Use of Antipsychotic Polypharmacy for Children in Foster Care

Executive Summary

In the fall of 2017, the California Department of Social Services (CDSS) embarked on a mixed method, qualitative/quantitative study to better understand the experiences of children in foster care who were taking more than one antipsychotic medication concurrently (antipsychotic polypharmacy). As discussed in the Background section below, research suggests that while antipsychotic polypharmacy is a strategy used to treat behavioral and emotional issues, there is limited evidence of the effectiveness of this approach (Kashyap et al., 2018; Correll et al., 2012; Tandon, 2011; Correll, et al., 2009). This brief report presents preliminary findings about this sub-group of children and youth in foster care.

Preliminary Findings

➢ Between April 1, 2016-March 31, 2017, 77 out of the 76,707 children in foster care had paid claims for two or more antipsychotics that overlapped more than 60 days.

➢ Analysis of Child Welfare Services/Case Management System (CWS/CMS) data suggests that 88% of the population were adolescents aged 11-17, 67% resided in group homes at the time of the study, and 70% had been in foster care for over 2 years. Children/youth in this study had experienced an average of 8 placements (SD=5).

➢ Qualitative review of documents and quantitative analysis of CWS/CMS data revealed three themes in the experiences of children/youth in foster care with antipsychotic polypharmacy.

1) In addition to maltreatment, children/youth with antipsychotic polypharmacy experienced multiple adverse events. Based on the qualitative review of records, 70% (n=54) of children experienced substance abuse in the home, 53% (n= 41) experienced the incarceration of a parent, 24% (n=19) experienced homelessness, and 18% (n= 14) experienced the death of a family member (for 10% this was a parent).

2) Children/youth with antipsychotic polypharmacy had complex medical and psychiatric problems. The qualitative review of records revealed that about one half (51%, n=39) of children/youth had developmental delays, 22% (n=17) had autism spectrum disorder, and a subgroup (n<11) had seizure disorders. CWS/CMS administrative data indicated that 52% (n=40) of children/youth had a “medical disability” broadly defined (e.g. autism spectrum disorder, pervasive developmental disorder, visual impairment).

3) Children/youth with antipsychotic polypharmacy had serious behavioral health issues. Review of case documentation suggests that within the study review period (eighteen months before the receipt of antipsychotic polypharmacy through six months after) a majority of children had aggressive behaviors (62%, n=48), 45% (n=35) experienced one or more
psychiatric hospitalizations, and 38% (n=29), had attempted to run away from their placement (Absent Without Leave (AWOL)) one or more times. Additionally, one third of the children/youth had symptoms of psychosis (32%, n=25) and one third experienced suicidality or self-injurious behavior (32%, n=25).

Discussion and Ongoing Efforts

CDSS reviewed case files for 77 children and youth who received two or more antipsychotic medications concurrently between April 2016 and March 2017 (the total number of children in foster care at this time was 76,707). The review suggests that the children in this study had very few personal, social, and environmental resources to cope with an extraordinary burden of adversity. Below we discuss recommendations as well as current efforts undertaken by multiple state agencies that may support these recommendations.

1) **Decrease exposure to adverse events.** Many of the adverse events experienced by children in this study (such as the death of a parent) are difficult to prevent through statewide policy. However, efforts such as the CDSS Continuum of Care Reform initiative establish core practices intended to increase placement stability and reduce unnecessary placement changes that may constitute traumatic events for children/youth.

2) **Improve care and establish best practices for treatment of co-occurring conditions**, in particular autism spectrum disorders, developmental delay, and mental health problems. Research in this area suggests that co-occurring conditions present a challenge for clinicians both in terms of diagnosis and treatment, especially given overlapping symptom presentation (see National Association for Persons with Developmental Disabilities and Mental Health Needs; NADD). To better serve these clients, best practices for providing mental health care to individuals with developmental disorders within the foster care system should be identified and disseminated. Through internal and external stakeholder engagement, DHCS is working to implement a core set of standards and expectations for Medi-Cal managed care health plans (MCPs) and their partners, regarding appropriate care coordination activities and requirements for the Medi-Cal managed care population.

