



Chronic disease prevalence and discontinuation of medications among young mothers with a relationship to the child welfare system



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ABSTRACT

Objectives: To describe the prevalence of chronic conditions in the reproductive period among young mothers with a relationship to child welfare and to describe medication discontinuity from the preconception to postpartum period.

Methods: Retrospective cohort of mothers aged 15 to 24 delivering an infant between 2007 and 2010 in a large, Mid-Atlantic city. Descriptive and chi square statistics were used to: 1) describe the prevalence of chronic conditions and medication fills in the preconception, pregnancy and postpartum periods and, 2) determine differences in these outcomes by child welfare involvement status.

Results: Nearly half (43%) of all mothers with Medicaid-financed births had a relationship with the child welfare system. The prevalence of asthma and HIV were significantly elevated among child welfare involved mothers as compared to non-involved mothers. With the exception of anxiety and intellectual disability, all mental and behavioral conditions occurred more frequently among child welfare involved mothers than non-involved mothers. Among mothers with diagnosed mental illness receiving psychotropic medications prior to pregnancy, more than half experienced discontinuity of medications in the postpartum year and discontinuity was significantly increased among child welfare exposed mothers.

Conclusions: Young mothers with a relationship to child welfare experience increased morbidity and are at high risk for treatment discontinuity in the postpartum period. Bridging reproductive and behavioral health services is critical for this population; in addition, public health systems should support the delivery of trauma-informed services for adolescents to meet needs of young mothers with child welfare involvement.

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1. Background

Half of youth with experience in foster care have a pregnancy by age 19 and many have multiple pregnancies by this same age (Boonstra, 2011). Birth rates among adolescents with maltreatment victimization are more than twice the rates of their non-maltreated peers (Noll & Shenk, 2013). While adolescent childbearing itself is associated with numerous adverse outcomes for mothers and children (Barnet, Liu, & DeVoe, 2008; Boden, Fergusson, & John Horwood, 2008; de Vienne, Creveuil, & Dreyfus, 2009; Kane, Morgan, Harris, & Guilkey, 2013; Patel & Sen, 2012; Svoboda, Shaw, Barth, & Bright, 2012), poor health profiles and high risk for inadequate self-management of health

conditions among youth with a history of child welfare involvement may further complicate young motherhood.

In comparison to children without child welfare involvement, those in the child welfare system have increased rates of chronic physical as well as mental and behavioral health needs (Ahrens et al., 2010; Carpenter, Clyman, Davidson, & Steiner, 2001; Dubowitz et al., 1992; Flaherty & Weiss, 1990; Forkey & Szilagyi, 2014; Halfon, Mendonca, & Berkowitz, 1995; Hansen, Mawjee, Barton, Metcalf, & Joye, 2004; Jee et al., 2006; Rubin et al., 2012; Sullivan & van Zyl, 2008). While the burden of health challenges for youth with child welfare system involvement has been well documented, the health status of these youth upon entry into pregnancy and parenthood is understudied. Given the high prevalence of chronic health needs among youth exposed to the child welfare system, it is likely that health risk factors persist during the reproductive period.

Among youth with current or former child welfare involvement, the challenges to adequate health care receipt for the management of

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chronic illness are significant. The complexity of legal and administrative issues associated with health care utilization for youth in foster care, coupled with care coordination challenges for youth transitioning within and out of the child welfare system present significant barriers. While Medicaid is the primary health insurer for child welfare involved youth, there are unique barriers to care within the Medicaid program for older youth. In addition, emancipated youth often lack access to a medical home or the social support needed to navigate the healthcare system (AAP Council On Foster Care Adoption and Kinship Care and Committee On Early Childhood, 2012; Christian & Schwarz, 2011; Mekonnen, Noonan, & Rubin, 2009).

These unique child welfare related challenges exacerbate challenges to health care utilization and self-management of chronic illness common to many adolescents, among whom, treatment adherence has been documented as low. While protective factors for medication adherence among adolescents exist, including positive family functioning, parental support, and friendships, they may be lacking among youth with a history of child welfare involvement (Taddeo, Egedy, & Frappier, 2008). Discontinuity of health care during the reproductive period also threatens treatment adherence. Pregnancy and postpartum periods are high-risk periods for discontinuity in health care receipt for non-reproductive conditions such as depression (Bennett, Marcus, Palmer, & Coyne, 2010). These periods are characterized by lack of care coordination between providers and poor postpartum medication continuation for mental illness; these challenges disproportionately impact low-income and minority mothers (Bennett et al., 2010).

This study sought, first, to describe the prevalence of physical and mental/behavioral health conditions during the reproductive period among adolescent and young adult mothers with a history of child welfare involvement. Additionally, medication discontinuation for chronic health conditions in the postpartum period among these mothers was evaluated.

