

Time:

Note: All names bolded and underlined are PolicyLab Team Members.

8-10:00 a.m.

Title: Reproductive Health Care Advocacy and the Role of the Pediatrician

Presenters/Authors: Tracey Wilkinson, **Aletha Akers**, Maria Demma Cabral, Katherine Greenberg, Kirsten Hawkins, Jeryl Hayes, Nneka Holder, Atsuko Koyama, Renata Sanders

Location: Convention Center 306

Presentation Type:
Workshop

Abstract or Description:

This workshop will provide an overview of recent policy changes and an update on both federal and state-level political climate around comprehensive reproductive health care services for adolescent young women. While restrictive laws and regulations are typically couched by their proponents as improving women's health, these assertions are not supported by the medical evidence. As professional society members, we present this workshop to enable our professional community to discuss the impact of these laws, and to develop advocacy skills in service of improving our patients' access to vital reproductive health care.

1:15-2:30 p.m.

Title: Clustering of Unhealthy Behaviors in a Nationally Representative Sample of U.S. Children and Adolescents

Presenters/Authors: **Stephanie Mayne**, **Senbagam Virudachalam**, **Alexander Fiks**

Location: Convention Center Halls D-G (Board 201)

Section:
1824 Epidemiology: Social and Behavioral Contexts

Presentation Type:
Poster Session

Background:

Health behaviors (e.g. diet, physical activity, screen time) develop early in life and are linked to a variety of chronic diseases in adulthood. There is a dearth of effective interventions to promote healthy behaviors among youth. An improved understanding of coinciding unhealthy behaviors among youth could inform the development of more effective interventions to promote health.

Objective:

Characterize patterns of health behaviors among U.S. children and adolescents and examine associations of sociodemographic characteristics with clustering of unhealthy behaviors.

Design/Methods:

In a cross-sectional analysis using the 2011-2016 National Health and Nutrition Examination Survey (NHANES), we included children (2-11 years) and

Time:

adolescents (12-19 years) with complete data on health behaviors and key covariates. Health behaviors included diet quality, physical activity, screen time, fast food consumption and smoking (adolescents only). We calculated weighted proportions of unhealthy levels of each behavior, alone and in combination, to identify the most common patterns. Multivariable logistic regression estimated associations of health behavior clustering (≥ 2 unhealthy behaviors vs. 0-1) with sociodemographic characteristics, accounting for the complex sampling design.

Results:

Among 4,726 children and 2,936 adolescents, the most prevalent unhealthy behaviors were unhealthy diet for children (51%) and excessive screen time for adolescents (64%). 53% of children and 71% of adolescents had ≥ 2 unhealthy behaviors. The most common patterns for children were: no unhealthy behaviors (17%), unhealthy diet alone (12%), and unhealthy diet + screen time (9%), and for adolescents: unhealthy diet + screen time + fast food (11%), unhealthy diet + screen time (10%), unhealthy diet + screen time + low physical activity (8%). Smoking prevalence was low, but 98% of smokers had ≥ 1 other unhealthy behavior, most commonly poor diet. For children and adolescents, older age and black race were associated with having ≥ 2 unhealthy behaviors. Associations with socioeconomic status differed by age group.

Conclusion(s):

Unhealthy behaviors frequently coincide among U.S. children and adolescents, particularly unhealthy diet and screen time among black youth and adolescents. Interventions that target diet and screen time in combination may hold promise, and smoking interventions among youth may benefit from targeting other unhealthy behaviors.

Publication Number: 1824.1

1:15-2:30 p.m.

Title: Neighborhood Physical Disorder and Birth Outcomes

Presenters/Authors: **Stephanie Mayne**, Bernard Pellissier, Kiarri Kershaw

Location: Convention Center Halls D-G (Board 196)

Section:

1824 Epidemiology: Social and Behavioral Contexts

Presentation Type:

Poster Session

Background:

Adverse birth outcomes increase infants' risk of future health problems and are more common in families from economically deprived neighborhoods. Neighborhood physical disorder (e.g. graffiti, vacant lots) may contribute to adverse birth outcomes by increasing maternal chronic stress. Google Street View (GSV) imagery offers an objective and inexpensive approach to assess neighborhood physical disorder, yet this approach has not been examined in the context of birth outcomes.

Objective:

To assess associations of neighborhood physical disorder with preterm birth (PTB) and small for gestational age (SGA).

Time:Design/Methods:

We conducted a retrospective study of electronic health records from singleton births at Northwestern University's Prentice Women's Hospital in Chicago, Illinois from 2015-2017 (n=13,657). Mothers' addresses during pregnancy were geocoded and linked to census tract-level neighborhood physical disorder scores assessed via virtual neighborhood audit. Trained raters conducted virtual audits of GSV imagery to assess 9 indicators of physical disorder for a randomly sampled block within each of 810 Chicago census tracts. Inter-rater reliability was assessed in a 10% sample audited by 2 raters. An item-response theory model estimated latent levels of physical disorder for each block, and ordinary kriging was used to interpolate physical disorder scores across Chicago. We used multi-level logistic regression to assess cross-sectional associations of physical disorder (in tertiles) with PTB and SGA. Models controlled for maternal and infant characteristics (mother's age, race/ethnicity, insurance, multiparity, gestational diabetes, medical history, substance use and infant sex) and neighborhood poverty.

Results:

Percent agreement between raters was high (average 89.8% across physical disorder indicators). In models adjusted for individual-level covariates, women living in neighborhoods with high levels of physical disorder had greater odds of PTB than women living in neighborhoods with low levels (odds ratio (OR): 1.20, 95% CI: 1.00, 1.43, $p < 0.05$). The association was attenuated upon adjustment for neighborhood poverty. Neighborhood physical disorder was not associated with SGA.

Conclusion(s):

An adverse neighborhood physical environment may contribute to socioeconomic disparities in preterm birth. However, future work is needed to disentangle the unique contribution of physical disorder from other harmful characteristics of disadvantaged neighborhoods.

Publication Number: 1824.5

1:15-2:30 p.m.

Title: Pediatric Readiness of Hospitals Initially Caring for Severely Injured Children in the U.S.

Presenters/Authors: **Scott Lorch**, Sage Myers, Michael Nance, Keri Cronin, **Molly Passarella**, **Ashley Martin**, M. Kit Delgado, Brendan Carr

Location: Convention Center Halls D-G, Board 155

Section:

1819 Emergency Medicine: Operations 2

Presentation Type:

Poster

Background:

In order to optimize of a pediatric trauma system, moderately and severely injured children should be stabilized and triaged to the appropriate care location in a timely fashion. However, prior research found wide variation in the readiness of hospitals to care for children in the emergency room setting. The pediatric readiness of hospitals treating severely injured children is unknown.

Time:Objective:

To determine the percentage of injured children who initially receive care at a low pediatric readiness hospital, and identify patient factors associated with receipt of care at such institutions.

Design/Methods:

We used linked state emergency department-hospital discharge administrative records from 12 U.S. states between 2010-14 to construct a cohort of injured children with an ISS>8 (N=36,977). We linked these records to the 2015 PedsReady survey by hospital AHA number, and defined low pediatric readiness hospitals as a hospital with a PedsReady score < 80%. Multivariable logistic regression models assessed the association between receipt of initial care at a low pediatric readiness hospital and sociodemographic factors, ISS score, injury location, rural-urban residential location as defined by the U.S. Department of Labor and state of residence.

Results:

36.4% of moderately and severely injured children received initial triage and care at a low pediatric readiness hospital. Almost half of these children received care at a hospital without a trauma center designation, and only 26% received care at a hospital with a PICU. In multivariable analyses, non-Hispanic white race was associated with a higher likelihood of receiving care at a low pediatric ready hospital, as was public insurance, age > 10 and ISS category 9-15. Compared to children residing in large metropolitan areas, small metropolitan (OR 1.54, 95% CI 1.46-1.63), micropolitan (OR 3.23, 95% CI 2.97-3.52) and rural residents (OR 3.45, 95% CI 3.12-3.82) had a higher likelihood of receiving care at a low pediatric ready hospital. Significant state variation in pediatric readiness rates was observed particularly in states with large rural populations.

Conclusion(s):

A significant percentage of severely injured children initially receive care at a low pediatric readiness hospital, especially in micropolitan and rural areas. Given the random nature of pediatric trauma, ensuring the adequate resources to care for pediatric patients at all hospitals within a functional trauma system is needed to optimize the outcomes of these children.

Publication Number: 1819.155

1:15-2:30 p.m.

Title: Racial/Ethnic Differences in Outcomes of Infants Born <30 Weeks Gestation Between 2006-2016

Presenters/Authors: Nansi Boghossian, Marco Geraci, **Scott Lorch**, Ciaran Phibbs, Erika Edwards, Jeffrey Horbar

Location: Convention Center Halls D-G, Board 186

Section:

1823 Epidemiology: Neonatal Epidemiology

Presentation Type:

Poster

Background:

Time:

While in-hospital care practices, mortality and several morbidities of very preterm infants have changed over time, it is unknown whether these changes have differed by maternal race/ethnicity.

Objective:

To examine changes in care practices over time by race/ethnicity, and whether changes in mortality and morbidities have differed between non-Hispanic (NH) black, Hispanic and NH white infants.

Design/Methods:

Infants of gestational ages 22-29 weeks born between January 2006-December 2016 at a Vermont Oxford Network U.S. center were studied. We restricted the study sample to centers that remained during the entire study period. We examined rates of care practices, mortality and morbidity rate differences, and 95% confidence intervals by race/ethnicity and birth year. We tested temporal differences in care practices, mortality and morbidity rates between black and Hispanic vs white infants using a likelihood ratio test (LRT) on nested binomial regression models with log links. Statistical significance was set at the 1% level to account for multiple testing. No adjustments were made for variables related to medical care to prevent masking of temporal effects.

Results:

We studied 147,961 infants, 44.0% white, 34.9% black and 21.1% Hispanic. Antenatal steroid use increased over time faster for both black (LRT $P < .001$) and Hispanic ($P < .001$) than white infants. Hypothermia ($< 36.50^{\circ}\text{C}$) decreased at a faster rate among black (LRT $P < .001$) infants. No significant race-year interaction was observed for surfactant use, conventional ventilation postnatal steroids or human milk exposure at discharge by race/ethnicity. Human milk at discharge remained lowest among black infants (2016 rate: 31.5% vs white: 49.2%, Hispanic: 46.2%). The rate for mortality (LRT $P = .0016$), necrotizing enterocolitis ($P = .0082$) and late-onset sepsis ($P < .001$) decreased over time faster for black than for white infants. For Hispanic vs white infants, the rate decreased faster for mortality (LRT $P = .0069$) and respiratory distress syndrome ($P < .001$). Other morbidities showed a constant rate difference between black and Hispanic vs white infants over time. Mortality and several morbidities remained elevated for minority infants.

Conclusion(s):

Racial/ethnic disparities in vital care practices such as antenatal steroid use have decreased, although rates of human milk at discharge remain low in black infants. Practice changes might have contributed to the faster declines in mortality and morbidities among minority infants over 11 years.

Publication Number: 1823.186

1:15-2:30 p.m.

Title: The Impact of Volume and Neonatal Level of Care on Outcomes of Lower Risk Infants

Presenters/Authors: Sara Handley, **Molly Passarella**, **Scott Lorch**

Location: Convention Center Halls D-G, Board 487

Section:

1864 Neonatal Epidemiology, Health Services Research: Regionalization

Time:Presentation Type:

Poster

Background:

Studies have shown that high-risk infants, <1500 grams(g), have less mortality and morbidity in centers with high-volume and high-level care. However, the impact of volume and level of care on the outcomes of lower risk infants—those 1500-2500g or 320/7-356/7 weeks gestational age (GA), who often require specialized care after delivery—has not been reported.

Objective:

Determine if outcomes of lower risk infants differ between centers by volume (high: >250 low risk infants/year) and level (low: 1 or 2 and high: 3 or 4).

Design/Methods:

Retrospective cohort study of infants born between 320/7-356/7 weeks GA or 1500-2500g between 1995-2009 in California, excluding those with congenital anomalies. Outcomes included length of stay (LOS), death prior to discharge, major morbidity (intraventricular hemorrhage/periventricular leukomalacia, necrotizing enterocolitis, bronchopulmonary dysplasia, retinopathy of prematurity) or death prior to discharge, and any infection. Univariate analyses examined differences between infants cared for in centers of high versus low volume and level. Multivariate models accounted for differences in patient characteristics, and included GA by day and birth year to determine associations between volume, level and outcomes.

Results:

Patient characteristics were significantly different between centers. After multivariate analysis, there remained significant differences in all outcomes, except death. The LOS was shorter in low level centers regardless of volume, with an adjusted LOS of -1.01 (-1.22, -0.79) in high volume-low level centers and -1.6 (-1.68, -1.5) in low volume-low level centers. Odds of major morbidity or death was decreased across all center types relative to high volume-high level centers. Odds of any infection varied, with decreased odds in high volume-low level centers (aOR 0.7, 95% CI 0.61, 0.79) and increased odds in low volume-high level centers (aOR 1.36, 95% CI 1.31, 1.41).

Conclusion(s):

Unlike previous studies of high-risk infants, these data suggest optimal outcomes for lower risk infants are not uniformly associated with high volume-high level centers. Volume and level of care have differential impact on lower risk infant outcomes. High-volume centers are associated with lower odds of infection whereas low level centers are associated with shorter LOS and fewer complications. Although analyses were adjusted for differences in center case-mix, these results are subject to selection bias due to measured and unmeasured confounding.

Publication Number:

1864.487

1:15-2:30 p.m.

Title: Regionalization of Care for High-risk Infants: National Neonatal Transfer Communities

Time:

Presenters/Authors: Samuel Scarpino, Jeannette Rogowski, Erika Edwards, Jochen Profit, **Scott Lorch**, Sarah Kunz, Ciaran Phibbs, Douglas Staiger, Jeffrey Horbar

Location: Convention Center Halls D-G, Board 490

Section:

1864 Neonatal Epidemiology, Health Services Research: Regionalization

Presentation Type:

Poster

Background:

Hospital Referral Regions (HRRs) defined by the Dartmouth Atlas of Healthcare have formed the basis for health policy and payment decision making in adult medicine. Given the expansion of Medicaid managed care, HRRs may increasingly inform neonatal payments. Whether the use of HRRs is justified in neonatal care has not been established.

Objective:

To identify the geographic areas (communities) in which neonatal transfers occur nationally and compare these communities to those for adults based on HRRs.

Design/Methods:

We used data from Vermont Oxford Network (VON) to construct the inter-hospital transfer network for neonates, which included all U.S. VON hospitals and the hospitals that transferred very low birth weight (VLBW) infants to or received VLBW infants from VON hospitals in 2015. Infants with birth weight of 401 to 1500 grams or gestational age of 22 to 29 weeks included. We partitioned the transfer network into communities of hospitals using modularity maximization to minimize the number of transfers between hospitals in different communities and compared the geographic distribution of the communities to geographic distribution of HRRs. To evaluate whether the overlap between communities and HRRs was statistically different, we generated a null distribution for the overlap by randomizing the membership of communities 1,000 times.

Results:

The 2015 U.S. inter-hospital transfer network, which included 2,126 hospitals and 10,185 transfers, comprised 50 statistical communities. Less than 3% of infant transfers occurred between hospitals in different communities, and less than 8% of transfers occurred between hospitals in different states. Communities, on average, included 7 HRRs (range 1 - 20), but HRRs, on average, only belonged to a single community (range 1 - 5). Under a permutation test, communities were expected to cover >30 HRRs and HRRs were expected to belong to 6 different communities, thus suggesting that the results found were significantly different from chance.

Conclusion(s):

Care patterns for high-risk infants are regionalized in very large geographic areas that far exceed the size of adult communities. HRRs may be a poor proxy for neonatal transfer networks. Policy and payment decisions for neonates should be informed by the actual transfer networks that result from local health care markets, which may be better described using network analysis tools.

Time:

1:15-2:30 p.m.

Publication Number: 1864.49**Title:** National Variation of Early Use of Selected Medications in Extremely Low Birth Weight (ELBW) Infants**Presenters/Authors:** Kuan-Chi Lai, **Scott Lorch****Location:** Convention Center Halls D-G, Board 518Section:

1867 Neonatal Epidemiology, Health Services Research: Utilization

Presentation Type:

Poster

Background:

Understanding variation in clinical management may identify areas needing quality improvement or practices lacking consensus. Emerging evidence suggests prophylactic use of caffeine (CAF) is beneficial whereas early use of dexamethasone (DEX) is associated with significant adverse effects in ELBW infants. Prophylactic use of indomethacin (INN) and vitamin A (VitA) remains controversial. However, contemporary usage of these medications among children's hospitals is not well-characterized, nor are patient or hospital factors associated with receipt of medication.

Objective:

To describe national variation of selected early medication use in ELBW infants, and to examine hospital and patient factors that influence current usage.

Design/Methods:

A retrospective cohort of ELBW infants (birth weight 500-999g with gestational age 24-28 weeks) admitted in 2016-2017 from hospitals participating in the Pediatric Health Information System was identified for analysis. Spearman's rank correlation was calculated to determine if use of one medication is correlated with use of another among hospitals. Multivariable logistic regression assessed the association between medication use with patient factors such as demographics and need for mechanical ventilation, and with hospital factors such as ELBW patient volume.

Results:

2539 (for VitA, CAF, DEX) and 2464 (for INN) eligible ELBW infants were identified from 33 hospitals in 2016-2017. There was substantial variation in medication use among hospitals. The only hospital factor associated with current use of any medication was prior use of medication from 2007-2008 ($p < 0.05$ for all medications). Only use of VitA and INN were significantly correlated (Spearman's coefficient=0.38, $p=0.03$). There remained significant inter-center differences in usage of VitA, CAF and INN ($p < 0.001$) that were still unexplained by patient characteristics including mechanical ventilation in early life.

Conclusion(s):

Significant variation of medication use exists nationally that are not explained by patient case-mix or hospital characteristics, suggesting that there are other unmeasured factors influencing usage, such as provider preference. A national

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quality improvement collaborative is essential to reduce unwarranted variations in the use of these early treatments.

Publication Number: 1867.518

1:15-2:30 p.m.

Title: Trends of Early Medication Use in Extremely Low Birth Weight (ELBW) Infants, 2007-2017

Presenters/Authors: Kuan-Chi Lai, **Scott Lorch**

Location: Convention Center Halls D-G, Board 529

Section:

1867 Neonatal Epidemiology, Health Services Research: Utilization

Presentation Type:

Poster

Background:

Evolving evidences regarding the efficacies and adverse effects of vitamin A (VitA), caffeine (CAF), dexamethasone (DEX) and indomethacin (INN) used early in life in ELBW infants have emerged in the past 2 decades. Inter-center variation in the use of these medications over time remains unknown.

Objective:

To examine 11-year trends in early medication use in ELBW infants among children's hospitals.

Design/Methods:

Pediatric Health Information System identified a retrospective cohort of ELBW infants (birth weight 500-999g with gestational age 24-28 weeks) admitted in 2007-2017. Logistic regression was used to analyze the practice changes over time varying among hospitals by including the interaction term between years (in epochs) and hospitals, adjusting for patient-level characteristics such as demographics and need for mechanical ventilation.

