Georgia Quality Management System Quality Improvement Study

Psychotropic & Anticonvulsant Medication Prevalence and Average Utilization Rates for Individuals Recently Transitioned to the Community from an Institution

June 2013

Abstract

Little is known regarding psychotropic medication use among individuals with intellectual and developmental disabilities (I/DD) who have recently transitioned from institutions to the community (IRTC). This retrospective study evaluates the pattern and changes over time of psychotropic medication usage among individuals in Georgia receiving services through the Home and Community-Based Waivers or State Aid, comparing the IRTC population with the general I/DD population. The average number of psychotropic medications taken and the prevalence rates for psychotropic use were analyzed. The relationship between certain demographic characteristics and the prevalence of psychotropic prescriptions was also examined.

Among the IRTC population, the average number of psychotropic medications taken per person increased from 0.68 six months prior to transition to 1.84 six months after transition. This increase is greater and faster than the general I/DD population, whose average number of psychotropic prescriptions increased from 1.01 to 1.98 between 2010 and 2012. Prevalence rates (using at least one psychotropic medication) increased from 23 percent to 44 percent over the span of a year (six month before and after transition), while the prevalence in the general I/DD population increased from 19 percent to 32 percent during the three-year study period.

Findings from this study are consistent with what has been shown in the literature, that psychotropic medication use is on the rise among all individuals with I/DD. Our results also suggest that certain demographic groups could be at risk of higher psychotropic medication use than others. Based upon the results, suggestions for future study and quality improvement interventions are provided.

Introduction

The purpose of study is to assess the prevalence of psychotropic and anticonvulsant medication use in adults with intellectual and developmental disabilities (I/DD). The primary focus is individuals targeted as part of the Department of Justice American Disability Act (ADA) Settlement population, Individuals who Recently Transitioned to the Community (IRTC) from an institution. As a result of the settlement, individuals must be provided with the least restrictive living environment, utilizing supports and services as appropriate to help them thrive in their communities.

Data from the National Core Indicators conducted in Georgia demonstrated an increase in the proportion of individuals with I/DD who use of psychotropic medications; from 36.2 percent in fiscal year 2005-2006 to 51.0 percent in fiscal year 2010-2011.^{1 [5]} These results sparked discussion between the Georgia Division of Developmental Disabilities and Delmarva Foundation about possible reasons for this marked increase. One possibility was the people transitioning into the community from institutions, who presented with significant health and mental health challenges. The transition process may be difficult for them and also for the community providers struggling to support them.

The Georgia Division of Developmental Disabilities, in an ongoing effort to assess the appropriateness and effectiveness of the transition process and the health of individuals, has requested a closer analysis of medication use for this group: before, during and after transition from the institution. The research questions include the following:

- Has there been an increase in the percent of individuals prescribed psychotropic or anticonvulsant medication, particularly after transition?
- Do the IRTC individuals have a higher prevalence than the I/DD population that is already established in the community (the comparison group)?
- How many people were prescribed a psychotropic/anticonvulsant medication for first time after transitioning?
- Does the prevalence vary based on: residential setting, gender, ethnicity or disability type?

Data and Methods

The study population consists of adults with I/DD currently receiving services from the Medicaid Home and Community-Based Services (HCBS) waiver or state funding. Only individuals who were 18 or older at the beginning of the study period are included in the analysis. Adults who transitioned from state hospitals into a community between July 2010 and June 2012 are part of the IRTC Group. However, to determine if a change in medication use is associated with transitioning into the community, or if there has been a change in the overall utilization rate in the HCBS population, all other participants are analyzed as a Comparison

¹ Go to <u>www.nationalcoreindicators.org</u> for more information.

Group (n=12,722). The Comparison Group includes individuals who were already established in the community and were receiving HCBS or state funded services during the same time period.

Demographic information was obtained from the Georgia Case Management system (CIS), a database hosting information for all individuals receiving waiver or state funded services in Georgia. Medication information was obtained from the Health Risk Screening Tool (HRST), a web based application providers use to assess an individual's health status, including prescription drug use. The HRST is updated if there is a change in a person's prescription medication, and at least annually.

