



KAISER PERMANENTE®

Mid-Atlantic States

## Pharmacogenetic Testing for Behavioral Health Disorders

### Medical Coverage Policy

---

#### UTILIZATION \* ALERT\*

- Prior to use of this MCP for evaluation of medical necessity, benefit coverage MUST be verified in the member's EOC or benefit document.
- For Medicare members, please consult the Medicare Coverage Database.
- Note: After searching the Medicare Coverage Database, if no NCD/LCD/LCA is found, then use the policy referenced above for coverage guidelines

---

#### I. Procedure: **Pharmacogenetic Testing (Genetic Test or Multi-gene Panel) for Behavioral Health Disorders**

#### II. Coverage / Exclusion Policy

- A. The use of pharmacogenetic testing and/or multi-gene panel is only considered to be medically necessary in the management of a behavioral health disorder when one of the following conditions are met:
1. For patients with Moderate-to-severe depression and/or anxiety disorder, pharmacogenetic testing may be recommendation when there is documentation of at least one prior SSRI (selective serotonin reuptake inhibitor) or TCA (tricyclic antidepressant) treatment failure at the maximal effective dose, intolerance of side effects or specific documentation of contraindications to SSRI or TCA treatment; or
  2. For patients with ADHD (Attention Deficit Hyperactivity Disorder), pharmacogenetic testing for atomoxetine (selective norepinephrine reuptake inhibitor) may be recommended prior to initiation of treatment for patients with additional risk factors for treatment-related complications (e.g., prior adverse effects, atypically high disease burden with limited treatment options) or when atomoxetine was recently initiated and the patient had an unanticipated response (e.g., non-response, unusual or rapid onset of adverse effects). Pharmacogenetic testing is not recommended for any other ADHD treatments; or
  3. For patients with schizophrenia and/or bipolar disorder, pharmacogenetic testing may be recommended for patients with at least two prior antipsychotic treatment failures at the maximal effective dose, intolerance of side effects or specific documentation of contraindications to antipsychotic treatments.
- B. This is to be used only for psychopharmacology guidance such as the selection or dosing of medications to treat behavioral health disorders, including but not limited to the following:
1. antipsychotic drugs;
  2. selective norepinephrine reuptake inhibitors;
  3. selective serotonin reuptake inhibitors; and



KAISER PERMANENTE®

Mid-Atlantic States

## Pharmacogenetic Testing for Behavioral Health Disorders

### Medical Coverage Policy

4. serotonin-norepinephrine reuptake inhibitor, tricyclic antidepressants
- C. This testing would only be approved once per lifetime. At this time, any additional testing requested would be reviewed on a case-by-case basis. This would only be considered if the requested panel has additional genes that have not been previously tested, and the treating psychiatrist believes it to be helpful in the treatment of the specific patient.
- D. An individual genetic test or a panel of genetic tests is considered **experimental and investigational** for all other behavioral health clinical indications, including but not limited to the following:
1. For confirmation of behavioral health disorder diagnosis on symptomatic individual;
  2. For prediction of future risks of mental illness on asymptomatic individual; or.
  3. For psychopharmacology guidance such as selection or dose of medications to treat behavioral health disorders without failure of prior therapies, including but not limited to the following:
    - a. antipsychotic drugs;
    - b. selective norepinephrine reuptake inhibitors;
    - c. selective serotonin reuptake inhibitors; and
    - d. serotonin-norepinephrine reuptake inhibitors tricyclic antidepressants