Results:

13591 (for VitA, DEX, CAF) and 13027 (for INN) ELBW infants from 36 hospitals met eligibility criteria. There were statistically significant changes in the trends of VitA, CAF and INN use over the 11-year period, both overall and within individual hospitals ($p < 0.001$). The increasing use of VitA at the end of last decade was interrupted by a 3-year national shortage. 4 out of the 5 hospitals that currently use VitA had $>70\%$ use prior to the shortage (1 hospital had no prior data), however, 8 out of the 12 hospitals with $>70\%$ use prior to the shortage did not restart use. CAF adoption rate increased dramatically from 66% to 96% throughout the study period. INN prophylaxis had wide variation in use among hospitals. While the overall trend mildly decreased over the study period, 7 out of 27 hospitals had increased use of INN in 2017 compared to 2007. 2 hospitals had drastically decreased INN use (from $>75\%$ to $<25\%$ over the study period), and over half of the hospitals (22/36) did not use INN in 2017. There were no significant changes in DEX use, and overall usage remained low ($<1\%$).

Conclusion(s):

Time:

Changes in VitA, CAF and INN usage rates over 2007-2017 are observed with significant variation among hospitals. Such variation was not associated with changes in hospital case mix, although VitA use was impacted by the 3-year shortage of medication between 2011-2013. Future research is warranted to evaluate whether only a subgroup of ELBW infants would benefit (e.g. indomethacin) or whether current use is cost-effective (e.g. vitamin A) in the contemporary era.

Publication Number: 1867.519

3-3:15 p.m.

Title: Parent eReferral to Tobacco Quitline from Pediatric Primary Care: A Pragmatic Randomized Trial

Presenters/Authors: **Brian Jenssen**, Naveen Muthu, **Mary Kate Kelly**, Hilary Baca, Justine Shults, Robert Grundmeier, **Alexander Fiks**

Location: Convention Center 341-342

Section:
1505 Environmental Health

Presentation Type:
Platform

Background:
Secondhand smoke exposure is both harmful and widely prevalent, affecting more than 40% of U.S. children. Quitlines are effective in helping smokers quit, but pediatrician quitline referral rates are low and few parent smokers use the service.

Objective:
We sought to compare smoker enrollment in the quitline using electronic versus manual referral.

Design/Methods:
We conducted a pragmatic, randomized, controlled trial of electronic compared to manual referral at one large, urban pediatric primary care site. We enrolled adult parent smokers with interest in quitting at their child's health care visit. The intervention (eReferral) involved electronically sending parent information to the quitline (parent received call within 24-48 hours). Control group procedures were identical to eReferral, except the quitline number was provided to the parent. The primary outcome was the proportion of parents enrolled in quitline treatment. Secondary outcomes included parent factors (e.g. demographics, nicotine dependence and quitting motivation) associated with successful enrollment. We additionally explored number of quitline contacts. Power calculations demonstrated that approximately 450-500 parent subjects provided greater than 80% power to detect an absolute difference of at least 6% in enrollment between groups.

Results:
During the study period (March 2017 to February 2018), 781 parents were identified as smokers, 551 (70.6%) were interested in quitting and 484 were successfully randomized. The demographic and smoking-related characteristics of participants were balanced across study groups. In the eReferral group, 10.3%

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(24 of 233) of parent smokers interested in quitting enrolled in the quitline, compared to 2.0% (5 of 251) in the control group, a significant 8.3% (95% CI: 4.0-12.6) difference. Parents 50 years or older enrolled in the quitline more frequently—the only factor independently associated with quitline enrollment. While more parents in the eReferral group connected to the quitline, among parents who had enrolled in the quitline, there was no significant difference in the mean number of quitline contacts between eReferral and control groups (Mean 2.04 versus 2.40 calls, Difference 0.36 (95% CI: -0.35-1.06).

Conclusion(s):

Electronic referral of smoking parents from pediatric primary care is effective at increasing quitline enrollment and should be adopted by practices interested in increasing rates of parent treatment.

Publication Number: 1505.3

3-3:15 p.m.

Title: Racial Disparities in Maternal Mortality According to Teaching Hospital Status and Hospital Demographics

Presenters/Authors: Heather Burris, **Molly Passarella**, **Scott Lorch**

Location: Convention Center Ballroom IV

Section:

1515 Neonatal Epidemiology, Health Services Research

Presentation Type:

Platform

Background:

Pregnancy-related mortality is rising in the U.S., with black women more than 3 times more likely to die than white women (40 vs 12 per 100,000). While maternal mortality results from many conditions, in-hospital mortality during the delivery admission may be affected by characteristics of delivery hospitals.

Objective:

Determine whether racial disparities in maternal mortality vary by teaching hospital status and hospital demographics.

Design/Methods:

We used linked birth certificate and hospital admission data from California, Missouri and Pennsylvania from 1995-2009 to compare in-hospital maternal mortality rates for non-Hispanic white and black women (N=5,682,219). We used hospital discharge disposition as “death” to determine whether a woman died during the hospital stay. Hospital teaching status was collected from the American Hospital Association database. We calculated the percentage of pregnant women who were non-Hispanic black at each hospital to construct state-specific quartiles to compare the top minority-serving hospital quartile to the bottom three quartiles. To obtain risk-adjusted mortality rates for each racial/ethnic group, we used multivariable logistic regression adjusting for maternal factors such as age and insurance status, medical and pregnancy comorbid conditions, multiple gestations, gestational age at delivery, year and mode of delivery.

Time:Results:

There were 331 deaths among the 5,682,219 deliveries (5.8 per 100,000). The in-hospital maternal mortality rate was more than twice as high for black (11.5 per 100,000) than for white (4.8 per 100,000) women ($P < 0.0001$). The mortality rate was higher in teaching hospitals (8.6 per 100,000) compared with non-teaching hospitals (5.3 per 100,000) ($P = 0.0001$), coinciding with a higher prevalence of morbidities (6.8% vs. 4.1%, $P < 0.0001$). The highest risk of death was among black women who delivered in teaching hospitals that serve a low proportion of black patients. However, racial disparities were largest in non-teaching hospitals who served a low proportion of black patients (RR 2.56, 95% CI: 1.56-4.25). Adjustment for case-mix did not mitigate the observed disparities in maternal mortality risk.

Conclusion(s):

Our finding that the black-white racial disparity in in-hospital maternal mortality is largest in non-teaching hospitals with low proportions of black patients warrants further study into factors that may contribute to unequal outcomes such as hospital quality and capabilities as well as potential implicit health care bias.

Publication Number: 1515.3

3:45-4:00 p.m.

Title: Pediatric Provider Perspectives on Discussing Health Policy Issues with Families

Presenters/Authors: Aditi Vasan, Talia Hitt, Nadir Ijaz, Polina Krass, Leah Seifu, Leonela Villegas, Sindhu Pandurangi, Kathryn Pallegedara, Morgan Congdon, Beth Rezet, **Chén Kenyon**

Location: Convention Center 350

Section:

1510 Health Policy Research

Presentation Type:

Platform

Background:

Health policy issues, including health insurance coverage, early childhood education, and access to food assistance programs, influence pediatric patients and their families. The American Academy of Pediatrics encourages pediatricians to engage in advocacy around these policy issues. It is unclear whether and how pediatricians talk to patients and families about policy issues relevant to their children's health.

Objective:

To determine providers' perceptions of the importance of discussing health policy issues with patients and families and identify perceived barriers to these conversations.

Design/Methods:

Pediatric providers (residents, attending physicians and nurse practitioners) at primary care clinics within a large academic health system completed an electronic survey assessing (1) their perception of the importance of discussing

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health policy issues with families, (2) the frequency with which they discuss these issues and (3) perceived barriers to these discussions.

Results:

One hundred and fifty-seven providers responded to the survey, including 60% of residents and 37% of attending physicians and nurse practitioners contacted. The majority of respondents (78%) agreed that pediatricians should talk to families about health policy issues affecting children, including 86% of resident physicians as compared to 66% of attending physicians ($p < 0.05$). Providers selected health insurance coverage, food assistance programs, early childhood education and vaccination as the most important issues to address. Most providers, however, reported “never” (23%) or “rarely” (46%) discussing policy issues with families, with more residents than attending physicians reporting that they never had these discussions at all (35% vs. 7%, $p < 0.05$). Providers cited inadequate time to discuss policy issues, lack of information about policy issues, discomfort discussing these issues and worries that families would perceive conversations about policy negatively as the biggest barriers to these discussions.

Conclusion(s):

The majority of pediatric providers felt it was important to talk to families about health policy issues affecting children, however, few providers reported routinely having such conversations in their practice. There may be an opportunity to train pediatric providers, particularly resident physicians, to have these conversations more frequently by providing targeted education on policy issues that impact their patients and families.

Publication Number: 1510.6

6:30-6:45 p.m.

Title: Engagement of Black Adolescent Males in Preventive Care: Teen and Parent Perspectives

Presenters/Authors: George Dalembert, Ima Samba, Carol Ford, Victoria Miller, **Alexander Fiks**

Location: Convention Center 314-315

Section:

1735 Adolescent Medicine: General Adolescent Health

Presentation Type:

Platform

Background:

Adolescents have fewer well-care visits than all other age groups, with some estimates as low as only 43% receiving preventive care visits annually. Males and ethnic minorities are seen least often.

Objective:

To elicit from black adolescent males and their parents key drivers of teen preventive visit attendance.

Design/Methods:

We developed an interview guide informed by the Integrated Behavior Model and conducted separate semi-structured interviews with black adolescent males and

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their parents. We recruited, from a primary care practice and emergency department in West Philadelphia, parent-teen dyads including patients age 13-18 years with no complex chronic health conditions and no preventive care in the past 2 years. We purposively sampled those who had returned to care at time of enrollment and those who had not. Interviews were recorded, transcribed and coded in NVivo12 by two coders using the constant comparative method. Discrepancies in coding were resolved by consensus. Interviews continued until thematic saturation was achieved.

Results:

We interviewed 21 black adolescent males (median age 15.7) and 21 parents (19 female). Four themes emerged from the interviews: (1) Nearly all participants (38/42 parents and youth combined) endorsed that receiving preventive care, including vaccination, is important to know that the teen is mentally and physically well, a determination that requires medical expertise. (2) Parents and teens stated that remembering preventive care is hard but reported more recent preventive care than the medical record indicated. They also endorsed that reminders by phone, patient portal or at sick visits promoted scheduling preventive care. (3) Mothers noted that males in general are disengaged from health care, and they found themselves pushing men in their lives to get care. (4) Parents reported that bringing teens to well visits is part of being a “good” parent. Most teens (regardless of age) noted that a motivated parent is important and that it is the parent’s role to ensure teens attend these visits (scheduling, reminding, transporting). Themes were consistent among teens who had returned to or still lacked care.

Conclusion(s):

Black adolescent males and parents value preventive care and intend to receive it but may not be aware that care is due. Results suggest that reminders may be most effective if they are directed at mothers and emphasize that preventive visits support parents in making sure that their child is physically and mentally well.

Publication Number: 1735.8

Time:

10:30-10:45 a.m.

Title: State of Residence and Receipt of Post-hospitalization Home Nursing Care Among Children with Medical Complexity: A National Retrospective Cohort Study

Presenters/Authors: Irit Rasooly, Justine Shults, **James Guevara**, Chris Feudtner

Location: Convention Center 318-320

Section:
2340 Health Services Research I

Presentation Type:
Platform

Background:

Between 1-6% of children are medically complex. In contrast to elderly adults, pediatric home nursing is relatively uncommon even among children with medical complexity (CMC). State-level access to home nursing among commercially insured children has not been characterized.

Objective:

To assess patient, hospitalization and state-level characteristics associated with receiving post-hospitalization home nursing services among commercially insured CMC.

Design/Methods:

We conducted a retrospective analysis of 126,569 hospitalizations by commercially insured CMC age ≤ 19 included in Truven MarketScan Database, 2013-2016. CMC were defined as having at least one complex chronic condition (CCC). A single hospitalization was randomly selected for each child during the study period. Hospitalizations for which no state of residence was listed were excluded. We examined receipt of home nursing in the 30 days following hospital discharge and the number of days of home nursing (0-30) received. We fit logistic regression models to assess the relationship between patient, hospitalization, and state characteristics and home nursing.

Results:

Among 88,290 hospitalizations by unique CMC with known state of residence, post-hospitalization home nursing was provided following 8,735 (9.9%) admissions. Unadjusted state rates of home nursing ranged between 3.3%-20.8%. In bivariate and multivariable logistic regression models, age, year, sex, having more than one CCC, specific CCC, admission type (surgical/medical) and length of stay were associated with provision of home nursing ($p < 0.001$). The addition of state of residence strengthened multivariable logistic regression models (likelihood-ratio $p < 0.001$) and model fit. State average standardized (adjusted) probabilities ranged from 3.4% - 19.2%.

Conclusion(s):

Post-hospitalization home nursing was uncommon in this sample of commercially insured CMC. Younger children with higher degrees of complexity and illness were most likely to receive post-hospitalization home nursing. Even after adjustment for individual children's clinical differences, significant state-to-

Time:

state variation in rates of post-hospitalization home nursing was observed, suggesting opportunities for state-level policy and programmatic improvements.

Publication Number: 2340.1

10:30-10:45 a.m.

Title: Socio-economic Status (SES) Affects Neural Volume of Infants from Birth to Two Years of Age

Presenters/Authors: Hallam Hurt, Laura Betancourt, Thomas Nichols, Okan Elci, Martha Farah

Location: Convention Center 301-302

Section:

2345 Vulnerable and Underserved Populations/Health Equity & Social Justice I

Presentation Type:

Platform

Background:

Growing up poor is established as deleterious to child developmental outcome. Less is known regarding neural effects, with few investigations examining whether early effects are seen and, if seen, whether they persist, worsen or abate.

Objective:

To examine SES effects on brain volume over the first two years of life.

Design/Methods:

30 Low SES and 30 Higher SES self-declared African American mothers without significant medical, psychiatric or substance use issues and their healthy term gestation female babies were enrolled at infant's birth from a single urban hospital. Low SES was defined as Income-to-Needs (ITN) \leq poverty line and parents with no more than high school education; Higher SES was defined as ITN $>$ poverty line and both parents having at least a high school education. An SES composite score was computed combining normalized scores for income and education levels. Other aspects of the child's environment were assessed including Cognitive Stimulation and Emotional Nurturance derived from the Home Observation Measurement of the Environment (HOME) Inventory. Infants were scanned with 3T Siemens, without sedation, at 1, 12 and 24 months. Analysis utilized T1 and T2 weighted 1- month scans and T1 alone for older infants. Images were segmented into cortical gray, deep gray and white matter; they further were parcellated into frontal, temporal, parietal and occipital volumes. Mixed effects models analyses of SES effects on volumes of segmented and parcellated structures at each time point were conducted.

Results:

Mixed effects models of the relationship between SES and volumes measured at three time points show effects on cortex, white matter and whole brain volumes (all $p \leq 0.017$). No SES effects were shown for volume of deep gray matter ($p > 0.17$). SES effects were observed in the frontal and temporal lobes (all $p \leq 0.012$), with no association between SES and volumes of the parietal or occipital lobes (all $p > 0.052$). None of the SES effects grew or diminished significantly over the course of the two years.

Time:Conclusion(s):

In a homogeneous cohort of healthy infants of differing SES, higher SES was associated with larger neural volume in the first two years of life. Comment: Contribution of specific aspects of Higher SES, such as cognitive stimulation and emotional nurturance are being analyzed.

Publication Number: 2345.1

11-11:15 a.m.

Title: Health System Impact of a Population Management Program for Medicaid-enrolled Children

Presenters/Authors: **David Rubin, Betsy Brooks, Chén Kenyon, Doug Strane**, Genevieve Kanter, Roberto Rodriguez, Annique Hogan

Location: Convention Center 318-320

Section:

2340 Health Services Research I

Presentation Type:

Platform

Background:

Pediatric health systems are confronting capacity challenges in centralizing care for a growing population of Medicaid-enrolled children with medical and social complexity.

Objective:

To examine the impact of a primary care-directed population health management program between July 2015-June 2017 on aggregate Medicaid admissions and bed-days in a large pediatric health system.

Design/Methods:

A quasi-experimental observational evaluation compared changes in hospital utilization among Medicaid-enrolled children who received care at the hospital and who were in-network to the hospital's primary care network with changes in utilization among Medicaid-enrolled children from the same community who were out-of-network to the primary care network. Quality improvement initiatives focused on: 1) a hospital-based care management program for children with the most significant medical complexity; 2) a primary care coordination program focused on practices nearest the hospital; 3) an integrated care program for children with severe asthma; and 4) deployment of registries and reporting tools across primary teams using EPIC's Health Planet suite of tools. Interrupted time series models compared in-network to out-of-network children on outcomes of monthly admissions and bed-days, beginning one-year prior to the intervention date, and with adjustment for temporal trends in medical complexity among Medicaid-enrolled children within and outside the primary care network over time.

Results:

The 93,000 children Medicaid enrolled children in the primary care network demonstrated a reduction of 0.41 admissions per 1000 patients per month ($p=0.019$) and 5.7 less bed-days per 1000 patients per month ($P=0.001$), compared to other Medicaid-enrolled children who were out-of-network to the

Time:

primary care practices. Controlling for differential secular trends in children with multiple complex conditions, the reductions increased to 0.86 fewer admissions per 1000 patients per month ($p=0.002$) and 10.2 fewer bed-days per 1000 patients per month ($p=0.004$). Raw data findings aggregated up to a reduction in 6500 bed-days annually to the Medicaid program, representing in excess of \$20 million in savings for inpatient care to the Medicaid program.

Conclusion(s):

A scaled population management program focused on Medicaid-enrolled patients attributed to network practices for a tertiary care pediatric health system achieved significant impacts on reducing inpatient utilization to the parent hospital system.

Publication Number: 2340.3

11:30-11:45 a.m.

Title: Trends in Length of Stay and Readmissions in Children's Hospitals

Presenters/Authors: Charlotte Brown, Derek Williams, Matt Hall, Katherine Freundlich, David Johnson, Carrie Lind, Kris Rehm, Patricia Frost, **Stephanie Doupnik**, Dena Ibrahim, Stephen Patrick, Laura Sartori, Leigh Howard, James Gay

Location: Convention Center 318-320Section:

2340 Health Services Research I

Presentation Type:

Platform

Background:

While the proportion of hospitalized children with medical complexity is increasing, today's value-based care environment creates concurrent pressure to reduce hospital length of stay (LOS) and readmissions, common measures of resource utilization and quality. It is not known however, if LOS has decreased and if so, if readmission rates have also changed.

Objective:

To examine temporal trends in hospital LOS and readmissions across a national sample of U.S. children's hospitals.

Design/Methods:

We conducted a retrospective cohort study of hospitalized children <18 years old from 42 children's hospitals in the Pediatric Health Information System database from 2013 to 2017. We excluded deaths, normal newborns, obstetric care and service lines with <1000 annual encounters. Temporal trends in log LOS (in hours) and 14-day all-cause readmissions were analyzed using generalized linear mixed effects models, adjusted for temporal differences in patient factors (age, race/ethnicity, payor, complex chronic conditions [CCC]), hospital characteristics (annual surgical volume), and case mix (severity index [HRISK], intensive care admission), and controlled for hospital clustering. We used a Bonferroni corrected significance threshold of $p<.001$ to account for multiple comparisons. We estimated cumulative hours saved by summing annual hours saved in 2014-17 relative to 2013 (calculated by differencing each year's mean adjusted LOS

Time:

from the mean adjusted LOS in 2013 and multiplying by the number of discharges in that year).

Results:

Between 2013 and 2017, a total of 3,355,815 discharges (2,156,474 children) were included. There were increases in the proportion of children hospitalized with CCCs, mean severity index and the proportion admitted to intensive care ($p < .001$ for all). In adjusted analyses, mean LOS declined 3% (61.1 hours in 2013 vs. 59.3 in 2017, $p < .001$) while 14-day readmissions did not change (7% vs 6.9%; $p = .03$). Reductions in adjusted LOS were noted in both medical (3.6% decline; $p < .001$) and surgical (2% decline; $p < .001$) service lines. Overall, these changes equated to 4,675,523 inpatient hours saved (3,705,664 medical and 969,859 surgical). The medical and surgical service lines with the greatest decreases in LOS were medical respiratory (1,080,917 hours) and surgical digestive disease services (308,900 hours).

