Update on the HIV Epidemic in Maryland

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Center for HIV Surveillance, Epidemiology and Evaluation
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MISSION AND VISION

MISSION
The mission of the Prevention and Health Promotion Administration is to protect, promote and improve the health and well-being of all Marylanders and their families through provision of public health leadership and through community-based public health efforts in partnership with local health departments, providers, community based organizations, and public and private sector agencies, giving special attention to at-risk and vulnerable populations.

VISION
The Prevention and Health Promotion Administration envisions a future in which all Marylanders and their families enjoy optimal health and well-being.
Data Freeze

• We allow a six month period to account for
  • Delays in reporting
  • Time to complete investigations
  • Data sharing and de-duplication with neighboring states

• June 30th data freeze then subjected to data cleaning and geo-coding (currently underway)

• Use data freeze to produce numbers for new 2018 diagnoses and persons living with an HIV diagnosis on 12/31/2018
Preliminary 2018 Data

- **994** new HIV diagnoses in Maryland residents during 2018 (19.6 per 100,000)
- **0** perinatal HIV transmissions in babies born to mothers living in Maryland during 2018
- **507** new AIDS diagnoses in Maryland residents living with diagnosed HIV during 2018
  - **48.9%** were also newly diagnosed with HIV
- **31,559** adults/adolescents with a current address in Maryland living with diagnosed HIV on 12/31/2018
  - Estimated **36,611** people living with HIV (13.8% undiagnosed)
HIV Diagnoses by Year of Diagnosis

Using data as reported through 6/30/2019
HIV Diagnoses by Year of Diagnosis

- 2,611 cases in 1991
- 2018, first time under 1,000 cases since 1986

Using data as reported through 6/30/2019
HIV Diagnoses by Year of Diagnosis

42% decrease over the last 10 years

Using data as reported through 6/30/2019
2018 HIV Diagnosis Rates by Jurisdiction

Using data as reported through 6/30/2019

Rate per 100,000 population

- 0.0
- 0.1 – 5.0
- 5.1 – 10.0
- 10.1 – 15.0
- 15.1 – 30.0
- 30.1 – 45.0

State Rate = 19.6

994 HIV diagnoses, age 13+
Pediatric HIV Diagnoses by Year of Birth

Using data as reported through 6/30/2019
Pediatric HIV Diagnoses by Year of Birth

Using data as reported through 6/30/2019
Eliminating Perinatal HIV Transmission

- There were three babies diagnosed with HIV in Maryland and born in 2017
- Only one baby was identified for 2018
- None of these four babies were born in a Maryland hospital
- Only one of the mothers lived in Maryland at the time of birth
- Only two of these babies are being counted as Maryland cases
- Elimination: <1 transmission per 100,000 live births
- Maryland had 71,589 live births in 2017
Migration of persons living with diagnosed HIV from time of first diagnosis to current residence, between Maryland planning regions

- **red** = Central
- **blue** = Suburban
- **green** = out of state
Migration

- During 2017 there were 2,340 new people with HIV identified in Maryland
- However, there were only 1,043 new HIV diagnoses in Maryland residents
- The other 1,297 people (55%) either moved to Maryland after diagnosis or came to Maryland for medical care
HIV Prevalence by Gender

Adult/Adelescent HIV Diagnoses, Current Address in Maryland and Alive on 12/31/2017, Current Gender, Reported through 6/30/2018

N = 30,566

- Male, 19,905, 65%
- Transfemale, 273, 1%
- Transmale, 12, 0%
- Female, 10,375, 34%
HIV Prevalence by Race/Ethnicity

Adult/Adolescent HIV Diagnoses, Current Address in Maryland and Alive on 12/31/2017, Rates per 100,000 by Race/Ethnicity, Reported through 6/30/2018

- NH-White: 146.5
- NH-Other: 442.3
- Hispanic: 433.2
- NH-Black: 1,509.8

Rate of Living HIV Cases per 100,000
HIV Incidence and Prevalence by Age Group

Age at Diagnosis of New 2017 HIV Diagnoses versus Age on 12/31/2017 of Persons Living with Diagnosed HIV or AIDS

PLWH are aging with HIV, while the new HIV diagnoses are getting younger.
HIV Diagnosis Age Trends

Trends in Maryland Adult/Adolescent Diagnoses by Age at Diagnosis, 2008-2017, Reported through 06/30/2018
HIV Diagnosis Exposure Trends

Trends in Maryland Adult/Adolescent HIV Diagnoses by Exposure Category, 2008-2017, Reported through 06/30/2018

- HET
- MSM
- IDU
- MSM/IDU

Year of HIV Diagnosis

Number of HIV Diagnoses
# Maryland HIV Plan

<table>
<thead>
<tr>
<th>General Population</th>
<th>Vulnerable Populations</th>
<th>Full Diagnosis of HIV Infection</th>
<th>Care Engagement</th>
<th>Viral Suppression</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Educate</strong> all Marylanders to heighten HIV awareness and reduce stigma.</td>
<td><strong>Protect</strong> individuals and communities at highest risk for HIV infection in Maryland.</td>
<td><strong>Diagnose</strong> all Marylanders living with HIV who are unaware of their HIV status.</td>
<td><strong>Engage</strong> all Marylanders living with HIV in high quality HIV care.</td>
<td><strong>Achieve</strong> viral suppression for all Marylanders living with HIV.</td>
</tr>
</tbody>
</table>
CDC PS18-1802: Integrated HIV Surveillance and Prevention Programs for Health Departments
Ending the HIV Epidemic
A Plan for America – Feb. 2019

GOAL:

- 75% reduction in new HIV infections in 5 years and at least 90% reduction in 10 years.