Medication information includes the prescription name, start and end dates, and whether the specific medication is used for psychotropic or anticonvulsant purposes. For purpose of this study, the term "psychotropic medication" refers to any medication prescribed with the intent to affect or alter thought processes, mood or behavior, including antipsychotic, antidepressant, mood stablizer, antipanic, antianxiety, and anticonvulsant medications. Medication types and prescription names were reviewed by the Delmarva Foundation nurse to ensure only psychotropic medications were included in the analysis.

The transition date for each individual was provided by the Georgia Department of Behavioral Health and Developmental Disability (DBHDD). This date is used as an anchor point when analyzing medication utilization in the IRTC population. There is no anchor for individuals already established in the community. However, because the highest number of transitions occurred around June and July 2011, 7/1/2011 was used as the anchor date to compare results. Therefore, the analytic periods are defined differently for the two groups:

- IRTC Group: analysis begins six months prior to transition and continues through six months after transition. Prevalence of medication use was assessed at six and three months prior to transition, at transition, and at three and six months post transition.
- Comparison Group: Analysis was completed from January 2010 to December 2012, which is six months prior to the earliest transition date to six months after the latest transition date. Prevalence was assessed at three-month intervals, consistent with the IRTC Group.

Medication use at each time point was determined by the prescriptions documented in HRST. Prescriptions were excluded when no indentifying name and no begin date were provided. Prescriptions without an end date were assumed to be active. Several methods were used to analyze the data.

- Descriptive statistics were used to show the study population's demographic distribution.
- The average number of medications prescribed for the person was calculated at the specified dates to show the trend in medication use for the IRTC and Comparison groups.

- Prevalence rates were used to show the percentage of people who had active prescriptions at the designated times. Two different rates were calculated identifying individuals with one or more active prescription and individuals with three or more active prescriptions.
- A 95 percent confidence level with a five percent error rate (confidence interval of +/-5%) was the standard used to determine a statistically significant association. When comparing two means, if the intervals do not overlap we are fairly confident the means are different, meaning the results were not just due to chance or sampling error.
- Prevalence rates, indicating one or more active prescriptions, were calculated by race, gender, disability and residential setting. If the N size of a subgroup was smaller than 30, results were suppressed.²

Results

Demographic Information

The table below shows the number and percent of individuals in each of the study groups by demographic characteristics. The individuals in the IRTC Group had a higher percentage of males than the Comparison Group (65% vs 57%); were more likely to be White (61% v 52%); and were much more likely to be living in group homes (80% vs 19%). There were only a few IRTC individuals living with their parents, relatives, or living by themselves. The majority of the IRTC Group had Profound Intellectual Disabilities (72%) while most of the Comparison Group had Mild or Moderate Intellectual Disabilities

	IRTC Group (N=325)	Comparison Group (N=12,722)
Gender		
Female	35%	42%
Male	65%	57%
Don't know	0%	1%
Residential Setting		
Foster Care or Host Home	15%	8%
Group Home	80%	19%
Independent Home or Apartment	2%	15%
Nursing Facility	1%	1%
Parent or Relative's Home	1%	53%

Table 1. Demographic Distribution IRTC v Comparison Group

² Due to some missing demographic information, the N sizes for different demographic displays vary.

Other or Don't know	1%	4%
Race		
African American	37%	45%
White	61%	52%
Other or Don't know	2%	3%
Disability		
Autism Spectrum Disorder	1%	2%
Intellectual disability	27%	74%
Profound Intellectual Disability	72%	23%
Don't know	0%	1%

In the IRTC Group, 151 people (of 325 who transitioned) were on psychotropic medications at some point during the study period (6 months prior to 6 months after transition). In the Comparison Group, 4,371 people were on a psychotropic medication at some point between January 2010 and December 2012. The list of most frequently prescribed medications during study periods, by generic name, is provided in Table 2. Since one person can have multiple medications, the same person may be included in the results for multiple medications.

