

EXECUTIVE SUMMARY

OPTIMIZING HIV PREVENTION IN MICHIGAN

October 2009

The Michigan Department of Community Health (MDCH), through its HIV/AIDS Prevention and Intervention Section (HAPIS), Division of Health, Wellness and Disease Control (DHWDC) supports a comprehensive and highly targeted portfolio of evidence-based HIV prevention services. Our portfolio is inclusive of a range of service and intervention types including HIV counseling/testing, partner services, individual and group-level behavioral interventions, as well as community level interventions. Racial/ethnic communities, especially African Americans and men who have sex with men (MSM) receive emphasis due to the disproportionate impact of the epidemic on these populations. Services are provided by a range of implementing partners and in a variety of venues. Currently DHWDC supports community-based organizations, AIDS service organizations, community health clinics, hospitals, local health departments, and other health and human service providers to implement HIV prevention services. Community-based (agency and outreach) and clinic based programming is supported. DHWDC is highly flexible in terms of the models and intervention curricula employed by partners and provides a range of training, technical assistance and capacity building services to support planning, implementation and evaluation of locally delivered HIV prevention services.

This approach to prevention has had positive impact. Between 2003 and 2007 the number of cases reported to MDCH attributable to injecting drug use (IDU) decreased by 9 percent. IDU accounted for 7 percent of cases reported in 2007, compared with 9 percent in 2003. Perinatal transmission has decreased from 12 percent of children born to HIV-infected mothers in 1996 to one percent in 2007. As of January 2008, only three of the children born to HIV-infected mothers between 2005 and 2007 seroconverted. Even so, there is much more progress that needs to be made.

MDCH estimates that 18,200 people are living with HIV/AIDS in Michigan. Between 2003 and 2007 the number and rate of new diagnoses remained stable with an average of 892 new HIV diagnoses (8.8 per 100,000) occur each year. It is estimated that approximately 870 incident infections occur each year. Nearly one-quarter of all new AIDS cases are diagnosed concurrent (within 30 days) with HIV diagnosis. Men who have sex with men (MSM) and African Americans continue to bear the burden of Michigan's epidemic representing 46% and 59% of all new cases reported, respectively. Michigan continues to witness an increase in the percentage of new cases reported occurring among adolescents. Through 2007, 13-19 year olds accounted for 8% of all cases, but this represented a 24% increase since 2003.

MDCH's policy and program decisions are guided by a number of factors, including epidemiologic and health indicator data, data and information gathered through local-level needs assessment activities, statutory mandates, the parameters and restrictions associated with various funding streams, the capacity of implementing partners to provide services, and, of course, available resources. Priorities for HIV prevention services and supporting activities are articulated in the *Statewide Comprehensive HIV Prevention Plan*, which is developed through a highly consultative process with the Michigan HIV/AIDS Council (MHAC). MHAC is an advisory body comprised of representatives of diverse stakeholder groups.

Funding for HIV/AIDS prevention becoming increasingly constrained. At the same time, policy priorities, particularly those associated with federal HIV/AIDS funding streams, are increasingly shaping HIV prevention services. Most recently, the CDC's release of its *Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings*, have resulted in an emphasis on expansion of HIV testing, especially in health care settings. Traditional public health interventions, most notably partner services, are also increasing in prominence. There has been a relative de-emphasis of behavioral and social interventions and a continuing lack of focus on community-level interventions. A majority of Michigan's HIV prevention resources are, in fact, federal resources. Of the approximately \$8.2 million managed by DHWDC, approximately \$7.0 million are federal resources. This means that for Michigan, as in many other states, HIV prevention is significantly influenced by federal AIDS policy.

Stable incidence and prevalence rates, coupled with observations of trends of increasing infection among several populations groups, combined with diminishing funding and program priorities influenced greatly by federal policy suggested, strongly, the need for DHWDC to look very closely at its prevention portfolio to identify the approach most likely to optimize prevention. Specifically, DHWDC posed the following policy question:

At the current level of resources available for HIV prevention activities in the State, what array of services would result in the most HIV infections averted, result in the lowest HIV transmission rate possible, and maximize the level of awareness of HIV seropositivity?

