



Program and Abstract Booklet

**May 9th, 2008
1:30 – 5:30pm**

**Poster Session
Feinstone Hall**

**Oral Presentations
Becton Dickinson**



Johns Hopkins
Urban Health
INSTITUTE

Baltimore Research Day



BALTIMORE RESEARCH DAY
Friday, May 9, 2008 ~ 1:30pm – 5:30pm

1:30 pm **Poster Session**
Feinstone Hall

2:30 pm **Presentations (Session I)**
Sustaining Research and Policy Dialogues -Bernie Guyer (moderator)

Kenrad Nelson, Professor of Epidemiology, Bloomberg School of Public Health
The ALIVE Study of HIV and Other Infectious Diseases in Injection Drug Users in Baltimore, MD, 1988-2008

Andrea Gielen, Professor and Director, Center for Injury Research and Policy,
Bloomberg School of Public Health
Innovative Partnerships Drive Home Safety

3:10 pm **Break**

3:20 pm **Presentations (Session II)**
Innovative Community Based Research – Joshua Sharfstein (moderator)

Mary Beth Bollinger, Associate Professor, University of Maryland School of Medicine
Impact of the Breathmobile on Asthma Outcomes in Underserved City Children

Maureen Black, Professor of Pediatrics, University of Maryland School of Medicine
The Three Generation Project: A Home Intervention that Delays the Introduction of Solid Foods and Second Births Among Low-Income African American Adolescent Mothers and Infants

4:00 pm **Closing Remarks**

4:15 pm **Poster Session and Reception**
Feinstone Hall

Note: Abstracts are presented in format submitted

Presentations

The ALIVE Study of HIV and Other Infectious Diseases in Injection Drug Users in Baltimore, MD, 1988-2008

Kenrad E. Nelson, Gregory D. Kirk, Shruti H. Mehta, David Vlahov, David Celentano, and B. Frank Polk for the ALIVE Investigators Team

Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD

OBJECTIVES: The AIDS Linked to the Intravenous Experience (ALIVE) study is an ongoing evaluation of a cohort of IDUs in Baltimore, MD. Funding was provided by NIDA and the study represents a long-standing partnership between investigators of Johns Hopkins Schools of Public Health and Medicine and collaboration with the Baltimore City and Maryland State Health Departments. Over two decades of work, ALIVE has documented changes in risk behavior and characterized trends in HIV and other blood-borne infections among IDUs in Baltimore.

METHODS: IDUs were recruited through community outreach into the ALIVE study and followed semi-annually. Enrollment opened in 1988-89 for those ≥ 18 years of age with a history of injection of illicit drugs in the prior 10 years; additional recruitment took place in 1994-95, 1997 and 2005-07 to replace those who died or were lost. Participants were seen at study entry and at 6-month interval visits, where behavioral risk factors were assessed, medical treatment documented, and blood drawn. Serological tests for HIV, HCV, HBV, Syphilis and other infectious diseases were performed. We used Poisson regression to identify predictors of HIV and HCV seroconversion. We characterized HCV prevalence among IDUs over four recruitment periods spanning 20 years. We evaluated 1607 persons from the original 1988-89 recruitment as well as 290, 166, and 537 from subsequent recruitments in 1994-95, 1997 and 2005-07 respectively. We characterized trends in HCV prevalence across these four groups using Poisson regression to calculate adjusted prevalence ratios (PR).

RESULTS: We observed stable HIV prevalence and significant declines in HIV incidence from 1988-2007 among the cohort. The HIV incidence in the cohort was 3.8 per 100 person years between 1988 and 1992; it was higher in younger participants (≤ 35 yrs) and women IDUs in this period. The incidence declined from 4.45/100 pyrs in 1988-1990, to 3.35/100 pyrs in 1991-1994, to 1.84/100 pyrs in 1995-1998 to 0.53/100 pyrs in 2004. The decrease in HIV incidence was accompanied by a decrease in reported use of shooting galleries for injection, needle sharing and an increase in use of needle exchange, as well as smaller decreases in sex with anonymous partners and STD incidence. Overall HCV prevalence declined from 91% in 1988-89 to 80% in 1994-95 and remained relatively stable thereafter at 77% in 1998 and 79% in 2005-07. However, among IDUs < 40 years of age, significant declines were observed after 1994-95. In multivariate analysis among this group that adjusted for age, time since injection initiation, demographics, HIV status and drug-related risk behaviors, compared to persons in the original cohort, prevalence ratios of HCV infection were: 1994-95, 0.84 (95%CI, 0.77-0.92); 1998, 0.73 (95%CI, 0.62-0.85) and 2005-06, 0.67 (95%CI, 0.59-0.77). Compared to persons enrolled in 1994, prevalence among those enrolled in 2005-06 was 20% lower (PR, 0.80; 95%CI, 0.69-0.94).

EXPLANATION FOR FINDINGS: During these same time periods, the ALIVE study has characterized changes in injection and sexual HIV risk behavior. We have evaluated the effects of multiple interventions, including bleach sterilization of needle works, needle exchange program use, skin disinfection prior to injection and others. Needle exchange programs have been attended by IDUs having the highest risk drug use behavior, making precise effectiveness evaluation difficult. We found no evidence that needle exchange led to increases in discarded syringes in the community. Bleach disinfection of used syringes, an intervention promoted among IDUs early in the epidemic, was of limited or no effectiveness because of insufficient contact of the bleach in a syringe prior to use in practice. The decreased incidence of HIV among IDUs in Baltimore found in the ALIVE study participants together with reported decreases in high risk behavior, wide use of needle-exchange and methadone replacement and increasing use of HAART therapy among IDUs who are HIV positive together suggest that the epidemics of HIV, HCV and other transmissible infections are now better controlled than 10-20 years ago. However, these epidemics continue to be very important health problems, since 20-25% of IDUs are HIV positive and over 70% are HCV positive. Continued implementation of novel interventions and evaluation of their effectiveness is critically important.

CONCLUSIONS: Our study documented substantial reductions in HIV incidence and HCV prevalence and incidence among IDUs in Baltimore in the past two decades. This was associated with reduction in high risk injection behavior. However, the HIV prevalence remains at about 25% and the HCV prevalence is over 70% in this high risk population.

POLICY IMPLICATIONS: Expansion of existing programs to prevent HIV, HCV and other infectious diseases spread by injection of illicit drugs are needed, as well as development of new prevention methods, such as Bupernorphine treatment to prevent opiate use, expansion of HIV testing and treatment and other public health strategies.

Innovative Partnerships Drive Home Safety

Andrea Gielen, Eileen McDonald, Shannon Frattaroli, Wendy Shields, Maria Bulzacchelli and the CARES Partnership

The purpose of this presentation is to describe the use of an innovative partnership in Baltimore City that created and is evaluating Johns Hopkins CARES -- Children ARE Safe -- Mobile Safety Center (MSC). The MSC is a 40 foot vehicle designed to replicate a home environment with interactive educational exhibits and low cost safety products such as car seats, stair gates and cabinet locks. Launched in 2004, its mission is to bring child safety to Baltimore City communities. The presentation will:

- Describe the partnership and development of the MSC as a dissemination vehicle for proven effective safety products;
- Examine the utilization-related outcomes, perceived benefits, and knowledge gains associated with visiting the MSC;
- Describe current status of research on the MSC; and
- Discuss implications for policy and scaling up the program.

Who were the partners? The MSC partnership includes the Baltimore City Fire Department, the Maryland Institute College of Art, Maryland Science Center, Johns Hopkins Center for Injury Research and Policy, Johns Hopkins Children's Safety Center, Johns Hopkins Pediatric Trauma Services and the Injury Free Coalition for Kids/Baltimore, and Johns Hopkins Health Care/East Baltimore Medical Clinic. Together, we designed the concept and educational components, solicited input from families in East Baltimore, and obtained funding to build the vehicle. In addition to the MSC's service mission, it has been the focus of four research grants that examine issues of implementation, widespread adoption, process and impact evaluation, and policy considerations for scaling up the program within the context of the BCFD's free smoke alarm distribution program.

Whom did the research impact? The MSC travels throughout Baltimore City to a variety of community venues (e.g., health fairs, schools) and it is open to anyone. The first two research grants allowed us to collect some data at these venues from August, 2004 – July 2006, as well as enroll and follow families from the East Baltimore Medical Center (EBMC) to evaluate the MSC. We collected data at 97 community venues (5,514 visitors), and for 197 days at EBMC (1,796 visitors). At the community venues, 2% of visitors obtained a safety product; at the EBMC, 24% of visitors received a safety product. In total, 559 products were distributed, 419 car seats sold or installed, 511 children fitted for bicycle helmets, and 233 referrals were made to the City's free smoke alarm program. We also enrolled and followed 210 EBMC families with children younger than 8 years; among this group, 68% visited the MSC when it was prescribed as part of their well child visit. Among those who visited the MSC, 37% received a safety product, 96% reported learning something new, and 98% would recommend the MSC to family and friends. When families were followed up 2 weeks to 4 months later, MSC visitors versus non-visitors (adjusted for income and education) had higher knowledge scores and more positive outcomes for selected safety behaviors.

Did this work continue after the research dollars ended? The first two research grants from the Centers for Disease Control and Prevention have been completed and data analyses on the process and impact of the MSC are being completed and manuscripts prepared. In the meantime, we have continued to partner with the BCFD to successfully compete for two additional research grants from CDC and the NIH that will support intervention studies designed to improve the impact of the MSC and the BCFD current smoke alarm distribution program. Specifically, we are working with additional new partners, the Environmental Justice Partnership and the Center for Community Health to train community health workers (CHW) to promote the smoke alarm distribution program and the MSC. With this additional marketing effort and by bringing the MSC along when the BCFD goes door to door to distribute smoke alarms, we hope to increase both the uptake of smoke alarms and other home and child safety products available through the MSC. The research grants will allow us to compare neighborhoods that receive these enhancements to neighborhoods that receive the standard BCFD program. We will measure outcomes including safety knowledge, uptake of smoke alarms and other safety products, home and neighborhood safety improvements, and injury hospitalization rates. Several important policy questions are being studied through in-depth key informant interviews and document reviews as part of this work. Specifically, we will be examining barriers and facilitators to effective partnerships and to scaling up the combined BCFD/MS/CHW program to make it available to all of Baltimore City.

Was there follow up work? If so, describe the outcomes. Please see above for a description of the currently available results and the data currently being collected. This work will continue and we rely on research grants to both advance the science behind our work and help us continually improve service delivery. In addition, we have successfully leveraged our preliminary research results into support of operational costs from CareFirst BlueCross BlueShield to support the educational and service delivery components of the MSC, produce a replication guide for the program and expand its reach into the Hispanic community in Baltimore over the next three years.

What were the key findings and implications of the research for policy? This approach to disseminating injury prevention interventions holds promise for enhancing the appeal and uptake of safety information and products, and increasing the protection of children and families in Baltimore. Our partnership between Hopkins, the BCFD and the other organizations has been instrumental in creating a comprehensive and multi-faceted program that combines education, product delivery, and rigorous evaluation for continued quality improvement. The partnership has also increased capacity within each organization to address prevention needs. Making such a program available more widely throughout the city will require the support and participation of health and safety policy makers.

If the program were taken “to scale” in Baltimore, What would it cost? What would it look like? What would be accomplished? These are some of the questions we are exploring through our current qualitative and quantitative research. Our goal would be to increase the numbers of families who use proven effective safety products and thereby reduce childhood injury throughout Baltimore.

Impact of the Breathmobile® on Asthma Outcomes in Underserved Baltimore City Children

ME Bollinger¹, A Lasso Pirot¹, M Foster², M Streett¹, L DiStefano¹, C Vibbert¹, A Kewalramani¹.

¹Division of Pediatric Pulmonology and Allergy, University of Maryland School of Medicine

²University of Maryland Hospital for Children.

Background: Asthma affects a large number of children in Baltimore with as many as 20% of children affected in some city schools. Children living in Baltimore have higher asthma related morbidity than children living in other areas of the state with hospitalization and Emergency Department (ED) rates at 2-3 times that of children living elsewhere in Maryland. Statewide, children miss over 640,000 days of school per year (1993 statistics). Asthma can be controlled and urgent care visits can be prevented with proper preventive asthma care. Children who receive specialty asthma care have improved asthma outcomes and quality of life with increased use of preventive asthma medications and asthma education. Unfortunately, only about 10% receive specialty asthma care and children with Medicaid insurance are less likely to receive specialty care than their privately insured counterparts.

Objective: To evaluate the impact of a free mobile specialty based asthma clinic on asthma outcomes in underserved children attending Baltimore City Schools.

Methods: Asthma outcomes are tracked at each visit utilizing a computerized disease management system called Asmatrax. Outcomes tracked include hospitalizations, emergency department visits, missed school days and missed work days for caregivers, medication use, exercise induced symptoms and overall asthma control. Baseline data upon entry into the program is compared to follow-up data for children enrolled in the program for at least one year. Reports are generated twice a year.

Results:

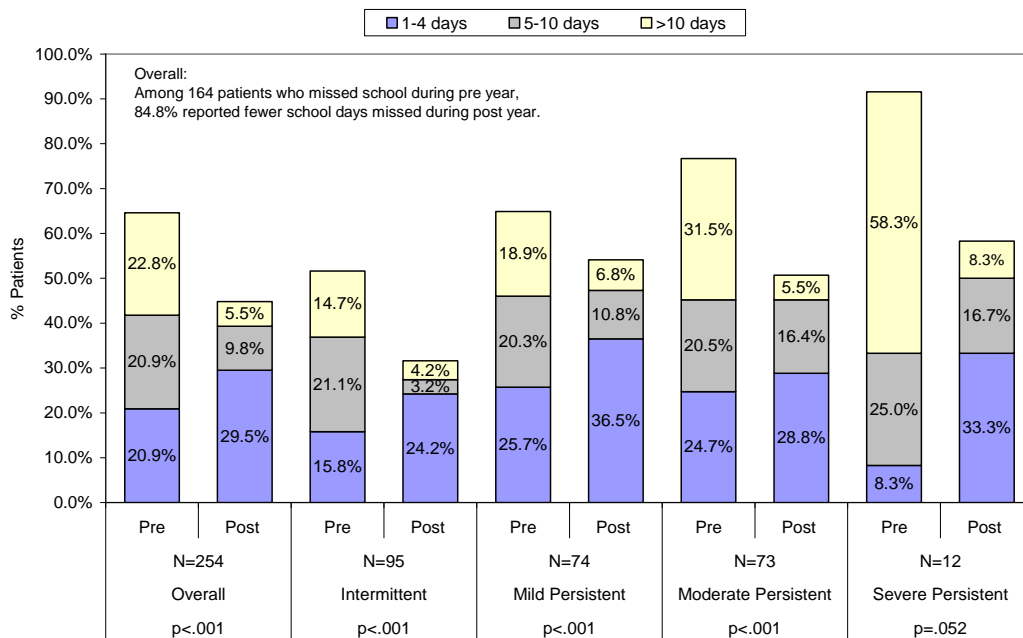
1. **Partners:** The Breathmobile program has been successful by partnering with many groups including the University of Maryland School of Medicine, the University of MD Hospital for Children, Baltimore City School System, Baltimore City Health Department, Department of Health and Mental Hygiene and numerous foundations and grant agencies including the Asthma and Allergy Foundation of America, Baltimore/DC and California Chapters, the Harry and Jeanette Weinberg Foundation, Glaxo Smith Kline, the Thomas Wilson Sanitarium, the Maryland Statewide Health Network Cigarette Restitution Fund, the Abell Foundation, RiteAid Foundation, WBAL Kids Campaign, the Associated Black Charities/Annie Casey Foundation and many others.

2. **Research Impact and Target population:** The Breathmobile program has demonstrated a significant impact on asthma outcomes including a reduction in hospitalizations, ED visits, missed school days and missed work days for caregivers. Our target population is underserved Baltimore City school children with more than 90% African American and as many as 90% qualifying for public assistance. With the addition of a Spanish speaking pulmonologist, we are now seeing an increased percentage of Latino children. These children have additional challenges that can impact asthma care including the language barrier and high rates of uninsured and undocumented families.

3. **Work Continuation:** The Breathmobile program has provided service to underserved children since March of 2002 through support from many sources including individual donors, research grants, foundations and organizations. Obtaining sustaining funds continues to be a challenge. To assure prolonged continuation of this much needed service as well the ability to expand to more children in need, long-term sustaining funds are greatly needed.

4. **Follow-up Outcomes:** We continue to show a positive impact on key asthma related outcomes. Children cared for in the program for at least a year, showed improvement from baseline in ED visits due to asthma (93%) , hospitalizations (92%), missed school days (see figure below showing 85%) and missed work days for caregivers (92%).

