



ENHANCED COMPREHENSIVE HIV PREVENTION PLAN for the BALTIMORE – TOWSON MSA, MARYLAND

**NASTAD 2011 Annual Meeting
May 23-25, 2011**

**Heather L. Hauck, Director
Infectious Disease and Environmental Health Administration
Maryland Department of Health and Mental Hygiene**



MISSION

- To improve the health of Marylanders by reducing the transmission of infectious diseases, helping impacted persons live longer, healthier lives, and protecting individuals and communities from environmental health hazards.
- We work in partnership with local health departments, providers, community based organizations, and public and private sector agencies to provide public health leadership in the prevention, control, monitoring, and treatment of infectious diseases and environmental health hazards.



ECHPP DEFINED



ECHPP Objectives

- Develop an enhanced plan that aligns the jurisdiction's prevention activities with the National HIV/AIDS Strategy
 - Using resources so that they have the biggest impact on HIV incidence
 - Identifying and addressing gaps in scope and reach of prevention activities among priority populations
 - Enhancing coordination between prevention, care, and treatment
- Identifying/implementing the optimal combination of prevention, care, and treatment activities to maximally reduce new infections
 - Assuring that the most effective biomedical, behavioral and community/structural interventions are prioritized
 - Assuring that interventions are going to populations/communities in such a way that the level of investment matches the level of risk



Combination Prevention

“A combination of behavioral, structural, and biomedical approaches based on scientifically derived evidence with the wisdom and ownership of communities”

Merson et al, 2008 Lancet



ECHPP Intervention Mix

- 3 types of interventions: “required,” “recommended” and “innovative local”
- 14 “required” and 10 “recommended” interventions included in the EHCCP:
 - All have some evidence base
 - Interventions and public health strategies should be appropriately scaled and targeted
 - No particular level of funding assumed for each activity (consider resources in making scale and targeting decisions)



ECHPP Funding

- Funding awarded to 12 MSAs
- Maryland Award Amount: \$878,896
- Project Period: 9/30/2010 to 9/29/2011



Key Stakeholders

- Local Health Departments in the Baltimore-Towson MSA
- Maryland HIV Prevention Community Planning Group
- Central Regional Advisory Committee
- Greater Baltimore HIV Health Services Planning Council
- Baltimore City Commission on HIV/AIDS
- Anne Arundel County Commission on HIV/AIDS
- Community members (including persons living with HIV and other individuals affected by HIV)
- Prevention, care and support providers
- IDEHA leadership, centers and offices



Maryland ECHPP Highlights: Process, Findings & Activities



Maryland ECHPP Process

- Presentations/meetings with key stakeholders
 - Seven local health departments and five HIV/AIDS community planning bodies
- Assessment of existing programming
 - Current level of implementation, including data on program funding, activities, reach and outcomes
- Mathematical modeling
 - Developed a resource optimization model to inform the allocation of current resources and quantify additional resources needed to reach the prevention goals of the NHAS
- Collaborative planning
 - Identification of priority areas to increase coordination and integration across the prevention, care and treatment continuum