Conclusion(s):

Across U.S. children's hospitals, adjusted LOS declined while readmissions did not change. Thus, children's hospitals are providing more efficient, high-value care for an increasingly complex patient population.

Publication Number: 2340.5

12-12:15 p.m.

Title: Impact of Medicaid Reimbursement Rates on the Financial Health of Hospitals Caring for Private and Publicly Insured Children

Presenters/Authors: **Scott Lorch**, Paul Wise, Ciaran Phibbs, Lisa Chamberlain

Location: Convention Center 318-320

Section:

2340 Health Services Research I

Presentation Type:

Platform

Background:

Compared to adults, a greater proportion of children are insured via public mechanisms. Since pediatric care is centralized for medically complex conditions, reductions in Medicaid reimbursement could affect the financial health of hospitals that care for all children, including those privately insured.

Objective:

Determine the percentage of publicly and private insured children (1) born prematurely or (2) have a complex medical condition that received care at a hospital with a negative net profit margin (NNPM), with current or a 20% reduction in Medicaid reimbursement levels. Identify patient and hospital factors associated with a receiving care at NNPM hospitals.

Design/Methods:

Using linked state emergency department and hospital discharge records, we constructed a retrospective cohort of children born prematurely ($N = 427,703$) or with a complex medical condition as defined by Berry, et al excluding asthma or

Time:

mental health (N=4,419,873) from 12 U.S. states between 2010-14. Medicare annual cost reports determined hospitals with NNPM, either with their state's current Medicaid reimbursement level or with a 20% reduction. Separate multivariable logistic models determined patient and hospital factors associated with receiving care at a NNPM hospital at each of the 2 reimbursement levels.

Results:

19.4% of children with complex medical conditions and 17.9% of preterm infants received care at a NNPM hospital, which increased to 34% and 31.4%, respectively, when Medicaid reimbursement was reduced by 20%. These figures varied widely by state. Regardless of medical condition, both publicly and privately insured infants received care at NNPM hospitals at rates that were not statistically different in multivariable results. Instead, children > 10 years, non-Hispanic black children and hospitals with a greater burden of Medicaid patients were associated with children attending a NNPM hospital at current reimbursement rates. With a reduction in Medicaid reimbursement, hospitals with specialized services to care for ill children, such as children's hospital designation or PICUs, were as likely to be a NNPM hospital as other hospitals.

Conclusion(s):

Medicaid reimbursement is a critical component to the financial health of hospitals caring for high-risk children regardless of insurance status. Further reductions in compensation double the at-risk population of patients and threaten the financial health of the highest-level pediatric centers.

Publication Number: 2340.7

12-3:00 p.m.

Title: Adolescent Sexual Health: Building a Toolkit for Clinical Care and Research in the Emergency Department

Presenters/Authors: Jennifer Reed, Fahd Ahmad, Lauren Chernick, Kayleigh Fischer, Monika Goyal, Erin Hoehn, Melissa Miller, **Cynthia Mollen**, Michelle Pickett

Location: Convention Center 335

Presentation Type:

Workshop

Abstract or Description:

The provision of adolescent-focused care and research involving sensitive topics, such as sexual health, can be challenging in an emergency department (ED) setting. Laws for confidential clinical care vary among states, and several of these laws do not support best research practices. Additional issues, such as adolescent research consent, also provide challenges in initiating and executing both single- and multi-site studies. This workshop will expose attendees to various consent, privacy, confidentiality and research-related challenges affecting adolescents in the ED setting, and provide tools to address these challenges in their own setting. Many of the challenges faced and tools to address them are relevant outside the ED and will be relevant to providers in a variety of practice settings.

2:15-2:30 p.m.

Title: Implementation and Evaluation of a Parenting Intervention to Improve Behavioral Problems in Young Children

Time:

Presenters/Authors: Joanne Wood, Devon Kratchman, Philip Scribano, Steven Berkowitz

Location: Convention Center 345-346

Section:

2570 Developmental and Behavioral Pediatrics: Parenting

Presentation Type:

Platform

Background:

Behavioral problems are common in young children and are associated with poor long-term outcomes. Interventions that promote positive parenting have been shown to improve child behavioral problems. In a prior study at a single primary care center, Child Adult Relationship Enhancement in Pediatric Primary Care (PriCARE), a 6-week group parent training program, showed promise in promoting positive parenting and addressing behavioral problems in children ages 2-6.

Objective:

To assess the acceptability and feasibility of implementing the PriCARE program in multiple urban primary care centers and to assess the effectiveness of PriCARE in decreasing child behavior problems and decreasing parenting stress.

Design/Methods:

English speaking caregivers of children 2-6 years old with perceived behavioral problems were recruited from 4 urban primary care centers. Child-parent dyads were randomized to PriCARE (n=119) or to wait-list control (n=55). Child behavior and parenting stress were measured at baseline (time 1), program completion (time 2), and 2-3 months following program completion (time 3) using the Eyberg Child Behavior Inventory (ECBI) and the Parenting Stress Index (PSI). An intention to treat approach was used. ECBI and PSI change scores from time 1 to time 3 in the PriCARE and control groups were compared using the t-test. Satisfaction with PriCARE was measured with the Therapy Attitude Inventory (TAI).

Results:

Overall 89% (155 of 174) randomized participants completed all 3 interviews. 87% of caregivers identified as Black and 57% had an annual household income under \$22,000. Of those randomized to PriCARE, 30% attended 0 sessions, 17% attended 1-2 sessions and 52% attended 3 or more sessions. Decreases in mean ECBI problem scores between time 1 and time 3 were greater in the PriCARE group (4.35 vs. 1.82, p=0.048), reflecting a larger improvement in behavior problems among the PriCARE group. There was not a significant difference in the ECBI intensity score (17.64 vs. 10.38, p=0.19) or the PSI from baseline to time 3. Among participants attending at least 1 session, 76% liked the program very much while 15% liked it somewhat and 83% reported getting a long better with their child.

Conclusion(s):

This study shows that conducting brief group parenting interventions in urban primary care settings is feasible and acceptable. The PriCARE parenting program

Time:

showed promise in improving child behavioral problems as measured by the ECBI problem score but did not decrease parenting stress.

Publication Number: 2570.6

2:45-3:00 p.m.

Title: Dialogue Around Respiratory Illness Treatment (DART) Quality Improvement (QI) Program Reduces Outpatient Antibiotic Prescribing

Presenters/Authors: Matthew Kronman, Jeffrey Gerber, Robert Grundmeier, Chuan Zhou, Jeffrey Robinson, John Heritage, James Stout, Dennis Burges, Benjamin Hedrick, Louise Warren, Madeleine Shalowitz, Laura Shone, Jennifer Steffes, Margaret Wright, **Alexander Fiks**, Rita Mangione-Smith

Location: Convention Center 309-310

Section:

2500 AAP Presidential Plenary and Annual Silverman Lecture

Presentation Type:

Presidential Plenary

Background:

A third of outpatient antibiotic prescriptions for pediatric acute respiratory tract infections (ARTIs) are inappropriate.

Objective:

To evaluate the DART QI program's effectiveness for reducing overall and second-line outpatient antibiotic prescribing rates for pediatric ARTIs.

Design/Methods:

Using a stepped-wedge design, the DART QI program enrolled 57 pediatric clinicians from 18 practices belonging to the AAP Pediatric Research in Office Settings (PROS) Network or the North Shore University Health System from 12/2016 to 6/2018. Practices were randomized to 1 of 4 wedges determining when the intervention was initiated and provided usual care until then. Clinicians received 3 program modules over 11 months. Module 1 contained two online tutorials—one on evidence-based antibiotic prescribing and one on communication strategies—and two webinars on the same topics. Modules 2 and 3 contained both individualized antibiotic prescribing feedback reports and booster video vignettes to reinforce communication practices. Outcomes were assessed using electronic health record data. Visits for acute otitis media (AOM), bronchitis, pharyngitis, sinusitis and upper respiratory infection (URI) were included. AOM, Group A streptococcal (GAS) pharyngitis and sinusitis were considered bacterial diagnoses. Eligible visits included care for children 6 months to 10 years-old who had not received antibiotics in the prior 30 days. We used mixed-effects logistic regression to compare overall ARTI antibiotic prescribing rates and second-line antibiotic prescribing rates for bacterial ARTIs during a 1-year baseline period compared to 3 periods occurring after implementation of each program module and a post-intervention period.

Results:

42 (74%) clinicians completed all three modules. Of 90,509 eligible visits by 31,726 patients, adjusted intention-to-treat analyses revealed odds of antibiotic prescribing for ARTI overall decreased 8% from baseline to the post-intervention

Time:

period (aOR 0.92 [0.87-0.96], corresponding to a mean prescription rate decrease from 42.6% to 38.8% across providers). Odds of second-line prescribing also decreased for GAS pharyngitis (aOR 0.68 [0.49-0.93]) and sinusitis (aOR 0.53 [0.39-0.72]), but not AOM (aOR 0.90 [0.78-1.05]).

Conclusion(s):

The DART QI program reduced inappropriate antibiotic use for outpatient ARTI visits. Extrapolated to national data, this intervention could prevent ~1.5 million inappropriate antibiotic prescriptions annually.

Publication Number: 2500.3

5-5:15 p.m.

Title: Predictors of Initiation of Early Intervention Services Prior to Positive Screen for Autism Spectrum Disorder in Young Children

Presenters/Authors: Kate Wallis, Whitney Guthrie, Amanda Bennett, Marsha Gerdes, Susan Levy, David Mandell, Judith Miller

Location: Convention Center 349-350

Section:

2730 Developmental and Behavioral Pediatrics: Autism

Presentation Type:

Platform

Background:

Disparities in Early Intervention (EI) initiation may affect autism spectrum disorder (ASD) identification and treatment. Minority children are less likely to be represented in EI and more likely to be diagnosed with ASD at a later age. We examined the rates of early initiation of EI—before a child screens positive for ASD—and associated socio-demographic and clinical factors, which may contribute to disparities in ASD identification.

Design/Methods:

We identified children aged 16-30 months who screened positive for ASD on the Modified Checklist for Autism in Toddlers with Follow-up Interview (M-CHAT/F) during a well-child visit between 2013 and 2016 (n=2884) in a large pediatric primary care network. Patient socio-demographic characteristics; relevant behavioral, developmental, medical diagnoses; and prior EI initiation (defined as having been referred to or enrolled in EI before positive ASD screen) were extracted from patient electronic health records. Manual chart review for a random sample of 10% of charts found >93% agreement for manually and digitally extracted data. Associations between child characteristics and prior referral were estimated using multivariable logistic regression including all socio-demographic variables simultaneously.

Results:

Among children who screened positive for ASD (median age=19 months), 26.4% (n=762) had prior EI referral or enrollment. Children with early EI referral or enrollment prior to positive M-CHAT/F were more likely to have a documented behavioral/developmental (adjusted OR [aOR]= 16.69, 95% CI= 12.17-22.88, p<.001) or medical concern/diagnosis (aOR=7.61, 95% CI= 5.37-10.79, p<.001); or were more likely to be white compared to Asian (aOR= 3.31, 95% CI= 2.21-

Time:

4.95, $p < .001$) or black (aOR= 1.81, 95% CI= 1.38-2.38, $p < 0.001$); of Hispanic ethnicity (aOR=1.54, 95% CI= 1.02-1.08, $p = .002$); from a home where only English is spoken (aOR=1.50, 95% CI=1.05-2.13, $p = 0.03$); or older (aOR=1.05, 95% CI= 1.02-1.02, $p = .002$). Child sex and insurance were not statistically significantly associated with prior EI initiation.

Conclusion(s):

Early focus on developmental concerns is associated with successful early initiation of EI for some children, but racial and socio-economic disparities were evident in which children had prior EI referral or enrollment. Recognizing the early factors that drive EI initiation may help providers equitably perform developmental surveillance and EI referral to improve equity in early ASD identification and treatment.

Publication Number: 2730.7

5:45-7:30 p.m.

Title: Experiences of Adolescents and Their Parents While “Boarding” Awaiting Inpatient Psychiatric Treatment

Presenters/Authors: Diana Worsley, Cadence Bowden, Stephanie Doupnik

Location: Convention Center Halls D-G, Board 149

Section:

2817 Developmental and Behavioral Pediatrics: Mental Health

Presentation Type:

Poster

Background:

Adolescent hospitalizations for mental health crises have been increasing for 2 decades. Due to limited availability of inpatient psychiatric beds, some young people must “board” for several days or longer in emergency departments (EDs) or medical hospitals before receiving inpatient psychiatric treatment.

Objective:

We aimed to understand the experiences of patients and their families and how medical hospital teams can support them while awaiting inpatient psychiatric treatment.

Design/Methods:

27 adolescents aged 9 to 17 (median=14), and 9 parents (M=2, F=7) participated in semi-structured interviews while the adolescent was “boarding” in the ED or a medical hospital unit, awaiting inpatient psychiatric treatment. Adolescents and parents discussed their hospital experiences, and described which clinical practices were supportive, as well as challenges they experienced. With informed consent, interviews were audio recorded and transcribed verbatim. Coding and thematic analysis were facilitated by NVivo12.

Results:

2 major themes were common among parents and adolescents:
(1.) Comfort with clinicians: Both adolescents and their parents noted higher levels of comfort with clinicians who presented with a warm affect. Parents felt

Time:

comfort knowing a 1:1 staff observer would always be in the adolescent's room, and adolescents felt supported by the 1:1 observer.

(2.) Information Needs: Both adolescents and their parents reported confusion about which clinicians could provide information on the treatment plan, including the planned psychiatric hospitalization.

One additional theme emerged in parent interviews:

(3.) Self-care and social supports: Parents reported that they did not practice self-care during their child's hospitalization. Social supports for parents were limited to a partner and/or a small group of close friends or family. Parents reported that they feared the stigma of having a child hospitalized for a mental health crisis. Parents were also not aware of hospital resources provided to families.

Conclusion(s):

Family experiences illustrate that hospital interventions to improve patient and parent experiences are needed during "boarding." Such interventions may include clearly defining clinical roles and making parental resources more readily available during their child's hospitalization.

Publication Number: 2817.3

5:45-7:30 p.m.

Title: Racial Differences in Young Adult Resilience and Associations with Low Birth Weight

Presenters/Authors: **Diana Montoya-Williams, Molly Passarella, Scott Lorch**

Location: Convention Center Halls D-G, Board 697

Section:

Vulnerable and Underserved Populations/Health Equity & Social Justice: Adolescents/Young Adults

Presentation Type:

Poster

Background:

Resilience to stress may mediate the development of poor mental and physical health outcomes. Given that adverse maternal psychosocial environments are believed to contribute to racial disparities in birth outcomes, disparities in resilience between racial/ethnic groups might amplify these effects. The existence of such disparities and their potential effect on birth outcomes is unknown.

Objective:

Describe differences in resilience by race and ethnicity, and associations between resilience and low birth weight (LBW).

Design/Methods:

We constructed a retrospective cohort of 5774 young adults surveyed repeatedly as part of The National Longitudinal Study of Adolescent to Adult Health (Add Health). Wave 4 questions which mirrored items on the Connor-Davidson Resilience Scale 10 were pulled. Factor analysis was performed on participants' responses to these questions to construct an Add Health-based resilience scale. Racial differences in resilience scores were measured via bivariate and multivariate analyses after adjusting for education, household income, age and

Time:

BMI. Multivariate regression models explored the association between resilience, as measured by tertiles, and LBW after adjusting for maternal socioeconomic status, age, BMI, smoking/alcohol history and prenatal care.

Results:

Non-Hispanic American Indians (NHAIs) had the lowest resilience scores across all races. In poisson regression models, NHAIs and NH Asians had lower resilience scores compared to NH Whites. When these models were sequentially adjusted for covariates, NH Blacks had higher resilience scores than NHWs (IRR 1.04, 95% CI 1.02-1.07) while NHAIs and NHAs scores remained lower than NHWs. Women with resilience scores in the mid or high tertiles were progressively less likely to deliver a LBW infant. These findings persisted in multivariable analyses (aOR 0.72, 95% CI 0.53-0.97 for highest tertile in full model). Finally, NH Black women had a 2-fold higher risk of LBW compared to other racial/ethnic groups if they were in the low resilience tertile (aOR 2.03, 95% CI 1.34-3.09). There was no such worsening effect for NHBs at the mid and higher resilience tertiles.

Conclusion(s):

Resilience scores were lowest among NHAIs. Resilience may act as a buffer against risk of LBW, particularly among NHBs. Alternatively, low resilience may be an indicator of the psychosocial environment most associated with the phenotype of LBW. Increasing resilience among at-risk women may prove a useful public health strategy to decrease LBW rates.

Publication Number: 2879.1

5:45-7:30 p.m.

Title: Differences in Resilience Among Hispanic Women and Associations with Low Birth Weight: Beyond the Hispanic Paradox

Presenters/Authors: **Diana Montoya-Williams**, **Molly Passarella**, **Scott Lorch**

Location: Convention Center Halls D-G, Board 699

Section:

Vulnerable and Underserved Populations/Health Equity & Social Justice: Adolescents/Young Adults

Presentation Type:

Poster

Background:

Low birth weight (LBW) rates among Hispanic women have been described as paradoxical as their rates are lower than non-Hispanic black women (despite similar socioeconomic and health care access barriers) and similar to rates among non-Hispanic white women. The etiology of this paradox may reflect the heterogeneity among Hispanic women by differing familial culture of origin, which may result in differences in socioeconomic status (SES), education or resilience.

Objective:

Describe differences in resilience by culture of origin among Hispanic women and assess for a relationship between resilience and LBW in this group.

Time:Design/Methods:

We constructed a retrospective cohort of 592 Hispanic women surveyed repeatedly as part of The National Longitudinal Study of Adolescent to Adult Health (Add Health). Wave 4 questions were used to create an Add-Health resilience scale via factor analysis. Differences in resilience, SES and LBW were measured among women of different Hispanic backgrounds. Regression models explored the relationship between resilience and LBW in this sample after adjusting for education and household income.

Results:

Hispanic women who identified as Cuban had the highest resilience scores, with an average score of 16.3 (SD 5.5), out of a max possible score of 29. Their scores were significantly higher than Puerto Rican (13.0, SD 4.8) and Central/South American women's scores (13.3, SD 4.9) (Bonferroni corrected p-values 0.001 and 0.008, respectively). In multivariate models, Cubans were 1.8x more likely to be in a higher resilience category compared to the Mexican women reference group. Cuban women also had the highest proportion of LBW births (14.5%) compared to the other Hispanic subgroups, though differences were not statistically different in bivariate or multivariate analyses. The odds of LBW appeared to decrease as level of resilience increased, but these findings did not reach statistical significance.

Conclusion(s):

In this sample of Hispanic women, Cuban women appeared to be more resilient than similarly aged Hispanic women of Mexican, Chicano, Puerto Rican or Central/South American background. This suggests that resilience may be culturally mediated. However, increased resilience may not necessarily be protective with respect to LBW. Further work to delineate the relationship between resilience and adverse birth outcomes must consider the variety of cultural backgrounds within Hispanic communities.

Publication Number: 2879.3

5:45-7:30 p.m.