Table 2. Psychotropic Medications Most Frequently PrescribedDuring the Study PeriodIRTC Group v Comparison Group

		IRTC (N=151)		Comparison (N=4,371)	
Generic Name	Category	Number	, Percent	Number	Percent
risperidone	Antipsychotic	21	14%	1,130	26%
valproic Acid	Psych/Seizure	37	25%	995	23%
quetiapine	Antipsychotic	26	17%	763	17%
clonazepam	Psych/Seizure	26	17%	494	11%
levetiracetam	Anticonvulsant	24	16%	431	10%
olanzapine	Antipsychotic	18	12%	403	9%
carbamazepine	Psych/Seizure	9	6%	364	8%
sertraline	Antipanic	7	5%	320	7%
trazodone	Antidepressant	12	8%	302	7%
fluoxetine	Antidepressant	8	5%	298	7%
lamotrigine	Psych/Seizure	12	8%	295	7%
lorazepam	Antianxiety	11	7%	293	7%
ziprasidone	Antipsychotic	5	3%	286	7%
haloperidol	Antipsychotic	6	4%	284	6%
phenytoin	Anticonvulsant	3	2%	270	6%

citalopram	Antidepressant	8	5%	240	5%
oxcarbazepine	Psych/Seizure	6	4%	229	5%
topiramate	Anticonvulsant	11	7%	224	5%
aripiprazole	Antipsychotic	7	5%	216	5%
paroxetine	Antidepressant	3	2%	169	4%
phenobarbital	Anticonvulsant	5	3%	158	4%
escitalopram	Antidepressant	10	7%	152	3%
lacosamide	Anticonvulsant	11	7%	84	2%
lithium	Mood Stablizer	6	4%	124	3%

Change in Average Medication Use

One of the focuses for the study is the total number of medications prescribed before and after transition. Is there an increase in the number of medications used by the IRTC Group? If so, is that increase different from any changes occurring for the Comparison Group?

The average number of medications prescribed at three-month intervals is shown in Figure 1 for the IRTC and Comparison Groups. For the IRTC Group, results are given for six and three months prior to transition, at transition, and three and six months after transition. For the Comparison Group, the average number of medications is provided at three-month intervals from January 1, 2010 through December 1, 2012.

As shown in Figure 1, the average number of mediations for the IRTC Group increased from 0.68 to 1.84 while the average number for the Comparison Group increased from 1.01 to 1.98. These are both statistically significant changes.³ However, the increase in medication use for the IRTC group was greater and faster than for the Comparison Group.

³ The tables in Attachment 1 show the Confidence Intervals (CI) for all the graphs in this report. When CIs do not overlap, there is a high degree of confidence the results are not due to chance.



There were 151 individuals in the IRTC Group who had taken at least one psychotropic medication at some point during the study period. Information from this group is presented in Table 3, comparing psychotropic medication use before and after transition into the community. While 58 of the individuals (38%) saw no change in the number of medications taken, 52 individuals (34%) who had not been on any medications were prescribed at least one psychotropic medication. An additional 30 individuals showed an increase in the total number of medications after transition.

Before and After Transition				
	Number	Percent		
Newly placed on medication after transition	52	34%		
Increase in the total number of medications	30	20%		
Decrease in the total number of medications	11	7%		
No change in the total number of medications	58	38%		
Total	151			

Table 3. Changes in the Total Number of Psychotropic MedicationsBefore and After Transition

Prevalence Rates

Prevalence rates were also used as a means of comparing medication use between individuals in the IRTC Group and individuals in the Comparison Group. Figure 2 shows the percent of adults prescribed one or more (\geq 1) or three or more (\geq 3) psychotropic medications at different times during the study period. The eligible populations includes 325 individuals in the IRTC Group and 12,722 in the Comparison Group, including 174 and 8,351 people respectively who never were prescribed these types of medications during the study period. Similar to Figure 1, 7/1/2011 was used as the anchor date to overlay the two groups' graphs.

The percent of individuals recently transitioned to the community taking one or more medication increased over 20 percentage points, to 44 percent six months post transition (Figure 2). While there was also an increase for individuals in the Comparison Group, the magnitude of increase was lower, 13 percentage point increase over the time period (19% to 32%). The prevalence of adults prescribed three or more medications is lower for both groups with a similar degree of increase over time.