JOHNS HOPKINS BLOOMBERG SCHOOL *of* PUBLIC HEALTH

Department of Health, Behavior & Society

David Holtgrave, PhD, Professor & Chair



Protecting Health, Saving Lives—*Millions at a Time*



ECHPP Mathematical Modeling for the Baltimore-Towson MSA*

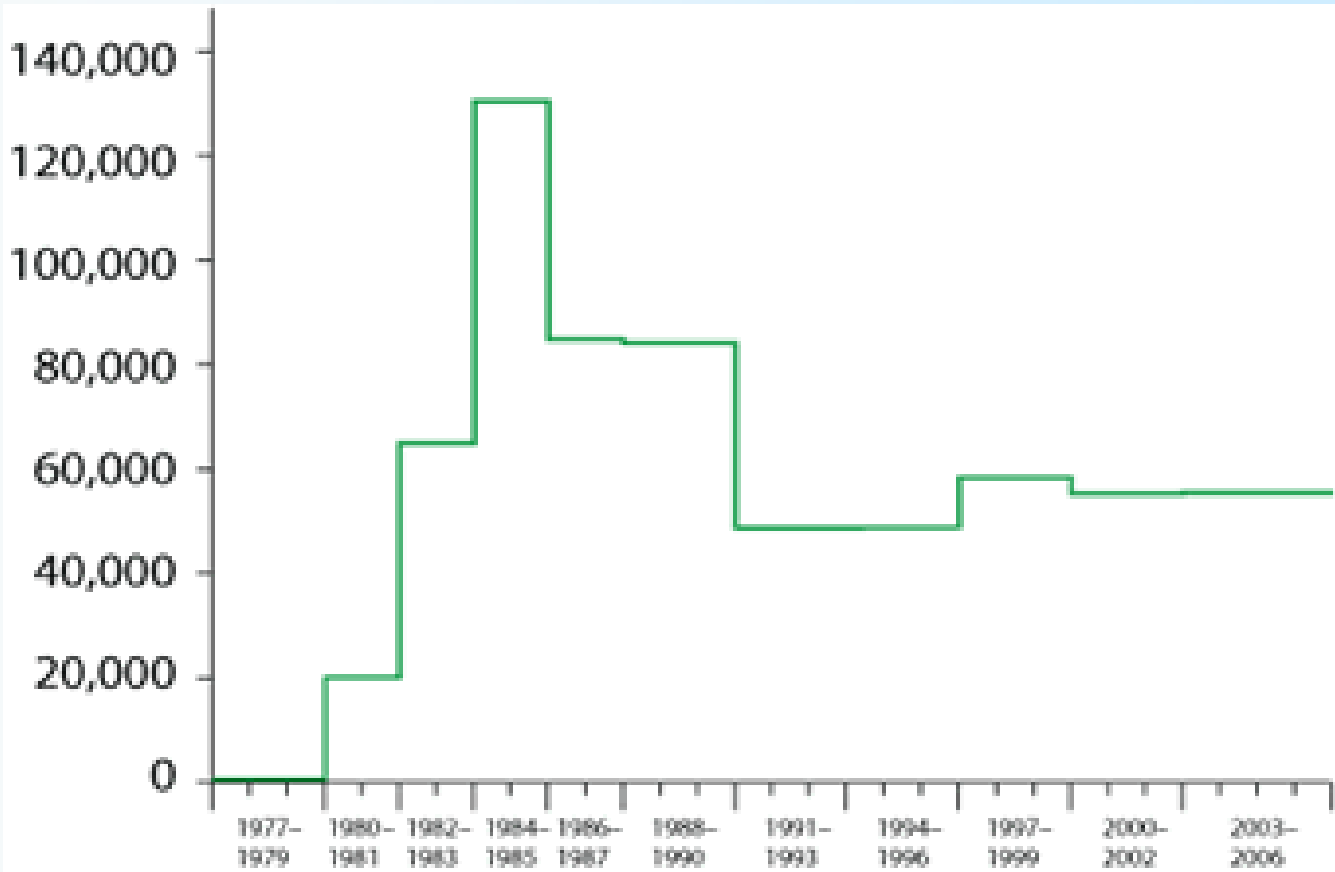
SECTION 1: HOW MODEL WORK – AN EMPHASIS ON HIV TRANSMISSION RATES

* The Baltimore-Towson Metropolitan Statistical Area (MSA) is comprised of seven jurisdictions: Baltimore City and Anne Arundel, Baltimore, Carroll, Harford, Howard and Queen Anne's counties.



Figure 1. Estimated Number of New HIV Infections, Extended Back-Calculation Model, 1977–2006