Title: Parent Concern Before Screening with the M-CHAT**Presenters/Authors:** Kristin Fleming, Judith Miller, Whitney Guthrie, **Kate Wallis**, Amanda Bennett**Location:** Convention Center Halls D-G, Board 141Section:

2816 Developmental and Behavioral Pediatrics: Autism - Potpourri

Presentation Type:

Poster

Background:

The AAP recommends universal screening for developmental delay and autism spectrum disorder (ASD) to identify children who would not otherwise have come to clinical attention. The U.S. Preventative Services Task Force found little data on whether parents of children identified through screening were or were not already concerned. Prior studies have shown that most parents of children with ASD have concerns by 18-24 months and sometimes as early as before 12 months.

Time:

However, few studies have characterized parental concerns that are actually documented in the health record (EHR) prior to screening.

Objective:

To assess the rate and quality of parent-reported concerns for development/behavior prior to Modified Checklist for Autism in Toddlers with Follow-up interview (M-CHAT-F) screening.

Design/Methods:

A chart review was performed on primary care patients at Children's Hospital of Philadelphia who were screened between 2011-2014. Types and frequency of parent concerns documented in the EHR for children who screened positive and had a confirmed ASD diagnosis were captured from well-child visits, sick visits, telephone calls, specialty care and scanned reports from outside providers. Concerns were classified: 1) Developmental (gross/fine motor, social, general development, speech); 2) Behavioral (sensory, emotional regulation, repetitive behavior, eye contact, gestures, response to name, ADHD); or 3) a parent-reported concern of "autism."

Results:

23,634 children ages of 16-30 months were seen in primary care from 2011-2014. 1,217 screened positive on the M-CHAT-F (total score ≥ 3); 181 had a diagnosis of ASD. Across the 181 patients, 76% were male, 94% English-only speaking, 89% non-Hispanic, 32% white, 46% black and 60% publically insured. Twenty-seven (14.9%) parents did not report any concerns prior to their child's failed MCHAT.

Conclusion(s):

Nearly 15% of children with ASD who screened positive on the M-CHAT-F were not of concern to their parents before screening. Parental concerns were rarely about autism but more often about nonspecific developmental/behavioral issues. Further studies are needed to determine if parents of children with autism have more (or different) concerns than parents of typically-developing children, but these results suggest that universal screening in primary care identified some children who would have otherwise been missed. Universal screening may reduce the risk of missed/late diagnosis in children whose parents do not have developmental/behavioral concerns prior to completing a screening measure.

Publication Number: 2816.3

5:45-7:30 p.m.

Title: Text Message Plan and Baseline Usage of Families Enrolled in a Text Message Influenza Vaccine Reminder Study: An AAP Pediatric Research in Office Settings (PROS) Study

Presenters/Authors: Chelsea Wynn, **Alexander Fiks**, Justine Shults, Russell Localio, **Ekaterina Nekrasova**, Laura Shone, Miranda Griffith, Priyam Thind, Alessandra Torres, Chelsea Kolff, Lindsay Berrigan, Melissa Stockwell

Location: Convention Center Halls D-G (Board 686)

Section:

2877 Social Media & Technology 2

Presentation Type:

Poster Session

Time:Background:

Text messaging has been investigated as a low-cost, accessible way to provide vaccine reminders, as most individuals in the U.S. own a cell phone with few differences across demographic groups. However, little is known about patterns of text-message plan type and use in populations participating in research involving text messaging.

Objective:

To examine text message plan and baseline usage of families enrolled in a text message influenza vaccine reminder study.

Design/Methods:

In the NIH-funded Flu2Text study conducted during the 2017-18 and 2018-19 influenza seasons, families of children needing a 2nd influenza vaccine dose in a season were recruited in primary care offices at the time of their 1st dose. Practices (n=49) were from the AAP PROS practice-based research network (Northeast [32.7%], South [32.7%], Midwest [18.4%] and West [16.3%]). A survey administered after enrollment included “What type of text message plan do you currently have” (limited vs. unlimited # of text messages/month), and “How often do you send and/or receive text messages?” (at least once a day; at least once a week but not every day; at least once a month but not every week; occasionally but not every week; never). Standardized proportions (adjusted for child and caregiver demographics) for plan type and texting frequency were calculated using logistic regressions.

Results:

Responses were collected from 1,018 participants (72.4% of enrolled). Mean parent age was 32 (range 16–57 years), and 96.9% of children were <3 years old. Most (94.0%) families were English speaking, with participant diversity comparable to the U.S. population. Most but not all (93.4%) participants had an unlimited texting plan and texted daily (92.9%). Caregivers whose children were Asian were less likely to have an unlimited text messaging plan. Caregivers who were Spanish-speaking, or whose children were Asian or Black were less likely to text daily. Nearly three-quarters (71.2%) of participants had received some form of text message from their doctor’s office, most commonly appointment reminders (98.5%), prescription (28.6%), vaccine reminders (10.4%), laboratory notifications (11.5%) or school forms (5.8%).

Conclusion(s):

There were significant differences by some family characteristics in terms of text message plan type and use. However, even those who did not have unlimited texting and/or did not text daily did enroll in a text message vaccine reminder study.

Publication Number: 2877.1

5:45-7:30 p.m.

Title: More Social Needs Identified by Caregivers of Young Children Experiencing Everyday Discrimination

Presenters/Authors: **Jennifer Robbins**, Elizabeth Critchlow, Tirzah Spencer, George Datto, Diane Abatemarco, Thao-Ly Phan

Location: Convention Center Halls D-G (Board 728)

Time:Section:

2882 Vulnerable and Underserved Populations/Health Equity & Social Justice:
Social Determinants 2

Presentation Type:

Poster Session

Background:

Both discrimination and social needs are underlying risk factors for poor health outcomes; however, it is not well understood how feelings of discrimination impact reporting of social needs.

Objective:

To compare caregiver report of social needs and desire for help addressing social needs in the pediatric primary care setting, based on their experiences with discrimination.

Design/Methods:

We conducted a cross-sectional study of caregivers of children aged 2-5 in an urban primary care setting. Caregivers completed a tool, adapted based on qualitative data with this same population and including items from the PHQ-2, 2-item food insecurity screener, and WE CARE survey, to screen for 15 social needs and desire for help to address these needs. The short version of the "Everyday Discrimination Scale" was also completed, with caregivers categorized as experiencing everyday discrimination if they reported "rarely," "sometimes," or "often" vs. "never" on any of 5 types of discrimination. If caregivers reported experiencing everyday discrimination they were asked about perceived reasons for discrimination.

Results:

178 caregivers (94% mothers, mean age 32) of diverse racial and ethnic backgrounds (27% non-Hispanic white, 53% non-Hispanic black, 10% Hispanic) completed the screening tool. 49% were from households with an annual income below \$30,000. 53% of caregivers reported everyday discrimination. Caregivers who endorsed everyday discrimination reported a significantly higher number of social needs and number of social needs for which they wanted help. Most common reasons for discrimination were race (45%), gender (36%) and age (29%). Caregivers who endorsed discrimination for these reasons reported a significantly higher number of social needs and number of social needs for which they wanted help.

Conclusion(s):

In this urban population the majority of caregivers endorsed feeling some degree of everyday discrimination. Those who did also reported more social needs and a greater desire for help addressing these social needs. The pediatric health care setting may be a place where caregivers feel comfortable reporting sensitive social needs, providing an opportunity to offer support for those experiencing discrimination in other settings.

Publication Number: 2882.3

5:45-7:30 p.m.

Title: Impact of Flow Disruptions in the Delivery Room

Time:

Presenters/Authors: Heidi Herrick, Scott Lorch, Ken Catchpole, Elizabeth Foglia

Location: Convention Center Halls D-G, Board 503

Section:
2858 Neonatal/Infant Resuscitation 3

Presentation Type:
Poster

Background:
We currently do not know how to optimize the delivery room (DR) to best support providers' performance during neonatal resuscitation. Flow disruptions (FD) are defined as "deviations from the progression of care that compromise safety and efficiency of a specific process," and have been associated with errors and adverse outcomes in other high acuity clinical settings. We hypothesized that FD are associated with worse short-term patient outcomes during neonatal resuscitation.

Objective:
To identify and classify FD during neonatal resuscitation. To determine the association between number and type of FD during neonatal resuscitation and achievement of target oxygen saturation values at 5 and 10 minutes.

Design/Methods:
This was a prospective observational study of video recordings of neonates <32 weeks gestational age who received respiratory support during DR resuscitation. FD were classified using Wiegmann's modified FD Tool. Clinical outcomes included achievement of target oxygen saturation at 5 (primary) and 10 (secondary) minutes. We used descriptive statistics to report the frequency, type and impact of FD. We assessed the association between patient and resuscitation characteristics and number of FD using Poisson regression. We used logistic regression to assess the association between FD and clinical outcomes, adjusting for patient gestational age and training level of team leader.

Results:
We assessed 32 resuscitations from 10/2017-7/2018. Target oxygen saturations were achieved in 40.6% (5 minute) and 75% (10 minute) of resuscitations. A mean of 52.6 FD (SD 17.9) occurred per resuscitation. Low impact and extraneous interruptions were the most common FD. We found no association between any patient or resuscitation characteristic and the number of FD. FD were associated with a trend towards decreased odds of achieving target saturation at 5 (aOR 0.92, 95% CI 0.79-1.06) and 10 minutes (aOR 0.94, 95% CI 0.84-1.05) when adjusting for gestational age and team leader. However, specific domains of FD, such as training and technical skills, demonstrated a trend toward higher odds of achieving target saturations.

Conclusion(s):
FD are common during DR resuscitation and are associated with a trend towards worse short-term patient outcomes. Measuring FD is a promising tool to assess systematic impediments in the delivery room. The use of FD may have the potential to facilitate identification of targeted interventions to improve performance and clinical outcomes during neonatal resuscitation.

Time:

8-8:15 a.m.

Title: Doctor-parent Communication in Primary Care: Talking About Young Children's Development**Presenters/Authors:** Kate Wallis, Okan Elci, Tamla Lee, Susan Levy, David Mandell**Location:** Convention Center 316Section:

3145 Developmental and Behavioral Pediatrics: Assessing Development, Risks & Outcomes

Presentation Type:

Platform

Background:

Primary care pediatricians are expected to surveil young children to identify those with developmental delays (DD) during well-child visits. Pediatricians should elicit caregivers' concerns and provide anticipatory guidance about development. Little is known about how child development is discussed and less is known about patient, parent and physician characteristics that affect this dialogue.

Objective:

To describe the quantity and type of communication about development in pediatric well-child visits with young children. To examine the role of patient and physician demographics on communication measures.

Design/Methods:

This descriptive study was conducted at 3 sites in a large, academic pediatric primary care network with a diverse patient population. The sample included 15 primary care pediatricians and 36 patients (up to 3 per physician) aged 15-36 months who presented for a well-child visit and were not enrolled in early intervention. We collected physician, parent and patient demographics. Visits were audio-recorded, and dialogue was analyzed using a validated coding scheme, the Roter Interaction Analysis System (RIAS). Linear regression examined the effect of respondent and physician demographics on communication measures as a percent of total dialogue.

Results:

Median age of patients was 20.5 months, with 53% female. Respondents were 88% female, 60% black and 33% white. Physicians are 88% female, 88% white and 8% black. All visits included some discussion of development but differed in the percentage of communication dedicated. Communication related to physicians' data-gathering (including questions about a child's development) were higher when talking with parents who were mothers ($p=.02$), black ($p<.001$), had less education ($p=.003$) or were low-income ($p=.008$). Patient question-asking was higher when patients were boys ($p=.003$). Counseling (provision of anticipatory guidance) occurred more for male patients ($p<.001$) and by male physicians ($p<.001$).

Conclusion(s):

Time:

Discussion of a child's development during well-child visits accounted for 11% of dialogue and differed based on physician and respondent characteristics. Understanding the quantity and content of talk about development, including recognizing which parent and physician characteristics are associated with increased communication about development, can help us to develop strategies to help pediatricians perform better surveillance to improve the equity of detection of DD and provision of anticipatory guidance in primary care.

Publication Number: 3145.1

8:30-11:30 a.m.

Title: Grant Writing for Young Investigators: Designing, Funding, and Implementing One-year Research Projects and Having Fun Doing It!

Presenters/Authors: Todd Florin, Rachel Gross, Amy Beck, Paul Chung, Lisa DeCamp, **Stephanie Douppnik**, Alexander Glick, Alan Mendelsohn, Cynthia Minkovitz, Eliana Perrin, Judith Shaw, Ashley Weedn

Location: Convention Center 326

Presentation Type:
Workshop

Abstract or Description:

For many investigators, an initial 1-year grant jump starts their academic careers. However, the daunting challenges of translating compelling scientific questions into feasible and fundable projects prevent some from obtaining funding and using an early grant as a springboard for future projects. In this workshop, APA faculty are joined by past and current Young Investigators to examine what constitutes a successful and fundable 1-year project and the steps needed to secure an award.

9:45-10:00 a.m.

Title: A Multi-site Randomized Control Trial of Family Navigation's Effect on Diagnostic Ascertainment Among Children at Risk for Autism: A DBPNet Study

Presenters/Authors: Emily Feinberg, Sarabeth Broder-Fingert, Amanda Bennett, Carol Weitzman, Andrea Chu, Jenna Sandler Eilenberg, Manju Abraham, Marisol Credle, Howard Cabral, Marilyn Augustyn, Gregory Patts, **James Guevara**, Ada Fenick, Nathan Blum

Location: Convention Center Ballroom III

Section:
3160 Health Services Research II

Presentation Type:
Platform

Background:

Significant disparities exist in access to evidence-based treatment services for children with autism spectrum disorder (ASD). Family navigation (FN) is a care management strategy designed to reduce disparities in access to care. This study's purpose was to test FN's effectiveness to reduce disparities in access to diagnostic and treatment services for children at risk for ASD.

Time:Design/Methods:

Families of children were recruited from urban clinics in Massachusetts, Connecticut and Pennsylvania. Eligible children were between the ages of 15-27 months (n=250), who screened positive for ASD in primary care. Families were randomized to receive either FN or enhanced usual care (eUC). FN families worked with a bilingual navigator, who met with families in the community, conducted outreach to service agencies and reminded families about appointments. eUC families worked with a clinic-based care manager, who addressed parent and provider concerns but did not actively reach out to families. Families received FN or eUC throughout their child's developmental assessment and for 100 days post-diagnosis.

Results:

The average age of enrolled children was 21.7 months. 12.4% of children in the study were white, 54.8% were black/African-American, 6.4% were Asian and 5.2% were mixed-race. 29.0% were Hispanic and 82.4% were covered by public insurance. Children scored an average of 8.6 (SD=3.1) on the MCHAT-R/F at time of enrollment in the study, with no significant differences reported between the FN or eUC groups. Approximately 60% of all children received an ASD diagnosis, with no significant differences between groups. By 90 days after enrollment, significantly more children in the FN group had achieved diagnostic resolution than those in the eUC group (55% versus 41%, p=0.022). By 1-year after enrollment, children who received FN had more than twice the odds of reaching diagnostic resolution as compared to children who received eUC, 86.6% vs 74.8%, respectively (Odds Ratio, 95% Confidence Interval, p-value; 2.18, 1.14-4.19, 0.019).

Conclusion(s):

This study supports FN's effectiveness to improve rates of ASD diagnostic resolution among minority, low-income children detected as "at-risk" for ASD. Because a formal medical ASD diagnosis is generally required to access ASD services, these findings support the use of FN to assure timely access to diagnosis, and ultimately services, for low-income, urban children.

Publication Number: 3160.8

10:30 a.m.-12:30 p.m. **Title:** Pediatric Practitioners Report Using Strategies to Improve HPV Vaccination, yet Barriers Persist: Results from the National AAP Pediatric Research in Office Settings (PROS) Network

Presenters/Authors: Margaret Wright, Laura Shone, Sharon Humiston, Jennifer Steffes, Cynthia Rand, **Mary Kate Kelly**, Abigail Breck, Russell Localio, Alisa Stephens-Shields, Robert Grundmeier, Christina Albertin, Dianna Abney, Greta McFarland, Peter Szilagyi, **Alexander Fiks**

Location: Convention Center 308 (Board 1)

Section:

3335 Immunizations/Delivery

Presentation Type:

Poster Symposia

Background:

Time:

A safe and effective vaccine that prevents HPV-attributable cancers has been available since 2006. Despite demonstrated safety and effectiveness, coverage rates for the HPV vaccine remain suboptimal, and considerably lower than coverage for other adolescent vaccinations.

Objective:

Examine a) barriers to HPV vaccination and b) strategies used to improve HPV vaccination rates in a sample of pediatric primary care practitioners from 19 states.

Design/Methods:

As part of the NIH-funded STOP HPV trial, the lead practitioner from 47 practices recruited from the PROS research network completed an online, confidential survey in 2018. The survey measured office characteristics, standard office practices for and communication about HPV vaccination, and use of evidence-based strategies such as performance feedback, practitioner prompts, reminder-recall and standing orders. Proportions and medians were calculated for categorical and continuous variables, respectively.

Results:

Barriers: All practitioners reported >1 barrier to HPV vaccination. The most commonly reported major barrier was parent refusal or delay (>80%). Practitioners reported approximately 30% (range 5%-75%) of parents of their 11-12-yr-old patients due for a HPV vaccine refused and 15% (range 5%-60%) hesitated without refusing. Other major barriers reported by practitioners included the time required to discuss HPV vaccination with families (17% of practitioners), low proportion of adolescents coming in for well visits (13%), lack of training in providing a strong practitioner recommendation (11%), practitioners' view that HPV vaccination can wait (9%) and challenges associated with administering HPV vaccine at acute or chronic care visits (7%).
Strategies: The most commonly reported strategy to improve HPV vaccination rates was use of prompts when HPV vaccination is needed (89%). Practitioners also reported that their practices commonly use tools to improve communication about HPV vaccination with parents and adolescents (87%) and receive performance feedback about HPV vaccination rates (83%). Only 17% of practitioners cited that their practice uses reminder-recall messages specific to the HPV vaccine.

Conclusion(s):

Practitioner-perceived barriers to HPV vaccination persist. Practices are already using a wide variety of strategies to improve delivery of this vaccine, yet room for improvement remains.

Publication Number: 3335.1

10:30 a.m.-12:30 p.m.

Title: Vaccine Hesitancy and Influenza Beliefs Among Parents of Children Requiring a 2nd Dose of Influenza Vaccine in a Season: An AAP Pediatric Research in Office Settings (PROS) Study

Presenters/Authors: Ekaterina Nekrasova, Melissa Stockwell, Russell Localio, Justine Shults, Chelsea Wynn, Laura Shone, Lindsay Berrigan, Chelsea Kolff, Miranda Griffith, Andrew Johnson, Alessandra Torres, Douglas Opel, Alexander Fiks

Time:**Location:** Convention Center 308 (Board 5)Section:
3335 Immunizations/DeliveryPresentation Type:
Poster SymposiaBackground:
To receive adequate protection against influenza, many children 6 months-8 years old need 2 doses of influenza vaccine in a season. Only half of those receiving a first dose receive a second.Objective:
To assess vaccine hesitancy and influenza disease and vaccine beliefs among caregivers of children who received the 1st of the 2 required influenza vaccine doses.Design/Methods:
As part of the NIH-funded Flu2Text national study conducted during the 2017-2018 season, a telephone survey collected demographic information of caregivers (age, English proficiency, education, relationship to a child) and the participating child (age, gender, race, ethnicity, insurance type, health status). Each child received the 1st dose of influenza vaccine, needed a 2nd dose that season and was enrolled in a study of text message influenza vaccine reminders. Caregivers completed a validated measure of vaccine hesitancy (PACV-5) and a series of questions to evaluate their knowledge about influenza infection and vaccine. We assessed the association of caregiver and child demographic characteristics with vaccine hesitancy and influenza beliefs. The standardized (adjusted) proportion of caregivers endorsing each outcome was calculated using logistic regression.Results:
Analyses included responses from 256 participants from 36 AAP PROS primary care network practices across 24 states. 11.7% of caregivers had moderate or high vaccine hesitancy. A high proportion of caregivers held the following inaccurate beliefs: “flu is just a bad cold” (40.2%); child will be protected with “only one flu shot” (93.8%); “flu shot causes the flu” (57%); children cannot “die from the flu” (68%). In a multivariable model including the demographic characteristics above, only lower English ability was a significant predictor of vaccine hesitancy ($p=.01$). No one variable consistently predicted inaccurate influenza disease and vaccine beliefs across all outcomes.Conclusion(s):
Even caregivers whose children receive the first dose of influenza vaccine may be vaccine hesitant and have inaccurate beliefs regarding influenza vaccine and disease. These results underscore the importance for the clinical team to broadly address inaccurate perceptions and promote vaccination even after caregivers agree to the first dose.Publication Number: 3335-5

11:30-11:45 a.m.

