Health Services: 131-136

131.

The Role of School-Based Health Centers in Increasing Universal and Targeted Delivery of Primary and Preventive Care Among Adolescents
Sarika Rane Parasuraman, PhD1; Leiyu Shi, DrPH2
1The Johns Hopkins University School of Medicine; 2Johns Hopkins Bloomberg School of Public Health

Purpose: School-based health centers (SBHC) can provide comprehensive primary and preventive care for adolescents, ensuring equitable utilization of care and the promise of targeted services for high-risk groups such as youth involved in risk behaviors or youth with chronic health conditions. Although research has described patterns of health service utilization at SBHCs, little is known about how the receipt of services differs among adolescent users. Utilization of primary and preventive care, and perceptions of care received, are correlates of access that are especially important factors among underserved populations more likely to be disconnected from traditional care settings. The purpose of this study was to use a nationally-representative dataset to investigate differences in utilization and perceptions of SBHC care among adolescents.

Methods: This study included responses from a sample of 414 adolescents who participated in the Healthy Schools, Healthy Communities User Survey. Three outcome measures represented utilization of care at SBHCs: (1) had a well-care visit, (2) received a primary care service, and (3) received a preventive service. Four outcome measures represented perceptions of care: (1) would recommend SBHC, (2) SBHC staff communicated effectively, (3) SBHC staff were respectful, and (4) SBHC staff gave time to ask questions. Multivariate logistic regression models were used to examine the effects of sociodemographic and health status (e.g., risk behaviors or chronic health conditions) characteristics on outcome measures.

Results: There were few notable and significant differences in either utilization of primary and preventive care or perceptions of care, based on sociodemographic characteristics, risk behaviors, or chronic health conditions.

Conclusions: SBHCs do appear to be successful at eliminating differences in utilization of care based on gender, race/ethnicity, and insurance status. However, null findings suggest that they fall short in delivering truly comprehensive and efficient care to high-risk adolescents and others who might benefit the most, and may not be capitalizing on opportunities to offer targeted screening or counseling. Encouraging results around positive perceptions of care suggest that adolescents would be amenable to consistent utilization of primary care, counseling, or education services offered at SBHCs. In order to foster continuous care and positive health outcomes among adolescents, SBHC administrators should regularly evaluate their scope of services and support quality improvement efforts. Furthermore, policymakers must support optimal delivery of needed services through sustained funding and reimbursement for the delivery of primary and preventive care.
Sources of Support: This study was conducted as part of the primary author’s doctoral dissertation work.

Are Young Adults Using the Emergency Room for Non-urgent Reasons?
Josephine S. Lau, MD, MPH; Sally H. Adams, PhD, RN; Charles E, Irwin, Jr, MD, FSAHM
University of California, San Francisco

Purpose: Young adults, between the ages of 18-25, utilize overall health care utilization less frequently than children, adolescents and older adults. When they do access care, they tend to seek ER care more frequently than other age groups. This study examines the immediacy of young adults’ ER visits, differences in immediacy between age groups, and for young adults, the diagnoses associated with these visits.

Methods: Using 2009-2010 National Ambulatory Health Care Surveys (NHAMCS), we examined the proportion of young adults’ ER visits that were triaged as immediate/emergent, urgent, semi-urgent and non-urgent. We used: 1) bivariate models to compare the proportion of non-urgent ER visit rates among young adults, children and older adults; 2) multivariate logistic regression models to examine young adults’ non-urgent ER visit rates by expected source of payment (private insurance, public insurance and self-paid), adjusted for race/ethnicity and sex; and 3) descriptive analyses to examine the top 10 primary diagnoses using the Agency of Health Research and Quality (AHRQ) Clinical Classification Software (CCS) for young adults’ non-urgent ER visits.