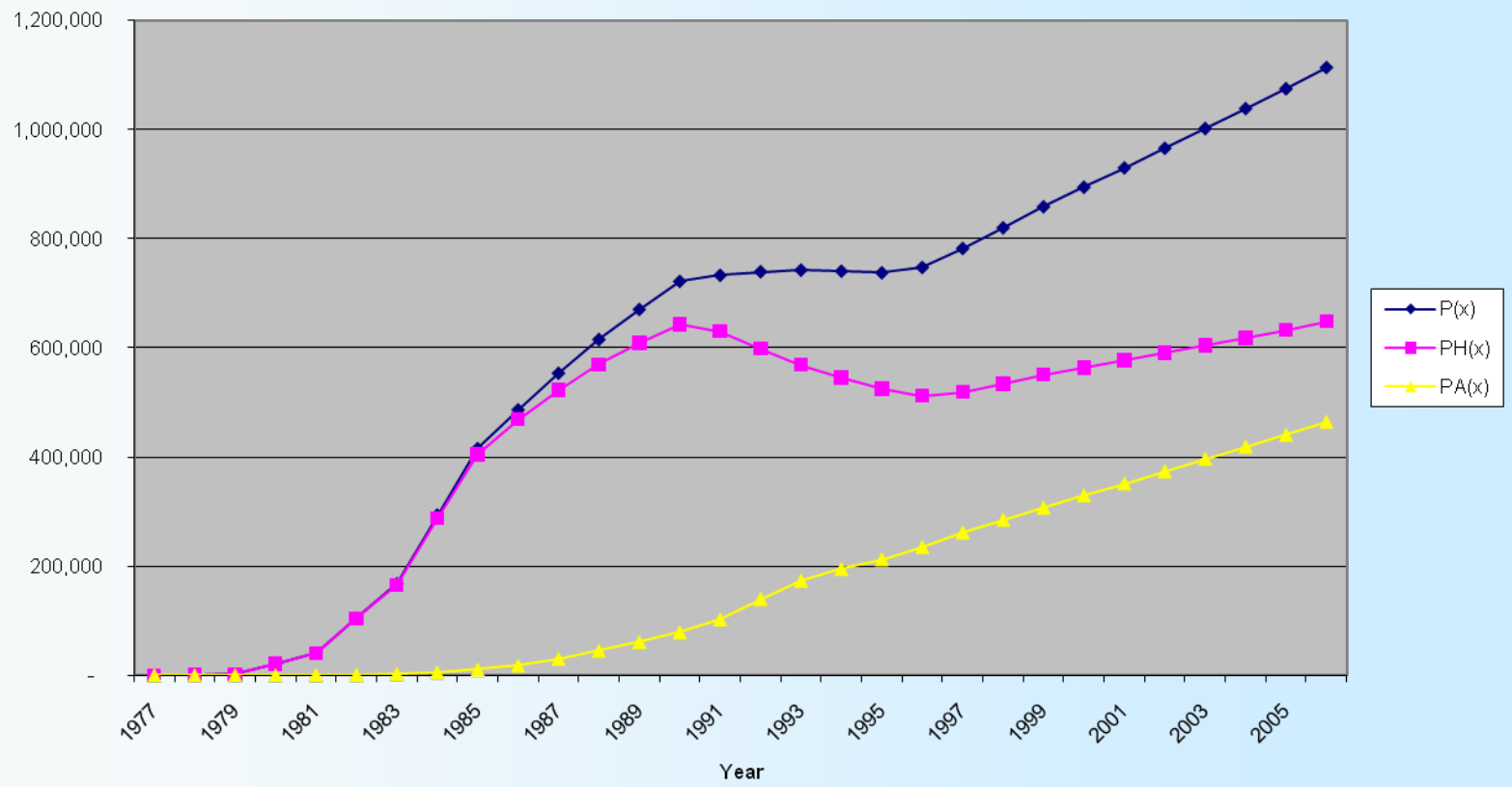
Source: CDC Website; Hall et al., JAMA 2008