3) **Identify special needs children early and provide specialized social work services.** Consistent implementation of developmental screenings at foster care entry may enhance early detection of developmental challenges. In addition, early identification of mental health problems may prevent escalation of behavioral disturbance. CDSS and DHCS are currently undertaking a joint project to: (a) improve the use of mental health screenings at intake and annually thereafter, (b) ensure that positive screenings result in actual referrals to mental health services, and (c) ensure that those referrals are reliably met with mental health assessments and services.

4) **Coordinate care among Regional Centers, Child Welfare, and County Mental Health Departments.** Early identification of children with developmental disabilities as well as
improved coordination of care between Regional Centers, Child Welfare, and County Mental Health Departments may result in access to timely and consistent interventions that prevent escalation of behavioral and emotional disturbance.

5) **Continued monitoring of antipsychotic polypharmacy cases.** Joint efforts are underway to continue monitoring, and include Treatment Authorization Requests for antipsychotic medications for children in Medi-Cal for the purposes of ongoing oversight on the part of the Department of Health Care Services. As children in out-of-home care often do not have a consistent primary care provider to provide advocacy and monitoring for effective psychiatric care, these children may require additional efforts to ensure that effective treatment is provided.

6) **Continuum of Care Reform efforts may serve as a springboard for improving services** to children/youth with complex medical and psychiatric problems, including efforts around placement continuity. As California implements the CCR initiative, there will be opportunities to ensure that children with co-occurring conditions and exposure to adverse experiences receive high intensity, coordinated care. CCR is also an opportunity to continue efforts around placement continuity, which is often another challenge faced by these children.

7) **Further explore conditions experienced by children receiving antipsychotic polypharmacy.** Additional study may include looking at more current data. As changes are made to policies and practices around psychotropic medications in foster care, further study may explore the impact of these changes. In addition, future reviews may include additional administrative data such as Medi-Cal claims data to validate diagnoses and other conditions captured in the child welfare case records.

As the efforts and changes listed above are implemented, it is our hope that this study can serve as a baseline to assess the impact of our efforts and continue to improve care.
Background and Rationale

Concerns over the use of antipsychotic medications to treat mental health problems for children and youth in the Child Welfare System (CWS), have led to greater scrutiny of prescribing practices. In particular, advocates, providers and policy makers have raised concern over the use of two or more antipsychotic medications in children and youth. Research suggests that while antipsychotic polypharmacy is a strategy used to treat behavioral and emotional issues, there is limited evidence of the effectiveness of this approach (Kashyap et al., 2018; Correll et al., 2012; Tandon, 2011; Correll, et al., 2009).

Although antipsychotics were originally developed to treat psychotic disorders, the indications for the use of antipsychotics in children and youth have expanded to include the treatment of other conditions. The American Academy of Child and Adolescent Psychiatry (AACAP) reports, “In youths...AAAs [atypical antipsychotics] have principally been used for non-psychotic conditions including aggressive and dysfunctional behavior in the context of autism and PDD, aggressive behavior in patients with disruptive behavioral disorders (DBDs), manic and mixed episodes in bipolar disorder, resistant ADHD, Tourette’s syndrome and other tic disorders, OCD, eating disorders, depression, sleep problems, and difficulties with impulse control associated with personality disorders. In fact, it appears that aggression, and not psychosis, is the most common target symptom for which AAAs are prescribed to youths” (p.3, Findling et al., 2011).

However, the use of antipsychotics and in particular, more than one antipsychotic, to treat a range of psychiatric symptoms has been criticized given the prevalence of side effects associated with these medications. Specifically, antipsychotics have been associated with metabolic syndrome, which may include weight gain, diabetes, and cardiovascular problems. Studies suggest that children treated with antipsychotics may be two times more likely to be obese and three times more likely to be overweight than children not treated with antipsychotic medications (Panagiotopoulos et al., 2009).

The current study identified children/youth in foster care with antipsychotic polypharmacy and employed a mixed-method quantitative/qualitative approach to gain insight into their situations, including behavioral and emotional symptoms and experiences in foster care.

Project Methods

Study Population

This study used Medi-Cal paid pharmacy claims data matched against CWS/CMS for children/youth in foster care under the age of 18 who received two or more antipsychotic claims overlapping by 60 days from April 1, 2016 through March 31, 2017. In total, 77 out of the 76,707 children in foster care were identified as having antipsychotic polypharmacy during this time period.