To obtain an answer to this question, DHWDC pursued a two-phase analysis. The first phase sought to address HIV counseling and testing. HIV counseling and testing continues to be the cornerstone of HIV prevention and treatment programs. This first phase examined the relative public health (i.e., infections and transmissions averted) and economic costs of various approaches to provision of HIV counseling and/or testing services.

In this phase, four scenarios were examined: (a) “opt-out” HIV testing as recommended by CDC (the base case analysis); (b) opt-out HIV testing that induces increases in risk behavior due to a lack of counseling; (c) routine HIV testing accompanied by client-centered counseling; and (d) highly targeted HIV testing accompanied by counseling, using the same level of resources needed for routine opt-out testing. The findings of phase one, presented in Table 1, clearly indicated that by far the better investment for Michigan is a highly targeted program of HIV counseling and testing. This targeted program could combine a mixture of both clinical and community-based counseling and testing. This approach results in making the largest number of new diagnoses and averting the greatest number of transmissions and infections (and doing so at the least cost). Because this scenario is so successful at reaching the number of undiagnosed HIV-infected persons, it also has the highest costs for medical care.

The second phase of the analysis built on the first phase to address the question of optimization, through development of a resource allocation model. Using mathematical modeling, the most optimal mix of prevention services was determined. Optimization refers to that mix of services which results in identification of the most number of previously undiagnosed HIV infections, averts the most transmissions and infections and which does so cost efficiently. The resulting model, presented in Table 2, makes specific suggestions for consideration about the level of investment and anticipated impact of a variety of HIV prevention services for the State of Michigan. It suggests that with some resource reallocation (within the current available pool of resources), improvements in HIV prevention outcomes maybe possible. However, the model also highlights that only a small fraction of all people in need of HIV prevention services in the State can currently access these services essentially guaranteeing a continued epidemic for some time to come even with the very best of efforts in Michigan. Importantly, the model also projects growing HIV prevalence suggesting that plans to clearly link prevention to care and treatment services are essential and will grow in cost in the years to come.

When compared to existing programming and associated resource allocation, in general, the model suggests that DHWDC is currently over committed in terms of HIV testing and partner services and is under committed with regard to prevention for HIV-positive persons and high risk negative persons. While it would seem desirable to reallocate resources to more precisely reflect the configuration suggested by this model, a variety of factors make that infeasible. At the policy level, DHWDC must manage multiple funding streams in supporting HIV prevention. Each has associated with it specific program expectations and requirements, some of which are incompatible with achieving the optimization suggested by the model. DHWDC supports direct service providers through multiple procurement and contracting mechanisms, with variable timelines and opportunities for adjusting requirements. At a very

pragmatic level, the capacity of local providers of prevention services to respond appropriately to the priorities suggested by the model is highly variable. Similarly, the ability of DHWDC to provide support and assistance to local service providers is hampered by the lack of resources. Importantly, because of the relatively limited amount of funding available to support HIV prevention, a large proportion of at-risk individuals will not receive and will therefore not benefit from HIV prevention services. This will guarantee a continued epidemic for sometime into the future, despite our very best efforts.

Even so, incremental adjustments to our prevention portfolio can move Michigan in the direction of optimization suggested by this model. DHWDC expects over the next one to two years to focus on making structural and operational adjustments necessary to move us in the direction suggested by this model.