Prevalence: PLWH/A; PLWH; PLWA

Prevalence: PLWHA, PLWH, PLWA





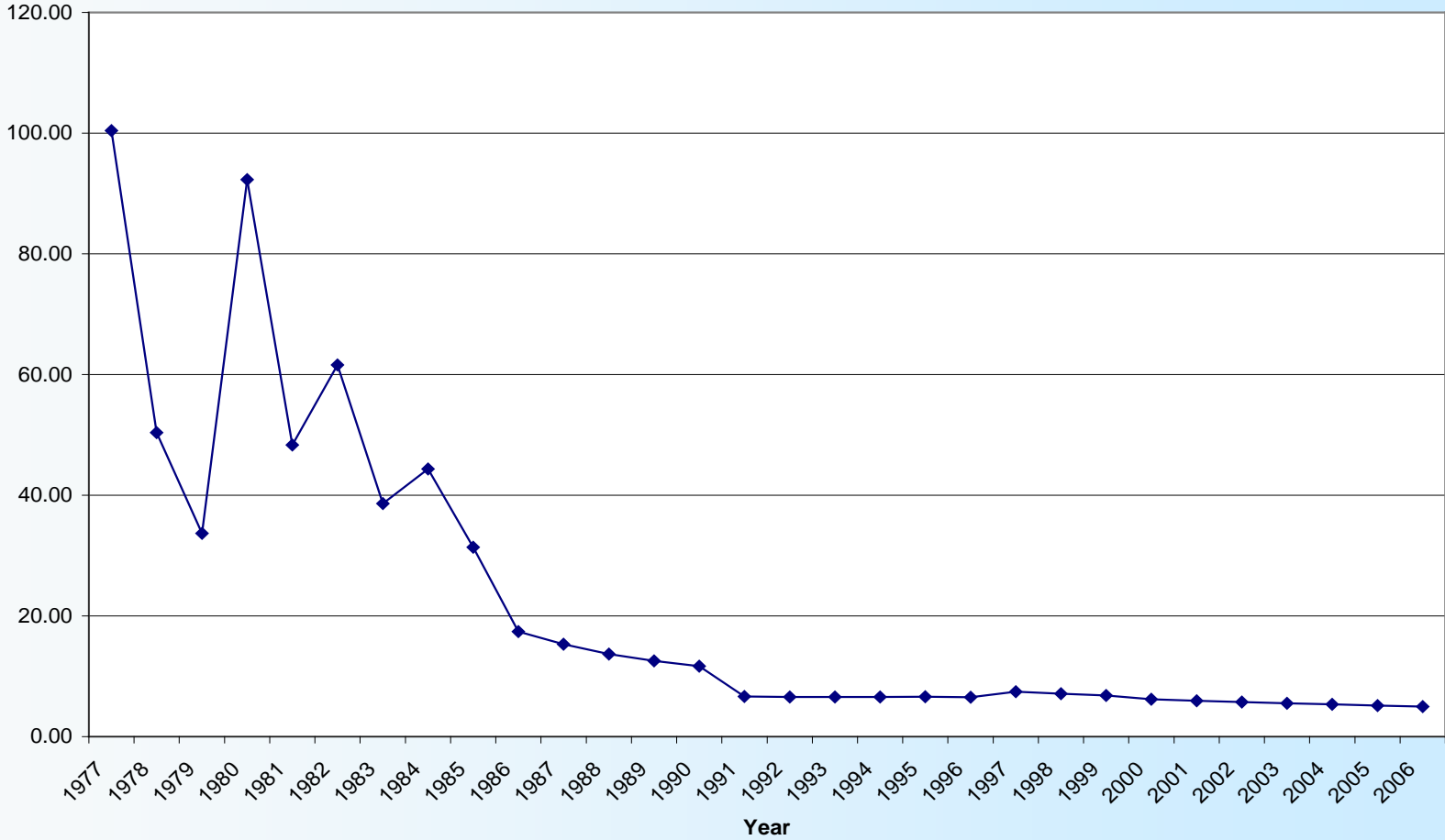
HIV Transmission Rate

$$(\text{Incidence} / \text{Prevalence}) * 100$$

(aka, "Incidence-Prevalence Ratio")



HIV Transmission Rate, United States, 1977-2006



Source: Holtgrave et al. *JAIDS* 2009



Refining Transmission Rates by Knowledge of Serostatus¹⁻⁵

- Now assuming HIV prevalence of 1,106,400 and 79% awareness of HIV seropositivity per recent HIV prevalence MMWR...
- Overall transmission rate
 - 5.0
- Unaware of HIV seropositivity
 - Transmission rate estimated at 11.4
- Aware of HIV seropositivity
 - Transmission rate estimated at 3.3

1. Holtgrave et al. *Int J STD AIDS*. 2004;15(12):789-92.
2. Marks et al. *AIDS*. 2006;20(10):1447-50.
3. Holtgrave, Pinkerton. *JAIDS*. 2007;44(3):360-363.
4. Hall et al. *JAIDS*. 2010;55(2):271-276.
5. Holtgrave. *Int J Clin Pract*. 2010;64(6):678-681.