Prevalence Rates by Demographic Characteristics

The prevalence of having one or more psychotropic medications is shown for the IRTC and Comparison groups in Figures 3 – 5, by race, gender, and disability.⁴ Because the number of individuals in many of the IRTC disability categories is small, results include only Intellectual Disability (ID) and Profound Intellectual Disability (PID). Similarly, some residential settings and race/ethnicity categories are not displayed. Findings indicate the following:

- In the IRTC group, African American individuals showed a higher prevalence of medication use than did white individuals, both before and after transition, and with a similar degree of increase, approximately 23 percentage points.
- In the Comparison group, African American individuals showed a lower prevalence of medication use than did white individuals, showing a similar increase over time but lower than for the IRTC group, approximately 13 percentage points.
- The difference between white and African American individuals was greater in the IRTC group than the Comparison group.
- Results in Figure 4 indicate the IRTC males had a higher prevalence of psychotropic prescriptions than females, both before and after transition. However, in the Comparison group there is almost no difference.
- Similar to race, information in Figure 5 indicates there is a reversed pattern between the IRTC and Comparison groups on findings by disability. Individuals in the IRTC group with a profound intellectual disability (PID) had a lower prevalence rate than people with a mild to moderate intellectual disability, both before and after transition. However, But, people in the Comparison Group with PID had a higher prevalence rate.

⁴ Results for individuals taking three or more medications are shown in Attachment 2.





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Most individuals who transitioned from an institution moved into a group home (N=260) or into a Foster or Host Home (N=49). Results in Figure 6 indicate the percent of individuals taking at least one psychotropic medication increased substantially for individuals who moved into either one of these residential settings. For individuals who moved into a group home, the prevalence rate increased from 22 percent to 42 percent (20 percentage points). The increase was slightly greater for individuals who moved into a foster or host home, from 16 percent to 39 percent (23 points).

Results in Figure 6 also indicate Comparison Group medication utilization showed similar prevalence rates during the three-year study period for individuals in any of these residential settings: with 58 percent by the end of 2012. In addition, individuals who have been living in a community group home, foster home, or host home (Comparison Group) were much more likely to be taking medication than individuals transitioning to any of these community settings; before, during or after transition. However, the gap between the IRTC and Comparison groups had decreased dramatically.

Because only a few IRTC individuals lived in a family home or independently, results for these settings are not shown. However, the prevalence of these medications has also increased over the three-year study period for individuals in the Comparison group: an increase from 12

percent to 19 percent for individuals in a family home, and an increase from 19 percent to 31 percent for individuals living independently.



Discussion

Due to the impact of the ADA Settlement, an increasing number of individuals has moved into a community setting from institutional life. Often these individuals had lived in an institution for many years, perhaps most of their lives. There is a limited amount of information in the literature regarding psychotropic medication use among individuals in this transitioning population. However, concerns have been raised regarding the use of chemical restraints in compensation for the less restrictive environment. In addition, during transition individuals may have difficulties adjusting to the new environment, which could aggravate certain psychological conditions and may be expressed outwardly as challenging behaviors or anxiety.

Findings in this study indicate that psychotropic medication use has increased significantly among all individuals with I/DD who are receiving services through the Georgia Home and Community-Based Services Waivers or through State funding. During the study period, 32

percent of Georgia adults with I/DD had was prescribed at least one psychotropic prescription. This is similar to the prevalence reported by the cross-sectional study from Australia^[1], which was conducted between 2000 and 2002 among adults with ID living in the community of Brisbane, Australia. Of the 117 participants, 35 percent was prescribed psychotropic medications.

Results further indicate that compared to individuals who had already been living in the community, individuals who had recently transitioned into the community from an institution had a lower average number of psychotropic prescriptions before transition, but quickly increased to the level of the general I/DD population after transition. In addition, of the 52 individuals who did not have a psychotropic mediation prescription prior to transition, approximately one third received these types of medications after transition.⁵ It is possible the stress of moving to a new location, among many contributing factors could contribute to this finding.

