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**eTable 1.** List of Adjuvant Endocrine Therapy Drugs

**eFigure.** Sample Selection Flow Chart

**eTable 2.** Illustration of Individual Scale

**eTable 3.** List of Individual Physical and Psychological Symptoms

**eTable 4.** Multivariable Linear Regression for AET Adherence Adjusted for Physical Symptoms Clusters

**eTable 5.** Multivariable Linear Regression for AET Adherence Adjusted for Psychological Symptoms Clusters

**eTable 6.** Sample Characteristics of the Larger Cohort Without Requiring Continuous Insurance Enrollment or Having PCM Reports

This supplemental material has been provided by the authors to give readers additional information about their work.
**eTable 1.** List of Adjuvant Endocrine Therapy Drugs

| Generic Name | Brand Name     |
|--------------|----------------|
| Anastrozole  | Arimidex       |
| Exemestane   | Aromasin       |
| Letrozole    | Femara         |
| Tamoxifen    | Soltamox       |
| Tamoxifen    | Nolvadex       |
**eFigure. Sample Selection Flow Chart**

Patients diagnosed with HR+ Breast Cancer at West Cancer Center and Research Institute from 2007 to 2015 (N=6,467)

- Patients identified with any hormone therapy from Medicare claims or Medicaid claims (N=2,144)
  - Advanced cancer stage, missing diagnosis date, or other race (Excluded N=417)
  - No continuous enrollment in Medicare FFS or Medicaid (Excluded N=720)

Diagnosed with Stage I-III, no missing diagnosis date, Black and White races only (N=1,727)

- Continuously enrolled in Medicare FFS or Medicaid from 2 months before to 1 year after first hormone therapy claim (N=1,007)
  - Missing residence zip code (Excluded N=34)
  - Had non-missing residence zip codes (N=973)

Linked with at least 1 symptom report within 2 months before hormone therapy and 1 symptom report within 1 year after starting hormone therapy (N=559)

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**eTable 2. Illustration of Individual Scale**

INSTRUCTIONS: Touch red dot on the line that best describes how bad the symptom has been for you during the past week including today.

| Not a problem | Mild problem | Moderate problem | Severe problem | As bad as possible |
|---------------|--------------|------------------|----------------|--------------------|
| 0             | 1 2 3        | 4 5 6            | 7 8 9          | 10                 |
| 0             | 0 0 0        | 0 0 0            | 0 0 0          | 0                  |

Fatigue, tiredness, or weakness |
Rash or dry skin or itching |
Trouble sleeping |
Daytime sleepiness |
Physical pain |
Sweating |

Trouble breathing or coughing |
Trouble focusing or concentrating |
Problems with urination |
Numbness or tingling |
Reduced sexual enjoyment, interest, or performance |
### eTable 3. List of Individual Physical and Psychological Symptoms

| Symptom Cluster          | Individual Item                                                                 |
|--------------------------|----------------------------------------------------------------------------------|
| **Gastrointestinal symptoms** | Change in Weight  |
|                          | Nausea or vomiting                                                             |
|                          | Trouble with bowel movements                                                   |
|                          | Change in appetite                                                             |
|                          | Dry mouth                                                                       |
|                          | Change in the taste of food                                                    |
|                          | Sore throat or trouble swallowing                                              |
|                          | Mouth sores                                                                     |
| **Gynecologic symptoms** | Vaginal itching                                                                 |
|                          | Vaginal bleeding/discharge                                                     |
|                          | Vaginal dryness                                                                 |
|                          | Reduced sexual enjoyment, interest, or performance                               |
|                          | Breast tenderness/discharge                                                     |
|                          | New lump/mass                                                                  |
|                          | Menstrual pain/cramping                                                        |
| **Neuropsychologic symptoms** | Headache                                                                       |
|                          | Dizziness                                                                       |
|                          | Fatigue, tiredness, or weakness                                                 |
|                          | Trouble focusing or concentrating                                              |
|                          | Difficulty hearing                                                             |
|                          | Memory loss                                                                     |
| **Vasomotor symptoms**   | Sweating                                                                        |
|                          | Hot flashes/flushes                                                            |
|                          | Trouble sleeping                                                               |
|                          | Daytime sleepiness                                                             |
|                          | Fever or Chills                                                                |
| **Musculoskeletal symptoms** | Joint pain                                                                     |
|                          | Muscle aches                                                                   |
|                          | Physical Pain                                                                  |
|                          | Numbness or tingling                                                            |
|                          | Problems with urination                                                        |
|                          | Trouble seeing                                                                 |
|                          | Burning sensation in hands/feet                                                 |
|                          | Weakness of body parts                                                          |
| **Integumentary symptoms** | Rash or dry skin or itching                                                   |
|                          | Hair loss                                                                       |
|                          | Bruising                                                                       |
|                          | Easy bleeding                                                                   |
|                          | Swelling                                                                       |
|                          | Dry eyes                                                                        |
|                          | Eyes tearing                                                                    |
|                          | Hives                                                                           |
|                          | Nail changes                                                                    |
| **Cardiorespiratory symptoms** | Trouble breathing or coughing        |
|                          | Sinus Problems                                                                 |
|                          | Difficulty breathing                                                           |
|                          | Chest pain                                                                      |
|                          | Rapid heart beat                                                               |
| Heartburn                      |
|-------------------------------|
| **Distress Symptoms**         |
| I feel nervous, tense, or anxious |
| I am worried                  |
| I cry a lot or feel like crying |
| I am sad or depressed         |
| **Despair Symptoms**          |
| I feel worthless              |
| I have lost interest in things |
| I feel guilty                 |
| I think I would be better of dead |
| I feel helpless               |
| I have lost interest in people |
| I feel hopeless               |
### eTable 4. Multivariable Linear Regression for AET Adherence Adjusted for Physical Symptoms Clusters