Estimated HIV Transmission Rates for the Baltimore-Towson MSA

Type of Transmission Rate	Transmission Rate Per 100 PLWH
Overall for the Baltimore-Towson MSA	4.4
Persons Living with HIV and Unaware of Seropositivity	9.5
Persons Living with HIV and Aware of Seropositivity	3.0
Persons Living with HIV, Aware of Seropositivity, and Not Engaged in Any Risk Behavior (Vast Majority of PLWH)	0.0 (by definition)
Persons Living with HIV, Aware of Seropositivity, and Engaged in Risk Behavior (Small Minority of PLWH)	18.7



ECHPP Mathematical Modeling for the Baltimore-Towson MSA

SECTION 2: COMPARISON OF THREE APPROACHES OF HIV TESTING



Definition of Three Testing Approaches in the Baltimore-Towson MSA

	Routine Testing in Emergency Department and Similar Settings	Targeted HIV Counseling and Testing – Target by Venue Type	Targeted HIV Counseling and Testing – Target Via Outreach
HIV Seropositivity Rate	0.8%	1.2%	4.0%
HIV New Diagnosis Rate	0.5%	1.0%	1.2%
Counseling and Cost Comments	Post-test counseling for PLWH and 11.9% of HIV- persons	Post-test counseling for all	Post-test counseling for all; 10% of cost devoted to “targeting via outreach”



Three Testing Approaches in Baltimore: Results of Modeling

	Routine “ED”	Target by Setting	Target via Outreach
No. Tested	45,260	34,472	28,916
No. Undiagnosed HIV+ Persons Reached	226	345	347
No. High Risk HIV- Persons Reached	5,343	16,859	13,741
Total Testing Cost	\$ 1,130,000	\$ 1,130,000	\$ 1,130,000
Transmissions Averted	15	22	23
Infections Averted	4	13	11
Transmissions + Infections Averted	19	36	34
Gross Cost Per Trans+Inf Averted	\$ 59,435	\$ 31,507	\$ 33,707
Public Support for Med Care Needed Year 1	\$ 3,867,450	\$ 5,891,225	\$ 5,930,184