Methods

To understand the experiences of foster children/youth with antipsychotic polypharmacy, quantitative data on medications, demographics of the study population, and foster care variables (length of stay, placement type, placement changes, disability, and special education indicators) from the CWS/CMS
database were summarized. In addition, an examination of child welfare case records by a team of fifteen researchers yielded qualitative data to identify commonalities in the experiences of children with antipsychotic polypharmacy. Researchers explored experiences 18 months before and six months after the anchor date of initial antipsychotic polypharmacy in the areas of trauma, changes in placement, behavioral observations, services delivered, and notes regarding medications recorded in the Delivered Services Records, Court Reports, and Health Notebook. Each case was reviewed by two researchers, taking care to avoid repeating pairs of researchers as much as possible to avoid dyad effects. Researchers were trained using a coding tool developed through a pilot review of two sample cases and inter-rater reliability was calculated for each measure.

The qualitative review yielded data on a myriad of variables, however this preliminary analysis focuses on a few select variables. These include the presence of 1) adverse experiences, 2) autism spectrum diagnosis/developmental delay, 3) psychotic symptoms, 4) suicidal symptoms, 5) psychiatric hospitalization, 6) aggression/violence, and 7) attempts to run away from placements (AWOL).

**Results**

**Child/Youth Characteristics**

An analysis of CWS/CMS data suggests that California children and youth in the foster care system with antipsychotic polypharmacy are more likely to be older, to have longer lengths of stay in foster care, and to be placed in group homes (See Figure 1). African American and White children were overrepresented in the population of foster children with antipsychotic polypharmacy: African American children were 28% (n=22) of those receiving antipsychotic polypharmacy and about 24% (n=11,319) of children in foster care and White children were 30% (n=23) of those receiving antipsychotic polypharmacy and 23% (n=11,934) of those in foster care (point in time estimate, April 1, 2017; California Child Welfare Indicators Project [CCWIP]). Latino children were 35% (n=27) of those with antipsychotic polypharmacy (about 51% in the general foster care population [CCWIP, 2017]). Data for other ethnicities is suppressed due to low numbers.
Children with antipsychotic polypharmacy experienced a high number of placements, ranging from 1 to 24 with an average number of 8 placements ($SD=5$). The average number of days in care for a child/youth with antipsychotic polypharmacy was 1,965 days or slightly over 5 years (range = 307 to 6318, $SD=1517$). Furthermore, children in this population had a history of a high number of child abuse referrals made on their behalf (range = 3 to 50, average 18, $SD=7$) and investigated referrals (range =1 to 29, average 11, $SD=6$). The majority of substantiated allegations were for neglect (82%), followed by caretaker incapacity (45%).

Administrative data from the CWS/CMS was also obtained for the following indicators: psychiatric hospitalization, medical disability, special education, and regional center. Due to reporting inconsistencies, these estimates most likely represent an undercount, however they are provided here as an additional data source to complement the qualitative analysis. These conservative estimates suggest that 56% of children/youth in this study experienced a psychiatric hospitalization in their lifetime, with a range of 0-13 hospitalizations and an average of 2 ($SD=3$; this is likely higher than that of the qualitative case review estimates as the case review explored a shorter time period). Administrative data suggests that 52% of these children had a “medical disability” broadly defined$^1$, 66% received special education services, and 22% had a regional center indicator.

$^1$ Conditions qualifying as a disability are based on the federally recognized disability groupings used in the Adoption and Foster Care Analysis and Reporting System (AFCARS) report, as defined by the Administration of Children and Families and include emotionally disturbed, mental retardation, other medically diagnosed conditions requiring special care, physically disabled, and visually or hearing impaired.
Client Conditions/Behaviors (Derived through Qualitative Review)
This report summarizes results from qualitative data in the child welfare case documents regarding: 1) adverse experiences, and 2) behavior/emotional indicators. The variables were selected based on trends identified by reviewers that emerged as the most salient in their reviews.