Figure 3. Among patients in the program at least one year (N=254, age>=5 years), compare % of patients pre- vs. post- year who missed school due to respiratory symptoms:



5. **Key Findings/Implications for Policy:** Our program has identified many gaps in services for the children with asthma in Baltimore City. These include a need for increased awareness of Breathmobile services; for example, by requiring that all children enrolled in the CHIP home instruction program for asthma receive a referral. Support of programs to improve the environment in which the children live is also needed. Long-term financial commitment to sustain the Breathmobile from additional sources such as the City of Baltimore, the Health Department, Medicaid Managed Care organizations and Baltimore based corporations is a necessary component to guarantee our continued success and potential for expansion.

6. **Program Expansion Proposal:** There are currently 81,284 students attending Baltimore city schools and 196 schools in the system. We currently provide service at 20 schools primarily on the Westside, which allows for continued service at each site every 6-8 weeks. The asthma prevalence rate in Baltimore City schools is as high as 20%. The current program is only able to access a small percentage of these patients (about 500-600/year) due to limited resources. To provide preventive asthma care to the majority of asthmatic children in Baltimore, we need to increase to an additional 2 units at an estimated start-up cost of \$1,200,000 and annual cost for the 3 units of \$1,500,000. This will allow 3 units/teams to cover key areas of Baltimore with expansion particularly in the East, North and South areas and an additional 2 Hispanic focused center/sites.

The Three Generation Project: A home intervention that delays the introduction of solid foods and second births among low-income African American adolescent mothers and infants

Sarah E. Oberlander, MA and Maureen M. Black, PhD

Objective: This study was a longitudinal, randomized, controlled trial of home intervention. Two outcomes were examined: 1) The introduction of solid foods to 3 month old infants and 2) Second births within the first 24 months postpartum.

Background: The American Academy of Pediatrics recommends that infants receive only breastmilk or formula for the first 4-6 months of life. The early introduction of solid foods is associated with obesity later in life. African American adolescent mothers, particularly those living in multigenerational households, are at risk for introducing solid foods earlier than recommended.

Among adolescent mothers, 20-50% have a second birth during the first 24 months postpartum. Mothers with a second birth are more likely to experience long-term outcomes of chronic poverty and welfare dependence. Previous interventions, including home visitation and monetary incentives, have been largely unsuccessful at preventing second births.

Methods: 181 urban, low-income, first-time, African American adolescent mothers living with their mothers were recruited after delivery from 3 hospitals in Baltimore. Ecological theory and formative qualitative research were used to create the intervention, and the curriculum included 19 topics that addressed parenting and adolescent development. Home visitors, who were college-educated African American single mothers of young children, delivered the intervention biweekly over the first year postpartum. Mothers in the intervention group completed an average of 6.63 intervention visits. Follow-up evaluation assessments occurred at baseline, 3, 6, 13, and 24 months postpartum.

Results: Mothers were a mean age of 16.4 at the baseline visit (range=13.5-17.9). At 3 months, 61% of infants had received solid foods, often cereal in a bottle. Above and beyond infant age and family income, mothers who did not introduce solid foods were 4 times more likely to be in the intervention group than mothers who did.

Mothers were asked to report subsequent births at each follow-up assessment. By 24 months postpartum, 18% of the mothers had given birth to a second child. Mothers who did not receive the mentoring intervention were more than twice as likely to have given birth to a second child than mothers in the intervention group (24% vs. 11%). Mothers who completed at least 2 intervention visits were 3 times less likely to have a second birth than mothers in the control group, and no mothers who received 8 or more intervention visits had a second birth.

Conclusions: Combining these two findings, these results suggest that the Three Generation Project, a relatively brief intervention, is effective at helping young mothers promote their infants' health and their own well-being by following feeding recommendations provided by the American Association of Pediatrics and avoiding a second birth during the first 24 months postpartum.

Questions:

1. Who were the partners?
This project was led by Dr. Maureen Black at the University of Maryland, School of Medicine and was conducted in collaboration with the Maternal and Child Health Research Program, U.S. Department of Health and Human Services, Grant MCJ-240301.
2. Whom did the research impact? What was the target population?
This research targeted low-income, urban, first-time African American adolescent mothers living in Baltimore City.
3. Did this work continue after the research dollars ended?
Between 2005 and 2007, we completed a 7 year follow-up with the families in the Three Generation Project.
4. Was there follow-up work? If so, describe the outcomes.
We continue to analyze existing data and do not plan to follow-up with mothers in the Three Generation Project in the future.
5. What were the key findings and implications of the research for policy?
This study found that a brief home-based intervention can delay the introduction of solid foods and prevent second births. Policy implications include the need to create culturally sensitive interventions that address the needs and concerns of adolescent mothers.
6. If the program were taken to scale in Baltimore:
 - a. What would it cost?
 - b. What would it look like?
 - c. What would be accomplished?

An annual budget of \$150,000 would be sufficient to hire three full-time mentors (\$35,000/yr each), one part-time supervisor (\$20,000/yr) and include additional costs of transportation, cellular telephones for mentors, office supplies, and intervention materials (\$25,000). These costs do not include overhead. Mentors could visit approximately 150 new mothers per year, with each new mother receiving 6 biweekly home visits over the first 3-4 months postpartum.

References

- Bentley, M., Gavin, L., Black, M.M., & Teti, L. (1999). Infant feeding practices of low income African-American, adolescent mothers. *Social Science and Medicine*, *49*, 1085-1100.
- Black, M. M., Siegel, E. H., Abel, Y., & Bentley, M. E. (2001). Home and videotape intervention delays early complementary feeding among adolescent mothers. *Pediatrics*, *107*, E67.
- Black, M. M., Bentley, M. E., Papas, M. A., Oberlander, S., Teti, L. O., McNary, S., Le, K., & O'Connell, M. (2006). Delaying second births among adolescent mothers: A randomized controlled trial of a home-based mentoring program. *Pediatrics*, *118*, 1087-1099.

Posters

POSTER #1
Interracial Links Serve Health Care Needs
for Underserved City Residents in North West Baltimore

Valeriya Aranovich and Tatyana Brodskaya
Old Court Pharmacy, Inc.
56 Taverngreen Ct., Baltimore, MD 21209

The idea of this project was to identify isolated underserved urban groups of immigrants, develop a system of communications with them and among them, and link these groups to small healthcare providers. This work started in January 2001 as a volunteer effort in the small pharmacy of a Nigerian-born owner. What we proposed was targeting underserved Russian residents (65 and older) who live side by side with Nigerian immigrants in North West Baltimore.

Our work included translating/ interpreting, labeling, and organizing delivery to those who need it. Also, we tried to educate them on ways to access medications and medical supply, resolve issues with doctors and with insurance, etc.

Over time, our work grew into a real research project and the pharmacy owner (Dr. Emeka Nwodim) started to fund this effort. Actually, it was a win-win situation because serving the underserved had a potential to drive the pharmacy's business up. Initial surveys and other efforts were necessary. We chose a relatively small group of city residents (about 1000 people) to study and understand their individual needs. It was difficult to categorize those needs into a few types; each person and each family had something special, however, there were some common groups of medications and medical supply, common features of lifestyle (such as attending day care), common doctor's offices that they used, etc. Some of the elderly Russian immigrants had relatives or neighbors who were willing to help our project be successful. Their help, along with the pharmacy owner's support, allowed the development of a novel form of service, including systems of communication, bilingual labeling, consulting with doctors, delivery, and transportation.

The general principles of our approach can be applied to various groups of underserved residents (such as Latino immigrants of North West Baltimore), though the details of the service can vary from group to group. With immigrants, language barriers are a problem, however, communication with the most social members and subsequent communication among all other members makes our service possible. Another issue is developing a basic knowledge of how the elements of the existing healthcare system work. This takes some time and requires a minimal effort from the underserved residents; however, access to qualified translators and interpreters of materials helps a lot.

Currently, our project is ongoing. We continue to experiment and optimize new forms of service. It is clear that our approach deserves the attention of Baltimore's policy makers because some principles can be disseminated over other urban areas to give relatively fast and impressive results. Our approach does not take significant investment. The key point is to develop effective systems of communication within relatively small groups and then link those groups to small healthcare providers. Initially, we focused on medications and the pharmacy was the "hub" in the communications. Now, we work on links to doctor's offices and to other small healthcare providers. Linking relatively small social groups to small providers can be turned into a network of such groups covering significant urban areas in Baltimore.

POSTER #2

The Cardiovascular Patient Outcomes Research Team (C-PORT) Projects

Thomas Aversano (JHMI), Lynnet Tirabassi (JHMI), Pamela Barclay (MHCC), Dolores Sands (MHCC)

Acute myocardial infarction (AMI) is one of the leading causes of death and disability in the United States, affecting more than a million patients each year. Since the early 1990's, coronary angioplasty has been recognized as the best treatment for an important subset of AMI patients: those presenting with ST-segment elevation myocardial infarction (STEMI).

In Maryland and many other states, angioplasty can be performed only in hospitals that have co-located cardiac surgery. In Baltimore, this restricts access to angioplasty for heart attack patients to 5 institutions with open heart surgery programs. The dilemma is that most patients with STEMI present to community hospitals where angioplasty cannot be performed. In 1994, when the C-PORT projects began, treatment of STEMI patients arriving at a community hospital was thrombolytic therapy, previously shown to be better than placebo but inferior to angioplasty.

Academic institutions (the Johns Hopkins Medical Institutions), community hospitals (those in the Baltimore metropolitan area including Johns Hopkins Bayview Medical Center, Howard County General Hospital, Saint Agnes Hospital, Anne Arundel Medical Center, Baltimore-Washington Medical Center, Mercy Hospital, Franklin Square Hospital, and those in Maryland but outside the immediate Baltimore area including Shady Grove Adventist Hospital, Suburban Hospital, Holy Cross Hospital, Memorial Hospital at Easton, Doctor's Community Hospital, and Southern Maryland Hospital), local clinical trial specialists (the Maryland Medical Research Institute) and government regulatory bodies (the Maryland Health Care Commission or MHCC) partnered on several projects to determine whether angioplasty could be performed for STEMI patients at non-tertiary hospitals without on-site cardiac surgery safely and effectively.

There have been four phases of this project. In the first phase the Maryland Health Care Commission (MHCC) amended language in the State Health Plan to allow a waiver to existing regulations so that a randomized clinical trial could be performed in this area. The amendment permitted a waiver from the State Health Plan policy requiring hospitals performing angioplasty to have co-located open heart surgery for hospitals participating in the clinical trial.

The second phase was a prospective, randomized trial comparing the outcomes of STEMI patients presenting to non-tertiary community hospitals. STEMI patients were randomized to either thrombolytic therapy or angioplasty at that hospital. Prior to beginning angioplasty, each non-tertiary community hospital completed a formal angioplasty development program. This project demonstrated a 40% reduction in short and long term major adverse events (death, recurrent myocardial infarction and stroke) in patients treated with angioplasty compared with thrombolytic therapy.

Subsequently, in the third phase of the project, STEMI patients continued to be treated with angioplasty at selected community hospitals in Baltimore (and other sites in Maryland) under a registry. Outcomes in this registry demonstrated that STEMI patients could be treated in the

hospitals safely and effectively and that both process (e.g., door-to-balloon time) and outcomes (e.g., mortality and morbidity) indicators of quality were similar to those reported from tertiary hospitals.

In the fourth phase of the project, after the clinical research and registry components ended, the Commission formed a Technical Advisory Committee to review the results and recommend appropriate changes to the State Health Plan. Based on the recommendations from the Committee, the State Health Plan was modified so that Maryland hospitals could apply for a Primary Angioplasty Waiver. The requirements for the Primary Angioplasty Waiver include completion of a formal angioplasty development program, availability of institutional and physician resources required for an effective program, and reporting of performance measures and outcome data. The MHCC is collecting data on patient outcomes from these centers and using it to ensure quality care for Baltimore's STEMI patients and continuously improve that care over time. Because the C-PORT group assists the MHCC in collecting this data, academic institutions continue to be involved in the MHCC STEMI registry.

The C-PORT project has had an important influence on health care policy in Baltimore and Maryland. Access to the best care for STEMI patients has increased as a result. Through the continued interaction among government regulatory bodies (MHCC), academic institutions (Johns Hopkins Medical Institutions) and the several community hospitals involved, access is provided to the best, highest quality, state-of-the-art care for the greater number of patients suffering acute myocardial infarction

POSTER #3
**Early Intervention and Recovery Among Children With Failure-To-Thrive:
Follow-Up At Age 8**

Maureen M. Black, PhD, Howard Dubowitz, MD, Ambika Krishnakumar, PhD, and Raymond H. Starr, PhD
University of Maryland, Department of Pediatrics

Objectives. To examine the long term outcomes of failure-to-thrive (FTT) on children's growth, academic and cognitive performance, and home and classroom behavior at age 8 and to examine the long term impact of a randomized controlled trial of home-based intervention delivered to children with FTT during infancy and toddlerhood on their growth and functioning at age 8.

Methods. Infants with FTT (N = 130) or adequate growth (AG) (N = 119) were recruited from pediatric primary care clinics serving low-income, urban communities. Eligibility criteria included < 25 months of age, gestational age > 36 weeks, birth weight above 2500 grams, and no significant medical conditions.

Baseline evaluation included anthropometries, the Bayley Scales of Infant Development, maternal anthropometries, demographics, negative affect (symptoms of depression, anxiety and hostility), and IQ, and a home visit to administer the HOME. Infants with FTT were treated and followed in an interdisciplinary Growth and Nutrition Clinic. They were randomized to participate in a home visiting program for one year (FTT-HI) or to receive clinical care only (FTT-CO). The home visiting curriculum was based on the Hawaii Early Learning Program and focused on promoting maternal sensitivity, parent-infant relationship, and child development. Home visitors did not address nutrition or feeding behavior and did not weigh the children.

Children and families participated in regularly scheduled follow-up visits conducted by evaluators who were unaware of the children's growth or intervention status. After one year, there were no differences in height or weight, but intervention group infants had better cognitive performance and caregivers who were more responsive and child-focused than control group infants (1). Two years after the home intervention ended, when the children were 4-years of age, intervention group children had better cognitive scores and were more socially interactive than control group children, but only if their mothers did not report negative affect (2). To examine whether early intervention altered the children's developmental course, we followed children with FTT (12, 24) through their school age years, along with a cohort of adequately growing children from the same low-income communities. The primary objective of the follow-up was to examine the long term impact of home-based intervention on children's growth, academic and cognitive performance, and home and school behavior at age 8 (3).

Results. Retention at age 8 was 74% (96/130) for the children in the two FTT groups and 78% (93/119) for the children in the AG group. Children in the two FTT groups were shorter and lighter than children in the AG group. Rates of stunting (height-for-age < -2 Z-scores) were higher for children in the FTT-CO (8.0%) and FTT-HI groups (6.4%) than children in the AG group (0%). Rates of wasting (weight-for-age < -2 Z-scores) were higher for children in the FTT-CO group (6%) than for children in the FTT-HI or AG groups. There were no group differences in IQ, reading, or behavior problems reported by the mother, although children obtained

cognition and academic scores that were approximately one standard deviation below the national norm.

The home intervention partially attenuated the effects of FTT on height-for-age, BMI, arithmetic, and children's behavior at school. Children in the AG group were significantly taller, heavier, and had better arithmetic scores than children in the FTT-CO groups, with children in the FTT-HI group occupying an intermediate position. Teachers reported that children in the FTT-HI group had fewer internalizing problems and better work habits across multiple domains than children in the FTT-CO group.

Conclusions. The cognitive and academic performance of the children was substantially below national norms, regardless of their growth history, possibly explained by chronic poverty and few stimulating experiences in the early caregiving environment. Although early FTT increased the children's vulnerability to short stature, poor arithmetic performance, and poor work habits, there were fewer negative effects of FTT than previously reported, probably because we avoided referral bias by recruiting the sample from primary care, rather than relying on referred or hospitalized cases of FTT. Finally, the early home visiting intervention attenuated some of the negative effects of early FTT on linear growth, arithmetic performance, and classroom behavior, possibly by promoting maternal sensitivity and helping children build strong work habits and enabling them to benefit from school. These findings provide evidence to advocate for early intervention programs for vulnerable infants and toddlers.

Questions:

7. Who were the partners?

The intervention was provided by "Intervention with PACT, Inc", a no-profit organization that provides services to infants and toddlers with developmental delays. This research was funded by Maternal and Child Health Bureau, NICHD, and the office on Child Abuse and Neglect, Administration for Children, Youth, and Families.