|                          | Baseline Model<sup>a</sup> | Baseline Model +Gastrointestinal Symptoms<sup>b</sup> | Baseline Model +Gynecologic Symptoms<sup>b</sup> | Baseline Model +Neuropsychologic Symptoms<sup>b</sup> | Baseline Model +Vasomotor Symptoms<sup>b</sup> | Baseline Model +Musculoskeletal Symptoms<sup>b</sup> | Baseline Model +Integumentary Symptoms<sup>b</sup> | Baseline Model +Cardiorespiratory Symptoms<sup>b</sup> |
|--------------------------|----------------------------|------------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
|                          | (1)                        | (2)                                                  | (3)                                              | (4)                                              | (5)                                              | (6)                                              | (7)                                              | (8)                                              |
| **Coefficient (95% CI)** |                            |                                                      |                                                  |                                                  |                                                  |                                                  |                                                  |                                                  |
| Count of symptoms with ≥3-point increase, during AET | -1.1 (-2.4, 0.1) | 0.3 (-2.0, 2.7) | -1.4 (-2.9, 0.2) | -2.0 (-3.8, -0.3) | -1.2 (-2.4, -0.1) | -1.5 (-3.0, 0.01) | -2.5 (-4.4, -0.6) |
| Count of moderate symptoms, baseline | -1.6 (-3.2, 0.0) | -0.9 (-3.8, 1.9) | -1.8 (-3.4, -0.2) | -2.0 (-3.9, -0.1) | -1.3 (-2.3, -0.2) | -0.6 (-2.3, 1.1) | -0.3 (-2.5, 1.9) |
| **Race**                 |                            |                                                      |                                                  |                                                  |                                                  |                                                  |                                                  |                                                  |
| White                    | Ref                        | Ref                                                  | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              |
| Black                    | 4.1 (-1.9, 10.1)           | 4.0 (-2.0, 9.9) | 3.9 (-2.1, 9.9) | 3.9 (-2.0, 9.9) | 4.2 (-1.7, 10.1) | 3.7 (-2.2, 9.7) | 4.2 (-1.7, 10.2) | 3.8 (-2.1, 9.8) |
| Age at Diagnosis         | 0.5 (0.2, 0.8)             | 0.4 (0.2, 0.7) | 0.5 (0.2, 0.8) | 0.5 (0.2, 0.7) | 0.4 (0.2, 0.7) | 0.5 (0.2, 0.7) | 0.5 (0.2, 0.8) | 0.5 (0.2, 0.7) |
| **Cancer Stage**         |                            |                                                      |                                                  |                                                  |                                                  |                                                  |                                                  |                                                  |
| Stage I                  | Ref                        | Ref                                                  | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              |
| Stage II                 | 3.1 (-1.9, 8.2)            | 3.6 (-1.4, 8.6) | 2.8 (-2.2, 7.9) | 3.6 (-1.5, 8.6) | 3.5 (-1.5, 8.5) | 3.5 (-1.5, 8.6) | 3.5 (-1.6, 8.5) | 3.6 (-1.4, 8.7) |
| Stage III                | 2.0 (-6.0, 9.9)            | 2.5 (-5.4, 10.5) | 1.7 (-6.3, 9.6) | 2.2 (-5.7, 10.1) | 2.0 (-5.9, 10.0) | 2.4 (-5.5, 10.3) | 2.4 (-5.6, 10.3) | 2.9 (-5.0, 10.9) |
| Neighborhood Level High School Education | -0.1 (-0.6, 0.4) | -0.1 (-0.5, 0.4) | -0.1 (-0.6, 0.3) | -0.1 (-0.6, 0.4) | -0.1 (-0.5, 0.4) | -0.1 (-0.6, 0.4) | -0.1 (-0.6, 0.4) | -0.1 (-0.6, 0.4) |
| **State of Residence**  |                            |                                                      |                                                  |                                                  |                                                  |                                                  |                                                  |                                                  |
| Tennessee                | Ref                        | Ref                                                  | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              |