Our results confirm that by December 2012, individuals living in a group home or foster care/host home setting had a higher prevalence (58%) of psychotropic medication use as compared to individuals living with parents and relatives (19%) or living independently (31%). This finding is consistent with other studies ^[3] and reiterates the benefit of living in a more independent setting. It is possible the family knows the son/daughter/family member very well and is therefore able to better support them than a paid provide could.

Findings in this study also point to some interesting variances by race, gender and type of disability. In the general I/DD population (Comparison Group) there is no difference between male and female prevalence rates for psychotropic medication use. However, men who transitioned into the community had a higher prevalence rate than their female counterparts. It is not clear why this pattern exists but is worth a deeper analysis to determine what may be causing the differences.

The disparities by race are also quite interesting and unexplained by the work in this study. African American individuals who transitioned to the community were more likely to be taking psychotropic medications than white individuals who transitioned. At the same time, the inverse pattern exists for individuals already living in the community, where white individuals had higher prevalence rates than African Americans. Why this pattern exists is not clear and further research into this area seems warranted.

Individuals in the Comparison Group with Profound ID were more likely to take medication than were individuals with less severe ID. However, the inverse was true of the IRTC population, where individuals with profound ID were less likely to take medication than individuals with less

⁵ Anecdotal evidence suggests that with an increased DOJ presence, there was a push to decrease psychotropic medications within the state hospitals for the first year or two. This is possibly because many individuals were receiving psychotropic medications without a mental health diagnoses but only for behavioral needs. The state hospitals hired several psychiatrists during this time as well and there were many medication changes.

severe ID. This could suggest that individuals with more serious disabilities are not as likely to exhibit difficult behaviors, possibly due to other medical and/ or physical disabilities. However, individuals who transitioned from an institution with either ID or Profound ID were much more likely to be taking a psychotropic medication than were the individuals who were already living in the community with the same diagnoses.

For future studies, it would be useful to:

- Examine the reasons behind the types of psychotropic medications prescribed
- Explore the gender and racial/ethnicity disparities identified in this study
- Determine the percent of psychotropic medications prescribed to individuals without any psychiatric diagnosis
- Identify individuals who may be at high risk and in need of medical oversight, such as individuals:
 - With multiple psychotropic prescriptions from the same class of medication
 - Who are simultaneously prescribed psychotropic and Antiparkinsonian drugs, which can lead to the presence of side effects like involuntary movement
 - Who have been on one class of psychotropic medication for a long period of time

Recommendations and Next Steps

It is important to monitor and control the use of psychotropic medication among people with I/DD because they are more vulnerable than individuals in the general population. Individuals with I/DD may be subject to overmedication and the use of physical and/or chemical restraints. There are often ethical concerns in prescribing such medications if individuals are unable to give consent to their own treatment. Because the findings in this study point to a steady increase in the use of psychotropic medications in the state, as well as a pronounced and rapid use among individuals who are transitioning from state institutions, the following recommendations were made and next steps are being taken to address them.

1. Increase the number of Human Rights Councils around the State to monitor individuals who may be at high risk due to medication overuse or interactions, and report information to the appropriate personnel.

<u>Next Steps:</u> The Division of DD is working with its Regional Offices and Regional Quality Improvement Councils to recruit local stakeholders in an effort to establish at least one Human Rights Council in each of its 6 Service Regions.

2. Require a pharmacy review for any individual using two or more types of psychotropic medications.

<u>Next Steps</u>: The results of this study have been shared with DBHDD Executive Quality Council which is chaired by the Department's Medical Director. In 2014, the DD Director

of Quality Management will work with the Medical Director to research and draft possible protocols for ongoing pharmacy reviews

3. Establish a Medication Utilization Board.

<u>Next Steps</u>: As stated above, the results of this study have been shared with DBHDD Executive Quality Council which is chaired by the Department's Medical Director. In 2014, the DD Director of Quality Management will work with the Medical Director to research the feasibility of establishing a Medication Utilization Board.

4. Develop statewide medication reduction protocols and procedures for people prescribed psychotropic and similar types of medications.

<u>Next Steps:</u> In 2014, the DD Director of Quality Management will work with the DBHDD Medical Director to research and draft medication reduction protocols.