8. Whom did the research impact? What was the target population?

This research targeted low-income infants and toddlers with failure-to-thrive.

9. Did this work continue after the research dollars ended?

The findings from this project were used to establish the Growth and Nutrition Clinic, an interdisciplinary clinic at the University of Maryland that provides evaluations and treatment to infants and toddlers with failure-to-thrive. The Clinic continues to operate. The home intervention did not continue due to lack of funds.

10. Was there follow-up work? If so, describe the outcomes

We included follow-up to age 8. We have the data to evaluate the effects of the program on the children at ages 12 and 14. Those analyses are in progress.

11. What were the key findings and implications of the research for policy?

This study found that a home-based intervention attenuated many of the negative effects of failure-to-thrive on children's growth, development, and academic performance.

12. If the program were taken to scale in Baltimore:

- a. What would it cost? b. What would it look like? c. What would be accomplished?
If we assume 8 1-hour visits. One full-time home visitor could handle 50 children/year. To reach ~ 200 children/year, would need 4 fulltime home visitors at \$30,000 (+ fringe) and part-time supervisor at \$20,000 (+ fringe) for a total of \$140,000. for personnel. Additional costs such as transportation, supplies, etc. are estimated to cost \$10,000/year for a total of \$150,000/year.
These costs do not include overhead.

References

- (1) Black, M.M., Dubowitz, H., Hutcheson, J., Berenson-Howard, J. & Starr, R.H.,Jr. (1995). A randomized clinical trial of home intervention among children with failure to thrive. Pediatrics, 95, 807-814.
- (2) Hutcheson, J.J., Black, M.M., Talley, M., Dubowitz, H., Berenson-Howard, J., Starr, R.H., & Thompson, B.S. (1997). Risk status and home intervention among children with failure to thrive: Follow up at age 4. Journal of Pediatric Psychology, 22, 651-668.
- (3) Black, M.M., Dubowitz, H., Krishnakumar, A., Starr, R.H. (2007). Early intervention and recovery among children with failure-to-thrive: Follow-up at age 8. Pediatrics, 120, 59-69.

POSTER #4

Home intervention increases cognitive development among prenatally drug exposed, urban, low-income infants

Stacy Buckingham-Howes, MA, Prasanna Nair, MD, MPH, and Maureen M. Black, PhD

Objective: This study was a longitudinal, randomized, controlled intervention for prenatally drug-exposed children and their mothers. One outcome examined was infant development.

Background: Children who are prenatally exposed to substances may experience long-term negative outcomes on cognitive development. However, developmental outcomes once thought to be specific to prenatal drug exposure may actually be associated with other factors such as the quality of the child's environment. A home intervention was implemented among prenatally drug-exposed children and their mothers to increase mothers' ability to manage self-identified problems and to promote child development. This research was carried out with funding from the National Institute of Drug Abuse and has continued to the present.

Methods: 265 urban, low income mother-child dyads were recruited from the full-term neonatal unit of the University of Maryland Hospital, Baltimore. Home intervention visitors were two African-American women with experience working with urban, low income families. Home visits included both a parent and a child component. Mothers received weekly home visits during the first 6 months and biweekly home visits from 6 to 18 months post partum. The mean number of home visits made to the intervention families was 19.0, and the mean length of the visits was 27.6 minutes.

Results: Developmental outcome scores differed by group, $F(1,142)=6.54, p<.05$, time $F(2,141)=43.40, p<.001$, developmental domain $F(1,142)=7.26, p<.05$, and the interaction of time by developmental domain $F(2,141)=16.31, p<.001$. Infants in the intervention group had significantly higher scores on the Psychomotor Developmental Index (PDI) at 6 and 18 months and marginally better scores on the Bayley Scales of Infant Development Mental Development Index (MDI) at 6 and 12 months compared to the control group.

Conclusions: Ongoing maternal drug use was associated with worse developmental outcomes among drug-exposed infants. A home intervention led to higher MDI as well as higher PDI scores in intervention infants through 18 months post partum. The home intervention increased developmental outcomes for prenatally substance-exposed infants.

The policy implications are that:

- Providing substance-abusing mothers with a home-based curriculum that promotes individual problem-solving and parenting skills increased positive child outcomes early in life.
- Incorporate home-visiting into community-based programs that include other services (drug tx, GED)
- Triage – screen to identify: 1) mothers likely to benefit from home-visiting, 2) mothers who need more intensive services, and 3) mothers who need less intensive services.
- Safety. Develop strategies to ensure safety.

In conclusion, a home intervention with a curriculum that focuses on both mothers and parenting led to increased developmental outcomes for prenatally substance-exposed infants. Ongoing maternal drug use and multiple family risks have been associated with worse developmental outcomes and limit the effectiveness of interventions. Over time, overwhelming poverty, lack of

opportunities, and family disruptions interfered with children's academic and psychological development, regardless of prenatal substance exposure.

If each family receives 1 visit/week for the first 6 months then biweekly visits for the next year, one visitor could work with 20 dyads over 18 months. To reach 100 dyads over 18 months, 5 full-time home visitors at \$30,000 + fringe per year plus a part-time supervisor at \$20,000 + fringe per year for a total of \$170,000 + fringe for personnel. A program would require \$10,000 per year for other necessities with a total of \$180,000 + fringe and overhead for 12 months. Need to extend to 18 months.

References

- Nair, P., Schuler, M., Black, M., Kettinger, L. & Harrington, D. (2003). Cumulative environmental risk in substance abusing women: Early intervention, parenting stress, child abuse potential and child development. *Child Abuse & Neglect*, 27, 997-1017.
- Schuler, M., Nair, P. & Kettinger, L. (2003). Drug-exposed infants and developmental outcome: Effects of a home intervention and ongoing maternal drug use. *Archives of Pediatrics & Adolescent Medicine*, 157, 133-138.
- Black, M., Nair, P., Kight, C., Wachtel, R., Roby, P., Schuler, M. (1994). Parenting and early development among children of drug-abusing women: effects of home intervention. *Pediatrics*, 94, 440-448.

POSTER #5
Preventing Child Maltreatment: A Role for Pediatricians
A Safe Environment for Every Kid (*SEEK*)

For further information, please contact Howard Dubowitz, MD, MS at (410) 706-6144.

1. **Partners:** The Division of Child Protection, University of Maryland School of Medicine and the Administration on Children and Families, U.S. DHHS.
2. **Whom did the research impact?** UMMS residents in pediatrics and internal medicine/pediatrics, and the mostly low income families in west Baltimore served by the resident pediatric continuity clinic.
3. **Did this work continue after the research dollars ended?** Yes. We are replicating the model intervention with 90 pediatricians in 18 private practices in central Maryland. The evaluation is underway.
4. What were the **key findings and implications** of the research for policy?

The *SEEK* intervention resulted in reduced child abuse and neglect, measured three different ways. There were fewer reports for child abuse and neglect to Child Protective Services (13.6% vs. 19.7%, $P = 0.04$), fewer instances of possible medical neglect documented as treatment non-adherence (4.6% vs. 8.4%, $P = 0.04$) and fewer children with delayed immunizations (3.3% vs. 9.6%, $P = 0.001$), and, less harsh punishment reported by parents (mean weighted score 0.11 vs. 0.33, $P = 0.04$). The 31% reduction in CPS reports is remarkable, and suggests that for every 17 children receiving the *SEEK* model of pediatric primary care, one case of abuse or neglect can be prevented.

5. If the program were taken “to scale” in Baltimore:

- a. **What would it cost?** We are studying this. The major cost is for a part-time social worker. Many urban health centers already have one. Of note, a recent report estimated an annual national cost of over 100 billion dollars related to child abuse and neglect; a compelling argument to improve prevention efforts.
- b. **What would it look like?** There are 3 main components to the *SEEK* model: 1) physician training (approximately 4 hours), 2) completion by parents of the brief Parent Screening Questionnaire to identify major risk factors for child maltreatment (eg, parental depression and substance abuse), and 3) a social worker or similar professional to help respond to identified problems and facilitate referrals to community agencies.
- c. **What would be accomplished?** Helping prevent child abuse and neglect and their short and long term sequelae. In addition, promoting the functioning of families and parents should enhance children’s health, development and safety.

POSTER #6

Measuring the Enhancement of Integrated Care Management of a Medicaid Population with Substance Abuse and High Medical Expenses: return on investment after two years.

Peter J. Fagan, PhD^{*†}, Alyson Schuster MPH, MBA^{*#}, Martha Sylvia, RN, MSN, MBA^{*±}, Kenneth B. Stoller, MD[†], Michael Griswold, PhD[#], Michelle Hawkins, RN, MSN, MBA, CCM^{*}, Linda Dunbar, RN, PhD^{*±}

* Johns Hopkins HealthCare LLC

† The Johns Hopkins University School of Medicine

The Johns Hopkins Bloomberg School of Public Health

± The Johns Hopkins University School of Nursing

Problem: Behavioral health services, including substance abuse treatment, have been traditionally carved out in both commercial and Medicaid health plans. This has resulted in gaps in clinical coordination of care and the tendency to analyze behavioral and somatic costs and healthcare utilization independently. In Maryland, Medicaid Managed Care Organizations (MCOs) are required to provide outreach and benefits for substance use treatment services as well as medical and surgical benefits. The total costs involved in an assertive care management program for a complex medical population that also has substance abuse disorders is not known. Having such information will assist Medicaid MCOs to allocate resources to intensify their care management of enrollees who have both chronic medical and substance use disorders.

Research Objective: Care management administrators in Johns Hopkins HealthCare and researchers from the Johns Hopkins Schools of Medicine and Bloomberg School of Public Health sought to examine the effect on medical utilization and medical costs of an integrated care management program for enrollees in Priority Partners, a Medicaid MCO (PPMCO). The targeted PPMCO enrollees had a history of abusing substances and who were high utilizers of medical services. It was hypothesized that such initiatives can have a positive return on investment (ROI) for a Medicaid MCO, thus making the coordination of substance abuse (SA) treatment and other medical services a financially viable policy option.

Study Design: The study was a two-group comparison of a 24 month quality enhancement initiative (QEI). The Intervention group (N = 400) was managed by substance abuse coordinators (SACs) and nurse care managers (CMs) who received ongoing training in the integration of medical care management and substance abuse services. The Comparison group (N = 203) received usual and customary outreach as mandated by state regulations. The study tracked the start-up costs and operational expenses for the twenty-four months. It compared the utilization and total medical costs for the 24 month intervention for the two groups. The research was independently evaluated by the University of North Carolina as part of a ten site study of the business case for quality among Medicaid recipients.

Study Population: The population from which the study sample was selected consisted of adult (age > 21 year) Priority Partners Medicaid MCO enrollees who had a recent history of substance use problems (SUP) and serious medical conditions. The morbidity level of the study sample (N = 603) was selected based on an ACG predictive model score > 0.39 and a

diagnosis indicating substance use problems during the previous 27 months. Enrollees who had HIV/AIDS, end-stage renal disease, or who were pregnant or enrolled in end of life care, were excluded from the program because they were already enrolled in another specialized DM program. Intervention and comparison groups in the study were selected from different jurisdictions, with the care managers being dedicated to either the intervention or comparison group jurisdictions. The intervention targeted enrollees who lived in the urban jurisdictions of Baltimore City, Baltimore County and Prince Georges County. The comparison group members were drawn from the remaining jurisdictions in Maryland.

Results: While the first 12 months of the intervention yielded a positive ROI, extended 24 month trend analysis found that 1) the increase in total (unadjusted) increase in medical costs in the Intervention group were \$30 per member per month (pmpm) less than those of the increase in the Comparison group. 2) The Intervention group had an increase in pharmacy costs (\$42 pmpm increase) in contrast to a \$30 pmpm decrease in pharmacy costs for the Comparison group during the intervention period. 3) The combined initial start-up costs (\$40,276) and 24 month QEI operational expenses (\$237,318) resulted in a total expense of \$277,594. If we employ the positive differential (\$30) between the Intervention and Comparison groups' medical costs, we estimate a projected savings (\$30 x 7444 member months) of \$223,320. This results in marginal adjusted pre-post ROI of 0.80 for the Intervention group. There was no significant difference in the increase in medical costs between the Intervention and Comparison groups. In terms of utilization effects, the Intervention group had an increase in members receiving substance abuse treatment and enrolling in care management.

Conclusions: 1) Integrated care management, combining medical and substance abuse case management for medically compromised and potentially substance using MCO Medicaid recipients, may be able to be provided with marginal negative expenses as indicated by an ROI of 0.80 in this initiative; 2) intensified care management may result in increases in pharmacy costs; 3) the challenges in the integration of behavioral and medical care management are considerable and require further applied research.

Implications for Policy, Delivery or Practice: 1) Medicaid MCOs should integrate behavioral and medical care management; 2) ROI calculation should be examined with both point estimates and trend analyses; 3) evaluating interventions for high risk Medicaid populations needs to measure not only medical costs but also quality of life and societal effects; 4) PPMCO expanded this project to Eastern Shore of Maryland and included the carved-out mental health services in the determination of costs. A similar research project should be done in the Baltimore area to examine total medical costs that include mental health expenses.

Primary Funding Source: Center for Health Care Strategies (CHCS) made possible through a separate grant to CHCS by the Robert Wood Johnson Foundation. Paper presented at AcademyHealth Annual Research Meeting, Orlando, FL June 2007.

POSTER #7
Predictors of Youth Violence in Baltimore City

Submitted by: Dr. Caroline Fichtenberg, Elizabeth Parker, Leyla Layman

Objective

Baltimore City youth are consistently the victims and perpetrators of violent crime. In order to identify opportunities for early intervention for the prevention of youth violence, the Baltimore City Health Department has undertaken the Predictors of Youth Violence Project in partnership with the Maryland Department of Juvenile Services, Baltimore City Department of Social Services, Baltimore City Police Department, State's Attorney's Office, Baltimore City Public School System, and the Courts and Judicial Proceedings. The goal of the Predictors project is to describe the life trajectories of youth who have been victims or perpetrators of violence in Baltimore City, in order to 1) develop a set of markers that can be used to help identify, early in a person's life, if they are at increased risk for involvement in violence, and 2) identify opportunities for early intervention.

Methods

The project is being carried out through the collection, review, and analysis of administrative records for youth who were victims of either homicide or attempted homicide between the period January 1, 2003 and December 31, 2007; and youth who were perpetrators of a crime resulting in a death or near fatality of another between the period January 1, 2002 and December 31, 2006. The total number of cases included is 687, of which 115 cases are victims of homicide, 404 cases are victims of a non-fatal shooting, and 168 cases are perpetrators.

The analysis will describe victims and perpetrators of homicide or attempted homicide in terms of their social service, educational, and legal histories based on records from the partner agencies.

Results

A preliminary analysis has been completed and the data include administrative records from the Baltimore City Department of Social Services, Baltimore City Police Department, and the Maryland Department of Juvenile Services. The participants included in the preliminary analysis are youth who were either victims of a homicide or a non-fatal shooting between the period January 1, 2004 and June 30, 2007 and resided in Baltimore City (n= 364).

Seventy-one youth (20%) were the subject of at least one abuse or neglect investigation with the Baltimore City Department of Social Services. Cases of neglect were reported more frequently than cases of physical abuse or sexual abuse, accounting for 65% of the total cases. Lack of supervision, abandonment, and environmental were the subtypes of neglect most often reported. Fifty-one youth had at least 1 indicated report of abuse or neglect, 30 youth had at least 1 unsubstantiated report of abuse or neglect, and 2 youth had 1 ruled out report of abuse or neglect.

Next, 240 youth (66%) had juvenile arrest records with the Baltimore City Police Department prior to the shooting incident. The average age at first arrest was 13.9 years (range: 7.4-17.9 years), and the average number of arrests per youth prior the shooting incident was 4.3.

Additionally, 88 youth (37%) had been arrested for 3 or more felony offenses prior to the shooting incident.

Finally, 211 (58%) youth had complaint and adjudication histories with the Maryland Department of Juvenile Services. The average age at first arrest was 13.5 years (range: 7.8-17.8 years), and the average number of complaints per youth was 8. The average number of felony complaints per youth was 3.1, while the average number of misdemeanor complaints per youth was 4.4. Looking at alleged offenses overall, controlled and dangerous substance offenses occurred more frequently.

Moving forward, the next step in the descriptive analysis will be to include data for the 168 perpetrators and remaining 155 victims of homicide or attempted homicide.