| Arkansas                 | 1.8 (-9.6, 13.3)           | 1.9 (-9.5, 13.3) | 1.6 (-9.8, 13.1) | 2.0 (-9.4, 13.4) | 2.8 (-8.6, 14.2) | 2.3 (-9.1, 13.7) | 2.4 (-9.1, 13.9) | 3.0 (-8.4, 14.5) |
| Mississippi              | -2.9 (-6.5, 2.7)           | -2.5 (-6.1, 3.1) | -2.6 (-8.2, 2.9) | -2.3 (-7.8, 3.3) | -2.2 (-7.8, 3.3) | -2.3 (-7.8, 3.3) | -2.1 (-7.7, 3.5) | -2.1 (-7.7, 3.5) |
| Other                    | 4.6 (-10.7, 20.0)          | 4.4 (-10.9, 19.6) | 4.5 (-10.8, 19.7) | 4.5 (-10.7, 19.8) | 4.0 (-11.2, 19.2) | 3.0 (-12.3, 18.2) | 4.5 (-10.8, 19.8) | 5.1 (-10.2, 20.4) |
| **History of chemotherapy** |                            |                                                      |                                                  |                                                  |                                                  |                                                  |                                                  |                                                  |
| No chemotherapy          | Ref                        | Ref                                                  | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              |
| Chemotherapy within 180 days before or after AET initiation | 5.1 (-1.4, 11.6) | 6.0 (-0.5, 12.5) | 4.9 (-1.5, 11.4) | 5.6 (-0.8, 12.0) | 5.6 (-0.7, 12.2) | 5.6 (-0.9, 12.0) | 5.9 (-0.6, 12.5) | 5.2 (-1.2, 11.7) |
| Chemotherapy beyond 180 days before AET | -2.7 (-9.1, 3.7) | -2.1 (-8.5, 4.3) | -2.7 (-9.0, 3.7) | -2.1 (-8.5, 4.2) | -2.1 (-8.5, 4.2) | -1.4 (-7.8, 5.0) | -2.2 (-8.7, 4.3) | -2.3 (-8.7, 4.0) |
| **Insurance type**       |                            |                                                      |                                                  |                                                  |                                                  |                                                  |                                                  |                                                  |
| Medicare Only            | Ref                        | Ref                                                  | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              |
| Medicaid or Dual         | -6.0 (-13.7, 1.6)          | -4.9 (-12.6, 2.7) | -6.2 (-13.8, 1.5) | -5.2 (-12.8, 2.5) | -4.3 (-12.0, 3.3) | -4.8 (-12.4, 2.9) | -5.3 (-13.0, 2.4) | -4.6 (-12.3, 3.1) |
| **First AET type**       |                            |                                                      |                                                  |                                                  |                                                  |                                                  |                                                  |                                                  |
| Tamoxifen                | Ref                        | Ref                                                  | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              | Ref                                              |
| Anastrozole              | 4.4 (-1.8, 10.6)           | 4.5 (-1.7, 10.7) | 3.8 (-2.6, 9.8) | 4.3 (-1.8, 10.5) | 4.8 (-1.4, 10.9) | 4.6 (-1.5, 10.8) | 4.6 (-1.6, 10.8) | 4.6 (-1.5, 10.8) |
| Exemestane               | -1.3 (-10.3, 7.7)          | -2.1 (-10.1, 7.2) | -1.9 (-10.3, 7.7) | -2.1 (-10.1, 7.7) | -1.8 (-10.2, 7.1) | -1.7 (-10.5, 7.2) | -1.6 (-10.5, 7.4) | -1.5 (-10.4, 7.5) |
| Letrozole                | -0.2 (-7.7, 7.3)           | 0.5 (-7.0, 7.9) | -0.9 (-8.4, 6.6) | 0.5 (-6.9, 8.0) | 0.8 (-6.6, 8.3) | 0.9 (-6.6, 8.3) | 0.5 (-7.0, 8.0) | 0.7 (-6.8, 8.2) |
| **Number of Observations** | 559                       | 559                                                  | 558                                              | 559                                              | 559                                              | 559                                              | 559                                              | 559                                              |
| **Adj R-Squared**        | 0.062                      | 0.072                                                 | 0.059                                            | 0.074                                            | 0.076                                            | 0.077                                            | 0.067                                            | 0.071                                            |