Title: Influenza Vaccine Visits are an Underutilized Avenue for Increasing Human Papilloma Virus Vaccination Rates: An AAP Pediatric Research in Office Settings (PROS) National Primary Care Research Network Study

Time:

Presenters/Authors: **Mary Kate Kelly**, Abigail Breck, Robert Grundmeier, Alisa Stephens-Shields, Russell Localio, Laura Shone, Margaret Wright, Jennifer Steffes, Christina Albertin, Sharon Humiston, Cynthia Rand, Dianna Abney, Greta McFarland, Peter Szilagyi, **Alexander Fiks**

Location: Convention Center 343-344

Section:
3350 Public Health & Prevention I

Presentation Type:
Platform

Background:
Despite proven benefits, vaccination rates for HPV remain substantially lower than for other adolescent immunizations. Missed opportunities (MOs) at primary care visits contribute to low HPV vaccine coverage. Although influenza vaccination is administered often at clinician and nurse-only visits, little is known about MOs for HPV during these visits.

Objective:
To examine the extent to which influenza vaccine visits are being utilized to administer the HPV vaccine.

Design/Methods:
As part of the NIH-funded STOP HPV trial, we extracted electronic health record (EHR) data from 37 practices across 19 states recruited from the AAP PROS national pediatric primary care network. We extracted all office visits from 2015-2018 in which the influenza vaccine was administered to HPV vaccine-eligible 11 to 17 year olds. Among those visits, MOs were defined as the proportion in which an HPV vaccine was due but not given. MOs were examined overall and separately by visit type, patient sex and age, and HPV dose due. A log-linear model, clustered by practice, examined the association of visit type, patient characteristics and HPV dose with MOs.

Results:
A total of 46,073 HPV-eligible influenza vaccine visits among 34,401 patients (median age: 12 yr., 46% female) were analyzed. Over half (58%) of these HPV vaccination opportunities were missed, and MO rates varied by practice (median: 58%, range: 22%-81%). MOs were far more common at visits during which an initial versus subsequent HPV vaccine dose was due (70% vs. 30%). MOs were also higher at acute/chronic and nurse visits versus preventive visits (74% and 77% vs. 39%). MOs were similar in males and females and slightly higher among younger versus older patients. In the multivariate model, MOs were significantly higher for initial versus subsequent doses (RR: 2.46, 95% CI: 2.22-2.73) and at acute/chronic (RR: 2.03 95% CI: 1.87-2.21) and nurse (RR: 2.08, 95% CI: 1.90-2.29) visits compared to preventive visits.

Conclusion(s):
MOs for HPV vaccination during visits where influenza vaccine is given are frequent, particularly during acute/chronic or nurse-only visits and for the initial HPV vaccine. These MOs are also common for subsequent HPV doses, when vaccine hesitancy is less likely. Efforts to increase simultaneous administration of HPV and influenza vaccines are warranted.

Time:

1-3:00 p.m.

Publication Number: 3350.5**Title:** Increased Utilization of Observation Status is Associated with Higher Inpatient-to-inpatient Readmission Rates**Presenters/Authors:** Rustin Morse, Jeffrey Colvin, Michelle Macy, David Synhorst, **Evan Fieldston**, Matt Hall**Location:** Convention Center 321-323Section:
3535 Hospital-Based Medicine: PracticePresentation Type:
PlatformBackground:

In several states, hospitals are at risk for penalties when children experience an inpatient readmission after an inpatient stay. Patients in observation status, either on an index or subsequent stay, are typically excluded from these analyses. However, the designation of observation vs. inpatient status varies greatly across hospitals without direct relationship to the true level of care provided. This phenomenon was of minimal significance until hospital-level readmission performance penalties began to be applied to inpatient-to-inpatient only readmissions.

Objective:

To evaluate variation in observation status utilization by length of stay (LOS) categories across children's hospitals, and to understand the impact of observation patients on readmission metrics.

Design/Methods:

A cross-sectional study of stays in the Pediatric Health Information System (PHIS) database, 2017. We defined the LOS in hours, and measured the percentage of observation status stays in each hospital for four LOS groups. At the hospital-level, we measured the 14-day readmission rate with and without observation patients included. Changes in readmission rates were determined, and correlations between percent observation and readmission rates were assessed.

Results:

Of 48 included hospitals, 39 (81.3%) used observation status. There was significant variation in the percentage of observation patients across hospitals. Of patients with LOS < 24 hours, the mean percent placed in observation status was 56.0% (range: 0%-94%), compared to 36.1% (range: 0%-76%) staying 24-47 hours, and 12.1% (range: 0%-35%) staying 48-72 hours (all $p < 0.001$). Use of observation status for stays beyond 72 hours was uncommon (1.3%, range: 0%-11%). There was a significant relationship between the percentage of observation stays and the inpatient only readmission rate ($p = 0.027$). As the percentage observation increased 10%, the inpatient readmission rate increased $0.3\% \pm 0.2\%$.

Conclusion(s):

Time:

While most children's hospitals utilize observations status, almost 20% do not. Across hospitals, there continues to be significant—and clinically unjustifiable—variation in the use of observation status for hospitalizations < 48 hours. Hospitals that more liberally utilize observation status generally experience higher inpatient-to-inpatient readmission rates. Further work is necessary to determine if these associations potentially impact readmission rate penalties.

Publication Number: 3535.3

1-3:00 p.m.

Title: Opiate and Antidepressant Exposure During Pregnancy and Risk of Preterm Birth

Presenters/Authors: Scott Lorch, Molly Passarella, Ashley Martin, Heather Burris

Location: Convention Center Ballroom IV, Board 8

Section:

3545 Neonatal Abstinence Syndrome: Eat. Sleep. Console. Repeat - and Other New Thoughts for 2019

Presentation Type:

Poster

Background:

Maternal opiate exposure is a fast-growing perinatal public health issue. While there is some suggestion that substance exposure is associated with an increased risk of preterm birth, these studies have not assessed the effect of specific types of opiates on pregnancy outcomes; disentangle effects from concurrent low socioeconomic status and antepartum and intrapartum complications of pregnancy; and the additive risk of antidepressant use on these outcomes.

Objective:

Determine the association between specific maternal opiate and antidepressant exposures on risk of preterm birth in women of a similar socioeconomic background.

Design/Methods:

Using the Medicaid Analytic Extract, we constructed a deterministic linked maternal-infant birth file from 19 states that, between 2007-12, had > 90% match linkage and data on managed care Medicaid patients (N=813,334). Maternal medication exposure was determined via HCPCS and NDC codes for opiates and antidepressant medications, with additional illicit exposures assessed via ICD-9CM codes. Preterm birth was determined from ICD-9, DRG and CPT codes. Univariable and multivariable logistic regression models assessed the association between preterm birth and any opiate use, any antidepressant use, or specific classes of either medication after accounting for maternal socioeconomic variables including race/ethnicity, reason for Medicaid eligibility, maternal antepartum and intrapartum complications such as hypertension and diabetes and state of birth.

Results:

9.5% of the cohort had a preterm birth. Women with preterm birth were more likely to be exposed to either opiates (6.6%) or antidepressants (8.8%) compared

Time:

with women who delivered at term (5.0% exposed to opiates and 6.5 % exposed to antidepressants). This increase in preterm birth was seen regardless of type of medication. In multivariable analysis, any opiate or antidepressant exposure was associated with increased odds of preterm birth (opiate OR 1.30, 95% CI 1.26-1.34, antidepressant OR 1.34, 95% CI 1.30-1.38). Combined exposure increased this risk by 60% (combined OR 2.67, 95% CI 2.45-2.91). There was significant variation in this risk by class of opiate, with greater risk with morphine or methadone exposure, but no difference with class of antidepressant.

Conclusion(s):

In a cohort of women of similar socioeconomic background, maternal opiate and SSRI exposure significantly increases the risk of preterm birth, with a strong interaction between opiates and antidepressants.

Publication Number: 3545.8

2-2:15 p.m.

Title: Financial Margins for Mental Health vs. Medical Admissions to Children's Hospitals

Presenters/Authors: Alison Herndon, Derek Williams, Matt Hall, James Gay, Whitney Browning, Heather Kreth, Gregory Plemmons, Kate Morgan, Maya Neeley, My-Linh Ngo, Lisa Clewner-Newman, Evan Dalton, Hannah Griffith, Travis Crook, **Stephanie Doupnik**

Location: Convention Center 321-323

Section:

3535 Hospital-Based Medicine: Practice

Presentation Type:

Platform

Background:

Increasing incidence of mental health (MH) conditions and lack of access to MH services has led to a growing volume of children with MH crises requiring admission to children's hospitals. Little is known about cost and reimbursement for such hospitalizations.

Objective:

To compare annual costs, reimbursements and margins for MH and non-MH medical hospitalizations in children's hospitals.

Design/Methods:

Using the 2017 Pediatric Health Information System and Revenue Management Program databases, we identified inpatient medical encounters for patients 6 years of age and older at 17 U.S. children's hospitals. We used primary discharge diagnosis codes (ICD-10-CM) to categorize encounters into MH or non-MH medical hospitalizations. We estimated per-day inpatient hospitalization costs from charge data reported by each hospital using hospital and year-specific charge-to-cost ratios. Actual reimbursements for each hospitalization were reported by each hospital. We calculated mean margins per day (\$U.S.) for MH and non-MH medical hospitalizations at each hospital by subtracting costs from reimbursements and dividing by the number of days for each diagnosis group. We then estimated each hospital's total annual margin/gain/loss for MH vs. non-

Time:

MH hospitalizations by calculating the difference in the mean margins per day for each diagnosis group and multiplying by the annual number of MH bed days.

Results:

We included 77,065 hospitalizations, of which 6,819 (8.8%) were MH hospitalizations and 70,246 (91.1%) non-MH medical hospitalizations. Mean hospital margins per day varied from \$-1,286 to \$1,174 (mean across hospitals \$283) for MH hospitalizations and from \$-677 to \$1,851 (mean \$692) for non-MH medical hospitalizations. For 13 of 17 (76%) hospitals, mean margins per day were lower for MH vs. non-MH medical hospitalizations. The annual margin loss across these 13 hospitals totaled \$29.7 million (mean \$2.3 million per hospital). Accounting for annual margin differences across all 17 hospitals, the total annual margin loss of MH vs. non-MH medical hospitalizations was estimated at \$25.0 million (mean \$1.5 million per hospital).

Conclusion(s):

Nearly 9% of all medical hospitalizations across 17 children's hospitals were for MH conditions in 2017. Financial margins were usually lower for MH vs. non-MH medical hospitalizations. Given that children's hospitals serve as a critical safety net for MH patients, this has important implications for resource allocation and sustainability of these important services.

Publication Number: 3535-5

3:30-5:30 p.m.

Title: 3734 Beyond QI for Health Care Improvement: Tools for Innovation

Presenters/Authors: Daria Ferro, **Alexander Fiks**, Philip Hagedorn, Elena Huang, Sharon Kaminski, Flaura Winston

Location: Convention Center 326

Presentation Type:

Workshop

Abstract or Description:

This high-yield interactive workshop is intended for those looking to redesign and optimize their improvement initiatives. During the session, you will apply tools from the fields of Informatics and Innovation to improvement quandaries and get real-time feedback and suggestions from peers and workshop leaders. Through brief presentations, small group activities, and question and answer sessions, you'll learn novel ways to analyze problems, harness your creativity and explore your data needs to ensure that the changes you make will lead to clinical impact.

5-5:15 p.m.

Title: Parent Stress in Relation to Use of Bedside Telehealth

Presenters/Authors: Katherine Guttmann, Chavis Patterson, Tracey Haines, Casey Hoffman, Marjorie Masten, **Scott Lorch**, John Chuo

Location: Convention Center 316

Section:

3670 Health System Innovations (Telemedicine-EHR)

Time:

Presentation Type:
Platform

Background:

Telehealth technologies have become increasingly prevalent in all health care settings. Though such innovations hold enormous potential for increasing connectedness, little is known about their impact on parent stress levels in the Neonatal Intensive Care Unit (NICU), where parental depression and anxiety levels are high.

Objective:

We sought to determine the relationship between use of bedside web cameras and stress levels of parents in the NICU.

Design/Methods:

A validated survey, the Parental Stress Scale (PSS) NICU was administered to parents of babies admitted to our NICU. Parents were also asked if they used the bedside camera. Stress levels were analyzed according to whether parents used the camera. Univariable association between camera use and 4 scores reflecting sights and sounds, appearance of baby, relationships and experiences with staff where the scores are the percentage of questions in each scale that were answered as very or extremely stressful were assessed with the Wilcoxon rank sum test.

Results:

A total of 114 parents completed the PSS NICU while their babies were hospitalized at Day 7-10 of admission. Parents reported high levels of stress associated with being separated from their babies, with their babies appearing to be in pain, and with feeling helpless to protect or help their babies. Of the 48 parents who reported whether or not they used the bedside camera, 44% (21/48) utilized the bedside camera. Parents who reported using the camera also reported lower levels of stress in three domains assessed by the PSS NICU—the sights and sounds of the unit, the appearance of the baby, and their relationship with the infant and parental role. There was no association between use of the bedside camera and levels of reported stress related to a fourth domain—staff behaviors and communication. Parents who used the camera reported significantly less stress related to being separated from their babies than those who did not use the camera, with 22% of parents who used the bedside camera reporting that separation from their baby was very or extremely stressful in comparison to 63% of parents who did not use the camera ($p=.005$).

Conclusion(s):

Bedside web camera interventions may hold potential for reducing parent stress relating to NICU hospitalization. Units may wish to consider inclusion of such interventions in order to increase family-centeredness of care. Our findings suggest a need for further study of this promising technology and its impact on parental depression, anxiety, sleep disturbances and fatigue.

Publication Number: 3670.7

5:45-7:30 p.m.

Title: Feasibility of Clinical Asthma Program and House Repair Agency Partnership to Reduce Asthma Disparities

Presenter/Author: Tyra Bryant-Stephens

Time:**Location:** Convention Center Halls D-G (Board 46)Section:

3804 Asthma: Miscellaneous

Presentation Type:

Poster Session

Background:

CDC has established that only 20% of health outcomes is related to health care. Accordingly, optimal asthma management and outcomes may be more influenced by social and psychosocial conditions than clinical medicine in populations most affected—poor and minority. Therefore clinicians must consider and address social determinants when managing asthma. One important social determinant is housing conditions. Children who live in substandard housing are potentially more exposed to environmental and psychosocial asthma triggers leading to increased asthma morbidity. For the past 21 years Community Asthma Prevention Program (CAPP) at Children’s Hospital of Philadelphia has implemented asthma trigger reduction interventions in the bedrooms of children with asthma, but these interventions have not addressed root structural causes of triggers such as poor ventilation, leaks and exterior wall breaches requiring major home repairs.

Objective:

CAPP sought to address structural causes of environmental asthma triggers by establishing a partnership with housing repair agencies (HRA) to provide a two-pronged intervention: tailored asthma education and home repairs. This paper describes the process used to partner with HRA to identify families and complete home repairs as well as challenges and solutions.

Design/Methods:

Partnership was formed between 2 HRA’s, CAPP and local department of health. Workflows established with the following goals: 1) to identify families as soon as possible, 2) to have consistent communication between CAPP and HRA’s, 3) to deliver excellent service to families and 4) to reduce asthma symptoms. Challenges included communication between families and HRA’s, completing application process in a timely manner, establishing work plans for homes and educating contractors regarding asthma-based repairs. A communication pathway that provides clear communication at all times between partners was created with community health workers playing a central role in facilitating the plan. Eligibility includes home ownership, child with asthma diagnosis and inpatient or ED visits.

Results:

Nine homes have been completed with 9 more in the pipeline. Caregivers report high satisfaction with the process and the house repairs. Indoor air quality monitoring shows immediate improvement.

Conclusion(s):

A partnership between a clinical asthma program and house repair partners is feasible and effective in improving housing conditions for children with asthma.

Publication Number: 3804.6

Time:

5:45-7:30 p.m.

Title: Health Care Utilization and Spending for Children with Mental Health Conditions in Medicaid**Presenters/Authors:** **Stephanie Douppnik**, Jonathan Rodean, James Feinstein, James Gay, Julia Simmons, Jessica Bettenhausen, Jessica Markham, Matt Hall, Bonnie Zima, Jay Berry**Location:** Convention Center Halls D-G, Board 252Section:

3828 Health Services Research: Mental Health

Presentation Type:

Poster

Background:

As the U.S. health care system struggles to care for children with mental health (MH) conditions, little is known about the highest resource utilizers.

Objective:

We examined clinical attributes and health services use among children with mental health (MH) conditions. We compared attributes of children with lower health care spending to those with higher health care spending.

Design/Methods:

We conducted a retrospective analysis of 2014 Medicaid claims from 11 states using the IBM Watson Health MarketScan Medicaid claims database. We used ICD-9-CM codes to identify children ages 3 to 17 years with a MH condition, and we analyzed all health care claims for the year, including types of services the children received, diagnoses associated with each service and payments for each service. Children were categorized into four mutually exclusive groups based on their total health care spending for the year: the top 1% highest-spending, the next 4% higher-spending, the next 15% and the remaining 80% lowest-spending. We compared characteristics across groups using chi-square tests.

Results:

We identified 692,974 children with MH conditions. Average annual per-member-per-year (PMPY) spending for children in the sample was \$6351. Average PMPY spending ranged from \$2456 in the least expensive spending group to \$140,873 in the most expensive spending group. The top 1% highest-spending MH patients accounted for 22% of the sample's total spending. When compared with children in the other groups, the highest-spending patients were more likely to have multiple MH conditions (47% vs. 34%) and physical complex chronic conditions (73% vs. 11%). They were also more likely to have general ED visits (59% vs. 39%), MH ED visits (13% vs. 4.0%), general hospitalizations (46% vs. 2.4%) and MH hospitalizations (21% vs. 2.9%), $p < 0.001$ for all.

Conclusion(s):

Children in Medicaid with MH conditions and the highest spending commonly had mental and physical health multimorbidity as well as high rates of hospitalization and ED use. Systems improvement initiatives may leverage these findings to better meet the needs of children with MH conditions.

Time:

5:45-7:30 p.m.

Publication Number: 3828.4

Title: Expedited Acute Pediatric Primary Care Visits in an Urban, High-volume Practice

Presenters/Authors: Taraneh Behin, Shalona Merceir, Ekaterina Nekrasova, Maura Powell, Dana Srodes, Stephanie Mayne, Mary Kate Kelly, Lisa Biggs, Alexander Fiks

Location: Convention Center Halls D-G (Board 279)

Section:

3831 Health System Innovations (Telemedicine–EHR) 2

Presentation Type:

Poster Session

Background:

During sick visit season, large volumes of triage phone calls consume nurse time and delay responses to families of ill children. Innovation in care delivery systems may address these challenges.