Implications for health policy

The Surgeon General's goal for Health People 2010 is to reduce homicides to less than or equal to 3 deaths per 100,000 person-years. In order for Baltimore City to do this, city and state agencies must maintain interagency collaboration and aggressively target juvenile violent death as they would any other health disparity. Increased understanding of the trajectory of youth violence in Baltimore City from the Predictors project results, will enable city and state agencies to improve violence prevention efforts, in particular earlier in the lives of children at risk. It is assumed that it is easier to change a trajectory when children are younger and have not gotten into a criminal lifestyle than to change youth who are already involved. Delinquency reduction programs could be expanded and or implemented to reduce future acts of violence and to concentrate efforts on reducing the likeliness of at-risk youth becoming victims or perpetrators of violence. Finally, violence prevention interventions could be implemented in unconventional settings to reach the youth at risk for violence.

Targeting violence requires a long-term commitment to a comprehensive set of strategies and by undertaking the Predictors of Violence Project, the Baltimore City Health Department is illustrating its pledge to address violence with a systematic, evidence-based approach.

POSTER #8

Addressing MCH disparities among newborns of urban African-American women

MC Gibbons, MD, MPH, Nadra Tyus, DrPH

Background: Breastfeeding may improve health outcomes that disproportionately impact African-American children during early stages of life and is associated with several health benefits for children, including lower risk of post neonatal mortality, otitis media, respiratory tract infections, diarrhea, necrotizing enterocolitis, and childhood obesity. Breastfeeding also is associated with health benefits for mothers including reduced risk for postpartum bleeding, ovarian and premenopausal breast cancer, and lower maternal incidence of osteoporosis and hip fracture after menopause. Despite these benefits, breastfeeding rates differ substantially by race and socioeconomic level. According to the 2004 National Immunization Study (NIS), 71.5% of non-Hispanic white children were ever breastfed compared with 50.1% of non-Hispanic black children. Also, the Third National Health and Nutrition Examination Survey (NHANES III) found that among minority adolescents, only 13.1% of non-Hispanic black adolescent mothers compared to 33.7% and 43.7% of non-Hispanic White and Mexican American adolescent mothers, respectively, chose to breastfeed their children. In terms of birth outcomes, the rates of preterm delivery and the rate of Small for Gestational age (SGA - infants born with birth weights under 2500 grams) deliveries are disproportionately higher among African-American women as compared to White women. In addition, according to the National Center for Health Statistics (NCHS) in 2004 the preterm delivery rate among African-American mothers was 17.9% compared to 11.5% among White mothers, while the rate of SGA deliveries among African-American mothers was 13.7% vs. 8.1% among White mothers. The causes of these MCH disparities have not been completely characterized, but are not fully explained by differences in socioeconomic conditions or maternal behaviors, such as smoking or drug use. While much work has been done regarding effective interventions to improve breastfeeding rates among adult women, very little evidence exists regarding effective interventions among adolescent African-American mothers. Similarly despite a significant amount of research, effective interventions to reduce preterm delivery rates and SGA delivery rates remain elusive. Evidence suggests that Community Health Workers can play an important role in interventions designed to enhance MCH outcomes. Community Health Workers (CHWs) are community members of the target community who serve as connectors between health care consumers and providers to promote health among groups that have traditionally lacked adequate access to care. In the scientific literature, CHWs are referred to by more than 30 different term. These names include “lay health advisors,” “paraprofessionals,” “health aides,” “*promotoras*,” “patient navigators,” and “natural helpers.” Community health workers often play influential roles in the health care delivery system even though they may not be considered formal members of a medical team. Several observational, experimental studies and retrospective reviews have been conducted evaluating the CHW mode. These studies, in part, form evidence base that generally supports the efficacy of the CHW to improve health outcomes.

Methods: To preliminarily explore the feasibility of implementing a CHW mediated MCH disparity reduction intervention among African-Americans, we conducted a pilot CHW demonstration project. Eight community members were identified and given extensive training on topics including health promotion, chronic disease, basic documentation and conflict

resolution. In addition a structured, evidence based prenatal clinico-educational curriculum was developed for pregnant mothers. This curriculum was also taught to the CHW's. The curriculum was designed to be delivered in 12 weekly one-on-one motivational/educational sessions with the mothers lasting no longer than 40 minutes.

Results: Approximately 409 women enrolled in the pilot demonstration project. To date approximately 229 women have completed the intervention and delivered their babies. Additionally there were 5 abortions, 4 intrauterine/perinatal deaths and 4 sets of twin deliveries. Four women had physician directed contraindications to breastfeeding. In terms of outcomes among these women 150/216 (69%) reported initiating breastfeeding subsequent to delivery. 20/220 (9%) of women delivered their babies preterm while 17/220 (7.7%) of women delivered babies weighing less than 2500 grams. Finally, only 6/220 (2.7%) of all infants required admission to the Neonatal Intensive Care Unit for at least 24 hours.

Conclusion: Community Health Worker mediated interventions may prove effective at enhancing MCH outcomes and reducing MCH disparities among newborns of African-American women.

6. Who were the partners?
 - a. East Baltimore community members
7. Whom did the research impact?
 - a. African-American pregnant mothers and their newborn infants.
8. Did this work continue after the research dollars ended?
 - a. Yes. This is an ongoing project.
9. Was there follow up work? If so, describe the outcomes.
 - a. Evaluation and benchmarking continue iteratively. The intervention continues to be delivered.
10. What were the key findings and implications of the research for policy?
 - a. Research Implications – The efficacy of CHW's at addressing MCH outcomes and health disparities needs to be further explored.
 - b. Policy Implications – Policy strategies for diffusing and institutionalizing CHW mediated interventions with proven efficacy need to be elucidated.
11. If the program were taken "to scale" in Baltimore:
 - a. What would it cost?
 1. Unclear, this depends on the size of the "scale"
 - b. What would it look like?
 1. Teams of CHW's overseen by dedicated providers working in collaboration with obstetrical and pediatric providers to support maternal prenatal care compliance and education and to remove community based barriers to care and compliance.
 - c. What would be accomplished?
 1. Significant improvements in breastfeeding rates over the short term.
 2. Probably improvement in childhood illnesses associated with breastfeeding over the long run.
 3. Likely maternal health benefits over the long run.
 4. Significant reductions in Preterm delivery and SGA delivery rates among the target population.
 5. Likely reductions in preterm delivery and SGA delivery disparities.
 6. Potentially significant healthcare system and patient cost savings related to decrease utilization of NICU.

POSTER #9

Exploration of Women's Lives: Understanding the Myriad of Factors Impacting the Lives of Women and Their Children in Baltimore

Alan Green, PhD; Nadra Tyus, DrPH; Chaka Ward, MS

Objectives: To explore the contemporary and historical social/cultural factors that impact the life trajectories of marginalized women and children in Baltimore. Data from this study will be used to inform future efforts to meet the needs of similar populations. The two major goals of this study are: 1) To engage in conversations with low-income women who have experienced and prevailed against multiple threats to health and well-being associated with living in Baltimore and; 2) to create a process for analyzing data derived from these conversations that lead to feasible and acceptable prevention and intervention strategies for other women and families exposed to similar threats to health and well being living in Baltimore.

Methods: This study employed a non-experimental research design comprised of conducting group discussions with a convenience sample of women from local community-based organizations who service low-income women such as the Agape House.

The following research questions were used to accomplish the above stated objectives:

1. What are the major challenges (threats) impacting low-income women in Baltimore?
2. What types of support are available/useful for addressing these challenges?
3. What strategies and supports were most/least effective for you in overcoming these challenges?

In all, this formative research process will be helpful in developing services for women and their children in a community school setting. In addition, the partners for this research study is Johns Hopkins University and Agape House – a community-based transitional housing facility for women and their children in Baltimore.

Results: The final sample consisted of 6 women ranging from ages 19 to 54. Overall, the research findings show numerous threats impacting low-income women and their children in Baltimore. These threats will be described in detail during the presentation. The women of Agape also discussed various types of support that were available to them during times of transition and talked about how useful these supports were to them gaining independent living. As well, various strategies were pinpointed that helped these women overcome the crises in their lives. Some of the protective factors identified were transitional housing such as Agape House, having a “purpose” in life, family and friends who never gave up on them, spirituality, and personal counseling they received.

Discussion: The discussions at the Agape House were rich and life changing. The research team decided to use Activity Theory in order to examine the difficulty the women were having identifying protective factors that were helpful to them. Data collected from the women revealed that they were only identifying protective factors which were ultimately unsuccessful in their lives (i.e. parenting classes, social services, etc) yet, they felt compelled to describe as successful. The women who once lived at Agape House are not as successful as one assumes

them to be because many of them are barely surviving or are still battling drug addiction, health issues, family instability and poverty. These women are primarily focused on overcoming daily crises (i.e. employment, parenting, transportation, heat/gas, etc) and are unable to make connections between each crises and how to use protective factors to avoid such crises. Thus, the research team suggests that in order for these experiences to be beneficial to others, there needs to be an added dimension of critical consciousness into the discussions which assists the women with developing skills to better understand and act upon life their life circumstances.

The work at the Agape House is continuing although the research dollars have ended. These discussions have paved the way for developing support mechanisms for women that are connected to their gaining a broader understanding of the intersectionalities of race/culture, gender, class, sexual orientation and the misuse of power in relationships and systems on a personal and societal level (Almeida & Durkin, 1999; Hernandez, Almeida, Dolan-DeVecchio, 2005).

What is the follow up work? Has it begun? The follow up work in this project will take place with the East Baltimore Development Initiative. Specifically, the strategy of engaging women in discourse about their struggles and triumphs will be utilized to inform the Integrated Services Strategy model currently underway with EBDI.

What are the policy implications of this research? Efforts to support disenfranchised women should be grounded in public policy and resources that allow the women themselves to drive change strategies.

If the program were taken “to scale” in Baltimore:

- a. What would it cost? The cost of paying ongoing stipends for engaged women in this work would be the primary financial expenditure.
- b. What would it look like? This process would mirror a community health worker model, but engage empowered women to drive and facilitate services to women in their children in a defined neighborhood.
- c. What would be accomplished? Community Driven Change.

POSTER #10

***Challenge!*, a Home- and Community-Based Intervention Led by College Mentors, Prevents Overweight among Low-Income Urban African American Adolescents**

Erin R. Hager, PhD; Fatma Shebl, MD MPH; Maureen M. Black, PhD

Objective: To conduct a randomized controlled trial of a home- and community-based health promotion/ obesity prevention program led by college-aged mentors targeting low-income urban African American adolescents in Baltimore City.

Methods: 235 adolescents were recruited to participate and were randomized to receive the intervention (n=121) or control (n=114). The intervention was administered to each adolescent in the intervention group individually in their home or at a location in the community (a corner store, a playground, a grocery store, etc.) by a college aged mentor. The intervention focused on improving diet and increasing physical activity through goal setting. Evaluations were conducted at baseline, following the intervention (1 year after baseline), and 1 year post-intervention (2 years after baseline) and included assessment of weight status (measured height and weight to calculate BMI-for-age, bioelectrical impedance analysis to estimate body composition including % body fat), diet (youth adolescent food frequency questionnaire), and physical activity (accelerometry).

Results: Retention over 2 years was 76%. At baseline, 39% were overweight or obese (BMI-for-age \geq 85th percentile). After 2 years, rates of overweight declined 2.4% in the intervention group and increased 12.1% in the control (OR=7.97, p=0.007). Using GEE, intervention adolescents were less likely to advance to overweight/obesity than control adolescents ($\chi^2 = 5.8$, p=0.02). The decline in consumption of snacks/deserts was greater among intervention adolescents ($\chi^2=0.31$, F=7.21, p=0.007). Changes in play-equivalent physical activity (PEPA \geq 1800 counts/min) were moderated by BMI-for-age. Among adolescents who were overweight or obese at baseline, PEPA increased among intervention adolescents and decreased among those in the control group (F=4.12, p=0.03) following the intervention, but no difference was observed at 2 years.

Conclusions: The results of this study suggest that a home- and community- based intervention delivered by college-aged mentors can prevent overweight, improve diet by decreasing snack/desert consumption, and prevent a decline in physical activity (among the heaviest youth).

Questions:

13. Who were the partners?

This project was led by Dr. Maureen Black at the University of Maryland School of Medicine and was conducted in collaboration with investigators from University of Maryland Baltimore County, Johns Hopkins Bloomberg School of Public Health, University of Massachusetts Amherst, and the University of Maryland Eastern Shore. This research was funded by the Department of Health and Human Services Health Resources and Services Administration Maternal and Child Health Bureau Grant Number

1 R40 MC 00241-01, The Thomas Wilson Sanitarium for Children of Baltimore, and The Annie E. Casey Foundation and Associated Black Charities.

14. Whom did the research impact? What was the target population?

This research targeted low-income urban African American adolescents living primarily in West Baltimore City.

15. Did this work continue after the research dollars ended?

When the original *Challenge!* program ended, we began piloting the lessons in a group format with additional funding. The small-group *Challenge!* program was pilot-tested in community sites (YMCA and Open Gates Foundation), in a primary care setting (University of Maryland Pediatric Ambulatory Clinic), and in the Baltimore City public school system.

16. Was there follow-up work? If so, describe the outcomes

-- We are still analyzing much of the existing data and currently do not plan to follow-up with the adolescents enrolled in the original *Challenge!* intervention.

-- Our next step in data analysis includes determining the minimum intervention exposure that results in a positive outcome.

-- We have applied for and received funding to work with the Baltimore City public school system on an obesity-prevention program for middle school girls using a multi-level intervention model which includes the small group *Challenge!* program and an environmental intervention. The formative work for “*Challenge!* in Middle Schools” is scheduled to begin in August of 2008.

17. What were the key findings and implications of the research for policy?

This study found that a home- and community- based intervention delivered by college-aged mentors that focused on goal-setting can prevent overweight, improve diet, and prevent a decline in physical activity (among the heaviest youth) among urban African American adolescents. Policy implications include the need to provide adolescents with both nutrition education and hands-on experiences with preparing food and being physically active, both of which are lacking in the public school systems. Additionally, it is important to teach adolescents how to set behavior change goals and to provide the adolescents with a positive health role model.

18. If the program were taken to scale in Baltimore:

a. What would it cost?

b. What would it look like?

c. What would be accomplished?

Given that each mentor would have to spend 12 hours with each child (12 lessons, 1 hour each), and that children this age attend school during the week, one mentor could work with 32 children each year (assuming with travel, 2 children per day—8 children per week (4 days of mentoring, 1 day for administrative duties), 4 cohorts of 8 children per year—32 children over 48 weeks of work each year (to account for vacation and holidays)). To reach out to approximately 160 children/year we would need 5 part-time mentors at \$15,000/year per mentor plus a part-time supervisor at \$20,000/year for a total

of \$95,000 for personnel. The intervention includes making healthy snacks, using a pedometer to track steps taken per day, and drinking plenty of water. These and other supplies have been previously estimated to cost of \$65/child. For 160 children, a supply budget would be \$10,400. Therefore, **to expand this program to 160 children per year, the cost would be \$105,400.** These costs do not include overhead.

Implementing this program in a small group setting would be more cost-effective. This approach will be tested in the coming years through the Baltimore City Public School System.

Erin R. Hager, PhD
University of Maryland School of Medicine
Department of Pediatrics, Growth and Nutrition Division
737 West Lombard Street Room 163 Baltimore, MD 21201
410-706-0213 ehager@peds.umaryland.edu



POSTER #11

The Safe and Sound Campaign: Prospects and Perspectives from the Urban Health Initiative

Author

Martha Holleman, MPP, is a Distinguished Fellow of the WT Grant Foundation at the New York University Robert F. Wagner Graduate School of Public Service, and has served as the Policy Advisor for the Safe and Sound Campaign, the Baltimore site of the Urban Health Initiative, since 1996. While at Wagner, she is spending time with the UHI evaluation team, analyzing data collected through the national evaluation of the Urban Health Initiative and thinking about its implications for improving the lives of young people growing up in the nation's most distressed cities.

Overview

Motivated by a sense of urgency to confront the persistent decline in child well-being in the nation's largest and most distressed cities, in the spring of 1995 The Robert Wood Johnson Foundation (RWJF) established the Urban Health Initiative (UHI). From 1996 – 2006, RWJF funded five cities -- Baltimore, Detroit, Oakland, Philadelphia and Richmond -- to establish local initiatives that would cut across sectors, involve both civic leaders and community members, and motivate changes in policies and programs by using data to drive decision making and implement best practice solutions with the belief that such effort would result in measurable changes on a host of critical outcomes for children and youth. Funding was also provided to the Wagner School at New York University to conduct a national evaluation.