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Notes: Abbreviations: Ref. – reference. AET – adjuvant endocrine therapy.

*aBaseline Model adjusted for sociodemographic characteristics (age at diagnosis, race, neighborhood-level education, neighborhood-level income, residence state) and clinical characteristics (cancer stage, history of chemotherapy).

*bModel adjusted for sociodemographic characteristics and clinical characteristics in baseline model, as well as corresponding symptom cluster.
**eTable 5. Multivariable Linear Regression for AET Adherence Adjusted for Psychological Symptoms Clusters**

|                                | Baseline Model\(^a\) | Baseline Model + Distress Symptoms\(^b\) | Baseline Model + Despair Symptoms\(^b\) |
|--------------------------------|----------------------|-----------------------------------------|-----------------------------------------|
| Coefficient \((95\%\ CI)\)     | Coefficient \((95\%\ CI)\) | Coefficient \((95\%\ CI)\)          | Coefficient \((95\%\ CI)\)          |
| Count of symptoms with ≥ 3-point increase, during AET | -2.6 (-4.7, -0.6) | -2.0 (-3.8, -0.2) |                              |
| Count of moderate symptoms, baseline | -1.4 (-3.5, 0.7) | -0.6 (-2.7, 1.5) |                              |
| Race                           |                      |                                         |                                         |
| Black                          | 4.1 (-1.9, 10.1)     | 6.5 (0.1, 12.8)                       | 6.8 (0.5, 13.2)                       |
| White                          | Ref                  | Ref                                    | Ref                                    |
| Age at Diagnosis               | 0.5 (0.2, 0.8)       | 0.5 (0.2, 0.8)                        | 0.5 (0.3, 0.8)                        |
| Cancer Stage                   |                      |                                         |                                         |
| Stage I                        | Ref                  | Ref                                    | Ref                                    |
| Stage II                       | 3.1 (-1.9, 8.2)      | 3.7 (-1.6, 9.1)                       | 3.6 (-1.8, 8.9)                       |
| Stage III                      | 2.0 (-6.0, 9.9)      | 2.0 (-6.3, 10.3)                      | 2.2 (-6.1, 10.5)                      |
| Neighborhood Level High School Education | -0.1 (-0.6, 0.4)     | -0.1 (-0.6, 0.4)                      | -0.2 (-0.7, 0.3)                      |
| Neighborhood Level Household Income |                  |                                         |                                         |
| <$35,000                       | Ref                  | Ref                                    | Ref                                    |
| $35,000-$44,999                | -2.4 (-9.4, 4.5)     | -2.9 (-10.2, 4.5)                     | -3.0 (-10.4, 4.3)                     |
| $45,000-$54,999                | 3.6 (-5.0, 12.3)     | 5.1 (-4.1, 14.2)                      | 5.7 (-3.5, 14.8)                      |
| >=$55,000                      | 3.3 (-7.5, 14.0)     | 4.5 (-6.8, 15.9)                      | 5.2 (-6.2, 16.6)                      |
| State of Residence             |                      |                                         |                                         |
| Tennessee                      | Ref                  | Ref                                    | Ref                                    |
| Arkansas                       | 1.8 (-9.6, 13.3)     | 1.3 (-11.1, 13.7)                     | 2.1 (-10.3, 14.5)                     |
| Mississippi                    | -2.9 (-8.5, 2.7)     | -3.5 (-9.3, 2.4)                      | -3.2 (-9.1, 2.6)                      |
| Other                          | 4.6 (-10.7, 20.0)    | 2.3 (-13.8, 18.4)                     | 2.4 (-13.7, 18.6)                     |
| History of chemotherapy        |                      |                                         |                                         |
| No chemotherapy                | Ref                  | Ref                                    | Ref                                    |
| Chemotherapy within 180 days before or after AET initiation | 5.1 (-1.4, 11.6) | 6.1 (-0.9, 13.1) | 6.2 (-0.9, 13.2) |
| Chemotherapy beyond 180 days before AET | -2.7 (-9.1, 3.7) | -2.3 (-8.9, 4.3) | -2.3 (-8.9, 4.3) |
| Insurance type                 |                      |                                         |                                         |
| Medicare Only                  | Ref                  | Ref                                    | Ref                                    |
| Medicaid or Dual               | -6.0 (-13.7, 1.6)    | -7.2 (-15.2, 0.8)                     | -7.2 (-15.3, 0.8)                     |
| First AET type                 |                      |                                         |                                         |
| Tamoxifen                      | Ref                  | Ref                                    | Ref                                    |
| Anastrozole                    | 4.4 (-1.8, 10.6)     | 5.1 (-1.4, 11.6)                      | 4.9 (-1.6, 11.5)                      |
| Exemestane                     | -1.3 (-10.3, 7.7)    | -0.6 (-9.8, 8.7)                      | -0.4 (-9.7, 8.8)                      |
| Letrozole                      | -0.2 (-7.7, 7.2)     | -0.1 (-7.9, 7.8)                      | -0.6 (-8.5, 7.2)                      |
| Number of Observations         | 559                  | 510                                    | 510                                    |
| Adj R-Squared                  | 0.062                | 0.089                                  | 0.083                                  |

