



Factors Associated with Multi-Class Psychotropic Medication Utilization for Individuals in Foster Care in a State Medicaid Population

Shellie L. Keast, Pharm.D., Ph.D.,^{1,2} Laura M. Tidmore, Pharm.D.,^{1,2}

Deborah Shropshire, M.D.,⁴ Nancy Nesser, Pharm.D, J.D.,³ Tammy L. Lambert, Pharm.D., Ph. D.^{1,2}

¹University of Oklahoma College of Pharmacy, ²Pharmacy Management Consultants, ³Oklahoma Health Care Authority ⁴Oklahoma Dept. of Human Services



The UNIVERSITY of OKLAHOMA
College of Pharmacy

Background

- Literature has shown that children in foster care are more likely prescribed psychotropic medications than those not in foster care.¹⁻³
- Current research in psychotropic medication use in foster care has focused on single-class poly-pharmacy.
- Little information exists regarding multi-class psychotropic medication utilization in vulnerable populations such as foster children in the literature.

Objectives

- Compare levels of multi-class chronic psychotropic medication class use (defined as the presence of at least one claim for a psychotropic medication for at least 90 consecutive days) among children in foster care in the Oklahoma Medicaid population.
- Assess factors associated with levels of chronic multi-class psychotropic medication use for those in foster care.

Methods

- Research team:** Stakeholders from The University of Oklahoma College of Pharmacy’s Pharmacy Management Consultants (PMC), The Oklahoma Health Care Authority (OHCA), and the Oklahoma Department of Human Services (DHS).
- Study Design:** Cross-sectional, retrospective analysis of paid prescription, outpatient, and inpatient Oklahoma Medicaid claims from January 1 through December 31 2016.
- Population:** A subgroup of 2,092 foster care children up to 20 years old.
- Statistical Analysis:** Analysis was conducted using SAS version 9.4 (SAS Institute, Cary, NC). Descriptive statistics compared demographics of the foster care population across levels of medication use. Logistic regression was used to analyze factors associated with levels of multi-class psychotropic medication use across independent variables.

Table 1: Demographics of Foster Care Population on Any Select Medication by Level of Use

| | Non-Chronic Psychotropic Medication Use (n=775) | Single-Class Chronic Medication Use (n=458) | 2-3 Chronic Psychotropic Medications (n=728) | 4-5 Chronic Psychotropic Medications (n=131) | p-value |
|---|---|---|--|--|---------|
| Age (Mean, S.D.) | 10.15 (4.53) | 9.29 (3.58) | 11.74 (3.34) | 13.13 (2.89) | <0.0001 |
| Age Group | | | | | <0.0001 |
| 0-4 (%) | 11.35 | 4.80 | 0.27 | 0.00 | |
| 5-12 (%) | 53.94 | 74.02 | 57.24 | 35.88 | |
| 13-20 (%) | 34.71 | 21.18 | 42.58 | 64.12 | |
| Sex (% Male) | 53.68 | 62.23 | 60.16 | 70.99 | 0.0002 |
| Race | | | | | 0.0025 |
| White (%) | 50.97 | 51.75 | 56.32 | 65.65 | |
| Black (%) | 12.39 | 9.61 | 12.77 | 9.92 | |
| Asian (%) | 0.00 | 0.00 | 0.00 | 0.00 | |
| American Indian or Alaskan Native (%) | 10.32 | 8.52 | 5.36 | 4.58 | |
| Native Hawaiian or Pacific Islander (%) | 0.00 | 0.00 | 0.00 | 0.00 | |
| Mixed (%) | 26.06 | 29.48 | 24.73 | 19.85 | |
| Unknown (%) | 0.26 | 0.66 | 0.82 | 0.00 | |
| Region | | | | | 0.0049 |
| Region 1 (Northwest) (%) | 19.23 | 18.12 | 16.76 | 13.74 | |
| Region 2 (Southwest) (%) | 19.87 | 20.09 | 24.31 | 24.43 | |
| Region 3 (Oklahoma County) (%) | 16.77 | 14.63 | 18.82 | 27.48 | |
| Region 4 (Southeast) (%) | 22.58 | 24.67 | 18.54 | 12.21 | |
| Region 5 (Northeast and Tulsa) (%) | 21.55 | 22.49 | 21.57 | 22.14 | |
| Rural (%) | 16.13 | 14.19 | 16.07 | 10.69 | 0.345 |
| Mean Months Eligible (Mean, S.D.) | 11.55 (1.51) | 11.88 (0.68) | 11.91 (0.64) | 11.98 (0.15) | <0.0001 |
| Receiving Psychotherapy (%) | 36.51 | 48.03 | 61.4 | 53.44 | <0.0001 |
| Charlson Co-morbidity | 0.12 (0.37) | 0.13 (0.46) | 0.11 (0.34) | 0.11 (0.38) | 0.5077 |
| Overweight/Obese (%) | 4.13 | 2.4 | 7.28 | 12.21 | <0.0001 |
| Hyperlipidemia (%) | 0.65 | 0.22 | 0.82 | 3.05 | 0.004 |
| Residence Status* | | | | | <0.0001 |
| Own Residence (%) | 14.19 | 49.68 | 0.39 | 35.74 | |
| Foster Home (%) | 11.57 | 50.22 | 1.31 | 36.90 | |
| Group Home (%) | 8.52 | 51.1 | 2.47 | 37.91 | |
| Other (%) | 5.34 | 45.8 | 3.82 | 45.04 | |

*As reported in OHCA claims.