The Safe and Sound Campaign was the Baltimore partner in the Urban Health Initiative. For the last ten years, Safe and Sound has worked in partnership with many from across the Baltimore community to raise funds for and implement citywide strategies to improve the quantity and quality of after school programs, support families with young children, improve reading and school readiness, reduce youth violence, and stem city homicides. The Campaign has also focused on securing public investments to sustain and grow these strategies through voter education and citizen advocacy.

Each of these efforts could well serve as the focus of a paper on its own. The work covered in this abstract, however, uses data collected by the national evaluation of the UHI carried out by Beth Weitzman, Diana Silver and Tod Mijanovich of New York University to assess the impact of the Campaign's (and the UHI's) overall approach to achieving measurable improvements in children's well being – an approach which was always intended to be more than the sum of its parts.

Partners

Partners in the Safe and Sound Campaign's efforts include youth and community leaders; local and national foundations; local and state government; Baltimore community and civic leaders; researchers and analysts from the Johns Hopkins School of Medicine and the Bloomberg School

of Public Health; the board and staff of the Family League of Baltimore City (which has served as an operational partner for many of the Campaign's initiatives), and hundreds of community-based program providers.

Target Population

The intent of the Urban Health Initiative was to achieve measurable change in the health and safety status of children and youth citywide. The Safe and Sound Campaign identified a set of broad goals, or 'results', and a series of indicators, or measures, on which it hoped to make such improvements.

Ongoing Nature of the Work

The Safe and Sound Campaign's efforts to serve as the engine for innovation and action to improve the well being of the city's children and youth continue in the present. Progress on the core health and safety measures identified in the initial stages of the Campaign continues to be both measured and sought.

Findings

The Campaign has, with local partners, assessed city wide progress on the core health and safety measures initially identified -- and has been encouraged by seeming improvements. Absent a counterfactual, however, the Campaign has been unable to address the degree to which these changes might otherwise have occurred.

To establish such a counterfactual, researchers at NYU used a cluster analysis to identify a set of cities that best matched the UHI cities in terms of population size, unemployment rate, African-American population, high school education, and poverty level (Baton Rouge, Birmingham, Boston, Cleveland, Milwaukee, Minneapolis, Newark, Pittsburgh and St. Louis were the cities selected). Among other evaluation activities, NYU conducted a random digit dialed telephone survey to collect perceptions of young people and their families about the quality of life for children in their communities. This survey, the Survey of Adults and Youth -- or the SAY -- was undertaken in three waves at three points in time (1998-1999; 2001-2002; and 2004-2005) to a randomly selected sample of parents, non-parents and children in the five cities that made up the UHI, their suburbs, the comparison cities and their suburbs.

The NYU evaluation team used odds ratios to assess statistically significant differences from baseline on key questions from the SAY between respondents in the comparison cities, taken as a group, and Baltimore-based respondents. In keeping with Safe and Sound Campaign strategies and activities, compared to survey respondents in non-UHI cities, Baltimore residents were more likely at follow-up than at baseline to report that they vote in local elections, feel positive about the quality of after school programs, consider their neighborhoods to be good or excellent places to raise children, to assess the performance of local government as good or excellent and to believe that problems facing children and their families will get better over the next four years. Also consistent with site level work, Baltimore residents are less likely to report that teen pregnancy and unsupervised children are a big problem facing young people. More ambiguous to site level effort (though perhaps reflecting a growing awareness of the role schools can and should play in promoting the success of all youth); Baltimore residents were less likely to report satisfaction with public schools. (Administrative data on key health and safety outcomes

collected by the UHI evaluation team also show greater gains in the desired direction in UHI vs. comparison cities using a difference in difference analysis.)

These findings should, of course, be interpreted with caution. The UHI evaluation design was not intended to yield site specific results. Further, in addition to those reported here, there were a number of other non-significant survey responses found.

Though far from definitive, when taken together with administrative trend data and other analyses of site-level effort, these results do indicate that over the last ten years conditions for children in Baltimore have improved to a greater extent than might otherwise have been possible absent such a comprehensive effort.

Implications

- *Progress is possible.* Intensive, city-level effort to improve the well being of young people appears to yield improvements in both perceptions and outcomes.
- *These gains are small.* These gains are significant, but do not appear sufficient, in and of themselves, to dramatically alter the conditions of children and families in the city. One must keep in mind the size of the investment and effort relative to the scale of the issues faced and the larger macro-structural forces at work.
- *Nonetheless we should stay the course.* Comprehensive city-level effort remains vital. It is an area in which we have the tools – the mechanisms, the knowledge and the extant political will – to move forward. We work here now because we can. We should do so while we also work on developing greater political will, at greater levels of authority and responsibility, to address the larger forces shaping the lives of children and families living in Baltimore and other of the nation’s distressed cities.

POSTER #12

Adverse Pregnancy Outcomes among Pregnant Women Attending STD Clinics

Authors: Johnson, Hope L., Ghanem, Khalil G., Zenilman, Jonathan M., Erbelding, Emily E.
Email of Contact: hjohnson@jhsp.edu

Objective: Rates of preterm birth and low birth weight have continued to rise over the last decade in the United States. A primary goal of STD detection and treatment is to prevent adverse pregnancy outcomes. We sought to identify predictors of adverse pregnancy outcomes (preterm birth and low birth weight) among pregnant women seeking STD care.

Methods: We conducted a case-control study of pregnant women ages 13-49 who attended STD clinics in Baltimore, MD during 1996-2002 and were tested for bacterial vaginosis (BV), *Chlamydia trachomatis* (CT), *Neisseria gonorrhoeae* (NG), early syphilis (ES), and *Trichomonas vaginalis* (TV). We linked STD clinic data with state birth records to test the association of STIs and APOs. Cases were women who delivered preterm and/or low birth weight newborns and were compared with controls using multiple logistic regression.

Results: Among 1531 pregnant women, 767 (50%) had singleton births with post-natal data available. There was a 23% prevalence of APOs (6.9% preterm birth; 4.2% low birth weight, and 11.9% preterm birth and low birth weight). 97% of pregnant women were African American (mean age = 22.3); 39% reported prior spontaneous or elective termination of pregnancy, and 60.1% of women reported at least 1 antenatal care visit in the 1st trimester of pregnancy.

Prevalence of maternal infection was 54.7% (BV: 30.5%; CT: 14.0%; NG: 7.3%; TV: 14.7%; ES: 0.8%). Adjusting for age and maternal weight gain during pregnancy, CT in the 1st trimester of pregnancy was associated with term delivery of a low birth weight newborn (aOR=3.44, CI 1.09-10.82, p=0.04). NG, diagnosed any time in pregnancy, was associated with preterm delivery of a normal birth weight newborn (aOR=2.50, CI 1.03-6.06, p=0.04), adjusting for age, medical factors in pregnancy, and history of NG infection.

Conclusions: STIs and APOs were prevalent among pregnant STD clinic attendees. Prospective studies designed to further elucidate the relationship of STIs and APOs are needed. The STD clinic visit may represent a critical opportunity to target interventions that will improve perinatal outcomes. Future interventions might include: 1) enhanced counseling messages and case management, including follow-up care; 2) active referral to substance abuse and antenatal care programs; 3) improved communication with antenatal care providers.

Partners:

- Johns Hopkins Bayview Medical Center, Division of Infectious Diseases
- Johns Hopkins Bloomberg School of Public Health, Department of International Health
- Baltimore City Health Department STD Program
- Maryland Department of Health and Mental Hygiene, Vital Statistics Administration

Research support:

- Student investigator was supported by NIAID/Johns Hopkins STD training grant.

Outcomes:

- Plans for future follow-up work include presentation of the findings to key Baltimore City Health Department staff.
- Future research will likely include: 1) qualitative research to identify determinants of treatment seeking behaviors among pregnant women in this setting; 2) prospective studies evaluating the association of STIs and APOs among populations in similar settings with multiple risk factors for APOs to further elucidate these relationships while accounting for associated risk factors (drug, alcohol, and tobacco use, nutrition, pregnancy history, access to care, etc.); and 3) evaluation of an intervention with enhanced follow-up and referral (antenatal care and drug rehabilitation programs) of pregnant women who attend Baltimore City STD clinics.

Key Findings for Policy:

- On average, over 250 pregnant women attended Baltimore City STD clinics each year. Among women with antenatal care information available, 98% had access to antenatal care. Information obtained at STD clinic visit can be vital to the follow-up care of the pregnant women, but no formal mechanism exists to communicate patient outcomes from STD clinic visits to antenatal care providers. *Recommendations:* 1) develop methods for communication with antenatal care providers; 2) develop enhanced counseling messages and improved active case management for pregnant patients attending STD clinics, including follow-up care.
- Only 60% of women initiated antenatal care in the 1st trimester of pregnancy. Most women attended the STD clinic either prior to or during the same trimester of pregnancy as initiation of antenatal care. *Recommendation:* STD clinic visit could provide an opportunity to counsel and enroll women in antenatal care earlier in pregnancy.
- Alcohol and illicit drug use was high and reported more frequently at STD clinic visit than recorded on birth certificates. *Recommendation:* STD clinic visit could provide an opportunity to refer and enroll women into appropriate drug and alcohol rehabilitation programs. The Baltimore City Perinatal Review Systems found that substance abuse rehabilitation programs are available but few are designed to meet the needs of pregnant women. *Recommendation:* Given the high rates of drug and alcohol use in this population, adaption of existing programs or development of new programs appropriate for pregnancy women is recommended.
- STD clinic visits can provide a window of opportunity to counsel women about available public services and coordinate enrollment in these programs, consistent with a recommendation from the Baltimore City Perinatal Review Systems.

POSTER #13

A Retrospective Assessment of the Association Between Patient Factors and African Americans' Willingness to Accept Heart Catheterizations

Sharon Duncan Jones-Eversley. Morgan State University, School of Community Health and Policy, Baltimore, MD 21251.

For over 100 years, cardiovascular disease has been the leading cause of death in the United States. African Americans are a high-risk cardiovascular disease (CVD) subpopulation. Timely diagnosis and effective management of CVD heart disease are critical to improving heart health and saving lives. Heart catheterization is valuable gateway invasive diagnostic cardiac procedure used to detect and treat CVD. However, CVD-related racial and ethnic disparities in accessing and utilizing heart catheterizations exist. When compared to whites, African Americans are the least willing to undergo the heart catheterization procedures and, least likely to receive access to them. The objective of this study was to assess patient factors that could be associated with African American patients' willingness to accept heart catheterizations clinical recommendations.

While interracial studies have provided insight to the level of variations in accessing and utilizing heart catheterizations between African Americans and other racial groups, intra-racial research is limited. Gaining greater understanding of intra-racial decisional conflict was the goal of this secondary analysis study. Societal (macro-level) and individual (micro-level) patient factors (i.e. sociodemographics, socioeconomic status, health care access, heart health condition, health attitudes and beliefs [perceived racism and medical mistrust], hospital satisfaction, and referral status) were assessed in the research to examine how decisional conflict, induced by stress, is associated with the patients' willingness to undergo the heart catheterization procedure.

An integrated theoretical model was used to assess ethnic variations in cardiac care. The social *conflict theory* and the psychological *conflict theory of decision-making* were used to assess African American cardiac patients' willingness to accept heart catheterization recommendations. Clinical and administrative data from the *Cardiac ACCESS Longitudinal (CAL) Study* were used to conduct a secondary analysis of the CAL Study. The CAL Study is an active retrospective, cross-sectional study that was conducted in three urban hospitals in Baltimore City. In the secondary analysis study, 298 African American cardiac patients were examined. Frequency distributions, chi square and logistic regression analyses were used to retrospectively examine how patient factors were associated with the patients' willingness decision to accept the heart catheterization procedure if recommended by their physician.

A majority of the African American cardiac patients (78.2%) were willing to accept the heart catheterization recommendation. Over half (50.5%) of the African American cardiac patients had high-perceived racism, 53.5% had high medical mistrust and, 59.5% were satisfied with their hospital and physician interactions. Medical mistrust and being older were associated with lower odds of being willing to accept the heart catheterization procedure. Patients who agreed hospitals experiment on people without their knowledge were 63% less willing to accept the cardiac procedure than those who disagreed with the statement ($p < .009^*$; CI: .175 - .780). Patients 50-64 years old were 76% less willing to accept the heart catheterization than patients >80 years old ($p < .021^*$; CI: .074 - .822).

The intra-racial study impacts health policy because it examines ethnic- specific patient factors that may be associated with African American cardiac patients' willingness, and it

potentially provides intra-racial insight to the development of future cardiac care policies. From a systemic perspective, the study findings propose a new paradigm shift in the development of health policies aimed at eliminating health and cardiac care disparities in the Baltimore.

If the study's research outcomes were implemented in Baltimore it would:

- Heighten knowledge of epidemiology and etiology of African American cardiac patients,
- Promote the development of more empirical approaches to health policy that presents integrated (macro-level) and ethnic-specific (micro-level) strategies to eliminate cardiac care disparities.
- Encourage the development of ethnic-specific health service policies that targeted high-risk CVD subpopulations.
- Pave the way for patient-focused primary health care services that have the capacity to increase comprehensiveness and accessibility of cardiac care for high-risk CVD subpopulations.

Because the heart catheterization procedure is comparatively a low-cost invasive cardiac procedure, the medical cost of increasing heart catheterization access and utilization would not only result in cost savings, but it would be cost effective as well. Invasive and end-stage cardiac surgeries such as bypass surgery cost approximately \$85,653 per patient. However, paying \$25,332 for a diagnostic heart catheterization that: 1) provides an efficient assessment of the patient's heart health, 2) results in a reasonably short recovery period, and 3) identifies potentially life threatening and costly heart abnormalities (i.e., narrowing or blockages of heart arteries), obviously makes the heart catheterization an economically proficient surgical procedure.

Equitable heart catheterization access and utilization policies that address racial and ethnic variations in cardiac care would benefit all Baltimoreans. Furthermore, engaging in cardiac care research that yields solution-driven policies is an ethical and professional obligation if health equality for all is to be achieved during the 21st century. Public health researchers, policymakers, and practitioners must elevate their methodological approaches to include ethnic-specific research when examining social determinants of health in Baltimore.

POSTER #14
The Impact of Workplace Violence on Nursing Policy

Partners:

Johns Hopkins Hospital, Baltimore

Howard County General Hospital

Johns Hopkins Hospital, Bayview

Funded by the National Institute of Occupational Safety & Health

Michelle Kanga

Jill Messing, MSW, PhD

Jacquelyn Campbell, PhD, RN, FAAN

Joan Kub, PhD, RN.

Sheila Fitzgerald, PhD, RN

Jacqueline Agnew, PhD, RN

Dan Sheridan, PhD, RN, FAAN

Richelle Bolyard

Abstract:

Workplace violence (WPV), including workplace intimate partner violence, has major long-term health and employment outcomes and affects nursing personnel in significant numbers. By affecting productivity, absenteeism and job satisfaction, workplace violence also may significantly affect nursing personnel retention and, therefore, the nursing shortage. However, the risk and protective factors for these outcomes have rarely been examined prospectively with self report data in order to address underreporting issues.

The main objectives of this study were to attain prevalence data on workplace violence within the nursing profession, investigate differences between victims and non-victims of workplace violence, and identify the reporting patterns of workplace violence.

The target population was nurses and nursing personnel at three Hospitals in Baltimore, MD. This study used online self report surveys to identify nursing personnel who have experienced workplace violence during the past year and follow them prospectively. At baseline, 30.3% of the participants reported experiencing physical (19.8%) and/or psychological (20%) WPV in the past 12 months. At this time, selected participants have been followed for 6 months. A case control design was utilized to select 1695 participants for follow-up, including the population of nursing personnel who experienced WPV (cases; n=652) and a random sample of controls (n=1035). The response rate was 81.3% (n=1378). 37% of follow-up participants reported experiencing physical (23.9%) and/or psychological (24.5%) violence in the approximately 6 months between baseline and follow-up surveys. Of those who reported experiencing WPV at follow-up, 21.8% had not reported experiencing WPV at Baseline.

At baseline, 53.7% of those experiencing physical WPV and 25.6% of those experiencing psychological WPV reported this incident through formal channels at their workplace, Logistic regression was used to examine the risk factors for WPV at follow-up. Nurses were more likely

than non-nursing personnel to be the victims of WPV, as were participants who identify as White. Variables regarding hospital unit had the highest adjusted odds ratios; significantly more WPV was reported by nursing personnel who work in the Emergency Department and the Psychiatric Unit. Childhood physical and sexual abuse also were risk factors for experiencing WPV. Those participants who reported being depressed (CESD-10) at baseline were significantly more likely to report WPV at follow-up. Burnout was measured using the Copenhagen Scales at Baseline. Personal Burnout at baseline predicted experiences of WPV at follow-up. However, Client Burnout shows the opposite effect, with nursing personnel who reported Client Burnout at baseline significantly less likely to report WPV at follow-up.