2. Methods

2.1. Data and sample

The target population was adolescent and young adult mothers with past maltreatment victimization in a large Mid-Atlantic city. Included were women who: (1) delivered at least one infant between January 1, 2007 and December 31, 2010; (2) were between the age of 15 and 24 at the time of the birth; (3) were enrolled in Medicaid at any time during the year prior to the estimated date of conception through one year postpartum; (4) were successfully linked to the Medicaid claims of their child following birth; and (5) were known to child protective services prior to the birth of the infant(s). A comparison group of mothers without identified child welfare involvement met inclusion criterion 1 through 4, with an additional requirement of being enrolled in Medicaid for at least 10 of the 12 months prior to conception.

Data sources included: (1) birth certificates from January 1, 2007 to December 31, 2010; (2) death certificates from January 1, 2007 to December 31, 2012; (3) Medicaid claims data from January 1, 2006 to December 31, 2012; and (4) child welfare data for all women meeting inclusion criterion 1–4 covering an observation period beginning with birth of the mother through December 31, 2010.

Mothers and infants were first identified within birth certificates. An iterative deterministic linkage (Dusetzina et al., 2014) approach then linked mothers and infants to Medicaid claims using a sequential process that included social security numbers (when available) and unique identifiers constructed from the mother's name, mother's date of birth, and infant date of birth. Names, dates of birth, and infant gender for mother-infant dyads meeting inclusion criterion 1 through 4 were then sent to the child protective service agency for linkage to child protective service files (see Supplemental Appendix for cohort creation diagram).

2.2. Outcome measures

Main outcome measures included: a) chronic physical and mental/behavioral health conditions and b) filled prescriptions for treatment of mental/behavioral conditions. The eight chronic physical health conditions included asthma, Type 1 diabetes, Type 2 and gestational diabetes, epilepsy/seizure disorder, anemia, hypertension/gestational hypertension, autoimmune disease (including lupus, rheumatoid arthritis, inflammatory bowel disease), and human immunodeficiency virus (HIV). Each were coded using the International Classification of Diseases, Ninth Revision classification (ICD-9) in the Medicaid claims files. These conditions were selected using three criteria: a) increased prevalence among children with child welfare involvement (Ahrens et al., 2010; Dubowitz et al., 1992; Hansen et al., 2004), b) classification as immune-related diseases potentially affected by dysregulation of the hypothalamic-pituitary axis following trauma exposure (Johnson, Riley, Granger, & Riis, 2013), and c) likelihood of reliable ascertainment within Medicaid claims files (Centers for Medicare and Medicaid Services, 2013).

Mental/behavioral health diagnoses were classified using the Diagnostic and Statistical Manual of Mental Disorders IV-TR (DSM-IV-TR) and coded using ICD-9 in the Medicaid claims files. Ten diagnostic categories were included: schizophrenia, bipolar disorder, depression, anxiety disorder, conduct disorder, attention-deficit hyperactivity disorder (ADHD), intellectual disability, posttraumatic stress disorder, substance use, and miscellaneous behavioral health diagnoses (Matone et al., 2012). Psychotropic medications for the treatment of mental/behavioral health conditions were identified using therapeutic class codes (abbreviated Hierarchical Ingredient Code). Within psychotropic agents, antidepressants and antipsychotic agents also were reviewed individually.

The observation window for outcome assessments included the preconception, pregnancy and postpartum periods. Specifically, the observation window included a maximum of 12 months prior to the estimated date of conception through a maximum of 21 months post conception (estimated to equate to pregnancy plus one year postpartum). The mean number of months of Medicaid enrollment observed were: preconception: 10.0 (standard deviation 4.2) and pregnancy and postpartum period: 19.8 (standard deviation: 2.5). For a given woman, a diagnosis was included as a chronic health condition if it was present in the first three diagnostic fields of any given claim in inpatient or outpatient files. Medication information was used for classification of Type 1 versus Type 2 diabetes (see Supplemental appendix). Sensitivity analyses assessing the impact of restricting included chronic health conditions to those in the primary diagnostic field versus inclusion of all available diagnostic fields yielded similar prevalence of health conditions (<1 absolute percentage point). An additional sensitivity analysis using two diagnoses within a one-year period (Centers for Medicare and Medicaid Services, 2013) moderately attenuated prevalence rates but trends were unchanged (data available upon request). Given the observation window during the reproductive period for a high-risk subgroup of women, wherein non-pregnant related healthcare visits are infrequent, multiple comorbidities exist, and reproductive diagnoses are likely to be disproportionately recorded as compared to non-related comorbidities, a single diagnosis was used to determine prevalence.

Medications were included if ever present in a prescription claim file. For secondary analysis of medication discontinuation, medications were separately identified in preconception observation period (12 months prior to estimated date of conception) and postpartum observation period (12 months following date of birth). Physical health conditions, selected based on high likelihood of medication use for management, included seizure disorder/epilepsy, Type 1 diabetes, HIV, and asthma.

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