Results: Out of 9,254 ER visits utilized by young adults, 8.4% were triaged as immediate/emergent, 43.1% as urgent, 39.1% as semi-urgent, and 9.3% as non-urgent. Young adults’ non-urgent ER visit rate was signficantly higher than adults over age 25 (3.9%-7.7%, p<.001) and similar to children and adolescents (9.5-10.7%, p=.13). There were no differences in the proportion of young adults’ non-urgent ER visits by sex and race/ethnicity. Rates for those with expected payment source of private insurance (6.3%) were significantly lower than those with expected sources of public insurance (10.2%, p<.001) and self-paid (10.4%, p<.01). The top 10 primary CCS diagnoses for non-urgent ER visits by young adults were 1) “other aftercare” (12.1%); 2) sprains and strains (11.1%); 3) superficial injury (6.2%); 4) other non-traumatic joint disorder (5.3%); 5) abdominal pain (5.3%); 6) viral infection (5.2%); 7) teeth and jaw disorder (4.5%); 8) eye infection/inflammation (3.7%); 9) open wounds of head, neck and trunk (2.5%); and 10) anxiety disorders (2.5%). These 10 diagnoses comprised of 58% of all primary diagnoses for non-urgent ER visits among young adults.

Conclusions: Young adults have relatively high rates of non-urgent ER visits when compared to the US adult population. Significant disparities exist in non-urgent ER visit rates by expected source of payment/insurance, with those who had private insurance having the lowest non-urgent ER visit rate. The majority of the top 10 primary diagnoses of non-urgent ER visits among young adults appear to be
diagnoses that can be addressed at office-based visits. More studies are needed to examine whether these non-urgent ER visits can be replaced by office-based (urgent care or primary care visits).

**Sources of Support:** The Maternal and Child Health Bureau, Leadership Education in Adolescent Health Training Grant (T71MC0003), Health Resources and Services Administration, U.S. Department of Health and Human Services (U45MC 00002 and U45MC 00023), and NICHD T32 Training Gr

133.

**Total Medical Expense (TME) for Privately Insured Adolescents: Understanding the Causes of High Cost Care**

Susan Hayden Gray, MD; Elizabeth R. Woods, MD, MPH, FSAHM; Ann Suny, MBA; Urmi Bhaumik, DSc; Nora Boukus, MA; S. Jean Emans, MD, FSAHM

*Boston Children's Hospital*

**Purpose:** New accountable care payment models are focusing on reducing total medical expense (TME) for a patient population. Health care providers are incentivized to reduce costs. Our objective was to characterize TME for average cost adolescents and elucidate the causes of high TME in order to identify opportunities for prevention, case management, and potentially cost savings.

**Methods:** We analyzed de-identified data from 13,439 adolescent patients in a large private insurance database from January 1, 2012 to December 31, 2012. Data were obtained from primary care patients in a large practice association affiliated with an academic medical center.

**Results:** Patients ranged in age from 12 to 21 years old (median 17 years), with 50% males (N=6725) and 50% females (N=6714). The median annual total medical expense (TME) for an adolescent patient in this cohort was $1,117, compared to average annual TME for privately insured patients of all ages in Massachusetts of $4,968 in 2010. A small fraction of patients (2.1%, N=287) with annual TME greater than $20,000 accounted for a large proportion (32%) of annual expenses of $41,781,922 for this entire cohort. The median age for high cost patients was 17, and there were similar numbers of male (N=150) and female patients (N=137). Being a high cost patient was associated with a higher likelihood of having a behavioral health condition such as depression, anxiety, or attention deficit disorder (61% vs. 30%, p<0.001). Certain extremely high cost patients (0.1%, N=25), with annual expenses greater than $100,000 accounted for 8% of the cohort’s TME. The greatest contributor to extremely high annual medical expense for these patients was inpatient hospitalization. Diagnoses among extremely high cost patients included traumatic injuries, congenital anomalies, diabetes, and behavioral conditions. Three out of the top 25 extremely high cost patients were receiving care for eating disorders.