These results have important implications for policy changes in the area of nursing personnel safety, including WPV education, support and prevention. Workplace violence education could be implemented into all Baltimore hospital personnel's training agendas, the importance of sensitivity to this problem could be stressed with hospital administration, and a more friendly system reporting workplace violence could be devised. It is likely that the implementation of these measures could easily be absorbed by hospital budgets and, in some cases, may cost nothing at all. If these steps were taken, the prevalence and negative consequences of workplace violence may decrease in Baltimore area hospitals.

Additionally, results suggest that workplace violence may play an important role in the current nursing shortage, as significantly more victims of WPV indicated their desire to leave their position than did nursing personnel who did not experience WPV. It is essential that policy changes be implemented in order to improve the morale and retention of nursing personnel.

This longitudinal study is ongoing, with a sufficient amount of research funding to survey the participants again in approximately 6 months. It is hoped that this research will have lasting effects on hospital policy and the response to WPV in hospital settings.

POSTER #15

Evaluating the Impact of a Nutritional Education Program in Baltimore City Schools

Dana Kindermann, MD/MPH Candidate, 2009

This session will describe the impact of a nutrition education program currently implemented in eight Baltimore city schools.

Partners, Target Population, and Funding:

Food for Life (FFL), a food and nutrition education program developed by the Food Studies Institute (FSI), was first brought to Baltimore in 2004. At that time, Hampstead Hill Academy, a public charter school, was the first school to pilot the program; the following year, it was started at the Stadium School; and the following year, two after-school programs were started. In January 2008, six additional City public schools received funding from the FSI through a grant from the Stop and Shop Foundation to implement FFL. This new opportunity led to a partnership between FSI, Patterson Park Public Charter School (PPPCS, one of the new FFL schools), and Johns Hopkins Masters of Public Health students to conduct a qualitative research study on the impact of the FFL program on students and families at PPPCS. The results of the study (which is still on-going) will be useful to PPPCS as well as other interested schools in the future. The Johns Hopkins Institutional Review Board approved the research plan for the study. Although the FFL program is currently supported by outside grants and food donated from Whole Foods, there is no funding for the research component. Each of the participating schools has agreed to take over the financial responsibility of the FFL program after three years.

The FFL curriculum provides hands-on, sensory-based education to teach students about health-promoting, plant-based foods. A food educator trained by FSI teaches the weekly classes. Students learn about how food affects their minds and bodies, where different foods come from, how they are grown (through school gardens and earth boxes) and how to prepare delicious multi-cultural meals. The main objective is to expose students to healthy foods; a secondary objective is to involve students' families through journals and recipes and by inviting parents to volunteer and/or participate in community dinners and after school activities.

Methods:

The FFL program is run differently at each of the schools in Baltimore, based on the needs, interest, and resources available. At PPPCS, the course is offered to third graders only, who receive a weekly one-hour class. Since the program started in January, Masters students have evaluated the program in the context of broader food decision-making behavior among families of PPPCS. The research has consisted of in-depth interviews with parents (n=9), teachers (n=4), the food educators at PPPCS and Hampstead Hill, and the PPPCS community school coordinator. The student researchers have also observed several of the FFL classes, participated in Hampstead Hill's monthly community dinners, and conducted focus groups with participating third graders (n=14).

The Masters students, FSI, and the community school coordinator at PPPCS jointly developed the questions for the interviews and focus groups. Parent interviews focused on how parents define nutrition and health, how they make food purchasing and preparation decisions, what they

hope for in a nutrition education program, and whether they have noticed any changes in their children's knowledge, attitudes, or behavior regarding food since the start of the program. Teacher interviews focused on the nutritional challenges they observe in their students and their impressions of the appropriateness and value of the FFL program. In the focus groups, 3rd grade students were asked about what foods they liked and why, what foods they commonly ate at home, and what they had learned through the FFL program. The objective of the study was to collect information that would provide feedback on the program to FSI and PPPCS, and more broadly, to gain a better understanding on the value and potential limitations of nutrition education in the school system. The information will be provided to interested families and employees of PPPCS and to the Baltimore City School Board. It will also be included in FSI's 2008 Final Report and presented at a national conference in Baltimore led by FSI this fall.

Key Findings, and Implications of Study:

The interviews collected with parents shed light on what shapes food purchasing and preparation decisions among families at PPPCS. This contextual information is important because it relates to the extent to which nutrition education can impact what children "choose" to eat. Parents expressed a desire to provide healthy meals for their families, but all mentioned challenges to this effort. These challenges include budgetary and transportation limitations, time constraints, the desire to please and satisfy their children, the force of food advertising on their kids, and the presence of multiple cultural influences and food preferences within one family.

Even with the short exposure to the program, there was unanimous support among parents, teachers, students and school employees about the FFL program. Parents mentioned that their children were now asking about the nutritional content of foods at home, asking to read food labels, and demonstrating how they had learned to use a knife. Several parents expressed that the school was the ideal setting to introduce kids to nutrition and healthy eating as students are much more likely to heed advice from teachers than parents. Also, they commented that kids who are reluctant to try new foods at home are much more likely to try them amongst their peers. Parents also liked that their kids would have the chance to actively prepare snacks and meals, and recognized these as important life skills. Third graders eagerly shared what they had learned in the program and many had joined the optional after-school cooking club to learn and do more. Despite the support for the FFL program, most of the parents also recognized the contradiction in teaching students one thing in the classroom and doing another in the lunchroom. About two thirds of PPPCS students qualify for free or reduced price meals, and yet almost all of the parents expressed dissatisfaction with the quality of food served. Parents commented that to be most effective, nutrition education should go hand and hand with healthy options in the cafeteria.

Cost of the program and taking the program to scale:

The information collected through this study points to the value of implementing a nutrition education program such as FFL in schools. Considering obesity trends among young people, in particular among impoverished and minority communities, teaching children about healthy eating is a crucial preventative and cost-effective measure. According to the American Diabetes Association, the estimated cost of diabetes in 2007 was \$174 billion, with a per capita yearly cost of \$6,649. A recent CDC study estimated that 1 in 3 children born in 2000 will develop diabetes

in their lifetime.¹ In contrast, if the FFL program were implemented in 130 public elementary and middle schools in Baltimore City, the cost of the FFL program for one year would be about \$19,500 per school, or about \$195 per student. This estimates that each school would offer the program to about 100 students in four classes. For each school, this includes the food educator's salary (\$15,000), a single Baltimore City FFL coordinator (\$28,400), FSI's training and oversight (\$13,000), cooking supplies (\$400), food and gardening materials (\$1,250), and student binders filled with educational materials (\$300). The largest component of this cost is for the food educator; we believe each school needs a food educator to allow the program to grow and positively impact the health and education of students. Both the information collected through the study at PPPCS as well as this very simple cost analysis should be used to advocate for implementing a nutrition program such as FFL in all Baltimore City Schools.

¹ Narayan KM, Boyle J, Geiss L, Saaddine J, Thompson T. "Impact of Recent Increase in Incidence on Future Diabetes Burden, US, 2005-2050," *Diabetes Care*, Vol 29, no. 9 (2006): 2114-1226.

POSTER #16
An Oral Health Intervention Program for the Homeless

Dr. Mary Lashley
Professor
Department of Nursing
Towson University

Dr. Nancy Ward
Dean's Faculty
University of Maryland Dental School

Reverend Keith Daye
Pastoral Counselor
Helping Up Mission

Oral health care resources for the homeless are scarce and under funded resulting in significant disparities in access to oral health care. Collaborative, cross disciplinary initiatives that involve students in professional service learning experiences present an innovative alternative to address gaps in vital health care services. This project partnered the Helping Up Mission in Baltimore City with Towson University Department of Nursing, the University of Maryland Dental School, and volunteer dental care providers to improve access to oral health care for the homeless. The purpose of this community based participatory research was twofold: 1) to improve oral health among the urban homeless through education, screening, and improved access to care; and 2) to inspire students in nursing and dentistry to work with underserved populations.

Founded in 1885, The Helping Up Mission is one of Baltimore's oldest and largest faith based, non-profit, 501c3 institutions. The HUM serves the homeless, chemically dependent, mentally ill, and impoverished through programs designed to meet their physical, psychological, social, and spiritual needs.

Homeless residents enrolled in the Helping Up Mission's residential addictions recovery program received education on oral hygiene, signs and symptoms of oral cancer, and basic nutrition. Residents were screened for oral health problems. Those with priority oral health needs and those requesting dental care were referred to the University of Maryland Dental School Clinic for treatment. Services included preventive and restorative care including cleanings, fluoride treatments, fillings, extractions, periodontal care, and dentures.

Since inception of the program two years ago, 279 residents have received oral health education. Residents have consistently evidenced a two to four letter grade improvement in oral health knowledge. To date, 203 residents have received on site oral health screenings, and 201 residents have received treatment services including preventive, restorative, endodontic, and periodontal care at the Dental School Clinic. Despite the high rate of attrition and appointment non-adherence common to homeless populations, the rate of client inactivation for this program is considerably lower than that of the University's general dental clinic practice (37% since program inception and 24% in the second year of program operation compared to 50% for the University Dental Clinic).

Project partners are collecting data to determine the impact on employment rates of residents who have undergone restorative dental work. Preliminary results reveal that 86% of

clients (19 out of 22) who completed restorative treatment are gainfully employed, 63% outside of the Mission, 23% as paid Mission staff, and 9% as Mission interns. Beginning in the second year of program operation, residents who received comprehensive care and completed their treatment plans at the Dental School Clinic were asked to complete exit surveys to evaluate their satisfaction with the program and the dental care they had received. Survey data reveals that clients report feeling more confident (94%), satisfied with their appearance (100%), better able to eat (82%), more likely to smile (88%), and feel the care they received will help them in the job market (77%). Students are surveyed regarding the impact of the experience on their perceptions of the homeless. Students in nursing and dentistry report dramatic changes in their views on homelessness and a greater desire to work with underserved populations.

This program has been sustained for two years through private foundation grants (i.e. Abell, Stulman, Baltimore Community, Maryland Home and Community Foundations). While continued funding is being sought, efforts are also underway to establish a 501c3 non profit organization (entitled "Smiles Across Maryland") to raise additional funds to expand access to oral health care for the homeless as well as other underserved populations in the State of Maryland.

If the program were taken to scale in Baltimore, it is estimated that costs would be approximately \$1,400 per person. However, depending upon income status, clients could be responsible for a portion of the fees. Once admitted to the School's dental clinic, clients would be assigned to a dental student. A treatment plan would be developed, and fees would be assigned based on the Dental Clinic fee schedule.

This program represents an innovative service delivery model and a collaborative cross disciplinary initiative that is based on successful community-academic partnerships. Such a program can be potentially replicated in other communities to reduce health disparities and increase access to care for underserved populations. By proactively addressing oral health needs through prevention and earlier diagnosis and treatment, morbidity, quality of life, and cost can be positively impacted. The program has provided for expanded delivery of oral health care services to the homeless and has made a huge impact in restoring dignity to the lives of homeless men. At the same time, students in the health professions are challenged and inspired to work with underserved populations. Finally, the program illustrates the value that can be derived from organizational and community based partnerships. Faith based organizations can effectively partner with academic institutions to meet community needs and to address health care issues of underserved populations.

POSTER #17

How modeled PM 2.5 values correlate with inpatient asthma hospitalization in the Baltimore area: A case-crossover study?

Katherine C. Lin

Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, Maryland 21205-2179, USA

Running Title: Baltimore PM 2.5 Asthma Study

Abstract

Context Association between fine particulate matter (air pollution particle with aerodynamic diameter less than 2.5 micrometers, PM 2.5) exposure and number of asthma cases was mainly compared between counties in a national level. Limited evidence was narrowed down to one local area. Modeled PM 2.5 values presented in this study calibrated measurement error induced by unevenly allocated PM 2.5 monitors. Results from inpatient asthma hospitalization data make the magnitude of association short-term pollutant exposure and prompt health effects more approachable.

Objective To estimate the change in health risks of asthma inpatient hospitalization visits with elevated short-term exposure to ambient PM 2.5 and to explore risk levels associated with various distance from residential areas to Interstate-95 Expressway (I-95).

Design, Setting, and Patients A time-stratified case-crossover study comprising daily counts of asthma inpatient hospitalization data in Baltimore area (Baltimore City and five geographic adjacent counties: Baltimore, Anne Arundel, Howard, Carroll and Harford) from January 2002 through December 2002 (extracted from Maryland Health Services Cost Review Commission File). A total of 8,806 cases from 26 hospitals with daily time-series modeled PM 2.5, temperature, and relative humidity readings on spatial resolution of 12 square-kilometer grids were analyzed.

Main Outcome Measures Comparison of odds of hospital admissions for asthma between age (≤ 5 , 6-10, 11-17, 17-35, 35-65, ≥ 65), gender (male and female), ethnicity (Whites, Blacks, Hispanic, and Asian) and season (winter, spring, summer, and autumn).

Results (under analyses and revision, will be updated soon)

Conclusions The contribution of PM 2.5 to hospitalized asthma cases, for the first time, in a densely populated urban area in the Eastern United States was calculated. Short-term exposure to PM 2.5 and closer residential distance to I-95 increase the risks of inpatient hospitalization for asthma.

1. **Who were the partners (academic institutions, private foundations, government, community, etc.) involved?** (1) Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins University; (2) Environmental Public Health Tracking Program, Maryland Department of Health and Mental Hygiene
2. **Whom did the research impact? What was the target population?** People live in Baltimore area
3. **Did this work continue after the research dollars ended?** I hope so. Financial issues should contact project PI (Dr Clifford S Mitchell, MD, MS, MPH) at DHMH
4. **Was there follow up work? If so, describe the outcomes.** During my internship, the answer is “No” for my part. It’s my stand-alone PHASE internship project, but I’m sure there are and will follow up work by my colleagues at DHMH.
5. **What were the key findings and implications of the research for policy?** The contribution of PM 2.5 to hospitalized asthma cases, for the first time, in a densely populated urban area in the Eastern United States was calculated. The outcomes could be used as an aid to plan environmental regulations.
6. **If the program were taken “to scale” in Baltimore: What would be accomplished?** Identified benefits to society include: (1) Evaluate the odds ratio of PM 2.5 on asthma IPHs by using a large sample and daily/hourly modeled PM 2.5 readings. With a large sample of asthma patients it will be possible to estimate the contribution of one criterion air pollutant on a prevalent chronic respiratory disease. (2) Spatial variation should be seen on PM 2.5 exposure dose-asthma outcome response attributed to the density of transportation network (e.g. roads). (3) Defining better models in accessing PM 2.5 concentration-asthma hospitalization relationship that could be further applied to other states. (4) The results could be applied to calculate potential years of life lost, disease burden, and the impact one macro-economy for persons in the Baltimore study area. (5) The outcomes could be used as an aid to plan environmental regulations.
7. **Please indicate abstract should be considered for a presentation, a poster, or either):** Either. (Presentation is preferred.)

POSTER #18
**Recreational water contact with Baltimore urban waterways as a
source of exposure to pathogens**

Cynthia McOliver, MPH, Thaddeus K. Graczyk, PhD, Ellen K. Silbergeld, PhD. Department of Environmental Health Sciences, Johns Hopkins Bloomberg SPH.

Fishing and other water-related recreation are integral activities for millions of Americans, which are also essential to the livelihood, enjoyment, and life style of many people in the Baltimore metropolitan area. However, urban waters used for such recreational activities and as sources of food supplementation and subsistence are often contaminated by pathogenic organisms such as *Cryptosporidium* species, as a result of pollution originating from storm water runoff, combined sewer overflows, sanitary sewer overflows, and wastewater treatment plant effluents. Our research objectives are to identify recreational water contact as a risk factor of *Cryptosporidium* exposure in persons with HIV/AIDS in Baltimore, a high-risk group from increased morbidity, complications, and mortality from cryptosporidiosis. Our research partner is the Johns Hopkins Moore Outpatient Clinic in East Baltimore, which provides outpatient care for over 3000 HIV/AIDS patients in and around the Baltimore metropolitan area. The target population of our research was HIV/AIDS patients at Johns Hopkins Moore Outpatient Clinic in Baltimore, Maryland. However, the research has impact for both people with HIV/AIDS and immunocompetent persons who utilize the waterways in Baltimore for recreational water activities as well as subsistence/food supplementation. Our studies have utilized detailed self-reported questionnaires to assess the nature and extent of recreational water contact, consumption of self-caught and local catch, as well as self-reported gastrointestinal illness that may be associated with recreational water contact.