Table 2: Mental Health Medication Utilization

| | Non-Chronic Psychotropic Medication Use (n=775) | Single-Class Chronic Medication Use (n=458) | 2-3 Chronic Psychotropic Medications (n=728) | 4-5 Chronic Psychotropic Medications (n=131) | p-value |
|---------------------|---|---|--|--|---------|
| ADHD (%) | 57.68 | 81.44 | 86.13 | 98.47 | <0.0001 |
| Antipsychotic (%) | 17.29 | 10.70 | 67.99 | 99.24 | <0.0001 |
| Antidepressant (%) | 39.61 | 25.98 | 76.92 | 96.95 | <0.0001 |
| Mood stabilizer (%) | 12.00 | 6.11 | 30.36 | 83.21 | <0.0001 |
| Anxiolytic (%) | 24.00 | 10.70 | 19.23 | 44.27 | <0.0001 |

Results

- For those with non-chronic medication use, the most commonly prescribed medication class was ADHD, followed by antidepressants and anxiolytics.
- ADHD medications were also the most commonly used in single-class chronic medication use and chronic use of 2 to 3 psychotropic medications.
- At the 4 to 5 chronic concurrent psychotropic medication level, antipsychotics became the most commonly used medication.
- Controlling for independent variables, the odds of the highest level of chronic psychotropic use was 1.9 times greater for those with psychotherapy vs. no psychotherapy (95%CI: 1.6 to 2.2), 3.1 times greater for those in a group home vs. own residence (95%CI: 1.5 to 6.4), and 10.1 times greater for those on antipsychotics vs. no antipsychotics (95%CI: 8.2 to 12.3).

Table 3: Odds of Having the Highest Level of Polyclass Use

| Effect | Point Estimate | 95% Wald Confidence Limits | | Odds Ratios with Confidence Limits |
|---|----------------|----------------------------|--------|------------------------------------|
| Presence of Psychotherapy (Reference=None) | 1.853 | 1.56 | 2.202 | |
| Age (Yrs) | 1.07 | 1.047 | 1.095 | |
| Male (Reference=Female) | 1.505 | 1.261 | 1.795 | |
| American Indian or Alaskan Native (Reference=White) | 0.59 | 0.423 | 0.823 | |
| Black (Reference=White) | 0.69 | 0.52 | 0.914 | |
| Mixed (Reference=White) | 0.862 | 0.704 | 1.056 | |
| Foster Home (Reference=Own Residence) | 1.323 | 0.988 | 1.772 | |
| Group Home (Reference=Own Residence) | 3.082 | 1.482 | 6.41 | |
| Other (Reference=Own Residence) | 1.374 | 1.018 | 1.854 | |
| DHS Region 2 (Reference=1) | 1.248 | 0.951 | 1.638 | |
| DHS Region 3 (Reference=1) | 1.243 | 0.929 | 1.663 | |
| DHS Region 4 (Reference=1) | 1.287 | 0.976 | 1.699 | |
| DHS Region 5 (Reference=1) | 1.328 | 1.011 | 1.743 | |
| Charlson Score - Devo (Mean) | 0.966 | 0.773 | 1.208 | |
| Use of Antipsychotic (Reference=None) | 10.054 | 8.213 | 12.306 | |

Discussion

- In this Medicaid program, foster care children receiving psychotropic medications were more likely to be classified as high level utilizers if they resided in a group home or were receiving antipsychotics.
- Receiving psychotherapy was present at a higher odds for those with higher psychotropic use, possibly indicating those individuals had a more complex mental health status.
- Additional research is needed to determine the appropriateness of multi-class psychotropic use in this population.

Limitations

- Use of administrative claims data may result in potential coding errors or omissions.
- Prescriptions paid for in cash are not reflected in data.
- Caution should be taken in generalizing findings to other Medicaid programs.

References

- Hoagwood KE, Kelleher K, Zima BT, Perrin JM, Bilder S, Crystal S. Ten-Year Trends In Treatment Services For Children With Attention Deficit Hyperactivity Disorder Enrolled In Medicaid. Health Affairs. 2016;35(7):1266-1270.
- Crystal S, Mackie T, Fenton MC, et al. Rapid Growth Of Antipsychotic Prescriptions For Children Who Are Publicly Insured Has Ceased, But Concerns Remain. Health Affairs. 2016;35(6):974-982.
- Zito JM, Safer DJ, Sai D, et al. Psychotropic Medication Patterns Among Youth in Foster Care. Pediatrics. 2008;121(1):e157-e163.

Disclosure Statement

Drs. Tidmore and Lambert have no conflicts of interest. Dr. Keast reports unrelated research grants from Gilead Sciences, Inc, and Purdue Pharma as well as additional contractual work for OHCA. Dr. Nesser is an employee of OHCA and Dr. Shropshire is an employee of DHS.