ECHPP Mathematical Modeling for the Baltimore-Towson MSA

*SECTION 3: ATTEMPTING TO MEET
NATIONAL HIV/AIDS STRATEGY
GOALS IN THE BALTIMORE-TOWSON
MSA WITH CURRENT RESOURCES*



NATIONAL HIV/AIDS STRATEGY FOR THE UNITED STATES

JULY 2010





NHAS Goals for Reducing HIV Incidence

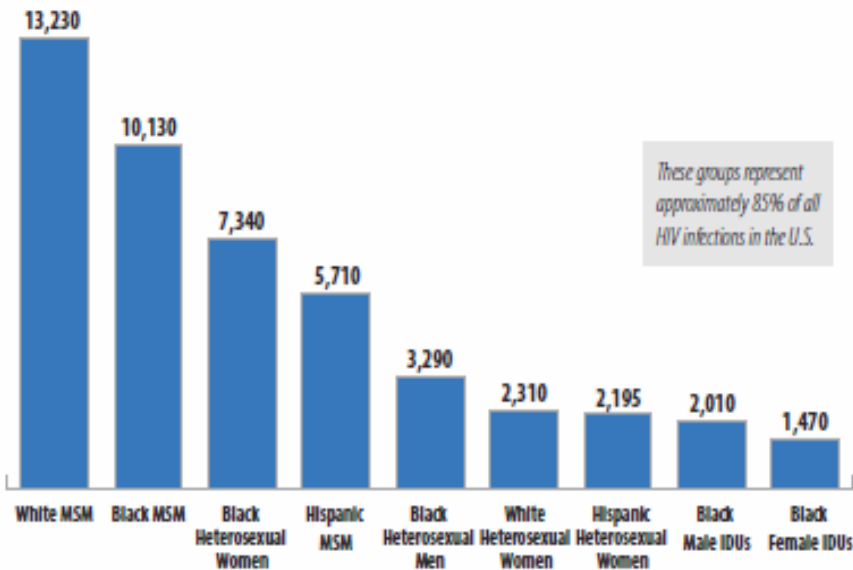
Reducing New HIV infections

- By 2015, lower the annual number of new infections by 25 percent (from 56,300 to 42,225).
- Reduce the HIV transmission rate, which is a measure of annual transmissions in relation to the number of people living with HIV, by 30 percent (from 5 persons infected per 100 people with HIV to 3.5 persons infected per 100 people with HIV).
- By 2015, increase from 79 percent to 90 percent the percentage of people living with HIV who know their serostatus (from 948,000 to 1,080,000 people).



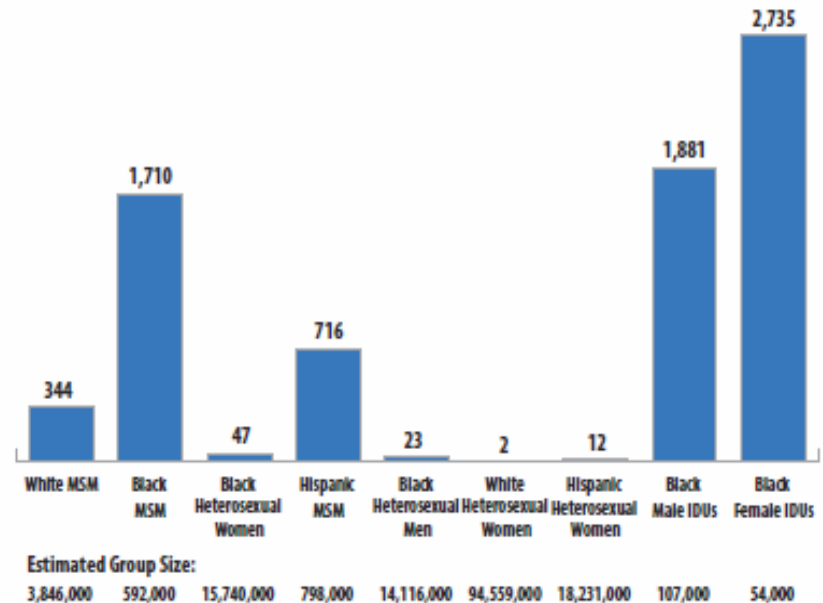
Relative Risk Calculations from National HIV/AIDS Strategy

Figure 2. Numbers of Annual HIV Infections by High-Risk Groups (2006)



Sources: MMWR, October 3, 2008 and MMWR, June 5, 2009 with the addition of incidence data for Puerto Rico based on an analysis by Holtgrave, D., Johns Hopkins Bloomberg School of Public Health. For this analysis, all Puerto Rico cases were classified as Hispanic. Chart based upon CDC, *HIV Prevention in the United States at a Critical Crossroads*, 2009. MSM = men who have sex with men (gay and bisexual men) and IDUs = injection drug users.

Figure 3. Estimated Risk for HIV Infection for High-Risk Groups (Infections per 100,000 people in each group, 2006)



Source: Holtgrave, D., Johns Hopkins Bloomberg School of Public Health based on analysis of HIV incidence in the 50 states from MMWR, October 3, 2008, with the inclusion of HIV incidence for Puerto Rico, where all Puerto Rico cases were classified as Hispanic and taken from CDC's MMWR, June 5, 2009. Population sizes for 2006 are rounded estimates derived from analysis of the following sources: Statistical Abstract US, 2009; CDC estimate of 4% of men are MSM (MSM denotes men who have sex with men); The National Survey on Drug Use and Health Report, October 29, 2009; Brady et al., *Journal of Urban Health* 2008; and Thierry et al., *Emerging Infectious Diseases*, 2004.



