

Antipsychotic Medication Prescribing Practices: Youth versus Adults

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KEY FINDINGS

Cross-sectional analysis of 91,547 discharges to explore the antipsychotic medications prescribing practices for patients discharged from state psychiatric facilities by age stratification. The prevalence of antipsychotic polypharmacy was 4% for youth and 12% for adults. Disparate antipsychotic polypharmacy rates were observed for facilities serving youth and adults, and by region, highlighting opportunities for quality improvement. In general, there was an increasing trend in the practice of discharging patients on antipsychotic polypharmacy as age increased.

Introduction

In 2016, NRI's researchers published an original article¹ on the prescribing practices of antipsychotic medications for patients discharged from state psychiatric facilities during calendar 2011. Psychiatric facilities that serve youth have since requested a comparable report. Data for the following report are the same data used for the original report but now include analytical results for adolescents (age 13-17). The following report presents age group comparisons on the use of antipsychotic medications for youth versus adults. Graphical displays provide the overall prevalence of antipsychotic medication, regional variation, and reasons for antipsychotic polypharmacy. Graphical displays also portray variation across facilities in the rate of antipsychotic polypharmacy for youth versus adults. Results on the prevalence of antipsychotic polypharmacy for a specific facility is available to the facility through a special report. The special report includes summary results for calendar years 2011 through 2016.

Method

This report includes data extracted from the Behavioral Healthcare Performance Measurement System (BHPMS), a comprehensive proprietary national database of the National Association of State Mental Health Program Directors Research Institute, Inc. (NRI), comprised of patient-level data submitted by state psychiatric inpatient hospitals in the United States and its territories. It includes all discharges reported for the Hospital-Based Inpatient Psychiatric Services (HBIPS) measures from state psychiatric facilities from January 1 through December 31, 2011.

Antipsychotic medication prescribing practices are defined as one of the following: no antipsychotic medication, antipsychotic monotherapy, and antipsychotic polypharmacy. Antipsychotic monotherapy refers to the prescription of one antipsychotic medication at discharge. Antipsychotic polypharmacy includes two or more antipsychotic medications at discharge. The states from which data were included for analysis are aggregated as follows:

1 Ortiz, G., Hollen, V., & Schacht, L. (2016). Antipsychotic medication prescribing practices among adult patients discharged from state psychiatric inpatient facilities. *Journal of Psychiatric Practice*, 22 (4), 283-297.

Northeast - CT, DE, MA, MD, ME, NH, NJ, NY
 South - AL, AR, FL, GA, KY, LA, MS, NC, OK, PR, SC, TN, TX, VA, WV
 West - AK, AZ, CA, CO, HI, MT, ND, NM, NV, OR, UT, WA
 Midwest - IA, IL, IN, KS, MI, MN, MO, NE, OH, WI

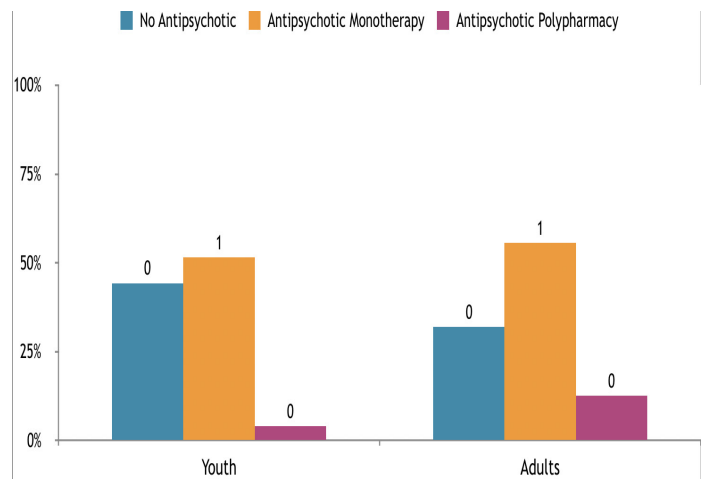
Rates of polypharmacy were calculated in two ways. The unadjusted antipsychotic polypharmacy rate was calculated as the number of discharges prescribed antipsychotic polypharmacy divided by the total number of discharges during a given period. The unadjusted polypharmacy rate therefore includes patients that are not prescribed any antipsychotic medication in the denominator. An adjusted polypharmacy rate was also calculated as the number of discharges prescribed antipsychotic polypharmacy divided by the number of discharges prescribed at least 1 antipsychotic medication during a given period.