KAISER PERMANENTE®

Mid-Atlantic States

## Pharmacogenetic Testing for Behavioral Health Disorders

### Medical Coverage Policy

#### References:

1. Aboelbaha, S., Zolezzi, M., & Elewa, H. (2021). Effect of Pharmacogenetic-Based Decision Support Tools in Improving Depression Outcomes: A Systematic Review. *Neuropsychiatric disease and treatment*, 17, 2397–2419. <https://doi.org/10.2147/NDT.S312966>
2. Brown, L. C., Stanton, J. D., Bharthi, K., Maruf, A. A., Müller, D. J., & Bousman, C. A. (2022). Pharmacogenomic Testing and Depressive Symptom Remission: A Systematic Review and Meta-Analysis of Prospective, Controlled Clinical Trials. *Clinical pharmacology and therapeutics*, 112(6), 1303–1317. <https://doi.org/10.1002/cpt.2748>
3. Bradley, P., Shiekh, M., Mehra, V., Vrbicky, K., Layle, S., Olson, M. C., Maciel, A., Cullors, A., Garces, J. A., & Lukowiak, A. A. (2018). Improved efficacy with targeted pharmacogenetic-guided treatment of patients with depression and anxiety: A randomized clinical trial demonstrating clinical utility. *Journal of psychiatric research*, 96, 100–107. <https://doi.org/10.1016/j.jpsychires.2017.09.024>
4. Tiwari, A. K., Zai, C. C., Altar, C. A., Tanner, J. A., Davies, P. E., Traxler, P., Li, J., Cogan, E. S., Kucera, M. T., Gugila, A., Braganza, N., Emmerson, H., Zai, G., Müller, D. J., Levitan, R., Kloiber, S., Daskalakis, Z. J., Frey, B. N., Bowen, J. M., Tarride, J. E., ... Kennedy, J. L. (2022). Clinical utility of combinatorial pharmacogenomic testing in depression: A Canadian patient- and rater-blinded, randomized, controlled trial. *Translational psychiatry*, 12(1), 101. <https://doi.org/10.1038/s41398-022-01847-8>
5. Greden, J. F., Parikh, S. V., Rothschild, A. J., Thase, M. E., Dunlop, B. W., DeBattista, C., Conway, C. R., Forester, B. P., Mondimore, F. M., Shelton, R. C., Macaluso, M., Li, J., Brown, K., Gilbert, A., Burns, L., Jablonski, M. R., & Dechairo, B. (2019). Impact of pharmacogenomics on clinical outcomes in major depressive disorder in the GUIDED trial: A large, patient- and rater-blinded, randomized, controlled study. *Journal of psychiatric research*, 111, 59–67. <https://doi.org/10.1016/j.jpsychires.2019.01.003>
6. Hicks, J. K., Sangkuhl, K., Swen, J. J., Ellingrod, V. L., Müller, D. J., Shimoda, K., Bishop, J. R., Kharasch, E. D., Skaar, T. C., Gaedigk, A., Dunnenberger, H. M., Klein, T. E., Caudle, K. E., & Stingl, J. C. (2017). Clinical pharmacogenetics implementation consortium guideline (CPIC) for CYP2D6 and CYP2C19 genotypes and dosing of tricyclic antidepressants: 2016 update. *Clinical pharmacology and therapeutics*, 102(1), 37–44. <https://doi.org/10.1002/cpt.597>
7. International Society of Psychiatric Genetics (ISPG) Genetic Testing Statement. Accessed 01/03/2023 Available at: <https://ispg.net/genetic-testingstatement/>
8. Jaquenoud Sirot, E., Harenberg, S., Vandell, P., Lima, C. A., Perrenoud, P., Kemmerling, K., Zullino, D. F., Hilleret, H., Crettol, S., Jonzier-Perey, M., Golay, K. P., Brocard, M., Eap, C. B., & Baumann, P. (2012). Multicenter study on the clinical effectiveness, pharmacokinetics, and pharmacogenetics of mirtazapine in depression. *Journal of clinical psychopharmacology*, 32(5), 622–629. <https://doi.org/10.1097/JCP.0b013e3182664d98>
9. Kim, K., Magness, J. W., Nelson, R., Baron, V., & Brixner, D. I. (2018). Clinical Utility of Pharmacogenetic Testing and a Clinical Decision Support Tool to Enhance the Identification of Drug Therapy Problems Through Medication Therapy Management in Polypharmacy Patients. *Journal of managed care & specialty pharmacy*, 24(12), 1250–1259. <https://doi.org/10.18553/jmcp.2018.24.12.1250>
10. Pérez, V., Salavert, A., Espadaler, J., Tuson, M., Saiz-Ruiz, J., Sáez-Navarro, C., Bobes, J., Baca-García, E., Vieta, E., Olivares, J. M., Rodríguez-Jimenez, R., Villagrán, J. M., Gascón, J., Cañete-Crespillo, J., Solé, M., Saiz, P. A., Ibáñez, Á., de Diego-Adeliño, J., AB-GEN Collaborative Group, & Menchón, J. M. (2017). Efficacy