Interventions Included in the Baltimore-Towson MSA Modeling

- HIV Counseling and Testing
 - hybrid reflective of Baltimore-Towson experiences and best practices in the field (assuming rapid testing model; 1.5% seropositivity rate; and 0.9% new diagnosis rate);
 - includes post-test counseling for at-risk HIV- persons
- Prevention Services with Persons Living with HIV
 - intensive behavioral risk-reduction intervention services (and reinforcement of linkage to other needed services)
- Partner Services and Intensive Linkage to Care
- Prevention Services for HIV- Persons at High Risk of Infection
 - intensive behavioral interventions above and beyond post-test counseling
- Total Size of Funding Pool: \$6 million



Interventions Assumed to be Provided with Separate Funding by DHMH

- Syringe Exchange Services
- Public Information Campaigns
- Condom Distribution
- Structural Interventions (such as work on HIV-related policies; and HIV-related housing which is supported via other funding streams)
- Overall Program Management and Evaluation
- Provider Training and Capacity Building



Modeled “Best Performance”: Costs by Category

	Year 0	Year 1	Year 2	Year 3	Year 4	Total Y1-4
Total Costs	\$6,002,859	\$6,002,844	\$5,724,757	\$6,007,416	\$6,276,419	\$24,011,436
Counseling and Testing	\$3,260,500	\$3,807,730	\$2,293,361	\$2,411,791	\$2,521,157	\$11,034,039
Prev. with PLWH and Engaged in Risk Behav	\$290,663	\$608,014	\$2,475,500	\$2,590,367	\$2,704,418	\$ 8,378,299
Prev. for HIV-Persons	\$1,162,653	\$ -	\$ -	\$ -	\$ -	\$ -
Partner Services	\$789,043	\$1,587,100	\$955,896	\$1,005,259	\$1,050,844	\$4,599,098
ECHPP \$	\$500,000	\$ -	\$ -	\$ -	\$ -	\$ -



Modeled “Best Performance”: Results

	Year 0	Year 1	Year 2	Year 3	Year 4
Incidence	1,201	1,103	995	967	936
Prevalence	27,550	28,194	28,722	29,213	29,667
Transmission Rate	4.3593	3.9108	3.4628	3.3086	3.1539
Unawareness of Seropositivity	21.00%	17.69%	15.45%	13.22%	10.98%

Note: HIV incidence is reduced 22.09% (vs the 25% goal in the NHAS) and HIV transmission rate is reduced 27.65% (vs the 30% goal in the NHAS).

Unawareness of seropositivity does not quite reach the NHAS goal of 10%.



ECHPP Mathematical Modeling for the Baltimore-Towson MSA

SECTION : WHAT RESOURCES ARE NEEDED TO MEET NATIONAL HIV/AIDS STRATEGY GOALS IN THE BALTIMORE-TOWSON MSA?



Unmet Needs Scenarios: Baltimore-Towson MSA

	Year 1 to 4 Total Resources	Total Incidence Reduction	Total Transmission Rate Reduction	HIV Seropositivity Awareness Level
Better Use of Current Resources	\$24,011,436	22.09%	27.65%	89.02%
Meeting Awareness Goal	\$25,769,082	23.26%	28.69%	90.00%
Same as Above But Front Loaded	\$25,984,400	24.04%	29.24%	90.00%
Meeting All Goals	\$32,281,882	24.94%	30.12%	90.00%
Same as Above But Front Loaded	\$32,538,589	25.73%	30.68%	90.00%
NHAS Target		25.00%	30.00%	90.00%



Some Key Findings

- Transmission rates differ greatly by population noted above and suggest strategies for intervention
- There is not enough money currently in the system to meet NHAS goals, therefore....
- It is critical to (a) attempt to garner necessary resources and (b) to use current resources in the very best way possible



Some Key Findings (continued)

- At current resource levels:
 - Targeting of counseling and testing strategies is key (and rapid testing must be ramped up in the MSA)
 - Prevention with persons living with HIV must be expanded (and especially emphasize small minority of persons living with HIV engaged in risk behavior)
 - DHMH has indicated a desire to provide partner services for all persons testing HIV seropositive in a given year (even if previously aware of HIV seropositivity)
 - A timely evaluation question is to examine the exact impact of such services on the transmission rate