**Conclusions:** A small number of adolescent patients accounted for a disproportionate amount of annual medical expense in this population. Our findings suggest that strategies for intervention and cost reduction in this group should include case management and integrated behavioral and medical services.
The Time Burden for Pediatricians Caring for Adolescents with Behavioral Issues

Edward M. Gotlieb, MD, FSAHM1; George A. Cotsonis, MA2; Melissa Magill, MD1; Jaquelin Gotlieb, MD1; Sally Marcus, MD1; Kathryn Patterson, MD1; Philip Spandorfer, MD1; Michael Tim, MD1; Laura Yedvobnick, PA1; Barbara Douglas1

1Kids Health First Pediatric Alliance; 2Emory University

Purpose: To better understand the time and concomitant financial burden on private pediatric practices caring for adolescents

Methods: Kids Health First Pediatric Alliance is a private pediatric primary care independent practice association (IPA) with approximately 260 physicians, nurse practitioners, and physician assistants, located in some 50 sites in the Metro Atlanta area. It cares for more than 500,000 pediatric and adolescent patients. Over the year from spring 2012 though winter 2013, we collected prospective data at office visits on 8711 children and adolescents between 4 and 16 years old who presented for office visits. Each clinician surveyed the first ten eligible study patients during each of four seasonal quarters. Analytic methods: Chi-squared tests were used to compare time each visit required, age of child, and existence of psychosocial problems. Frequencies between tables do not add up because of missing data

Results: Out of a total of 8711 recorded visits, 2347 visits were for patients age 12 to 16 years -- 1197 of those visits were sick visits; 1125 were well visits. We queried the amount of time each visit required. 956 of the 2347 adolescent visits took 16+ minutes to complete (41.3%), compared to 1876 of the 6364 4-11 year old visits (29.8%) (p< 0.0001, Chi-Square df=1). Patients identified by the examining clinician as having new, ongoing, and/or recurrent psychosocial problems were 478 of 2310 adolescent patients (20.7%) compared to 861 of 6301 (13.7%) in the 4-11 group (p<0.0001 Chi-Square, df= 1). The number of visits lasting 16+ minutes by adolescents with psychosocial problems was 283 of 472 (60.0%) compared to 470 of 854 (55.0%) for children with psychosocial issues. (p=0.0832, Chi-Square df=1).

Conclusions: There are extended time requirements to care for adolescent patients compared with a younger patient cohort. Although there is also a trend toward extended time requirements for adolescent patients with psychosocial problems over younger patients with psychosocial problems, the difference is not statistically significant. These data need to be presented to those who fund pediatric care. An understanding of the extended time needed to care for children and adolescents with psychosocial issues needs to be shared with pediatric training program directors developing workforce plans.

Sources of Support: Self-funded by Kids Health First Pediatric Alliance
Youth in Custodial Facilities: A Vulnerable Population in Need of Services
Sebastien Bergeron, MD; Jean-Yves Frappier, MD, FSAHM; Yasmine Ratnani, MD; Rosanne V. Krajden, CPsychol; Yves Lambert, MD, FSAHM; Manon Duchesne, MD; Ronald Chartrand, MD
1CHU Ste-Justine; 2Centre jeunesse de la Montérégie; 3Centre jeunesse de Montréal \ Centre hospitalier de Verdun; 4Association des Centres jeunesse du Québec

Purpose: Studies show that a large proportion of youths admitted in custodial facilities have several health problems, usually not taken care of. Despite the fact that many organizations such as the AAP recommend an evaluation upon admission with comprehensive health care, the services provided in these facilities remain variable. Our study aims to: 1) evaluate the health of youths in custodial facilities; 2) test comprehensive assessment tools to be used by all facilities; 3) provide data so that medical resources can meet the health needs of youths.

Methods: Seven facilities from small to large urban areas participated in the study. A total of 300 youths ranging from 14 to 17 y.o. were recruited. Upon admission, a self-administered questionnaire was completed by the teen and a staff member to evaluate the youth’s health. Then a medical assessment was performed by the nurse and doctor, using a standard data collection form/check list.