Cross tabulation were performed to determine the proportion of discharges by antipsychotic medication prescribing practices by age group and by region. Frequency analyses explored the prevalence of antipsychotic medication practices across the age spectrum, to determine the reasons for being discharged on polypharmacy, and to investigate the polypharmacy rates by facility.

Results
Age Group Comparisons
General Practice Patterns

Overall, 91,547 discharges during calendar 2011 were included for comparison analyses. Figure 1 displays the age group comparison for the overall prevalence of antipsychotic medication practices. Overall, a greater proportion of youth than adults were discharged on no antipsychotic medication (44% versus 32%); a slightly lower proportion of youth than adults were discharged on antipsychotic monotherapy (52% versus 56%); and a one-third as many youth compared to adults were discharged on antipsychotic polypharmacy (4% versus 12%).

Figure 1. Prevalence of Discharges by Antipsychotic Medication Status



Adjusted Polypharmacy Rate

Table 1 presents the comparison between the unadjusted and adjusted polypharmacy prevalence rates among youth and adults. The adjusted rate includes only patients discharged on at least one antipsychotic medication. Therefore, discharges where no antipsychotic medications are prescribed at discharged are excluded from the adjusted rate. The adjusted polypharmacy rate is equivalent to the HBIPS 4 measure on use of multiple antipsychotic medications. The adjusted rates for both age groups are higher than the unadjusted rates. The main utility of adjusted rates is to allow comparisons across populations, whether between facilities or other defining characteristics, by equalizing the study population. Youth experienced polypharmacy at one-third the unadjusted and less than half of adjusted polypharmacy rates of adults.

Table 1. Unadjusted and Adjusted Antipsychotic Polypharmacy Rates

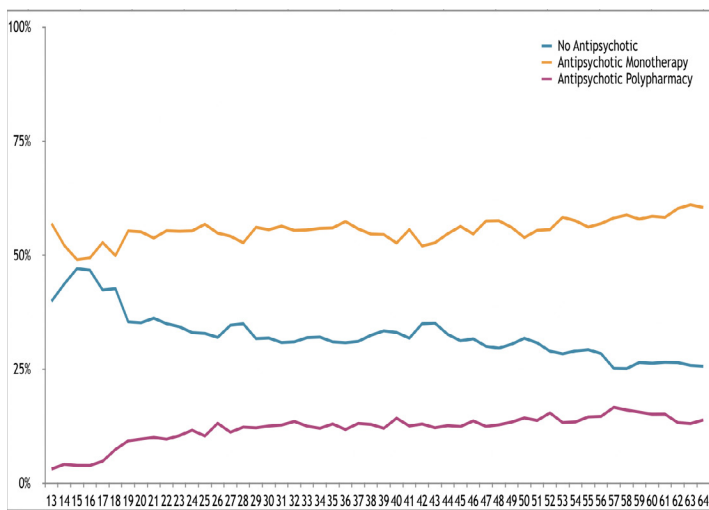
	Youth (13-17 years)	Adults (18-64 years)	Total
Total (N)	5,513	86,034	91,547
Antipsychotic polypharmacy	224	10,804	11,028
Unadjusted antipsychotic polypharmacy rate (%)	4	12	12
Adjusted antipsychotic polypharmacy rate (%)	7	18	18

Note. Unadjusted antipsychotic polypharmacy rate=antipsychotic polypharmacy/Total N x 100.
 Adjusted antipsychotic polypharmacy rate=antipsychotic polypharmacy/# of patients discharged on at least 1 antipsychotic medication x 100.

Age Continuum

Figure 2 displays the antipsychotic medication prescribing practices along the age continuum. For both youth and adults, more than half of the patients were discharged on antipsychotic monotherapy. For youth, the proportion on monotherapy tends to decrease between 13 and 17 years old, while for adults, the proportion tends to increase slightly with age. The proportion of discharges on no antipsychotic medication increased from ages 13 to 14 but then appears to continue to decrease with age. Finally, antipsychotic polypharmacy appears to increase with age with a notable increase between the ages of 17 and 19.

