio | CI          | p-value |
| **Full Sample***       |                             |            |            |         |            |            |         |
| Mental Health          | 163 (21)                  | 2.685      | 1.638-4.400| <.001   |            |            |         |
| Medical                | 70 (10)                   |            |            |         |            |            |         |
| **Received mental health care from primary care provider** |                             |            |            |         |            |            |         |
| Mental Health          | 44/193 (14)               |            |            |         |            |            |         |
| Medical                | 18/193 (9)                | 1.548      | .653-3.672 | 0.322   |            |            |         |
| **Did not receive mental health care from primary care provider*** |                             |            |            |         |            |            |         |
| Mental Health          | 118/419 (24)              | 3.461      | 1.908-6.278| <.001   | 0.447      | .158-1.270 | 0.131   |
| Medical                | 52/419 (10)               |            |            |         |            |            |         |
| **Self report of fair or poor health status** |                             |            |            |         |            |            |         |
| Mental Health          | 27/78 (21)                |            |            |         |            |            |         |
| Medical                | 19/78 (18)                | 1.273      | .374-4.331 | 0.699   |            |            |         |
| **Self report of excellent, very good, or good health status*** |                             |            |            |         |            |            |         |
| Mental Health          | 135/529(21)               | 3.278      | 1.893-5.675| <.001   | 0.388      | .104-1.449 | 0.159   |
| Medical                | 50/529 (8)                |            |            |         |            |            |         |
| **Serious Psychological Distress*** |                             |            |            |         |            |            |         |
| Mental Health          | 65/228 (23)               | 4.149      | 1.950-8.827| <.001   |            |            |         |
| Medical                | 29/228 (8)                |            |            |         |            |            |         |
| **No Serious Psychological Distress** |                             |            |            |         |            |            |         |
| Mental Health          | 98/387 (19)               | 2.122      | 1.132-3.978| 0.019   | 1.955      | .735-5.202 | 0.179   |
| Medical                | 41/387 (11)               |            |            |         |            |            |         |
| **Received out-of-network mental health care in past year*** |                             |            |            |         |            |            |         |
| Mental Health          | 116/277(31)               | 5.231      | 2.107-12.991| <.001  |            |            |         |
| Medical                | 39/277(10)                |            |            |         |            |            |         |
| **No out-of-network mental health care** |                             |            |            |         |            |            |         |
| Mental Health          | 47/338(16)                | 1.923      | 1.033-3.579| 0.039   | 2.721      | .907-8.159 | 0.074   |
| Medical                | 31/338(10)                |            |            |         |            |            |         |

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eTable, B: Statistical test results for Table 2. Network discontinuity and participant responses, by practitioner type

| Practitioner left insurance plan's network in the past 3 y (N=708) |  |  |
|---------------------------------------------------------------|---|---|
| N (weighted %)                                                |   |   |
| Any provider                                                  | 168 (21%) |   |
| Mental health provider                                        | 60 (8) |   |
| Primary care provider                                         | 80 (11) |   |
| Specialty provider                                            | 57 (7) |   |
| Tests of comparisons                                         | odds ratio | 95% CI | p-value |
| Mental health providers versus primary care providers          | 0.646 | .399-1.046 | p=.076 |
| Mental health providers versus specialists                     | 1.175 | .684-2.018 | p=.559 |
| Primary care providers versus specialists                      | 1.817 | 1.130-2.923 | p=.014 |
**eTable, C:** Statistical test results for Figure 2. Percentage of 523 participants who looked up a practitioner before choosing a plan and whether it affected plan choice

| Panel 1: Looked up a provider (N=523) | Panel 2: Impacted plan choice (N=523) |
|--------------------------------------|--------------------------------------|
| N (weighted percent)                 | N (weighted percent)                 |
| Any provider                         | 302 (57)                             | 200 (37)                             |
| Primary care provider                | 236 (45)                             | 164 (31)                             |
| Mental health provider               | 98 (20)                              | 46 (8)                               |
| Specialist                           | 124 (21)                             | 77 (14)                              |
| Hospital                             | 35 (5)                               | 24 (4)                               |

**Comparisons**

|                                        | odds ratio | 95% CI    | p-value | odds ratio | 95% CI    | p-value |
|----------------------------------------|------------|-----------|---------|------------|-----------|---------|
| Mental health provider versus primary care | 0.168      | .096-.293 | <.001   | 0.053      | .025-.109 | <.001   |
| Specialist versus primary care         | 0.198      | .130-.301 | <.001   | 0.183      | .108-.310 | <.001   |
| Hospital versus primary care           | 0.014      | .008-.026 | <.001   | 0.019      | .008-.042 | <.001   |
| Specialist versus mental health        | 1.179      | .696-1.997| =.541   | 3.481      | 1.760-6.882| <.001   |
| Hospital versus mental health          | 0.084      | .044-.160 | <.001   | 0.357      | .145-.879 | <.025   |
| Hospital versus specialist             | 0.071      | .039-.132 | <.001   | 0.103      | .046-.228 | <.001   |