Results: Upon admission, 83% of youths had at least one health problem, while 46% had at least four. 59% of youths had chronic physical health conditions, whereas mental health disorders (excluding ADHD) were observed in 34%. 30% fulfilled the criteria for substance abuse. Sexuality-related problems/needs (including STI screening and contraception issues) were found in 38% of teens. While 51% of youths needed a further investigation or referral to a specialist, 43% needed a treatment (medication or other) and/or a medical follow-up by the nurse or doctor in the facility. Genders significantly differed regarding the number of problems upon admission, with more females having at least four problems (54% vs 41% in males, p = 0.017). Males had more physical chronic health conditions (65% vs 52% in females, p = 0.027), while sexuality-related problems/needs were predominant in females (57% vs 23% in males, p = 0.00). However, both genders had equivalent needs for investigation/referral and treatment/follow-up. The self-administered questionnaire was useful but could have misestimated the youth’s needs.

Conclusions: Our study highlights the need for an early and comprehensive health evaluation of youths in custodial facilities by a self-administered questionnaire, followed by a standardized medical assessment. The high prevalence of physical and mental disorders underscores the importance of organized health services in custodial facilities in order to fulfill the youths’ needs, improve the rehabilitation process and facilitate the health care transition upon admission and discharge.

Sources of Support: Association des Centres Jeunesse du Québec (ACJQ)
Education and Guidance About Health Risk Behaviors During Sports Physicals—What Do Adolescent Athletes Need, and What Do Health Care Providers Discuss?
Karen E. Johnson, PhD, RN1; Annie-Laurie McRee, DrPH2
1The University of Texas at Austin; 2The Ohio State University

Purpose: In the U.S., 60% of high school students participate on school sports teams. In all states, a pre-participation exam (PPE), commonly called a “sports physical,” is required of students prior to participation. PPEs traditionally focus on ruling out relatively rare physiological contraindications to sports participation (e.g., cardiomyopathy), but also provide opportunities for health care providers to provide preventive services such as discussing health-risk behaviors that are common during adolescence. The purpose of this descriptive study was to assess the prevalence of health-risk behaviors among school athletes and the proportion of health care providers who discuss these behaviors during PPEs.

Methods: We used data from two statewide surveys: the 2010 Minnesota Student Survey (a school-based survey for adolescents), and an online survey of Minnesota health care providers conducted in April 2013. We restricted analyses of adolescent data to students who participated on a school sports team in the past year (n=46,492); half (49%) were female, 20% were youth of color, and 20% received free or reduced price reduced lunch. The provider sample was comprised of pediatricians (20%), family physicians (47%), and nurse practitioners (32%) who provide care to adolescent patients (n=561). We used descriptive statistics to calculate the prevalence of health-risk behaviors among sports participants and the proportion of health care providers who discussed these health-risk behaviors during PPEs.

Results: Among athletes, the most commonly reported health-risk behaviors included not getting recommended levels of physical activity (70%), bullying perpetration (41%), alcohol use (41%), not using a condom at last intercourse (32%), and bullying victimization (32%). With the exception of mental health variables, all health-risk behaviors were more prevalent among 12th graders vs. 9th graders. The majority of health care providers (89%) strongly agreed that PPEs were a good opportunity to provide health education and anticipatory guidance to adolescents. Five of the seven categories of behavior examined were addressed by most providers (>/=75%) during PPEs (i.e., healthy eating, mental health, physical activity, sexual behaviors, and substance use [exception: prescription drug use]). Fewer providers reported discussing bullying (41%), violence (17%), and prescription drug use (52%).

Conclusions: PPEs may be the only contact some adolescents have with a health care provider during the year, and therefore provide valuable opportunities for providers to address health-risk behaviors among athletes. We found that many providers take advantage of this opportunity by discussing several of the critical threats to adolescent health with their patients during PPEs. However, findings also suggest potential disconnects between topics addressed during sports physicals and the behaviors of adolescent sports participants. Although findings are encouraging, ideally, 100% of providers should assess health-risk behaviors during PPEs. Future research should examine strategies for increasing the
provision of education and guidance about health risk behaviors during PPEs and best practices for efficient and effective risk assessment and intervention.

**Sources of Support:** #U04MC07853-03; HRSA: #T32HP22239