Figure 2. Prevalence of Antipsychotic Medication Status by Age



Regional Variation

Figures 3 and 4 display the regional patterns among age groups. Among the adult group, the Northeast region had the highest proportion of patients discharged on antipsychotic polypharmacy (20%), while the South and West regions had the lowest (11%). When accounting for the rate of no antipsychotic medication on discharge, the rates of polypharmacy changed to the West and Midwest having higher rates (20%) than the South (15%) while the Northeast (26%) continued to have the highest rates.

Among the youth group, the West and Midwest discharged the highest proportion of patients on antipsychotic polypharmacy, 6% and 7%, respectively. When accounting for the rate of no antipsychotic medication on discharge, there was little change in the polypharmacy rates with the Midwest only slightly higher than the West (11% versus 10%), followed by the Northeast (7%) and South (5%).

The rate of no antipsychotic medication was markedly different by age group. For adults, the rate of no medication ranged from 24% to 45%. For youth, the rate of no medication ranged from 36% to 48%.

An observation from the initial analysis may provide some insights into these differences. The key factors associated with polypharmacy were diagnosis (particularly schizophrenia) and longer facility stays.

Figure 3. Antipsychotic Medication Prescription for Youths by Region

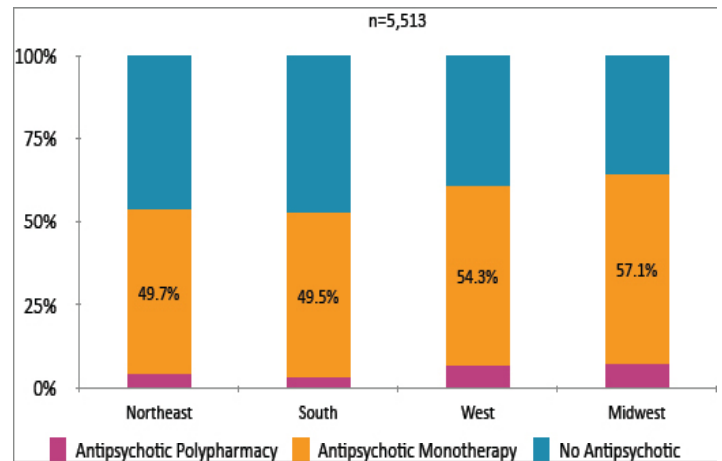
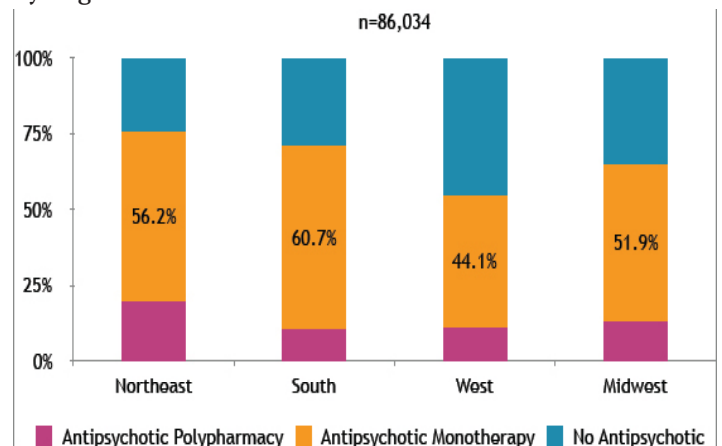


Figure 4. Antipsychotic Medication Prescription for Adults by Region



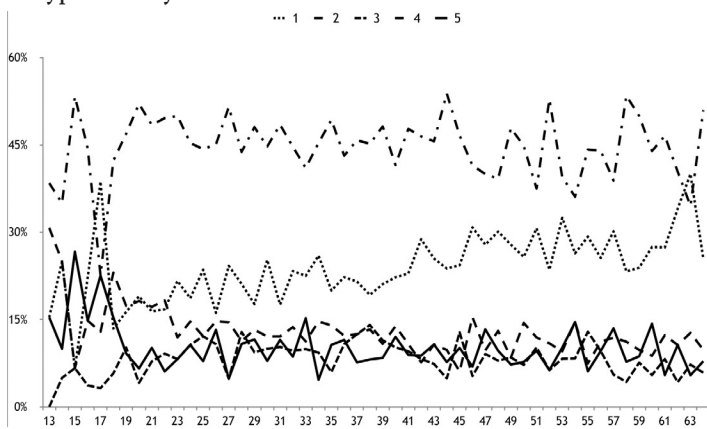
Reason for Polypharmacy

Figure 5 displays the reasons for discharging patients on multiple antipsychotic medications. The listed options include the three scientifically validated reasons: three or more failed trials of monotherapy, specified plan to taper to monotherapy, and augmentation of clozapine. Other reasons noted by a clinician have been symptom reduction and admitted on multiple antipsychotic medications.