Key findings & implications of the research for policy

Pilot Study

Thirty-six patients (35%) reported neither recreational water activities nor catch consumption. The number of patients (66 out of 102 [65%]) who reported participating in some form of recreational water activities, i.e. fishing or crabbing, boating or swimming, including consumption of fish and crabs caught during these activities, was statistically significant ($P = 0.004$). Seventeen out of 66 patients (25%) also reported taking part in multiple water activities. Thirty-three patients (50%) reported consuming wild-caught fish or crabs only, without engaging in either fishing/crabbing themselves or boating/swimming. In general, consumption of recreationally caught fish and crabs was very common in the Johns Hopkins Moore Outpatient Clinic population, with 62 out of 102 patients (61%) reporting such consumption ($P = 0.04$).

Follow-up Survey: Preliminary findings

There were no statistically significant differences in the number of patients who reported recreational water contact compared to non-participants (i.e., 70 out of 153 as compared to 80 out of 153) ($P = 0.46$). Three patients did not identify a specific recreational water activity despite answering “yes” to recreational water contact. Thirty-nine patients (~26%) reported not being involved in recreational water activities or consumption of wild catch. Of the remaining

114 patients, 102 (90%) reported consuming either wild catch, or self-caught fish or crabs. Patients who engaged in recreational water contacts were more likely to report consumption of wild-catch fish or crabs (61 out of 73 [84%]) compared to those who did not report recreational water activities (41 out of 80 [51%]). Overall consumption of recreationally caught fish and crabs was high in both surveys (>50%). These results indicate that recreationists, specifically persons with HIV/AIDS, are engaging in recreational water activities leading to contact with waterborne pathogens in urban settings. These findings raise concerns regarding the role of urban fisheries, outdoor recreational water programs, and regulatory agencies in addressing microbial risks posed to anglers and other recreationists in urban settings and environment. Fish advisory programs, water quality assessments commonly neglect the impact of pathogens, specifically parasites, and represent a major oversight of both environmental and public health agencies in protecting the public's health.

Did work continue after research \$\$ ended: The research was funded by a 2006-2007 Johns Hopkins Center for a Livable Future Faculty and Student Innovation grant #1602030055, and is currently ongoing. This research is the foundation for my doctoral thesis project, with the addition of clinical outcomes.

The estimated costs for a “scaled” city wide application of our project will include (1) Commercial laboratory costs for the analysis of environmental samples for 10 recreational water sites, at \$40 per sample/month/site (\$4800 baseline costs for a minimum sampling regimen of 1 sample per site per month). Additional costs will be necessary for specific waterborne pathogens tests/assays; and costs for printing and mailing surveys to 384 randomly selected participants (\$1000). This sample size is based on assuming a population size of 600,000, a 50% response rate, a 5% margin of error, and a 95% confidence in the survey results. This calculation was performed using the Raosoft software (<http://www.raosoft.com/samplesize.html>), reimbursement of project staff/volunteers for travel related to the onsite-interviews is projected at \$500 at a rate of \$.10/mile). Study communication and public service announcements to promote public awareness of the proposed research as well as final study outcomes via television, newspaper, and radio are estimated at \$500. A total minimal direct cost for the project is estimated at \$30,000. Finally, an additional 64% standard indirect cost level for JHSPH will be added.

Design/implementation: 1) A year-long monthly environmental surveillance of high-usage recreational water sites (i.e., rivers, streams, and reservoirs), including parks and urban fishing program sites, for the presence of indicator organisms (bacteria), enteric viruses, and as well as parasites by the Maryland Department of Environment in collaboration with research institutions such as JHSPH 2) One-time representative citywide surveys of the impact and extent of recreational water contact and subsistence fishing conducted via mailed surveys, recreational site visit (onsite interviews), and door-door surveys. The surveys would be implemented and carried out as a joint effort and collaboration between the Maryland Department of Health and Mental Hygiene, Maryland Department of Environment, JHSPH, community volunteers, and the U.S. Postal Service.

What would be accomplished? The surveys and environmental assessments would provide evidence of the 1) population level exposure to human-disease causing pathogens in our waterways; 2) assess the potential inputs of, and burden of pathogen loadings in waters used for recreational water activities; and 3) confirm the need for increased pathogen surveillance in recreational waters by regulatory agencies.

POSTER #19
**Trends of HIV Prevalence and Incidence at the
Johns Hopkins Hospital Emergency Department**

Authors: Amy Oliver^{1*}, Oliver Laeyendecker^{1,3*}, Chadd Kraus², Heather Hairston², Jordyn Gamiel¹, Jessica Neal¹, Richard Moore¹, Richard Rothman^{1,2}, Judy Shahan², Gabor Kelen², and Thomas Quinn^{1,3}

* co-investigators

Affiliations:

- 1) *The Johns Hopkins University, School of Medicine, Division of Infectious Diseases, Baltimore, MD*
- 2) *The Johns Hopkins University, Department of Emergency Medicine, Baltimore, MD*
- 3) *The National Institute of Allergy and Infectious Diseases, the National Institutes of Health, Baltimore, MD*

Additional Sources of Support: This research was supported by the Department of Medicine at Johns Hopkins University, the HIV Prevention Trials Network, the Center for Disease Control, and the Division of Intramural Research, NIAID, NIH.

Objectives: An 8-week identity unlinked sero-survey was conducted to determine the prevalence and incidence of HIV among patients attending the Johns Hopkins Hospital Emergency Department (JHHED) in inner city Baltimore during the summer of 2007. This survey also evaluated the relationship between HIV, HCV, and HSV-2 and compared HIV prevalence and incidence rates seen in this population in 2001 and 2003.

Methods: 4475 adults were enrolled into this study and samples were tested for HIV by Bio-Rad HIV-1/HIV-2 Plus O EIA and Bio-Rad HIV-1 Western Blot and for HSV-2 by Focus HerpeSelect[®] IgG-2 specific ELISA. All HIV-positive samples were quantified for viral load by AMPLICOR[®] HIV-1 Monitor Test version 1.5 and tested for HCV by ORTHO[®] HCV version 3.0. HIV cross-sectional incidence determinations were performed using three assays Vironostika[®] less-sensitive (LS) EIA, Calypte[®] HIV-1 BED Incidence EIA (BED), and an avidity assay using BioRad HIV-1/HIV-2 Plus O EIA. Samples from HIV chronically infected individuals who had advanced AIDS (CD4 < 50) or who were virally suppressed (CD4 > 500, VL < 50) were controls for the cross-sectional incidence assays.

Results: HIV prevalence was 7.2%, and HSV-2 prevalence was 50.3%. Among 321 HIV-positive individuals, 11.5% (37) were not co-infected with HSV-2 or HCV, whereas 35.5% (114) were dual HIV/HSV-2-infected, 10% (32) were dual HIV/HCV-infected, and 43% (138) were HIV/HCV/HSV-2-co-infected. Undetectable viral loads were found in 32.7% (105) of HIV-positive individuals. HIV incidence was 3.4% using the BED assay, 2.4% by Vironostika-LS, and 0.29% by the Avidity assay. HIV viral loads were undetectable among 50% (30/60) of the putative recently infected samples by BED, 43% (21/47) in recently infected individuals by Vironostika-LS, and 0% (0/4) of all the newly infected subjects classified by the avidity assay. Of the virally suppressed control subjects, 16% (11/70) tested incident by BED, whereas none

were classified as incident by the Avidity assay. Among the advanced AIDS patients, 21% (16/77) were incident by BED, and 1% (1/77) was incident by the Avidity assay.

Conclusions: In 2007, the prevalence of HIV seen here was 7.2%, a decrease from 10.9% in 2003 and 11.8% in 2001. Viral suppression was detected in 32.7% of HIV-infected individuals, which was an increase from 23.7% in 2003 and 21.2% in 2001. Viral suppression and advanced AIDS affect antibody titer-based incidence assays by misclassifying approximately 20% of the samples. These findings indicate that the incidence rate estimate based on avidity testing is more likely to be accurate. The estimated annual HIV incidence based on an avidity assay has decreased from 0.93% in 2001 to 0.56% in 2003 and to 0.29% in this 2007 survey, indicating that the HIV epidemic in Baltimore around the JHHED is declining. These data also suggest that current prevention strategies are effective in decreasing HIV acquisition rates in this inner city Baltimore area.

We will conduct an investigation on the socio-demographic correlates of HIV, HCV, and HSV-2 infections among this population. If funding permits, HCV testing will be performed on all samples as well as cross-sectional incidence testing for HCV and HSV-2.

The cost of performing all the tests in this study was \$90,000. An estimated 10,000 hours were needed for the collection of specimens, testing, and administrative organization. This type of sero-survey could be implemented at other Baltimore Hospitals, and multiple collections would allow an in-depth view of the current HIV epidemic.

POSTER #20
Keeping Families Strong in East Baltimore and Beyond

Anne W. Riley, Carrie L. Mills, Kathleen Evans

Depression is a devastating illness that affects individuals, families, and communities. In Baltimore, there is evidence that the rates of depression are increased by neighborhood disorder and decay (Latkin & Curry, 2003), a finding observed in other highly urban settings (Roche, Ensminger, & Cherlin, 2007). When adults, especially mothers, are depressed, children and families are impacted too. Decades of research have shown that maternal depression is associated with their children having much higher rates of psychiatric disorder, more school drop-out, and more problems in getting along in all aspects of life (Goodman & Gotlib, 1999; Hammen et al., 1987).

Even when mothers get treatment for depression, their families still have significant needs that are not met by the mother's treatment alone (Coiro, Riley, Broitman, Keefer, & Miranda, 2008; Timko, Cronkite, Berg, & Moos, 2002; Weissman et al., 2006). The problems common in these families are not recognized or addressed by any service or program. These families have critical needs for understanding depression as an illness, improving their communication, and reducing the resentment, guilt, and blame that so often occur when a parent is depressed. Families need help to re-establish positive interactions and enjoyment of one another. Often parents need to develop or enhance their parenting skills so their children develop a positive sense of themselves and become good problem solvers. The children themselves often need help learning to cope effectively.

Keeping Families Strong (KFS) is a resiliency-building program for families. It is derived from two evidence-based programs for highly stressed families, and was developed to address the family-level needs of low-income African-American and white families who have been affected by maternal depression. KFS is a 10-meeting intervention in which mothers recovering from depression meet weekly for 1 ½ hours in a small group with their partners. The older children (8-17 years) meet in their own group each week. The families and group leaders have dinner together prior to the meeting. The program culminates in a separate family meeting with each family to discuss their strengths, how they are coping with the mother's depression, and how they will move forward together as a family.

The evidence from the pilot study of the outcomes of the Keeping Families Strong (KFS) program shows promise for participating families. Participants in the 10 families with complete data reported medium to large effect size changes in several areas. Specifically, parents reported improvements in their mental health, particularly in levels of depression, anxiety, interpersonal sensitivity and somatization. Parents also reported positive changes in general health status (although they also reported an increase in role limitations due to physical health) and increased social support. Considering family-level outcomes, parents also indicated positive changes in family and couple togetherness. Children reported reductions in stressful life events and increases in coping efficacy.

The feasibility and acceptability of the program is high, in part because it was developed in an active partnership between the Hopkins researchers and the clinicians and administrators at Bayview. Work began with in-depth interviews with mothers from East Baltimore who were recovering from depression and their input guided the adaptation of two evidence-based programs for highly stressed families. Significant efforts were made to foster the ability of the program to be self-sustaining once the grant funding ended, which it now has. Multiple staff at Bayview and the other participating site, The Way Station a program of Sheppard Pratt, have been trained in the program.

Given that the KFS program is derived from evidence-based interventions and the initial evaluation is promising, taking it to scale is an important future step. A detailed and careful tracking of time and costs indicates that the initial program costs were about \$30,000 to deliver the 10 session program with 2 follow-up booster sessions (Barrueco, 2005). It is likely to be somewhat less expensive when previously trained clinicians deliver the program. Although challenging, it has been possible to bill Medical Assistance, usually the children's insurance and at times a mother's insurance, to cover some of the clinical costs. Costs of materials are minimal except for the meals provided weekly.

There are several "Next Steps." One is to secure funding to carry out a large study with a control group to evaluate the long term effects on families and children. We also hope to focus on families with younger children.

This year we are offering a brief engagement and referral intervention for mothers from the East Baltimore community who feel highly stressed and blue. We will help them find the evaluation and treatment they may need, and help them link into local resources for effective parenting and family supports. This less intense intervention may help families get help earlier and prevent some of the effects on families of living with depression for many years.

Currently, the Keeping Families Strong program is being offered at the Bayview campus of Johns Hopkins in Community Psychiatry. It is available when a sufficient number of families, usually 5-7, are ready to begin.

This project was funded by the National Institute of Mental Health and carried out in collaboration between the Johns Hopkins Bloomberg School of Public Health and the Johns Hopkins Bayview Medical Center with key roles played by Kathleen Evans, A.P.R.N. and Drs. Anita Everett and Gerry Gallucci.

Author Affiliations:

Anne W. Riley, Ph.D., Carrie L. Mills, Ph.D. –
Department of Population, Family and Reproductive Health, JHSPH.

Kathleen Evans, M.S.N, A.P.R.N, P.M.H –
Community Psychiatry, Johns Hopkins Bayview Medical Center

Research Articles:

- Barrueco, S., Riley, A.W., Frick, K. (2005). *Cost report for the development and delivery of the Keeping Families Strong program*. Baltimore: Johns Hopkins University.
- Coiro, M. J., Riley, A. W., Broitman, M., Keefer, M., & Miranda, J. (2008). In revision.. Limited effects on children of remission of maternal depression: One-year outcomes.
- Goodman, S. H., & Gotlib, I. H. (1999). Risk for psychopathology in the children of depressed mothers: A developmental model for understanding mechanisms of transmission. *Psychological Review*, 106(3), 458-490.
- Hammen, C., Gordon, D., Burge, D., Adrian, C., Jaenicke, C., & Hiroto, D. (1987). Maternal affective disorders, illness, and stress: Risk for children's psychopathology. *American Journal of Psychiatry*, 144(6), 736-741.
- Latkin, C. A., & Curry, A. D. (2003). Stressful neighborhoods and depression: A prospective study of the impact of neighborhood disorder. *J Health Soc Behav*, 44(1), 34-44.
- Roche, K. M., Ensminger, M. E., & Cherlin, A. J. (2007). Variations in parenting and adolescent outcomes among African American and Latino families living in low-income urban areas *Journal of Family Issues*, 28, 882.
- Timko, C., Cronkite, R. C., Berg, E. A., & Moos, R. H. (2002). Children of parents with unipolar depression: A comparison of stably remitted, partially remitted, and nonremitted parents and nondepressed controls. *Child Psychiatry Hum Dev*, 32(3), 165-185.
- Weissman, M. M., Pilowsky, D. J., Wickramaratne, P. J., Talati, A., Wisniewski, S. R., Fava, M., et al. (2006). Remissions in maternal depression and child psychopathology: A STAR*D-child report. *Journal of the American Medical Association*, 295(12), 1389-1398.

POSTER #21

Impact of a Family Help Desk at a Medical Home for Urban Children

Author: Sonia Sarkar¹

Faculty Mentors: Arvin Garg MD MPH², Barry Solomon MD MPH²

¹Department of Public Health Studies, Johns Hopkins University, Baltimore, MD. ² Department of Pediatrics, Johns Hopkins Hospital, Baltimore, MD.

Background: Basic family psychosocial needs can negatively affect a child's health and development. A child's medical home is an ideal place where low-income parents can receive assistance for basic needs. However, despite professional guidelines and parental desire, few pediatricians address these needs at visits. Alternative approaches are needed to assist providers in linking at-risk parents to appropriate community-based resources.

Objectives: To evaluate the impact of a Family Help Desk on improving health care providers' screening practices and connecting at-risk caregivers in East Baltimore to community resources.

Design/Methods: In October 2006, the Family Help Desk (FHD), sponsored by Project HEALTH, a non-profit organization, the Baltimore City Health Department, and Johns Hopkins University, was established in the Harriet Lane Clinic, a medical home for urban, low-income children. The FHD is staffed by college volunteer students who link at-risk families to community resources and provide longitudinal follow-up. Every referred parent undergoes a structured intake regarding their psychosocial needs using a standardized tool.