Adverse Events: Reviewers noted the presence of each adverse event as referenced in the case documentation. Our preliminary analysis presents a count of the number of children who experienced the following adverse events in their lifetime: substance abuse in the home, incarceration of a parent, death of a family member, homelessness as well as any mention of a diagnosis of developmental delay or autism spectrum/pervasive developmental disorder. In the case of these discrete events, the child was deemed to have experienced the adverse event even if only one reviewer identified the occurrence. The decision was made to include cases in which only one reviewer had identified the adverse outcome based on the rationale that it was more likely that a reviewer may have missed a mention of an adverse event rather than a reviewer would have noted one that wasn’t present. Although the study design prevented reviewers’ checking each other’s work, spot checks of some of these cases by the lead researchers supported this rationale.

Results indicate that 70% (n=54) of children experienced substance abuse in the home, 53% (n=41) had experienced the incarceration of a parent, 24% (n=19) had experienced homelessness and 18% (n=14) had experienced the death of a family member (for 10% this was a parent). Furthermore, almost one half (51%, n=39) of children/youth with antipsychotic polypharmacy had developmental delays, 22% (n=17) had autism spectrum disorders, and a subgroup (n<11) had seizure disorders.

Behavioral/Emotional Indicators: The team of researchers reviewed case documentation noting the presence of a wide range of behaviors indicative of emotional distress during the 18 months prior to initial antipsychotic polypharmacy and six months after. This preliminary analysis focuses on the following composite indicators: 1) psychosis, 2) aggression, 3) suicidality, 4) hospitalization, and the non-composite indicator 5) running away (AWOL). Inter-rater reliability was calculated for each of these categories based on the presence or absence of a given indicator at any point in a 3-month time segment across the study review period; number of agreements or disagreements within a quarter were not analyzed. Kappa coefficients for the five composites, based on quarterly periods are as follows:

Composite indicators were comprised of the following subcategories combined to form the larger category:
Psychosis: 1) hallucinations, 2) delusions, 3) disorganized thought, and 4) other psychotic symptoms; Aggression: 1) aggression, 2) violence; Suicide: 1) self-injurious behavior, 2) suicidal thoughts, 3) suicide attempts; Hospitalization: hospitalized due to 1) illness, 2) grave disability, 3) danger to self, 4) danger to others, and 5) other hospitalization.

Cohen’s Kappa coefficient measures the degree to which raters agree on the presence of a feature while controlling for chance agreement, and are a more rigorous measure of inter-rater reliability than simply reporting “percent agreed.” The significance of the values depends in part on the underlying distribution of features under evaluation, so the “meaning” of a given kappa score depends on the phenomenon under investigation and the goals of the study. As these ratings reflect subjective interpretations of qualitative and inconsistent data, and as this is an exploratory study looking for promising directions for future investigation, we applied the relatively liberal minimum kappa threshold of 0.4.
Psychotic Composite, κ=0.534; Suicide Composite 0.488, Aggression, Composite, κ=0.562, Hospitalization Composite, κ=0.656; AWOL (not a composite), κ=0.730.

Analysis of the behavioral/emotional indicators revealed the following: within the study review period a majority of children with antipsychotic polypharmacy had aggressive behaviors (62%, n=48), 45% (n=35) experienced one or more psychiatric hospitalizations, 38% (n=29), had attempted to run away from their placement (AWOL) one or more times. One third of the children/youth had symptoms of psychosis (32%, n=25) and one third experienced suicidality or self-injurious behavior (32%, n=25).

Discussion and Ongoing Efforts
The current study identified commonalities in the experiences of children/youth with antipsychotic polypharmacy. The results indicated that children/youth in foster care with antipsychotic polypharmacy experience significant life challenges. Superimposed on these life challenges was the experience of entering foster care. Many children in this study experienced a confluence of catastrophic life events, mental health problems, and developmental disorders. Many of the children had severe behavioral disturbances that included suicidality, self-injurious behavior, and violence and aggression. This review of 77 cases suggests that these children had very few personal, social, and environmental resources to cope with an extraordinary burden of adversity.

Several recommendations to improve the care of these children emerged from the findings. These include:

1) Decrease exposure to adverse events. For many children/youth in this study, exposure to adverse events (such as the death or incarceration of a parent) was difficult to prevent. However, to the extent that child welfare service providers have the ability to increase placement stability and decrease exposure to further trauma while in care, these efforts should be made. The Continuum of Care initiative includes efforts to enhance the training and support for foster caregivers and group homes to prevent unnecessary placement changes.