- DHWDC will maintain an emphasis on highly targeted services, particularly as related to HIV counseling and testing.
- Prevention services targeted to HIV infected individuals will receive increased emphasis. The optimization model suggests a need to enhance linkages between care and prevention, both from the point of initial diagnosis (i.e., initial engagement with care) as well as through the continuum of care. To that end, DHWDC will need to explore and invest in strategies that will support fuller integration of prevention into care and treatment for those with HIV-infection.
- Technical assistance to enhance recruitment and targeting (at both the client and agency level) will remain prominent in DWHDCs prevention activities. Capacity building and technical assistance to support matching of prevention interventions to client needs, as well as organizational mission and capacity will also be emphasized.
- DHWDC will closely examine strategies delivered by local public health, most notably partner services, to strengthen and improve the efficiency, effectiveness and relevance of these services. Integration with STD services will receive emphasis in this regard in order to more efficiently leverage scarce public resources.
- Due to funding constraints, a large proportion of at-risk individuals, particularly high risk HIV negative individuals, will not receive, and will therefore not benefit from HIV prevention services. To maximize available resources, it is critical that we identify and build provider capacity to deliver a range of evidence-based and culturally competent HIV prevention interventions which are more cost efficient than those currently available and in use (e.g., small group and individual level behavioral interventions). Community-level interventions which promise both a greater reach and deeper impact than individual and small group-level interventions are of particular interest. Brief prevention interventions may also be desirable due to the fact that they require a lower investment in capacity development and may be more easily quality assured than more complex multi-session, behavioral interventions.

Through this approach, DWHDC will use this model as the framework to assist in both enhancing the effectiveness of HIV prevention and will do so in a way which makes the best use of public resources.

Table 1: Summary of HIV Counseling and Testing Policy Analyses

	Opt-Out Testing with Behavioral Disinhibition	Opt-Out Testing	Routine Counseling (no post-test counseling for low risk HIV- persons)	HIV Counseling and Testing Targeted by Geographic & Venue Prevalence
No. Tested	1,201,382	1,201,382	1,201,382	547,973
No. Undiagnosed HIV+ Reached	544	544	544	1,726
No. High Risk Negatives Tested	142,792	142,792	142,792	128,468
Total Testing Cost	\$ 17,246,008	\$ 17,246,008	\$ 28,354,611	\$ 17,246,008
Transmissions Averted	42	42	42	134
Infections Averted	(7)	-	21	17
Transmissions + Infections Averted	35	42	63	151
Gross Cost Per Trans+Inf Averted	\$ 488,560	\$ 407,280	\$ 448,172	\$ 114,069
Public Support for Med Care Needed (One Year)	\$ 12,284,498	\$ 12,284,498	\$ 12,284,498	\$ 38,957,956

Table 2: Summary of Resource Allocation Model Results (Base Case)

	Year 0	Year 1	Year 2	Year 3	Year 4
<i>Model Outputs (Yrs 1-4)</i>					
Incidence (est.)	870	822	729	672	640
Prevalence (est.)	18,200	18736	19,172	19,546	19,882
Transmission Rate (est.)	0.0478	0.0439	0.0380	0.0344	0.0322
Seropos. Unawareness (est.)	0.21	0.18	0.15	0.13	0.10
<i>Total Costs</i>	\$ 8,635,000	\$ 8,640,855	\$ 8,660,784	\$ 8,640,856	\$ 8,554,930
Unaware (VCT services)	\$ 4,934,361	\$ 5,350,000	\$ 3,383,365	\$ 2,947,099	\$ 2,479,559
HIV+, Aware (prev svcs)	\$ 332,568	\$ 535,469	\$ 2,456,461	\$ 2,595,981	\$ 2,730,583
HIV- high risk (prev svcs)	\$ 1,123,071	\$ 797,057	\$ 1,467,791	\$ 1,821,109	\$ 2,125,639
Partner services	\$ 610,000	\$ 267,735	\$ 275,623	\$ 257,475	\$ 262,494
Capacity building (fiat)	\$ 450,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 450,000
Lab (fiat)	\$ 660,000	\$ 715,594	\$ 452,545	\$ 394,192	\$ 331,656
Public Info/Newsltr (fiat)	\$ 525,000	\$ 525,000	\$ 175,000	\$ 175,000	\$ 175,000