To test the impact of the FHD on providers' screening practices, a retrospective chart review of all patient visits to the HLC continuity clinic during a pre-FHD time period (09/05/06-09/12/06) and a post-FHD time period (10/02-07-10/09/07) was conducted. Independent sample t-tests were used to compare continuous and binary variables between the pre and post timeframes. To examine the impact of the FHD on connecting caregivers to resources, a cohort of referred parents seen at the FHD between 09/25/07-10/31/07 were followed longitudinally for up to six months. Outcome variables including parental contact, enrollment, and satisfaction with community resources were recorded. For this descriptive study, we reviewed the FHD database and electronic patient records for the index visits.

Results: Overall, 11% of incoming Harriet Lane Clinic patients were seen by volunteers at the Family Help Desk and received assistance with accessing community resources during the post-FHD time period. The presence of the Project HEALTH Family Help Desk at the Johns Hopkins Harriet Lane Clinic was not associated with an increase in provider identification of psychosocial problems, nor was there an association with an increased number of referrals amongst providers. Of a cohort of 60 clients seen at the FHD, 83% were referred by their child's providers. A large majority (63%) of the clients successfully attempted to contact at least one community resource. 32% of the FHD clients enrolled in community programs and/or services. Roughly 90% of those clients who reported enrollment in a community resource described themselves as "very" or "somewhat" satisfied with the resource.

Conclusions: A Family Help Desk located in a medical home for low-income children can have a positive impact on addressing caregivers' basic psychosocial needs. While results were inconclusive as to the FHD's impact on changing providers' practice, significant portions of

FHD clients were able to contact or enroll in community resources. This community-based collaborative project holds great potential for assisting low-income families within the context of pediatric primary care.

- Partners included the Johns Hopkins Public Health Studies Department, the Pediatrics Department of Johns Hopkins Hospital, Project HEALTH, a national 501(c)(3) organization, Baltimore HealthCare Access, the Baltimore City Health Department, and Project HEALTH's private funders.
- This research impacted caregivers and physicians in an urban medical home, as well as student volunteers. The target population includes low-income children in urban neighborhoods; East Baltimore specifically.
- As this research project was a student-led endeavor, there were no research dollars involved. All research was conducted as part of a senior thesis project as part of the Public Health Honors designation.
- Data collection, evaluation, and assessment are part of a constant internal process within the Project HEALTH programs, and continue at both the student and staff levels. At the Harriet Lane Clinic, client files will continue to be followed longitudinally to determine barriers to contact or enrollment. Follow up is currently ongoing to study a 10-week period (09/25/07-12/06/07) during which >90 clients were seen.
- Key implications of the study establish the Project HEALTH model as a potential policy that can be adopted and adapted by health departments nationwide.
- Project HEALTH has already been taken 'to scale' in Baltimore: under Health Commissioner Sharfstein's planning, the Project HEALTH Family Help Desk can be found at 4 substance abuse centers, 2 health department clinics, and 1 federally qualified health center, in addition to the Harriet Lane Clinic.
 - a. Overhead cost for a Family Help Desk is roughly \$25,000. The hundreds of hours given by student volunteers, however, come at no additional cost to the facilities who host these desks. To bring the model to scale (for example, if FHDs were placed in 10 pediatric clinics across the city) would cost about \$400,000: \$250,000 for programmatic costs and an additional \$150,000 for additional infrastructure and support or management staff.
 - b. While the type of in-depth analysis conducted at the Harriet Lane Clinic has not yet been applied to all of the other sites, taking the Project HEALTH model to scale requires a strong integration of the Family Help Desk, regardless of the type of site it may be located at. Interactions and follow-ups between healthcare professionals, student volunteers, and caregivers are essential to the success of the program. Scaling Project HEALTH across the city could be achieved in two ways: (1) Place FHDs in various departments within one hospital- e.g. OBGYN clinic, pediatrics clinic, adolescent clinic, emergency department (2) Place FHDs at a mix of different hospitals and clinics across the city- e.g. University of Maryland Health Center, Union Memorial, Sinai Hospital, etc.
 - c. Taking Project HEALTH to scale will accomplish a major increase in connecting urban families to the psychosocial resources necessary for good health outcomes. Additionally, the presence of a Family Help Desk may aid healthcare professionals in identifying psychosocial needs while encouraging collaboration amongst universities, community organizations, and health clinics.

POSTER #22

Overcoming Geographical Barriers to Treatment on Demand in Baltimore City

Mieka Smart¹; Ian Craig¹; Damiya Whitaker¹; Pierre Alexandre¹ and Debra Furr-Holden¹

¹Johns Hopkins University Bloomberg School of Public Health; Department of Mental Health; 624 N Broadway; Baltimore, MD 21205

Objectives

The aims of this study were to (1) estimate the distance between treatment centers and alcohol and other drug- (AOD-) dense neighborhoods in Baltimore City and (2) identify relationships between drug treatment center characteristics and their proximity to drug users. Although Baltimore only accounts for 12.6 percent of Maryland's population, it accounts for 41.6 percent of Maryland state expenditures on substance abuse treatment and drug imprisonment. Proximity to service providers and geographic accessibility are documented barriers to addiction treatment-seeking and to program retention among drug users in Baltimore City. This research impacts the estimated 12.8 percent of the 471,147 adults residing in Baltimore, who are in need of treatment for alcohol or other drug abuse.

Methods

Environmental assessments of prevalent AOD use were conducted in the 242 residential neighborhoods of Baltimore City using the Neighborhood Inventory for Environmental Typology (NifETy). Baltimore City Mayor's Office of Information and Technology provided data used to create the sampling frame. Within each neighborhood, random selection of census blocks (from 7,086 residential census blocks in Baltimore City) occurred. Paired raters independently assessed selected city blocks during daylight and nighttime hours using the NifETy. Their observational assessments included 13 physical and social indicators of recent and/or current AOD use. The NifETy assessments were aggregated and made binary, giving each block a potential score of 0-13 for the 13 indicators of recent or current AOD use.

Geographical data for all existing treatment centers was provided by Baltimore Substance Abuse Systems, Inc. (bSAS). The final sample blocks were exported into ArcGIS 9.2 for geocoding. In ArcGIS 9.2, proximity data (including radii that encircled closest treatment centers and distance in linear miles from the closest treatment center) were recorded for all blocks in the final sample. Three treatment center characteristics (funding source, treatment services offered, and target service population) were analyzed for potential relationships with proximity to drug users. These data were exported into SPSS and Mann-Whitney, Kruskal-Wallis, ANOVA and *t*-tests were conducted.

Results

The linear distance to the closest treatment center in Baltimore City is less than one mile for most AOD-dense blocks. Funding source and treatment services offered had significant relationships with proximity to drug users. Distances (in miles) to the closest treatment center were significantly greater when treatment centers were privately funded, as compared to publicly funded treatment centers. The closest treatment center to an AOD dense block is more likely to provide outpatient services than inpatient or varied services. This finding is not surprising, as the

nature of outpatient services require heavy AOD-user foot-traffic. This finding has implications for placement of future treatment centers. Based on this data, Baltimore City residents with the “not in my back yard” attitude towards treatment centers have good reason to be concerned. The NifETy method could be a powerful tool in assessing whether treatment centers are improving or marring the faces of the communities in which they are located.

Partners

Partners included the Johns Hopkins Bloomberg School of Public Health - Department of Mental Health, the Baltimore City Mayor’s Office of Information and Technology and the bSAS Information Systems Department.

Follow-Up & “To Scale” Implementation

We are currently investigating the gravity model of urban land use which includes concepts of centrality, distance, proportionality and mass in conjunction with the treatment center and drug use location data. These additional analyses would assist in determining geographical areas with the most need for treatment portals. We propose using a mobile facility, with the primary purpose of filling several geographical holes in service. Its secondary purpose will be to provide a meeting space for recovery support groups. It is probable that this economical solution, designed to close the gap between active users and portals to treatment, may be more successful in securing state and municipal detox and treatment investments.

A “to scale” research project would first conduct the more powerful analysis of the true distance a treatment seeker would travel, taking public transportation into account. A mobile facility route with best geographical stops would be determined. The mobile facility could serve several Baltimore City neighborhoods for a fraction of the cost of a permanent office that serves only one community. The facility could accommodate dynamic urban renewal and be a “moving billboard” for recovery. Additionally a mobile unit may prompt less upset from residents opposed to having a permanent facility erected for drug-related services. Moreover, mobile facilities could be instrumental in the extension of the urban renewal and recovery already in process in Baltimore City.

It is also worth mentioning that a mobile unit could serve as a weekly “community center” for neighborhoods in need. A community in temporary need of a meeting space could book the mobile unit for 2 hours every two weeks. Another community could use it every day for a week for a temporary community-based research headquarters. Communities could collect their own information, with the support of a series of Johns Hopkins graduate students and post-docs.

POSTER #23

Building Community Capacity through Environmental Education and Outreach

Presented by
Environmental Justice Partnership, Inc.
2222 E. Jefferson Street
Baltimore, MD 21205

Authors: Patricia J. Tracey, Barbara Bates-Hopkins, Nancy Kass, Clara Goldberg-Freeman, Leon Purnell, Glenn L. Ross, Bernard Canniffe and Michael A. Trush

Background: Many community members have little access to understanding the impacts of environmental hazards and connecting the environment to their health. The Environmental Justice Partnership (EJP) is a grassroots community organization consisting of members from community organizations (The Men's Center, Tench Tilghman Elementary School, The Door, Middle East Reclaiming our Community, McElderry Park Community Association, Rose Street Community Center, and the South East Stakeholders Coalition) and educational institutions (Johns Hopkins staff and faculty, Maryland Institute College of Art students and faculty, and Morgan State University faculty and staff) which has evolved from being a research project to becoming a 501c3 organization whose vision is to connect researchers and community members in an effort to provide education and outreach around environment justice issues and concerns. Since becoming a 501c3 organization, the EJP has received funding to continue its work, and EJP continues to develop partnerships with local agencies and organizations that focus on giving the community a voice.

Objectives: To encourage partnerships between researchers and community members at all stages of research planning, implementation, and dissemination; to facilitate the equitable dissemination of pertinent information regarding local environmental and other research and its impact on the community, primarily through community education and outreach initiatives; and, to educate the local environmental and public health research establishments regarding the response, approval, and concerns of the impacted community to initiate change.

Methods: The EJP has created several formats and activities to engage community members, researchers, local agencies, and community organizations in providing educational information which connects the environment with health impacts and concerns. These formats and activities include **Chat and Chews** that showcase EJP's accomplishments and products that can also be used as a recruitment tool. **Toxic Tours** provide an opportunity for people from all walks of life to learn about the environmental hazards in Baltimore City neighborhoods. Through these Toxic Tours, residents and other interested parties are educated about the history of their community and surrounding areas and about the environmental hazards in their community and ways to protect them. **Community Research Advisory Board (CRAB) members** work with the Institutional Review Board (Research Ethics Committee) at the Johns Hopkins Bloomberg School of Public Health as a liaison to researchers who want to work in the East Baltimore Community. If researchers do not already have a community partner, they can be referred to the EJP for guidance on how to involve community in their grant writing, in their data collection, or simply to get a "community voice" in their research planning. **EJP Newsletter** is another

strategy that the EJP developed to fill the gap in the need to connect both community and researchers to each other. The EJP Newsletter disseminates health information and research results in lay language. The Newsletter has been able to educate community stakeholders about relevant community activities and health information and provides an opportunity for faculty and researchers to disseminate their research findings. We have learned that researchers feel it is important to share the findings, but that they rarely do so on their own outside of publishing in scholarly journals. **Educational and Outreach Products** are developed with the help of students from the Maryland Institute College of Art (MICA) working in partnership with graphic art design professor of MICA and the community, to produce products that are reflective of their cultural to include life-size lead exhibits, educational pamphlets and booklets, posters, and games. Our **EJP Day at the Market** program provides an opportunity for the EJP to educate residents about research and environmental health and justice issues and to share information with residents about how to safeguard against environmental hazards including lead poisoning, demolition, and asthma. EJP Day at the Market is a central place for researchers to disseminate their work. It also creates an opportunity for them to discuss their research and research results with local community residents. Finally, it is a place to meet with other stakeholders who are looking to build collaborations.

Results: In the past two years EJP Chat and Chews have recruited six new members. There have been regular requests for Toxic Tours from local universities and organizations almost on a monthly basis. Since the development of the EJP Newsletter, it has been produced quarterly. The EJP Day at the Market has engaged an average of 50 individuals around environmental issues while receiving answers to their questions and taking away educational materials. At the EJP Day at the Market researchers are invited to share their research findings. Service providers are also invited. The Urban Health Institutes' Community Health Workers participate in conducting blood pressure screenings and the students from the University of Maryland, School of Medicine provided glaucoma screening.

Conclusion: Building community capacity through conducting environmental education and outreach for populations that are underserved can be achieved by developing venues where community members embrace the opportunity to receive educational materials and dialogue to assist in making decisions on how reduce negative environmental impacts and to help community members make positive behavioral changes. Researchers are also embracing the collaboration with EJP and through their activities of engaging community members, as well as local agencies, and other community organizations.

Contact Information: Patricia J. Tracey, BA, 443-287-4686, ptracey@jhsph.edu

POSTER #24
Health and Urban Homelessness

Nadra Tyus, DrPH; M. Christopher Gibbons, MD, MPH

Background: Homelessness is a serious public health problem in the United States (U.S.). Consensus has not emerged regarding the most appropriate way to measure the magnitude of homelessness in the US. The National Coalition of Homelessness suggests that homelessness should be measured by the “number of people who experience homeless over time, not the number of homeless people” (NCH, 2007). In a study conducted by the U.S. Conference on Mayors, it was found that people remain homeless an average of eight months. Of those surveyed, approximately half were male, 30% were families with children, 17% single women, and 2% unaccompanied youth. The homeless population has also been estimated to be 42% African-American, 39% white, 13% Hispanic, 4% Native American, and 2% Asian. Other demographics associated with homeless are 16% mentally ill, 26% substance abusers, and 13% are employed. Some of the most commonly reported factors associated with the increasing rates of homelessness in the U.S. are poverty, decreasing opportunities for employment, reductions in public assistance, lack of affordable housing, lack of affordable health care, domestic violence, mental illness, addiction disorders (NCH, 2007).

In 2005, Baltimore City reported that over 2,900 individuals were homeless (Baltimore City Homeless Census, 2005). The homeless census conducted in Baltimore, Maryland surveyed homeless individuals from street outreach, shelters, and residential drug treatment centers. This survey found that the homeless were male (78%), individuals who completed high school or further education (60%), veterans (30%), and African-American (82%). The median age for this homeless population was 44 and the median monthly income was \$400. The reason that was reported the most for homelessness in Baltimore was because of a health or disability problem (38%) and the highest unmet need for these individuals was affordable housing (64%) [Baltimore City Homeless Census, 2005].

We analyzed homelessness data from a larger ongoing study of health in East Baltimore to examine the relationship between urban homelessness and health status among a low-income, urban population.

Methods: A 62 item questionnaire was administered to over 1100 East Baltimore, Maryland adults. The adult population in East Baltimore was the primary target population for this research analyses. These adults were surveyed as part of outreach initiatives by community health workers (CHWs) to improve quality access to the healthcare system. The question areas that were included in this survey were demographics, general health information, food intake, substance use (illicit drug, alcohol, etc), sexually transmitted diseases, sexual behavior, and interaction with the healthcare system.

Results: The complete sample includes 1,346 East Baltimore residents who were surveyed. Out of this sample, 18% of respondents were homeless (n= 246). In the homeless sample, ages ranged from 18-70 (mean = 41.3 years old). Sixty four percent of the sample was male and approximately 30% were employed. Homeless individuals reported in East Baltimore high rates of cigarette smoking (78%), illicit drug use (47%), and substance use (35%). Thirty nine percent reported a past STI, 16% sought help with asthma, and 11% reported being discriminated against

or denied treatment at a healthcare institution. Also, more than 28% of homeless individuals were currently employed at least part-time.

Discussion: Our finding that more than one quarter of East Baltimore homeless residents are employed has not been previously reported and is substantially higher than current data would suggest. Not surprisingly though the data document that the health status of these individuals is uniformly poor. This health and employment data challenges traditional notions regarding urban homeless populations which suggests that these populations are characterized by the mentally ill and substance abusers. Our data suggests that the urban homeless may increasingly be comprised of the working poor. This finding may have significant implications for employers. Obviously, employee healthcare costs among the working homeless will likely be substantially higher than for those with stable housing. Additionally, the rates of absenteeism and presenteeism, among homeless workers, will likely be elevated regardless of insurance status. As such, this will lead to reductions in workforce productivity, among homeless workers. These workers may also be more likely to transmit communicable diseases to other coworkers resulting in lost productivity among co-workers occupying stable housing. Our work suggests that ongoing research to characterize the employment status of homeless employees in America and communication with employers who may be affected may be warranted.