5. Through the Human Rights Councils, Support Coordinator oversight and the Georgia Quality Management System, ensure people with a mental illness are appropriately diagnosed by a psychiatrist; and psychotropic medications are prescribed by psychiatrists.

<u>Next Steps:</u> In 2013, DBHDD established a Co-Occurring Case Review Committee. The Committee reviews cases that have presented challenges for community providers to a team of clinical leaders in DBHDD and from Georgia Regents University. The Committee conducts focused discussions to identify possible gaps/barriers in care, practice issues (e.g. medication regimens, polypharmacy), workforce training issues, and any other circumstances that will assist in developing strategies to assure that individuals are receiving high quality care.

An additional goal of the Committee is to define a process and a group of individuals with expertise who can be consulted with when problems arise and how we can use what is learned there to improve the transition and discharge planning process for individuals leaving our institutions.

6. Individuals who have any change in psychotropic medication use (increase or decrease) should be monitored by the nurse case manager biweekly, for at least two months. Symptoms that may indicate the presence of Tardive Dyskinesia (TD) should be identified as early as possible and an alternative medication or treatment plan should be developed. Abnormal Involuntary Movement Scale (AIMS) should be conducted at least every six months.

Next Steps: Protocols for conducting AIMS will be review and revised as needed.

7. Help educate the medical community about I/DD specific behaviors typically associated with psychiatric or behavioral disorders that are actually medical issues. For example, an individual with a Urinary Tract Infection could exhibit unusual or challenging behaviors not resultant of a mental illness.

<u>Next Steps</u>: A proposal has been submitted to DBHDD through the Co-Occurring Case Review Committee to identify and support a network of clinicians across the State who are comfortable with caring for individuals with co-morbid medical / neurological disorders in individuals with MH/DD challenges. The goal of this initiative is not to make the identified MH/DD clinicians experts in primary care medicine or neurology, but rather to make them more knowledgeable about problems that occur with some frequency in the MH/DD population. This will enable the clinicians to better communicate and interact with Primary Care clinicians and Neurologists in the community.

8. Conduct an analysis of the current transitioning process and modify as needed. Ensure specific, competency based training is occurring with community providers who may not be as familiar with the more complex behavioral and medical issues of individuals from institutions. Prior to the person's discharge, ensure the support coordinator periodically checks and validates that appropriate training has been completed.

<u>Next Steps:</u> DBHDD is re-evaluating the current transition process, and will be taking additional steps to increase the quality of those transitions. The data gleaned from the reviews conducted during the 2013 transition moratorium and ongoing monitoring will be used to meet the DD QM work plan goal of ensuring that individuals with DD who transition out of state hospitals will receive high quality services.

The Division of DD has developed a new "enhanced" support coordination waiver service which will allow support coordinators to work with the individual and their transition team prior to transition. This will ensure a quality transition to the community.

 Consider further research to help determine why there are such disparities in medication use by race and gender. It is possible training and/or education programs should be modified to address these variances in medication use.

Next Steps: Additional research is being conducted. Additional findings and recommendations will be released in 2014.

Reference

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Average Nu	mber of N	ledicatio	ns with		
Со	Confidence Interval				
Confidence Interval					
Comparison	Ave # of	Lower	Upper		
Group	Meds	Limit	Limit		
1/1/2010	1.01	0.97	1.05		
4/1/2010	1.09	1.06	1.13		
7/1/2010	1.18	1.14	1.22		
10/1/2010	1.26	1.22	1.30		
1/1/2011	1.31	1.27	1.35		
4/1/2011	1.40	1.36	1.44		
7/1/2011	1.48	1.44	1.52		
10/1/2011	1.56	1.52	1.60		
1/1/2012	1.65	1.61	1.69		
4/1/2012	1.74	1.70	1.78		
7/1/2012	1.83	1.79	1.87		
10/1/2012	1.91	1.87	1.95		
12/31/2012	1.98	1.94	2.02		
IRTC					
Group					
6 months prior	0.68	0.54	0.83		
3 months prior	0.83	0.67	0.99		
Transition	1.17	1.00	1.35		
3 months post	1.60	1.42	1.77		
6 months post	1.84	1.65	2.03		

Attachment 1

Attachment 2