Some Key Findings (further continued)

- Evidence-based prevention services for persons who are HIV- but at risk of infection are useful and needed, but current resource levels prohibit the inclusion in the model results, however....
- Such services for at-risk HIV- persons could be provided if there were additional resources and maybe the final “piece of the puzzle” to fully meet all NHAS goals



Conclusions

- With the appropriate investment, the NHAS goals can be within reach for the Baltimore-Towson MSA
- However, even at current resources levels, strategic investment choices can lead to further prevention benefits
- Given budget constraints, and seriousness of the epidemic, efficiency of resource use is key to achieve maximum public health benefits
 - Expanding targeted counseling and testing is key
 - Expanding prevention services with the few PLWH engaged in risk behavior is also crucial
 - Prevention services for the very most at-risk HIV- persons are important and desirable but even those services may need to await further resource availability



President Barack Obama, July 13, 2010

“The question is not whether we know what to do, but whether we will do it.”





Maryland ECHPP Activities

- Significantly increase:
 - Routine HIV screening in clinical settings
 - Targeted HIV testing in non-clinical settings
 - Initial and ongoing HIV/STI partner services
 - Activities to support linkage to care, retention in care, and adherence to antiretroviral treatment
 - Risk reduction interventions for PLWH
- Decrease and redirect resources for:
 - Behavioral risk reduction interventions for HIV-negative persons
- Across all programming:
 - Increase utilization of local HIV and STI surveillance data
 - Increase partnerships across funding sources & with private providers



Maryland ECHPP Coordination, Collaboration, Integration (CCI) Activities

- Continue to enhance coordination between HIV testing, HIV/STI partner services, linkage-to-care programs and HIV care providers.
- Partner with the community health centers in the state, HRSA BPHC, NACHC, MACHC, and CHIP to increase the provision of HIV testing as part of ongoing medical care.
- Collaborate with HRSA HAB, HRSA BPHC, and the AETCs to increase the integration of prevention in all HIV care settings, regardless of funding source.
- Partner with provider associations such as MedChi (the state's medical society) and the Maryland Hospital Association to increase collaboration with private providers.
- Partner with the Maryland Board of Pharmacy to explore the implementation of pharmacy-based syringe exchange.



Maryland Recommendations for CCI

- Incorporate the funding information from relevant funding streams into the process. Specifically needed from federal agencies:
 - Funding amount , grant period, one-time or ongoing
 - Contact information for lead staff
 - Brief summary of services required with funding
 - Location of services by delivery site (not “parent office” address only)
 - Number of clients served/key demographics
 - Outcomes
- Incorporate modeling for cost effective and effective mix of HIV prevention and care and treatment interventions.
 - In Maryland, expand modeling to include other funding and service delivery (HOPWA, SAMSHA, HRSA BPHC)
- Incorporate annual data updates from Medicare, Medicaid, private insurance, VA, SAMSHA, HRSA BPHC, and Ryan White Parts A, C, and D.



Maryland Recommendations for CCI

- Federal agencies require grantees from all funding streams (e.g. RW Part C, SAMSHA) to participate in the development, implementation, and monitoring a NHAS State Plan.
- Federal agencies require grantees from all funding streams to align activities and service delivery to state health department planning as part of their application development.
- DHHS provides leadership and guidance on engaging private insurance and other federal agencies in collaboration, coordination, and integration.



Maryland Recommendations for CCI

- Continue to work with available Medicaid, Ryan White Parts B and D, surveillance, and HIV prevention programmatic data sources to describe the HIV epidemic, interventions implemented and reach/services delivered with known public funding.
- With more information from federal agencies (slide #39), incorporate the funding information from relevant funding streams into the processes.



**Maryland
Infectious Disease and
Environmental Health
Administration**

**Heather L. Hauck, MSW, LICSW
Director
410-767-5013
hhauck@dhmh.state.md.us**

<http://ideha.dhmh.maryland.gov>