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Notes: Abbreviations: Ref. – reference. AET – adjuvant endocrine therapy.

Baseline Model adjusted for sociodemographic characteristics (age at diagnosis, race, neighborhood-level education, neighborhood-level income, residence state) and clinical characteristics (cancer stage, history of chemotherapy).

Model adjusted for sociodemographic characteristics and clinical characteristics in baseline model, as well as corresponding symptom cluster.
### eTable 6. Sample Characteristics of the Larger Cohort Without Requiring Continuous Insurance Enrollment or Having PCM reports

| Characteristics | Black and White Patients with AET drug claims¹ | Black and White Patients with AET drug claims and continuous insurance coverage and non-missing zip codes² |
|-----------------|---------------------------------------------|--------------------------------------------------------------------------------------------------|
|                 | Black (n=529)       | White (n=1,198)       | Black (n=326)       | White (n=624)       |
| **Age at Diagnosis, y** |                               |                                   |                               |                       |
| Mean (SD)       | 60.1 (12.5)        | 66.8 (10.5)            | 59.9 (13.1)        | 68.2 (10.7)        |
| **Stage at Diagnosis** |                               |                                   |                               |                       |
| Stage I         | 210 (39.7)         | 624 (52.1)             | 119 (36.5)         | 360 (55.6)         |
| Stage II        | 219 (41.4)         | 448 (37.4)             | 138 (42.3)         | 228 (35.2)         |
| Stage III       | 100 (18.9)         | 126 (10.5)             | 69 (21.2)          | 59 (9.1)           |
| **Neighborhood Level High School Education** |                               |                                   |                               |                       |
| Mean (SD)       |                               | 78.6 (7.6)             | 84.0 (9.0)         |                       |
| **Neighborhood Level Household Income group** |                               |                                   |                               |                       |
| <35000          |                               | 216 (66.3)             | 178 (27.5)         |                       |
| 35000-44999     |                               | 50 (15.3)              | 129 (19.9)         |                       |
| 45000-54999     |                               | 26 (8.0)               | 109 (16.8)         |                       |
| >=55000         |                               | 34 (10.4)              | 231 (35.7)         |                       |
| **State**       |                               |                                   |                               |                       |
| Tennessee       |                               | 275 (84.4)             | 384 (59.4)         |                       |
| Arkansas        |                               | 16 (4.9)               | 33 (5.1)           |                       |
| Mississippi     |                               | 33 (10.1)              | 210 (32.5)         |                       |
| OTHER           |                               | 2 (0.6)                | 20 (3.1)           |                       |
| **History of chemotherapy** |                               |                                   |                               |                       |
| No chemotherapy identified |                               | 175 (53.7)             | 460 (71.1)         |                       |
| Chemotherapy within 180 days before AET/after AET initiation |                               | 61 (18.7)              | 84 (13.0)           |                       |
| Chemotherapy beyond 180 days before AET |                               | 90 (27.6)              | 103 (15.9)         |                       |
| **Insurance type** |                               |                                   |                               |                       |
| Medicare Only   |                               | 152 (46.6)             | 565 (87.3)         |                       |
| Medicaid or Dual|                               | 174 (53.4)             | 82 (12.7)          |                       |

**Notes:** Abbreviations: AET – adjuvant endocrine therapy.

¹ This cohort includes Black and White patients who initiated AET (n=1,727). No requirements for having continuous Medicare and/or Medicaid coverage, non-missing zip codes, or PCM reports.

² This cohort includes Black and White patients who initiated AET, continuous Medicare and/or Medicaid coverage, and non-missing zip codes (n=973). No requirements for having PCM reports.