KAISER PERMANENTE®

Mid-Atlantic States


## Pharmacogenetic Testing for Behavioral Health Disorders

### Medical Coverage Policy

of prospective pharmacogenetic testing in the treatment of major depressive disorder: results of a randomized, double-blind clinical trial. *BMC psychiatry*, 17(1), 250.

<https://doi.org/10.1186/s12888-017-1412-1>

11. Medicare Coverage Database, Local Coverage Determination for Pharmacogenomics Testing (LCD: L38294). Accessed: 12/12/2023.  
<https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?LCDId=38294&ver=16>
12. Medicare Coverage Database, Local Coverage Determination for Pharmacogenomics Testing (L39063) Accessed: 12/12/2023. <https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdId=39063&ver=11>.
13. MCG Ambulatory Care 28<sup>th</sup> edition. Copyright © 2023 MCG Health. Psychotropic Medication Pharmacogenetics Gene Panels ACG: A-0861 (AC). Accessed 12/15/2023
14. Zhang, J. P., Lencz, T., Zhang, R. X., Nitta, M., Maayan, L., John, M., Robinson, D. G., Fleischhacker, W. W., Kahn, R. S., Ophoff, R. A., Kane, J. M., Malhotra, A. K., & Correll, C. U. (2016). Pharmacogenetic Associations of Antipsychotic Drug-Related Weight Gain: A Systematic Review and Meta-analysis. *Schizophrenia bulletin*, 42(6), 1418–1437. <https://doi.org/10.1093/schbul/sbw058>
15. Rosenblat, J. D., Lee, Y., & McIntyre, R. S. (2018). The effect of pharmacogenomic testing on response and remission rates in the acute treatment of major depressive disorder: A meta-analysis. *Journal of affective disorders*, 241, 484–491. <https://doi.org/10.1016/j.jad.2018.08.056>
16. Pérez, V., Salavert, A., Espadaler, J. *et al.* Efficacy of prospective pharmacogenetic testing in the treatment of major depressive disorder: results of a randomized, double-blind clinical trial. *BMC Psychiatry* 17, 250 (2017). <https://doi.org/10.1186/s12888-017-1412-1>
17. Kaiser Permanente Interregional National Technology Committee (INTC) . Pharmacogenomic Recommendations for Psychiatry/ Behavioral Health-Interregional Practice Recommendations. June 2023  
[Reference Container Page \(kp.org\)](https://cl.kp.org/natl/cmi/interregional/pharmacogenomics/pgx-psychiatry-recommendations.htm)  
<https://cl.kp.org/natl/cmi/interregional/pharmacogenomics/pgx-psychiatry-recommendations.htm>

 <b>KAISER PERMANENTE®</b> Mid-Atlantic States	<b>Pharmacogenetic Testing for Behavioral Health Disorders</b>  <b>Medical Coverage Policy</b>
---	--

**Approval History**

Effective June 01, 2016, state filing is no longer required per Maryland House Bill [HB 798](#) – Health Insurance – Reporting

Date approved by RUMC	Date of Implementation
02/22/2023	02/22/2023
02/21/2024	02/21/2024

\*The Regional Utilization Management Committee received delegated authority in 2011 to review and approve designated Utilization Management and Medical Coverage Policies by the Regional Quality Improvement Committee.

Note: Kaiser Permanente Mid-Atlantic States (KPMAS) include referral and authorization criteria to support primary care and specialty care practitioners, as appropriate, in caring for members with selected conditions. Medical Coverage Policies are not intended or designed as a substitute for the reasonable exercise of independent clinical judgment by a practitioner in any particular set of circumstances for an individual member.