2) Improve care and establish best practices for treatment of co-occurring conditions, in particular autism, developmental delay, and mental health problems. Children/youth with co-occurring developmental delays/autism spectrum disorders and mental health problems are challenging to diagnose and treat given symptom complexity and cognitive delay (Fletcher et al., 2016). For example, children and youth with cognitive deficits may have difficulty learning coping and self-regulation strategies. Efforts to improve the psychosocial and psychiatric care should involve continued investment in research and dissemination of best practices for this population (for more information see National Association for Persons with Developmental Disabilities and Mental Health Needs; NADD). In addition, efforts should be made to enhance the competency of social workers and clinicians to work with this group.

3) Identify children/youth with special needs early and provide specialized social work services. The children in this study required high intensity services and care coordination. Multiple departments and agencies are working to increase the rate of developmental screenings in
children. In addition, CDSS and DHCS are currently undertaking a joint project to: (a) improve the use of mental health screenings at intake and annually thereafter, (b) ensure that positive screenings result in referrals to mental health services, and (c) ensure that those referrals are reliably met with mental health assessments and services.

Furthermore, child welfare agencies may bolster efforts to ensure that social workers assigned these cases (in particular those with co-occurring conditions) 1) have specialized training and experience in this area, and 2) have reduced case load to allow for increased monitoring and coordination of services.

4) **Coordinate care among Regional Centers, Child Welfare, County Mental Health Departments and other partners.** Reviewers noted that many children in this study experienced delayed or disjointed care due to lack of coordination between Regional Centers, child welfare agencies, and county mental health providers, particularly when children moved from one county to another. For example, initial assessments for Regional Center services were often delayed or cancelled due to changes in living arrangements, disagreements regarding county of jurisdiction or responsible agency, or other logistical challenges. This led to extended periods in which children did not receive needed services. Improving the coordination of care among these providers and facilitating access to these services are critical approaches to care for this population. Further, efforts should be made through increased screening by social workers, pediatricians, and education partners, to identify children with special needs early and establish eligibility for Regional Center services. Through internal and external stakeholder engagement, DHCS is working to implement a core set of standards and expectations for Medi-Cal MCPs and their partners, regarding appropriate care coordination activities and requirements for the Medi-Cal managed care population. Enhanced data sharing at the state level may guide efforts to coordinate services at the county level. Integrating developmental services data with child welfare and mental health services data may assist CDSS in understanding the needs and nature of mental health care received by foster children with developmental disabilities.

5) **Continue monitoring of antipsychotic polypharmacy cases.** Given the prevalence of side effects associated with the use of antipsychotics, the American Academy of Pediatrics offers the following practice parameter specific to the use of antipsychotic medication with children/youth in foster care, “When prescribing AAAs [atypical antipsychotics] for children in foster care, community or residential placements the local child welfare and/or juvenile justice agency should be contacted in an effort to obtain additional personal and family history of diabetes and hyperlipidemia, seizures and cardiac abnormalities as well as previous response to AAAs (p.10 Findling et al., 2011).” This statement acknowledges the importance of enhanced psychiatric support for children in out-of-home care. As children in out-of-home care often do not have a consistent primary care provider to provide advocacy and monitoring for effective psychiatric care, these children may require additional efforts to ensure that effective treatment is provided. DHCS will continue Treatment Authorization Requests for antipsychotic medications for children in Medi-Cal for the purposes of ongoing oversight services.
6) **Continuum of Care Reform (CCR) efforts may serve as a springboard for improving services to children/youth with complex medical and psychiatric problems.** As California implements the CCR initiative, there will be opportunities to ensure that children with co-occurring conditions and exposure to adverse experiences receive high intensity, coordinated care. CCR is also an opportunity to continue efforts around placement continuity, which is often another challenge faced by these children.

7) **Further explore conditions experienced by children receiving antipsychotic polypharmacy.** Additional study may include looking at more current data. As changes are made to policies and practices around psychotropic medications in foster care, further study may explore the impact of these changes. In addition, future reviews may include additional administrative data such as Medi-Cal claims data to validate diagnoses and other conditions captured in the child welfare case records.

As the efforts and changes listed above are implemented, it is our hope that this study can serve as a baseline to assess the impact of our efforts and continue to improve care.
References