Objective:

To test expedited delivery of acute visits in a high-volume, urban pediatric primary care clinic to increase patient access to care and improve the efficiency of nurse triage.

Design/Methods:

In a large, urban pediatric primary care office, we tested expedited delivery of acute care visits using PDSA (plan-do-study-act) cycles to improve processes. No additional staff were hired. To determine if a patient was eligible for an expedited appointment, schedulers answered phone calls and asked scripted questions. Children under 6 months of age, medically complex patients, those with difficulty breathing, wheezing or chest pain, and parents who wanted a nurse consult received usual telephone nurse triage. Patients who received expedited scheduling were triaged by nurses on arrival at the office. Data from the first 3 months were extracted from the electronic health record to measure overall visit volume by visit type (sick, well, expedited acute care), number of nurse triage encounters, wait time from check-in to rooming and no-show rate. Chi-square or t-tests assessed the significance of differences between groups.

Results:

Since the launch, 1,897 expedited acute care visits occurred (79% in English, 9% Spanish, and 12% Other (16 other languages)). Expedited visit volume per month rose by 61% from 450 visits in October to 723 visits in December, and increased significantly by month as a proportion of sick ($p < 0.001$) and all visits ($p < 0.001$) during this period. Compared to 2016 and 2017, the overall monthly visit volume at the practice also expanded. On average, routine sick and expedited visits had similar wait times: mean 11.4 min routine sick versus 12 min expedited acute visit ($p = 0.99$). The volume of telephone nurse triage decreased 12%, 39% and 18%, respectively, in October, November and December compared to the same month in 2017. The no-show rate for expedited acute visits was 6%, half of the rate (12%) for routinely scheduled visits during the same period ($p < 0.001$).

Time:Conclusion(s):

Results suggest that expedited acute primary care in an urban, multicultural, high-volume office is feasible, supports growth in visit volume and may lessen the need for telephone nurse triage, allowing for increased direct patient care.

Publication Number: 3831.1

5:45-7:30 p.m.

Title: Depression and Anxiety Symptoms During and After Asthma Hospitalization

Presenters/Authors: Stephanie Doupnik, Diana Worsley, Xuemei Zhang, Jennifer Faerber, Chén Kenyon

Location: Convention Center Halls D-G (Board 291)

Section:

3832 Hospital-Based Medicine: Mental Health

Presentation Type:

Poster Session

Background:

Depression and anxiety are common in young people with asthma, and hospitalization is an opportunity to identify and address symptoms. Little is known about whether depression and anxiety symptoms during hospitalization persist after hospital discharge.

Objective:

Compare depression and anxiety symptoms during asthma hospitalization and 6 weeks after discharge.

Design/Methods:

We conducted a prospective cohort study of patients 7 to 17 years old hospitalized for asthma in an urban, free-standing children's hospital. With informed consent from patients and guardians, patients reported depression and anxiety symptoms using Patient-Reported Outcomes Measurement Information System [PROMIS(R)] pediatric short-form scales during hospitalization and 6 weeks after discharge. We compared baseline and follow-up depression and anxiety symptoms using paired t-tests for the subsample with 2 sets of measurements.

Results:

We enrolled 130 participants, and 91 (72%) completed baseline and follow up measures. There were no significant differences in baseline characteristics, including depression and anxiety symptoms, for those who did and did not complete follow up ($p > 0.05$ for all). For those who completed follow up, median age was 10 years (IQR 9-13); 46% were male; 87% were non-White race. Median hospital stay was 2 days (IQR 1-2), and 75% had a severe asthma exacerbation requiring continuous albuterol. The mean within-person change for both depression and anxiety was an at least 6-point decrease (i.e. an improvement) in reported symptoms ($p < 0.001$ for both). Mean depression score during hospitalization was 46 (standard deviation [SD] 9.7) and at 6-week follow-up was 41 (SD 7.4). Mean anxiety score during hospitalization was 48 (SD 10.8) and at 6-week follow-up was 40 (SD 9.2). Although sample means at follow up were lower, 21 of 91 participants (23%) had more symptoms at follow up (7 with higher

Time:

depression and anxiety, 8 with higher depression only, and 6 with higher anxiety only). Mean depression and anxiety symptoms in the study sample were lower than the calibration population mean of 50 among children with various chronic illnesses ($p < 0.001$ for all).

Conclusion(s):

Most children and adolescents had more depression and anxiety symptoms during hospitalization than at 6-week follow up; however, a subset of children had more symptoms at follow up. Future research to investigate the relationship of depression and anxiety symptom trajectories with health outcomes could guide hospital-based efforts to support young people's mental health.

Publication Number: 3832.3

5:45-7:30 p.m.

Title: How Big are Missed Opportunities for Human Papillomavirus (HPV) Vaccination in Pediatric Primary Care Practices? An AAP Pediatric Research in Office Settings (PROS) Study

Presenters/Authors: Abigail Breck, **Mary Kate Kelly**, Margaret Wright, Alisa Stephens-Shields, Russell Localio, Robert Grundmeier, Christina Albertin, Laura Shone, Jennifer Steffes, Sharon Humiston, Cynthia Rand, Dianna Abney, **Alexander Fiks**, Peter Szilagyi

Location: Convention Center Halls D-G (Board 719)

Section:

3882 Immunizations/Delivery 1

Presentation Type:

Poster Session

Background:

HPV vaccination rates remain low, leaving many youth susceptible to HPV-disease. HPV missed opportunities (MOs) are visits with a provider during which a patient was eligible for HPV vaccine but did not receive it. While some national information is known about simultaneous MOs (when HPV-vaccine eligible patients receive another vaccine but not HPV), little is known nationally about MOs overall for HPV vaccine.

Objective:

To describe, in a national sample of pediatric primary care practices: (a) the prevalence of MOs, (b) patient and visit features associated with MOs, and (c) the proportion of overall MOs that involve simultaneous MOs.

Design/Methods:

As part of the NIH-funded STOP-HPV trial, we extracted electronic health record data from 23 practices across 10 states recruited from the AAP Pediatric Research in Office Settings national pediatric primary care network. We extracted all office visits (excluding nurse-only visits) from 2015-2018 among HPV vaccine-eligible 11-17 year olds. Using descriptive analyses, we examined MOs (overall and simultaneous), and by visit type (preventive, acute/chronic), patient sex and age and HPV dose due (initial or subsequent).

Results:

Time:

58,043 adolescents had 173,199 visits at which HPV vaccine was due. In 82% of visits where the first HPV vaccine dose was due there was a MO. This occurred in 61% of HPV-vaccine eligible preventive visits and 98% of HPV-vaccine eligible acute/chronic visits. MOs during visits at which the subsequent HPV vaccine dose was due were not as high: 58% of all such eligible visits, including 15% of preventive visits and 84% of acute/chronic visits. Across both initial and subsequent HPV-vaccine eligible visits, MOs were higher at visits for 13-17yr olds than at visits for 11-12yr olds (e.g., for 1st doses—85% vs 79%). Simultaneous MOs accounted for only a minority (14%) of all MOs overall, at preventive or acute/chronic visits, and among both younger and older adolescents.

Conclusion(s):

MOs for HPV vaccine are high, even during visits with patients who accepted a previous HPV vaccine dose. Few adolescents are vaccinated during acute/chronic visits, even for subsequent HPV doses. Higher MOs among older adolescents may be a function of vaccine refusal. Simultaneous MOs represent only a minority of all MOs. Strategies to reduce HPV MOs are needed.

Publication Number: 3882.1

5:45-7:30 p.m.

Title: The Impact of Early Recognition and Treatment of a Systemic Hypertension Program on Reducing Blood Pressure: The Hypertension and Vascular Evaluation (HAVE) Program

Presenters/Authors: **Jungwon Min**, Melodee Mendoza, **Heather Griffis**, Hannah Hanson, Michelle Kaplinski, Amy Kogon, Kevin Meyers, Shobha Natarajan

Location: Convention Center Halls D-G (Board 105)

Section:

3811 Hypertension Posters

Presentation Type:

Poster Session

Background:

Pediatric hypertension is commonly underdiagnosed and undertreated. The Hypertension and Vascular Evaluation (HAVE) Program was established in December 2011 by Divisions of Cardiology and Nephrology at Children's Hospital of Philadelphia to address this growing concern among high-risk pediatric patients.

Objective:

To examine 1) factors associated with attendance at follow-up visit in HAVE program and 2) the effect of HAVE program on controlling the subsequent risk of hypertension among patients who attended at least one follow-up visit.

Design/Methods:

Demographic and clinical data were collected from all visits in the HAVE Program between 2011 and 2018. Patient characteristics at the first visit were compared between those who followed-up (n=113) vs. those lost to follow-up (n=111) by X2 test and t-test. Subsequent changes in systolic blood pressure

Time:

(SBP) and the risk of hypertension in follow-up patients were examined using a mixed-effects linear regression model/logistic regression model.

Results:

A total of 310 patients had a first visit in the HAVE clinic. A follow-up visit was recommended in 270 patients and 42% of these patients had at least one visit by November 2018. Follow-up patients were younger (difference=1.5 (3.8) year), more likely to have family history of hypertension (32.7 vs. 18.9%) and had a lower BMI (3.5 (8.5) kg/m²) and SBP (4.3 (12.8) mmHg) than those lost to follow-up (all p<0.05). Patients lost to follow up were more likely to have a cardiovascular-related primary diagnosis (high blood pressure, obesity or dyslipidemia) than follow-up patients (34.2 vs. 17.7%, p<0.01). However, there was no significant difference in race, hypertension stage and antihypertension medication use. Patients with severe hypertension were more likely to have reduced SBP by the number of follow-up visits (β (SE) = -10.1 (2.1) mmHg, p <0.001). Also, the more follow-up visits a patient had, the stage of hypertension was more likely to be improved among those with elevated, stage 1 or 2 hypertension (OR= 0.8 (0.6-1.0)) after adjusting for sex, race, antihypertension medicine use, primary diagnosis and family history of hypertension.

Conclusion(s):

Differential follow up attendance was observed for specific patient demographics and types of primary diagnosis. Follow-up visits in the HAVE Program contributed to optimizing blood pressure control among hypertensive patients. Additional effort is required to improve follow-up.

Publication Number: 3811.9

5:45-7:30 p.m.

Title: Role of Telemedicine in the Transition from Pediatric to Adult Care

Presenters/Authors: **Adam Greenberg**, Caren Steinway, **Katherine Wu**, Bethany Thomas, Alexandra Sowden, Marissa DiGiovine, John Chuo, **Sophia Jan**

Location: Convention Center Halls D-G, Board 248

Section:

3827 General Pediatrics: Health Literacy Posters

Presentation Type:

Poster

Background:

Telemedicine is increasingly used as a clinical tool though few institutions have utilized it for transitioning adolescents and young adults (AYA) from pediatric to adult providers.

Objective:

To implement a telemedicine program that; 1) improves transition preparation for AYA with epilepsy; 2) streamlines hand-offs between pediatric neurology providers (PN) and adult neurology providers (AN); and 3), determine telemedicine's feasibility and acceptability.

Design/Methods:

Time:

Patients were identified by PN as ready to transition and then contacted to schedule a telemedicine visit, if interested. Information hand-offs between PN and AN were structured using I-PASS: Illness severity, Patient summary, Action list, Situational awareness and Synthesis by receiver. Two post-visit surveys were implemented: 1) a patient/family (P/F) survey that assessed the helpfulness of hearing a transition signout, its accuracy and confidence in the AN, and 2) a PN and AN survey that assessed call content accuracy and value.

Results:

From September 2017 to June 2018, 10 telemedicine visits were conducted in 5 quality-improvement cycles. The initial 2 calls were conducted in person during the last visit with the PN. All subsequent calls were conducted with the patient at home: 6 via telephone conference calls and 2 via secure video chat. Call length was initially 45 minutes, driven by a detailed medical history. In subsequent sessions, content was pared down to: 1) a brief sign out by PN; 2) an introduction to adult AN, practice expectations and logistics and 3) time for P/F questions. This reduced call length to 10 minutes. Post call survey response was poor (N=4). Of those, 75% thought it was helpful to hear the conversation between providers and thought the AN received adequate information. However, only 50% of patients felt confident that the AN could manage their disease despite this hand-off. PN (89%, n=8) and AN (78%, n=7) reported that telemedicine was an acceptable format for transition sign-out; however, AN reported still needing to review pediatric electronic medical records for most patients afterwards.

Conclusion(s):

Although P/F, PN and AN found the sign-out helpful, telemedicine alone did not improve the transition process. Value-added adoption of telemedicine for transition of care requires an iterative process to identify optimal content and process—which is highly dependent on the clinical subject matter and participant needs and expectations.

Publication Number: 3827.248

5:45-7:30 p.m.

Title: A Research Agenda for Emergency Medicine-based Adolescent Sexual and Reproductive Health

Presenters/Authors: Melissa Miller, Lauren Chernick, Monika Goyal, Jennifer Reed, Fahd Ahmad, Erin Hoehn, Michelle Pickett, Kristin Stukus, **Cynthia Mollen**

Location: Convention Center Halls D-G, Board 323

Section:

3836 Emergency Medicine: Gynecology

Presentation Type:

Poster

Background:

Adolescents are disproportionately affected by human immunodeficiency virus/sexually transmitted infections (HIV/STIs) and unintended pregnancy. High-quality research is needed to improve adolescent sexual health outcomes and identify best practices. Research is especially needed to inform care in non-

Time:

traditional settings, such as emergency departments, where high-risk adolescents frequently seek care and practice variation is high.

Objective:

To identify key questions for emergency medicine (EM)-based adolescent sexual and reproductive health and to develop an evidence-based research agenda.

Design/Methods:

We recruited national content experts to serve as advisory group members and used a modified Delphi technique to develop consensus around actionable research questions related to EM-based adolescent sexual and reproductive health care. Author subgroups conducted literature reviews and developed the initial list of research questions. We utilized in-person meetings, conference calls and electronic surveys to iteratively refine the items with input from advisory group members (n=18). Using an electronic survey, we then asked external stakeholders (n=22) to rate each item for its importance in expanding the evidence base (1= not important to 5 = very important).

Results:

Our final list of 24 research questions included items that spanned all sexual and reproductive health topics as well as questions specific to HIV/STI, pregnancy prevention, confidentiality/consent, public health and barriers and facilitators to medical care. External stakeholders rated research questions related to HIV/STI, cost effectiveness, brief intervention for sexual risk reduction, and implementation and dissemination as most important.

Conclusion(s):

Using validated consensus-building processes, we identified critical research questions to inform EM-based adolescent sexual and reproductive health research. Because innovative research has potential to improve health outcomes while reducing the sizeable costs associated with HIV/STI and unintended pregnancy, funders and researchers should consider increasing attention to these key questions.

Publication Number: 3836.323

5:45-7:30 p.m.

Title: What's in a Name? Implicit Bias in the Pediatric Emergency Department

Presenters/Authors: **Tiffani Johnson**, Mariam Olujide, **Scott Lorch**

Location: Convention Center Halls D-G, Board 316

Section:

3835 Emergency Medicine: Disparities

Presentation Type:

Poster

Background:

Research has shown that names can prime stereotypes, influencing how an individual is perceived and their likelihood of receiving employment, housing and mentorship opportunities. In the health care setting, physicians frequently see their patient's name in the medical record prior to interacting with patients during the medical encounter. Although research has demonstrated provider

Time:

implicit preference for white versus black faces, little is known about implicit attitudes regarding patients' names.

Objective:

To describe levels of implicit racial bias towards names that sound stereotypically black versus white among acute care providers.

Design/Methods:

A validated Implicit Association Test (IAT) using names measured unconscious racial bias in a sample of pediatric emergency medicine (PEM) and trauma surgery fellows and faculty physicians in a larger urban children's hospital. Stereotypically white sounding names used were Chip, Brad, Walter, Ralph, Heather, Betsy, Peggy and Colleen. Stereotypically black sounding names used were Tyrone, Malik, Jamal, Leroy, Tameka, Latisha, Tawanda and Shaniqua.

Results:

Of 75 subjects approached (64 PEM, 11 trauma), 54 (72.0%) consented and completed the electronic assessment with IAT. Of participants, 72.2% were white and 65.4% female, with a median age of 38 years. Participants on average had slight pro-white/anti-black bias on the name IAT ($M=0.27$, $SD=0.45$, Cohen's $D=0.60$). Trends in lower IAT scores were noted for women compared to men ($M=0.18$ versus $M=0.36$), PEM compared to trauma providers ($M=0.21$ versus $M=0.45$), fellows compared to faculty ($M=0.20$ versus $M=0.28$) and younger compared to older participants (Age <35 $M=0.16$, $36-45$ $M=0.26$, >46 $M=0.38$). Due to smaller sample sizes of subgroups, these differences were not statistically significant.

Conclusion(s):

Implicit pro-white/anti-black racial bias based on name was identified in this sample of acute care physicians. Further research is needed to examine how unconscious bias impacts patient care, such as disparities in timeliness of care, medical decision making, and communication with patients and families.

Publication Number: 3835.316

Time:

7:30-9:30 a.m.

Title: Utilization of Mental & Behavioral Health Care Among Children in Immigrant Families: National Survey of Children's Health-2016**Presenters/Authors:** Julia Rosenberg, Marjorie Rosenthal, Mona Sharifi, Laura Cramer, **Katherine Yun****Location:** Convention Center Halls D-G, Board 255Section:

4127 Vulnerable and Underserved Populations/Health Equity & Social Justice: Health Care Utilization

Presentation Type:

Poster

Background:

Children in immigrant families (CIF)—defined as children with at least one foreign-born parent—face unique psychosocial stressors and barriers to mental/behavioral health (MBH) care. Prior school-, community- and claims-based studies show Asian and Latino CIF are more likely to have internalizing symptoms relative to non-CIF peers, and tenuous maternal immigration status is associated with increased risk of childhood anxiety and adjustment disorder. However, little is known about access to MBH services for CIF in the U.S.

Objective:

Using the National Survey of Children's Health-2016 (NSCH-16), we describe prior-year utilization of MBH care among CIF and non-CIF with selected MBH diagnoses, as well as social and demographic characteristics associated with access to care.

Design/Methods:

Using the NSCH-16, a nationally representative survey of U.S. children ≤ 17 years, we analyzed 2-17 year olds with non-missing data on household generation whose parent reported the child had ever had at least one MBH diagnosis (ADHD, anxiety, autism, depression or behavioral/conduct disorder). We defined prior-year MBH care as receipt of MBH counseling, medication or both. We analyzed data in Stata with svy (subpop) commands and sampling weights and used multivariable logistic regression to examine socio-demographic characteristics associated with treatment.

Results:

Socio-demographic characteristics and specific diagnoses for CIF and non-CIF with MBH diagnoses varied. Among 999 CIF and 7,392 non-CIF with any MBH diagnosis, 46.3% of CIF (95%CI 39.1–53.7%) and 58.7% of non-CIF (95%CI 56.3–61.0%) received MBH care in the prior year. Differences were most pronounced when examining receipt of both counseling and medication: 15.6% of CIF (95%CI 11.5-20.8%) and 25.7% of non-CIF (95%CI 12.7-27.7%) received both. With the exception of ADHD, similar differences were observed when examining care by MBH diagnosis. In the adjusted model, the odds of CIF using MBH care were 0.78 (95% CI 0.55-1.09) relative to non-CIF. Receipt of no MBH care was associated with Latino ethnicity, no or unknown insurance, MBH diagnoses other than ADHD, very good maternal mental health, male gender, low household income and <2 reported adverse childhood experiences (ACEs).