The primary two reasons documented for discharging patients on antipsychotic medication were consistent for youth and adults with symptoms reduction as the most frequent reason, followed by failed trials of monotherapy.

The patterns for youth are more difficult to interpret due to the limited number of ages and the wide fluctuation in those rates across the five data points for ages 13 to 17 years. A higher proportion of youth (18%) were admitted on antipsychotic polypharmacy compared with adults (9%) and there appears to be a flattening in the pattern with increasing age.

Figure 5. Reasons for Discharging Patients on Antipsychotic Polypharmacy



1. History of a minimum of 3 or more failed trials of monotherapy; 2. Recommended plan to taper monotherapy; 3. Augmentation of clozapine; 4. Symptoms reduction 5. Admitted on multiple antipsychotics.

Antipsychotic Polypharmacy Rates by Facility

Of the 160 state psychiatric facilities included for analysis, 55 of them served youths. Facilities with 0% antipsychotic polypharmacy rate were excluded from the figures. Figure 6 displays the unadjusted antipsychotic polypharmacy rate for youth which ranged from a high of 24.1% to a low of 0.6% across facilities. Figure 7 displays the unadjusted antipsychotic polypharmacy rate for the adults which ranged from a high of 57.4% to a low of 0.7% across facilities.

Figure 6. Percent of Antipsychotic Polypharmacy in Each State Psychiatric Facility Serving Patients Ages 13 – 17

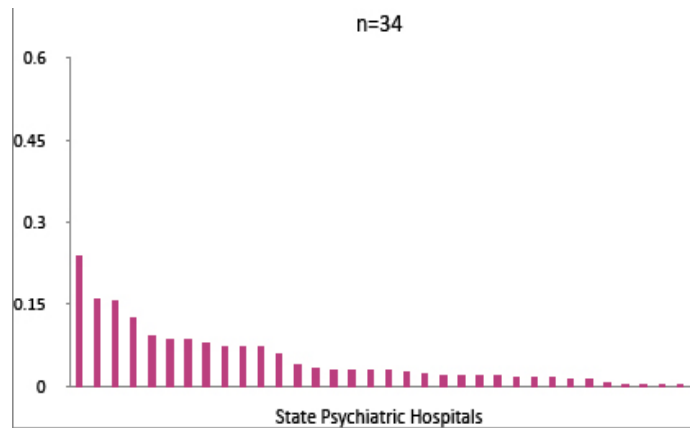
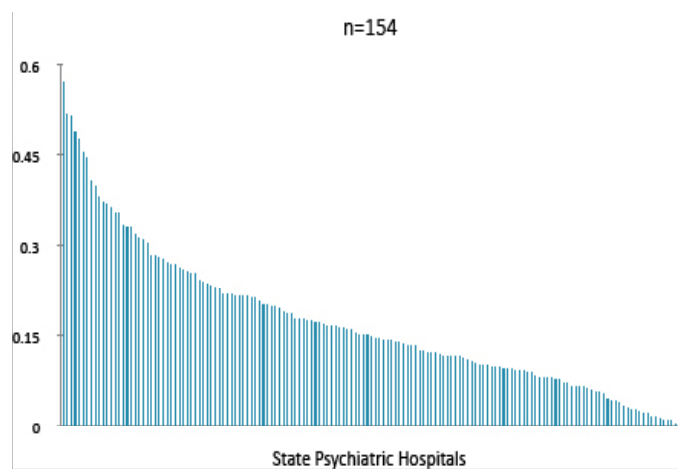


Figure 7. Percent of Antipsychotic Polypharmacy in Each State Psychiatric Facility Serving Patients Ages 18 – 64



Conclusion: Disparate antipsychotic polypharmacy rates were observed for both, facilities serving youth and facilities serving adults, and by region, highlighting opportunities for quality improvement. In general, there was an increasing trend in the practice of discharging patients on antipsychotic polypharmacy as age increased. This may inform age-specific interventions that can be transitioned with the patients as they move from youth life to adulthood that may have an impact on the antipsychotic polypharmacy rates.