Time:Conclusion(s):

CIF with MBH diagnoses have lower prior-year treatment rates than non-CIF with MBH diagnoses. Differences in access to care may be driven by differences in insurance coverage, diagnoses and social stressors.

Publication Number: 4127.5

7:30-9:30 a.m.

Title: Parental Perceptions of the Impact of PriCARE Parenting Classes on Maladaptive Parenting

Presenters/Authors: Natalie Stavas, Devon Kratchman, Veronica Darlow, Joanne Wood

Location: Convention Center Halls D-G (Board 345)

Section:

4138 Child Abuse & Neglect 2

Presentation Type:

Poster Session

Background:

Behavioral problems in children are common and place them at risk for harsh parenting and child maltreatment. Harsh parenting can lead to worsening behavioral problems, low self-esteem, depression and future child maltreatment. Child Adult Relationship Enhancement in Pediatric Primary Care (PriCARE), a positive parenting program for caregivers of children with behavior problems, has been identified as a mechanism for promoting childhood well-being and decreasing the effects of maladaptive or harsh parenting.

Objective:

The goals of our study were to 1) understand the experience of parents who were referred to PriCARE, and 2) explore changes in both parental and child behaviors after referral to PriCARE.

Design/Methods:

We conducted semi-structured interviews with 29 parents who were recruited to participate in a PriCARE randomized control trial. Interviews were audio-recorded, transcribed, coded and analyzed using NVivo. Analytic approach consisted of content analysis with constant comparative coding. Recruitment ended when thematic saturation was reached.

Results:

29 parents completed semi-structured interviews. 93% were female and 72% were Black. 68% had a high school education or lower. The majority of parents identified changes in their parenting behaviors including increased empathy, improved communication and less harsh parenting. The majority also reported improved changes in their child's behaviors including less tantrums and better emotional regulation. Much of this seemed to stem from an improved parent-child bond and a decrease in parental stress.

Conclusion(s):

Parents perceived PriCARE as a successful intervention to improve their own parenting skills and in return noted an improvement in their child/children's

Time:

behavior. The PriCARE positive parenting program may be beneficial for specific populations of parents.

Publication Number: 4138.5

7:30-9:30 a.m.

Title: Prevalence of Child Abuse in Children Presenting with Rib Fractures

Presenters/Authors: Brian Brennan, Ana Luiza Altaffer, M. Katherine Henry, **Joanne Wood**

Location: Convention Center Halls D-G (Board 336)

Section:

4137 Child Abuse & Neglect 1

Presentation Type:

Poster Session

Background:

Multiple studies have reported a high prevalence of non-accidental trauma (NAT) among children with rib fractures. These studies have primarily included children < 36 months old who presented with other injuries and upon further evaluation for NAT were found to have rib fractures. The prevalence of abuse and characteristics associated with abuse likelihood in children presenting with rib fractures, however, has not been well described.

Objective:

The primary objective is to determine 1) the prevalence of additional injuries concerning for NAT and 2) the prevalence of a diagnosis of NAT in children presenting with rib fractures or in whom rib fractures are found incidentally during an evaluation unrelated to abuse.

Design/Methods:

We conducted a retrospective study of children <72 months with rib fractures at a tertiary pediatric hospital between 2007 and 2018. Children with ICD9/10 codes for rib fractures were identified. Children in motor vehicle accidents, hospitalized following birth or with previously diagnosed bone disease were excluded. We performed a detailed chart review to identify the subset of children in whom rib fractures were the first presenting injury, excluding those who presented for other injuries and were then found to have rib fractures. Demographic and clinical information were abstracted from the medical records. The prevalence of additional injuries and prevalence of NAT (as determined by the hospital CPT and based on a standardized abuse scale) were calculated. Associations between patient characteristics and the likelihood of other injuries and a diagnosis of NAT were examined using a χ -square test.

Results:

Of the 72 children included, 85% were <12 months, 59% had a single rib fracture, 56% had only healing rib fractures and 15% had only acute fractures. Additional injuries were identified in 65%, including head injuries (29%), limb fractures (29%), spine injuries (7%) and cutaneous injuries (17%). Three-quarters of cases assessed by the CPT were categorized as concerning, highly concerning or diagnostic of abuse. Using a standardized scale, 56% of cases were classified as definite or likely abuse. Posterior rib fractures, multiple rib fractures and rib

Time:

fractures of multiple ages were associated with presence of additional injuries and classification as definite or likely abuse ($P < 0.05$).

Conclusion(s):

The presence of a rib fracture in young children is associated with a high likelihood of additional concerning injuries and should prompt an evaluation for NAT.

Publication Number: 4137.6

7:30-9:30 a.m.

Title: Food for Thought: Caregiver Preferences for Food Insecurity Screening and Resource Referral

Presenters/Authors: **Danielle Cullen**, Megan Attridge, Joel Fein

Location: Convention Center Halls D-G (Board 268)

Section:

4128 Vulnerable and Underserved Populations/Health Equity & Social Justice: Screening

Presentation Type:

Poster Session

Background:

Food insecurity (FI), while related to poverty, is an independent predictor of poor health outcomes for children. Although there is growing interest in screening for FI in the clinical setting, little research exists describing the effect of screening practices on caregiver comfort and willingness to disclose social risk, or what factors affect eventual engagement with food resources among those who screen positive.

Design/Methods:

In this qualitative component of a randomized trial comparing verbal and tablet-based screening modalities for FI, we conducted 40 semi-structured interviews with caregivers of pediatric patients who screened positive for FI in the emergency department of an urban, freestanding children's hospital. We used purposive sampling to ensure representation of participants who received each screening modality, those who expressed a preference of screening modality and level of acceptance of direct connection to a resource agency. All interviews were digitally recorded and transcribed. We used content analysis with constant comparison to code interviews inductively and identified emerging themes through an iterative process.

Results:

Three primary themes emerged as factors affecting caregiver comfort in FI screening and engagement with resources: caregiver relationship with their medical provider, perception of need and effective connection with food resources. While most caregivers were comfortable with FI screening in the clinical environment, a close relationship with their medical provider was paradoxically described as both a facilitator and a barrier to relaying social need. Engagement with resources was affected by the perception of personal need relative to their peers, with multiple caregivers describing service refusal because "someone else could use it more," and caregiver prioritization of food access

Time:

within a milieu of life stressors. Furthermore, caregivers suggested practices to facilitate effective connection with food resources such as use of mobile health technology, geographically based resources and personalized connections.

Conclusion(s):

This qualitative evaluation of FI screening in the clinical environment elucidated factors that can influence caregiver comfort with screening, reasons for current low rates of engagement with resources and strategies for improving caregiver connections with resources moving forward. This highlights the importance of involvement of target families in the development and implementation of social resource referral processes.

Publication Number: 4128.9

7:30-9:30 a.m.

Title: Impact of Observation Encounters on Length of Stay in Children's Hospitals

Presenters/Authors: James Gay, Matt Hall, Rustin Morse, **Evan Fieldston**, David Synhorst, Michelle Macy

Location: Convention Center Halls D-G (Board 33)

Section:

4103 Health Services Research: General 2

Presentation Type:

Poster Session

Background:

Length of stay (LOS) is commonly reported as a benchmarking measure for hospital resource utilization and quality. Decreasing LOS improves patient quality of life, reduces exposure to hospital acquired conditions and provides hospitals more efficient care. Observation status admissions (OBS) are billed as outpatient services despite the use of inpatient facilities in most children's hospitals. OBS are designed for monitoring patients with the expectation of improvement within 24-28 hours; thus, LOS for OBS is typically much shorter than for the average "Inpatient" (IP). Given the emphasis on reducing LOS in many children's hospitals, the impact of OBS may be significant. Yet, little information is available for comparison.

Objective:

To determine the impact of inclusion of OBS on calculation of LOS across children's hospitals.

Design/Methods:

Retrospective cohort study of hospitalized children (age 0-to-18 years) in 2017 from the Pediatric Health Information System (Children's Hospital Association, Lenexa, KS), which includes clinical and billing data from 52 children's hospitals, representing ~20% of all U.S. discharges for children. Normal newborns, transfers in and out, deaths, and hospitals not reporting LOS in hours were excluded. Mean LOS for IP only and IP+OBS was calculated for each hospital and ranked by quintile. Statistical analyses were performed using SAS v.9.4 (SAS Institute, Cary, NC), with a significance threshold of $p < .001$.

Time:Results:

In 2017, 45 hospitals and 625,032 hospitalizations met the inclusion criteria (IP=410,731, OBS=214,301). The geometric mean (SD) risk-adjusted LOS was 75.2 (2.6) hours for IP vs 25.0 (1.7) hours for OBS and 54.3 (2.7) hours for IP+OBS combined ($p < .001$). There were significant differences in age, race, payor, chronic disease incidence and Case Mix Index between IP and OBS patients ($p < .001$ for all comparisons). Among PHIS hospitals, the % of total discharges that were OBS ranged from 0.0-60.3%. For all hospitals, the addition of OBS to IP LOS calculations resulted in a decrease in risk-adjusted LOS compared with IP encounters alone. For 34/45 (75.6%) of hospitals, including IP+OBS resulted in a change in LOS of ≥ 1 quintile rank compared with LOS for IP alone.

Conclusion(s):

In children's hospitals, OBS have a much shorter average LOS compared with IP admissions and inclusion of OBS has a significant impact on LOS calculations. Careful consideration should be given to the inclusion or exclusion of OBS when determining LOS for benchmarking, quality and resource utilization measurements.

Publication Number: 4103.3

7:30-9:30 a.m.

Title: Implementing a Care Team Assistant Program: Lessons Learned

Presenters/Authors: Ryosuke Takei, George Dalembert, Jeanine Ronan, Nicole Washington, Elizabeth Salazar, Stuti Tank, Anna Sweeney, Susan Kolb, **Evan Fieldston**

Location: Convention Center Halls D-G (Board 204)Section:

4122 Hospital-Based Medicine: Optimizing Inpatient Care 2

Presentation Type:

Poster Session

Background:

Excessive administrative tasks have been associated with adverse consequences for doctors and their patients. Furthermore, this burden of non-clinical tasks has been linked to depersonalization, a major component of physician burnout. The Care Team Assistant (CTA) program, established in November 2016, provides administrative support for inpatient medical teams to help optimize patient care and promote wellness.

Objective:

To share the acceptability, feasibility, sustainability and effectiveness of implementing a CTA program.

Design/Methods:

The program was established in a large, urban, academic, tertiary medical center. A needs assessment included time-motion studies, resident surveys and drafting of a key driver diagram. Highest impact goals were identified by clinicians, nursing leadership and administrative stakeholders. A physician lead and project manager were designated, and 5 CTAs were hired. Once didactic/clinical training

Time:

was completed, CTAs were incorporated into resident teams and assigned various non-clinical tasks. Program leaders met regularly to discuss development and to ensure quality assurance for the CTAs.

Results:

Acceptability: Resident surveys have shown CTAs completing a large percentage of daily administrative tasks with promotion of job satisfaction and time spent in direct clinical care. Feasibility: Initial challenges included a lack of benchmark/guidelines for CTA training. These were iteratively refined with input from CTAs and physician partners. Some CTAs were terminated given inability to meet established markers for competency. Another major challenge was the lack of familiarity with the role and sub-optimal utilization of the CTAs requiring significant efforts to raise awareness. Effectiveness: The initiative has shown concrete positive impacts on various measures including PCP communication and family-centered rounds. CTAs have also helped address institutional needs including capacity management by facilitating earlier discharges. Sustainability: CTAs have become integral members of inpatient teams with involvement in multiple interdisciplinary initiatives. The program continues to grow with 12 current CTAs and expansion to the PICU.

Conclusion(s):

CTAs provide an effective means of reducing administrative burden and improving care delivery metrics. Rigorous implementation of a CTA program should include a needs assessment and identification of key target areas of impact. Thoughtful design and expansion informed/supported by stakeholders is key to achieving acceptability, sustainability and operational success.

Publication Number: 4122.1

7:30-9:30 a.m.

Title: Receipt of Interconception Preventive Care Among High-risk Mother-infant Dyads

Presenters/Authors: **Emily Gregory**, **Molly Passarella**, **Alexander Fiks**, Lisa Levine, **Scott Lorch**

Location: Convention Center Halls D-G (Board 12)

Section:

4101 Health Services Research: Neonatology

Presentation Type:

Poster Session

Background:

Maternal health risks increase the rate of poor birth outcomes, including prematurity. Pediatricians are asked to identify and address maternal health issues (e.g. postpartum depression), yet women also receive care in adult settings. Coordinating pediatric and adult preventive care opportunities may improve birth outcomes.

Objective:

Identify preventive interconception care opportunities from the mother-infant dyad perspective.

Time:Design/Methods:

This retrospective cohort uses Medicaid (MAX) data, linking mother-infant records for 2007-2011 births. Twelve states had maternal-infant linkage of > 70% and high-quality encounter data, based on standards described by Mathematica. Dyads were Medicaid eligible for ≥ 11 of 12 months following birth. Dyads were stratified on maternal health risks using ICD and CPT codes from pregnancy to 3-months postpartum. Risk categories included: Cardiovascular (CV) based on codes for diabetes, hypertension or obesity; Mental health (MH) based on codes for anxiety or depression; and preterm birth or low birth weight (PTB) based on the prior delivery. The primary outcome was preventive visits in the year after birth, defined broadly using ICD codes associated with any preventive or postpartum care, contraception, or maternal health risk category. We examined visit counts and patterns of care across risk groups. One pattern, in which dyads have ample opportunities for preventive care in pediatric settings (defined as at or above median preventive visits, by state) but no preventive care in adult settings, may be of particular interest to pediatric health systems. Logistic regression assessed for a relationship between dyad characteristics and this pattern.

Results:

We included 602,880 dyads. Across all groups, more preventive visits occurred in pediatric than adult settings. 41% of dyads had no adult preventive visits. CV or MH dyads were more likely to receive adult preventive care than PTB or no risk dyads (chi-squared p-value < 0.001). In regression, CV or MH dyads were less likely to have a pattern of ample pediatric-no adult preventive care (compared to no risk: CV OR 0.87, 95% CI 0.85 – 0.89; MH OR 0.78, 95% CI 0.73 – 0.84). PTB was not associated with this pattern (OR 1.02, 95% CI 0.98 – 1.08).

Conclusion(s):

We found more preventive visits in pediatric than adult systems, even among dyads with maternal health risks. With appropriate supports, pediatric health systems may be well positioned to help coordinate preventive care for mother-infant dyads in the interconception period.

Publication Number: 4101.2

7:30-9:30 a.m.

Title: Behaviors Associated with Food Security Among Low-income U.S. Households with Children, NHANES 2007-2010

Presenters/Authors: **Senbagam Virudachalam**, Chris Feudtner, **Jungwon Min**, **Jennifer Faerber**, Justine Shults, **Cadence Bowden**, **Alexander Fiks**

Location: Convention Center Halls D-G (Board 244)

Section:

4126 Vulnerable and Underserved Populations/Health Equity & Social Justice: Food Insecurity

Presentation Type:

Poster Session

Background:

Time:

Though pediatricians increasingly screen for food insecurity, few interventions exist for food insecure families, beyond emergency food provisions. Notably, not all low-income families are food insecure, raising the possibility that some may have behaviors that protect against food insecurity despite economic hardship. Identifying such behaviors could inform interventions for food insecure families.

Objective:

Test whether food behaviors differ among food-secure vs food-insecure low-income U.S. households with children

Design/Methods:

This cross-sectional study employed nationally representative NHANES (National Health and Nutrition Examination Survey) data from 2007-2010. Households with children <18 years and income <300% of the federal poverty level (FPL) were included. The primary outcome was household food security. Predictors were modifiable household food behaviors including grocery shopping, cooking, family meals, and fast or frozen food consumption. Covariates included income (FPL, modeled continuously), race/ethnicity, food assistance, grocery store access and head of household gender, age, education level, marital status and country of birth. Associations between household food behaviors and food security were tested via logistic regression modeling that accounted for the complex survey design.

Results:

Among U.S. households with children and income <300% FPL (n=8,831, representing 93,348,271 Americans), 44% were food insecure. Food-secure and insecure families had equal grocery store access, family meal frequency and fast food consumption in weighted χ^2 tests. In weighted logistic regression models, the probability of food security was higher among families that grocery shopped at least weekly (Δ = percentage point difference in probability of food security = 4.8; 95% CI: 1.1, 8.4) and typically cooked dinner in <90 minutes (Δ = 5; 95% CI: 1.6, 8.4); those who cooked dinner every night were less likely to be food secure (Δ = -11.3; 95% CI: -20.3, -2.4).

Conclusion(s):

Almost half of American families with children and incomes <300% FPL are food insecure. Low-income, food-secure families engage in different food behaviors than food-insecure families. Food secure families are more likely to grocery shop frequently and cook efficiently but are less likely to cook dinner every night. These behaviors may reflect more effective food resource management skills among food secure families and are potential targets for interventions to address food insecurity.

Publication Number: 4126.3

7:30-9:30 a.m.

Title: Adherence to HIV Testing Guidelines Among Adolescents with Acute Sexually Transmitted Infections

Presenters/Authors: Danielle Petsis, Jungwon Min, Yuan-shung Huang, Aletha Akers, Sarah Wood

Location: Convention Center Halls D-G, Board 323

Section:

Time:

4136 Adolescent Medicine: Sexual Health/Gynecology

Presentation Type:

Poster

Background:

Rates of new sexually transmitted infections (STI) have increased dramatically over the past decade, particularly among adolescents. National guidelines recommend HIV testing with incident STIs; however, adherence to this guideline in adolescent clinical settings is currently unknown.

Objective:

To determine the prevalence of HIV testing among adolescents with acute STIs in two urban, primary care clinics and identify patient and health care factors associated with HIV testing.

Design/Methods:

Retrospective study of youth aged 13-24 years with incident gonorrhea, chlamydia, syphilis or trichomonas from July 2014 to December 2017. The primary outcome was HIV testing within 90 days of STI diagnosis. Potential risk factors included patient (age, sex, STI history and multiple STIs at diagnosis) and health care factors (provider type, insurance status, visit confidentiality and receipt of primary care at clinical sites). Hierarchical mixed effects logistic regression model was used to examine the effect of patient and health care factors on receipt of HIV testing.

Results:

1,313 patients contributed 1,816 acute STI episodes. The median age at STI episode was 17 years (IQR:16-18), 75% of episodes were in female patients, and 97% in African-Americans. Chlamydia was the most common STI (84%), followed by gonorrhea (17%), trichomonas (7%) and syphilis (0.4%). Only half (55%) of acute STI episodes had HIV testing within 90 days. Of those not tested for HIV, 28% had an HIV test ordered but not completed. In bivariate analysis, sex, history of STIs, provider type, insurance status and confidentiality of visit were significantly associated with receiving HIV testing. In the final adjusted model, female sex (OR=0.66, CI:0.52-0.84), prior STI (OR=0.60, CI:0.48-0.75), being uninsured (OR=0.43, CI:0.20-0.90) and visit confidentiality (OR=0.60, CI:0.42-0.83) were associated with decreased odds of HIV testing within 90 days of STI than counterparts. Receipt of primary care (OR=1.40, CI:1.01-1.92) and provider type were both associated with HIV testing, with episodes managed by general pediatricians (OR=1.36, CI:1.06-1.74), adolescent medicine providers (OR=1.73, CI:1.34-2.24) and pediatric residents (OR=2.51, CI:1.53-4.13) more likely to complete HIV testing compared to those managed by nurse practitioners.

Conclusion(s):

The prevalence of HIV testing among adolescents with acute STIs is suboptimal and highly influenced by patient demographics and STI history, as well as provider and utilization of confidential sexual health care.

Publication Number: 4136.323

7:30-9:30 a.m.

Title: Identifying NICU Admissions from Secondary Data; Differences Between Birth Certificates and Discharge Abstracts

Time:

Presenters/Authors: Ciaran Phibbs, Susan Schmitt, Molly Passarella, Ashley Martin, Scott Lorch

Location: Convention Center Halls D-G, Board 13

Section:

4101 Health Services Research: Neonatology

Presentation Type:

Poster

Background:

Over 10% of all births receive at least some care in a neonatal intensive care unit (NICU), but with limited exceptions there are no standardized population-level data that accurately identify NICU admissions.

Objective:

We compared NICU admissions identified on the birth certificate (BC) with those from the patient's hospital discharge data (PDD) that included detailed data on NICU admissions from revenue codes. We also used these data to develop criteria to accurately identify which infants were admitted to the NICU that can be applied to datasets without NICU admission data.

Design/Methods:

We used data on all in-hospital deliveries in South Carolina for 2013-2015 (N=155,706). Birth certificates were linked to the PDD for both mothers and infants to provide complete data on the perinatal episode of care. The PDD included the number of days at each level of NICU care. We compared the NICU admission rates identified from the BC with those from the PDD. We used BW, GA, length of stay, death, transfer, DRGs plus selected ICD codes and hospital charges to develop criteria that could accurately predict which infants were NICU admits.

Results:

The PDD identified 12.0% of infants as NICU admissions while only 7.6% were identified as NICU admission on the BC. These differences varied by gestational age (GA); for infants <32 weeks 93.0% were NICU on the PDD vs. 86.7% for the BC. Further, the linked data confirmed that the <32 week infants not coded as a NICU case in the PDD either died before they could be admitted to a NICU or were transferred to a NICU at another hospital. For infants of GA 32-36 weeks, 51.2% were NICU admits on the PDD, vs. 33.2% on the BC. For term infants 6.3% were NICU admits on the PDD vs. 2.9% on the BC. For modeling NICU admits, the clinical criteria and a LOS>5 days accurately identified NICU cases except for DRG 794, which includes the lowest acuity NICU cases (e.g., jaundice). For these cases, using hospital charges/day more than 25% above those for a normal newborn at the same hospital allowed accurate identification of the NICU cases.

Conclusion(s):

The BC NICU variable misses almost 40% of infants who are admitted to the NICU, including over half of the term infants admitted to the NICU. Thus, the BC NICU variable should not be used to identify NICU admissions. But, it is possible to accurately identify which infants were admitted to the NICU using linked BC-PDD data both with revenue codes and using an algorithm based on DRG, LOS and elevated hospital charges.

Time:

10:30-10:45 a.m.

Publication Number: 4101.13**Title:** Communication to Improve Shared Decision-making in ADHD: A Randomized Controlled Trial**Presenters/Authors:** **James Guevara**, **Alexander Fiks**, Katherine Bevans, Lisa Snitzer, Siobhan Leavy, Denise Stewart, **Caroline Broomfield**, Robert Grundmeier, Jeremy Michel, Steven Berkowitz, Nathan Blum, Matthew Bryan, **Heather Griffis**, Thomas Power**Location:** Convention Center 327-329Section:
4425 General Pediatrics: Mental/Behavioral HealthPresentation Type:
PlatformBackground:
Care managers have become increasingly used in pediatric practice, yet little is known of their effectiveness.Objective:
To determine the comparative effectiveness of care management plus an electronic patient portal vs a patient portal alone on changes in ADHD symptoms, patient-reported outcomes and goal attainment among children with ADHD.Design/Methods:
9-month randomized-controlled trial involving children aged 5-12 years old with ADHD from 11 pediatric practices. Care management consisted of quarterly calls with caregivers to assess goals, provide education and facilitate communication with PCPs, teachers and mental health providers. The patient portal was developed to facilitate electronic capture of caregiver goals and preferences and parent and teacher ADHD rating scales. Outcome measures were assessed quarterly and consisted of Vanderbilt Parent Rating Scale (VPRS) scores (primary outcome), parent-proxy and child patient reported outcome measures (secondary) and a measure of goal attainment (secondary). Analyses were conducted using mixed-effects regression models adjusted for clustering by site that assessed time by intervention effects on outcome measures.Results:
Following informed consent, 303 children were enrolled, stratified by site, sex, and age-group, and randomized to care management + portal or portal alone. There were no differences in demographic characteristics or in the proportion on ADHD medications between groups at baseline. Parents expressed mainly academic goals (49%), but fewer behavioral (30%) or social interaction goals (21%) for their children at baseline. Over the course of the trial, the median number of care management sessions per family was two. After adjusting for seasonal variation, there was a significant decrease in VPRS scores over time in both groups, but children who received care management plus the portal did not have a change in VPRS scores that was different from children who received the portal alone. There were only modest changes in parent- or child-reported outcomes and goal attainment scores.

Time:

11-11:15 a.m.

Conclusion(s):

In this randomized controlled trial, children who received care management plus a portal for their ADHD did not report changes in ADHD symptoms, goal attainment or patient-reported outcomes that were different from children who utilized an ADHD portal alone. Telephonic communication using care managers may be no better than electronic communication using a portal at improving ADHD outcomes.

Publication Number: 4425.4

Title: Using Infant Well Visits to Identify Pediatric-aged Mothers Desiring Contraceptive Services

Presenters/Authors: Emily Gregory, Rosheen Grady, Andrea Bailer, Robert Grundmeier, Aletha Akers

Location: Convention Center 308

Section:

4415 Adolescent Medicine: Sexual/Reproductive Health

Presentation Type:

Platform

Background:

Repeat teen births represent 20% of all teen births. Pediatricians are positioned to provide services to young mothers presenting with their infants for routine care, even if these young women do not seek care for themselves.

Objective:

Improve identification and services for young mothers desiring contraception.

Design/Methods:

A single urban pediatric medical home that accepts > 100 newborns monthly undertook this quality improvement project. This site is collocated with a Title X adolescent family planning program. We developed a tool to promote documentation of maternal age, and screening, identification and referral of mothers desiring contraceptive services. This tool was embedded in well visit templates for infant visits up to four months of age. Site clinicians were educated about the tool in a single 30-minute session. We developed a workflow to provide same day access to contraception or referral to adolescent specialty care for LARC. We surveyed clinicians and mothers about their experience with the tool.

Results:

From December 2017-June 2018 our site saw 1415 new infants. Maternal age was documented for 72% of newborns. Of mothers, 8% were < 20 years old, and 27% were 20-23 years old, and thus eligible for contraceptive services through our pediatric system's adolescent specialty clinic. Clinicians documented counseling on birth spacing, current contraceptive use or satisfaction with contraception for 70% of newborns. No mothers received same day access to contraception or were successfully linked to contraceptive care at adolescent clinic. Surveyed clinicians (N=17) reported that the tool provided information important to care for their infant patients (71%). The two most common barriers to use were time (40%) and not knowing what to do with a positive screen (17%). Surveyed young mothers

Time:

referred for contraception (N=6) reported the referral was helpful to themselves (80%) and their infants (67%) and had no concerns with screening during the infant well visit.

Conclusion(s):

A documentation tool paired with a low intensity educational intervention achieved high levels of documentation of maternal age and counseling on topics related to birth spacing. Clinicians recognized maternal contraceptive screening as relevant to infant care, and mothers raised no concerns with screening in this setting. However, brief screening, counseling and referral was inadequate to meet identified contraceptive needs. Next steps involve dedicating nurse time to support modified same-day workflows and referrals.

Publication Number: 4415.6

11-11:15 a.m.

Title: Screening for Human Trafficking in the Emergency Department: Perspectives from Trafficked Youth Utilizing a Novel Video-elicitation Method

Presenters/Authors: Carmelle Tsai, Yvette Schein, Gina Carabelli, Needhi Mehta, **Nadia Dowshen**, Kenneth Ginsburg, **Cynthia Mollen**

Location: Convention Center 341-342

Section:

4136 Adolescent Medicine: Sexual Health/Gynecology

Presentation Type:

Platform

Background:

At least 33% of human trafficking victims in the U.S. are children and youth, and many of them seek health care in the emergency department (ED). A number of screening tools are being developed, but little data exists on screening modalities that trafficked youth find acceptable.

Objective:

To explore the perspectives of trafficked youth on screening strategies in the ED.

Design/Methods:

In-depth, semi-structured interviews were conducted with trafficked youth ages 18 to 21 from an urban homeless youth shelter. Shelter residents were screened according to the Trafficking Victims Protection Act. Residents trafficked prior to the age of 18 were recruited. A team of trained interviewers conducted the interviews, which included the use of a novel video-elicitation method. The video depicted a typical ED visit from check-in to evaluation and discharge. The video was used to prompt the subjects to provide detailed feedback on how they would prefer to be asked about their trafficking history, and how the ED staff could help youth disclose. Interviews were audio-taped and transcribed. Inter-rater reliability was established, then all transcripts were double coded utilizing NVivo software 11.4.3 (QSR, Australia). Data were analyzed for thematic content by team discussion and consensus.

Results:

Time:

Among ten interviews that were completed, several themes emerged. 1) No subjects did not want to be asked about trafficking, and nearly all subjects desired a direct approach. Most did not mind the use of adjuncts such a placard with printed screening questions or a computer survey, but ultimately subjects wanted to be directly asked in a sensitive manner. 2) Respondents preferred that a member of the medical team (nurse or physician) be the ones to ask, and desired to have a choice in the gender of their provider. 3) Fear was a common barrier to disclosure for participants, and they desired reassurance of safety.

Conclusion(s):

Study participants desired to be asked about trafficking in the ED in a direct, trauma-informed manner by their medical team. Computer surveys or a laminated card with screening questions were considered useful adjuncts. More research is necessary to explore additional screening options and what specific questions or terminology trafficked youth prefer providers use.

Publication Number: 4420.6

11:15-11:30 a.m.

Title: Parental Adverse Childhood Experiences and Parenting Perspectives

Presenters/Authors: Roy Wade, Manuel Jimenez, **Scott Lorch**

Location: Convention Center 341-342

Section:

4420 Child Abuse & Neglect

Presentation Type:

Platform

Background:

Quality parenting is a key factor in promoting child well-being. Parents with a history of adverse childhood experiences (ACE) report greater negativity in their relationships with their children and less confidence in their role as parents but these findings have not been empirically validated. Ineffective parenting may represent a key mechanism through which parental ACE impacts offspring health, thus understanding the impact of parental ACE on parenting skills is important.

Objective:

To determine the impact of parental ACE exposure on parental happiness as a parent, connection to their child, stress as a caregiver and feeling overwhelmed by parenting responsibility.

Design/Methods:

We constructed a longitudinal cohort of females and males with at least 1 live-born child who were recruited as adolescents in the National Longitudinal Study of Adolescent to Adult Health and followed for 15 years (N=4731 parents with 8886 children). Univariable and multivariable logistic regression analyses of parental ACE and caregiving perspectives was conducted controlling for parental socioeconomic factors, mental health, household characteristics, and offspring sex and age.

Results:

Time:

More than 17% of respondents experienced 4 or more ACE as a child. Childhood physical and emotional abuse as well as physical neglect (26.7%, 37% and 33.4%, respectively) were the most commonly endorsed ACE. Parents endorsing childhood exposure to emotional neglect and care provider mental illness most commonly reported feeling unhappy in their role as a parent, 4.7% and 4.8% respectively. Parents reporting a low sense of connection with their child most commonly endorsed childhood exposure to emotional neglect, physical and care provider substance abuse; 3.0%, 2.7% and 2.6% respectively. Parental feelings of unhappiness in their role as a parent and low connection with their child were associated with care provider mental illness (adjusted OR (AOR) 2.1, 95% CI 1.0-4.7) and household substance abuse (AOR 2.3, 95% CI 1.0-5.3) respectively. In multivariable analyses, parents with 4 or more ACE were 4 times as likely to report feeling unhappy as a parent (AOR 4.4, 95% CI 1.7-11.2) and low parent-child connection (AOR 3.9, 95% CI 1.1-13.7) in comparison to parents with 0 ACE.

Conclusion(s):

Parental ACE was negatively associated with maternal and paternal experience of parenting. Future work is necessary to understand the impact of parental ACE on parenting skills and the role this association may play in the transmission of ACE effects from parent to offspring.

Publication Number: 4420.7

11:30-11:45 a.m.

Title: Effect of a Double-interpretation Skeletal Survey Program on Child Abuse Evaluations

Presenters/Authors: M. Katherine Henry, Ammie White, Sabah Servaes, **Joanne Wood**, Philip Scribano

Location: Convention Center 341-342

Section:

4420 Child Abuse & Neglect

Presentation Type:

Platform

Background:

Child protection teams (CPTs) rely on skeletal surveys (SS) to identify young children with occult fractures who may be victims of abuse. Little is known about the utility of double interpretation SS programs.

Objective:

The goals of this project are to (1) quantify disagreement between radiologists regarding fractures and (2) evaluate whether second interpretations alter management of children undergoing evaluation for abuse.

Design/Methods:

Our institution's CPT and Department of Radiology piloted a double interpretation SS quality-improvement program. During this ongoing pilot, SSs are first interpreted by pediatric radiologists, and later, CPT requests a second interpretation from a core group of second-reader radiologists, with an option to ask clarifying questions. The second radiologist documents whether the second

Time:

interpretation: (a) has a different interpretation regarding fracture presence, absence or certainty, (b) a different interpretation regarding another aspect of the SS, (c) whether additional views or modalities were reviewed and then (d) answers the CPT's question. CPT reviews the second reader's responses and determines: (e) whether the second read process changed the level of concern for abuse, (f) whether medical management changed and (g) degree (Likert scale) to which this process was helpful in increasing confidence in SS interpretation.

Results:

Of 129 SS double interpretations completed, 93 (72.1%) initial and 36 (27.9%) follow up. Median age was 7.2 months; 58.9% were male. The proportion of second reads with a different interpretation (disagreement) regarding fracture presence, absence or certainty was 7.0% (95% CI 3.6, 12.9; N=9). As a result of the second-read process, CPT level of concern for abuse changed in 8 cases (6.2%; 95% CI 3.1,12.0), increased in 5 and decreased in 3. After consideration of the constellation of clinical findings, CPT concern rarely changed from abuse to non-abuse (N=1) or from non-abuse to abuse (N=1). CPT medical management changed in 11.6% (95% CI 7.1, 18.5). CPT reported that the second-read process was helpful in increasing confidence in SS interpretation in over 90% of cases.

Conclusion(s):

Our pilot program identified agreement in fracture presence, absence or certainty in >90% of cases. The second-read process resulted in a change in the level of concern for abuse in <10% of cases. Additional data are needed to understand if certain SS findings are at higher risk for disagreement to understand the utility of targeted second-read programs.

Publication Number: 4420.8

12:45-1:00 p.m.

Title: Health Care Use in Infants Exposed to Opiates in Utero After Discharge from Their Birth Hospitalization

Presenters/Authors: **Scott Lorch**, **Ashley Martin**, **Molly Passarella**

Location: Convention Center 308

Section:

4625 Health Services Research III

Presentation Type:

Platform

Background:

Maternal opiate use resulting in infant neonatal abstinence syndrome (NAS) is a rapidly growing public health issue. There is little information on the impact of NAS, or exposure to long-term maternal opiates without developing NAS (LTOE), on an infant's health care use after discharge from the birth hospitalization.

Objective:

Determine the association of NAS and LTOE on hospital admissions, emergency department (ED) visits and total visits to an outpatient provider 7-365 days after discharge from the birth, compared to infants of a similar socioeconomic status without opiate exposure in utero.

Time:Design/Methods:

We deterministically linked maternal and infant birth records from 2007-2011 Medicaid Analytic Extract data in 19 states with > 90% maternal-infant match rate and data from managed care Medicaid plans. For infants with 1 year of continuous follow-up after discharge (N= 813,334), infants with LTOE were identified using maternal ICD-9 codes for opioid abuse, dependence, or long-term use, or NDC codes for buprenorphine or methadone. ICD-9 codes defined infants with NAS from this larger group of women with LTOE. Univariable and multivariable logistic and poisson regression models assessed the association of NAS or LTOE on the future health care use after adjusting for sociodemographic factors, gestational age at birth, maternal co-existing medical conditions and state.

Results:

4.82% of the cohort was diagnosed with LTOE, and 0.5% of infants had NAS. Rates of both conditions increased from 37.3 LTOE infants/1000 births and 3.1 NAS infants/1000 births in 2007 to 57.4/1000 births and 7.2 births/1000 in 2011. Compared to non-exposed infants, opiate exposed infants had higher rates of hospital admissions by 30 days after discharge, and LTOE infants had more ED visits (1.55 ±1.92 visits v. 1.22 ±1.65 visits, p<0.05). In multivariable analysis, LTOE (OR 2.07, 95% CI 1.48-2.91) and NAS (1.26, 95% CI 1.09-1.45) had higher 30-day all-cause readmission risk which remained elevated through 365 days post-discharge. Both groups had more ED and total visits during the first year after discharge.

Conclusion(s):

Infants exposed to opiates in utero had higher rates of health care use after birth hospitalization discharge regardless of whether they developed NAS. Careful monitoring and transitioning the care of these high-risk infants, particularly those discharged with opiate exposure without an NAS diagnosis, is needed to minimize such health care use.

Publication Number: 4625.3

1:15-1:30 p.m.

Title: Practice Variability in Asthma Diagnosis in Young Children in a Large Pediatric Primary Care Network

Presenters/Authors: **Chén Kenyon**, Mitchell Maltenfort, Rebecca Hubbard, Leah Schinasi, Anneclaire De Roos, Sarah Henrickson, Christopher Forrest

Location: Convention Center 308

Section:

4625 Health Services Research III

Presentation Type:

Platform

Background:

Asthma guidelines do not provide specific diagnostic criteria and there are no reliable, objective tests to confirm asthma diagnosis in young children. Given this, there may be considerable variability in practice-level asthma diagnosis.

Objective:

Time:

To assess the variability in practice-level asthma diagnosis rates in a large pediatric health system, accounting for factors often associated with asthma diagnosis.

Design/Methods:

We generated a retrospective longitudinal birth cohort of children who visited one of 31 pediatric primary care practices in two states in the mid-Atlantic region within the first 6 months of life from January 2005 to December 2016. Children were observed for up to 8 years or until the end of the observation window. If they had an 18-month interval without a visit to any primary care practice, their subsequent clinical data were right-censored. The primary outcome was physician diagnosis of asthma during an in-person clinic visit. We used a mixed multivariable discrete time survival model to evaluate characteristics associated with asthma diagnosis (modeled as fixed effects) in 3-month time intervals and compared unadjusted and adjusted proportions of children diagnosed with asthma by clinic site (modeled as a random effect). We calculated the proportion of model variance explained by practice site using an intraclass correlation coefficient (ICC). To assess for robustness, we conducted a sensitivity analysis redefining the outcome as a second diagnosis of asthma.

Results:

Of the 161,502 children in the cohort, 34,578 children (21%) received at least one asthma diagnosis by age 8. In multivariable modeling, gender, race/ethnicity, gestational age <34 weeks, allergic rhinitis, food allergy and prior wheezing episode were associated with asthma diagnosis. Odds ratios were similar in the main analysis and sensitivity analysis. After adjusting for variation in these characteristics and conditions across practices, the incidence of asthma diagnosis by pediatric practice site ranged from 11% to 44% by age 6. Nearly 90% of the model variability was explained by practice site (ICC=0.902).

Conclusion(s):

Across a pediatric health network, we observed four-fold variability in the proportion of young children diagnosed with asthma after adjusting for characteristics associated with asthma diagnosis. Most of this variability was not explained by individual-level model characteristics.

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