Our goal is ambitious and the pathway is clear – employ strategic practices in the places focused on the right people to:

- Diagnose all people with HIV as early as possible after infection.
- Treat the infection rapidly and effectively to achieve sustained viral suppression.
- Protect people at risk for HIV using potent and proven prevention interventions, including PrEP, a medication that can prevent HIV infections.
- Respond rapidly to detect and respond to growing HIV clusters and prevent new HIV infections.
- HIV HealthForce will establish local teams committed to the success of the Initiative in each jurisdiction.
Ending the HIV Epidemic
A Plan for America – Feb. 2019

The Initiative will target our resources to the 48 highest burden counties, Washington, D.C., San Juan, Puerto Rico, and 7 states with a substantial rural HIV burden.

Includes Baltimore City, Montgomery County, Prince George’s County, and the District of Columbia.
75% reduction in new HIV infections in 5 years and at least 90% reduction in 10 years.
HIV Incidence Trends

Estimated HIV Incidence for Maryland
With 95% Confidence Intervals

Estimated HIV incidence in Maryland decreased 20% from 1,500 in 2010 to 1,200 in 2016

CDC. HIV Surveillance Supplemental Report 2019; 24(1)
HIV Diagnosis Trends

New diagnoses continue to trend downward, from 1,759 in 2010 to 994 in 2018 (43%).

Using data as reported through June 30, 2019.
Incidence or Diagnoses

- We use new diagnoses as a proxy for incidence (new infections)
- Highly correlated
- Counts versus estimates
- More recent numbers available
- Able to perform analyses on subpopulations and geographies
New HIV Diagnoses for Maryland

2010 NHAS called for a 25% reduction by 2015.

New HIV diagnoses decreased 32%, from 1,756 in 2010 to 1,196 in 2015.
2015 NHAS Update called for a 25% reduction by 2020.

New HIV diagnoses are on track to decrease 27%, from 1,196 in 2015 to 870 by 2020.
EtHE calls for a 75% reduction by 2025, from the projected 870 in 2020 to 218 by 2025.

Using data as reported through June 30, 2019.
EtHE calls for a total reduction of 90% from 2020 to 2030, which requires a further reduction from the projected 218 in 2025 to 87 by 2030.
HIV Diagnoses Projected to 2030

New HIV Diagnoses for Maryland

Current trends (2010-2018) have Maryland meeting the EtHE 2030 goal by 2029.

Using data as reported through June 30, 2019.
HIV Diagnoses Projected to 2030

Current trends (2010-2018) have Maryland meeting the EtHE 2030 goal for Blacks by 2029.

Using data as reported through June 30, 2019.
HIV Diagnoses Projected to 2030

Current trends (2010-2018) have Maryland meeting the EtHE 2030 goal for Whites by 2028.

Using data as reported through June 30, 2019.
HIV Diagnoses Projected to 2030

New Hispanic HIV Diagnoses for Maryland

Using data as reported through June 30, 2019.

Current trends (2010-2018) do not have Maryland meeting the EtHE 2030 goal for Hispanics.
Diagnose all people with HIV as early as possible after infection.
## CDC HIV Prevalence Estimates


<table>
<thead>
<tr>
<th>Age 13+</th>
<th>United States</th>
<th>Maryland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons Living with HIV on 12/31/2016</td>
<td>1,140,400</td>
<td>37,200</td>
</tr>
<tr>
<td>Percent Undiagnosed</td>
<td>14.2%</td>
<td>13.8%</td>
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</tbody>
</table>
Estimated Percent Undiagnosed

Estimated Percent HIV Undiagnosed, United States, 2016
Total = 14.2%
Estimated Time to Diagnosis

Estimated Time from HIV Infection to Diagnosis, Maryland, 2016
Total = 6.7 years
Treat the infection rapidly and effectively to achieve sustained viral suppression.
Continuum of Care
Maryland, 2017

Preliminary for 2018: 67% virally suppressed and 83% linked in 1 mo.

Prevalence-Based Estimated Adult/Adolescent HIV Continuum of Care, 2017

<table>
<thead>
<tr>
<th>Percent</th>
<th>HIV Infected</th>
<th>HIV Diagnosed</th>
<th>Retained in HIV Care</th>
<th>Suppressed VL</th>
<th>HIV Diagnoses</th>
<th>Linked to HIV Care - 1 month</th>
<th>Linked to HIV Care - 3 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100.0%</td>
<td>88.4%</td>
<td>68.7%</td>
<td>54.7%</td>
<td>100.0%</td>
<td>86.5%</td>
<td>92.0%</td>
</tr>
<tr>
<td>AMOUNT</td>
<td>34,577</td>
<td>30,566</td>
<td>23,743</td>
<td>18,914</td>
<td>1,040</td>
<td>900</td>
<td>957</td>
</tr>
</tbody>
</table>

Among current Maryland residents living with HIV

Among 2017 HIV diagnoses

Using data as reported through 6/30/2018
Continuum of Care by Age Group
Maryland, 2017
People Living with HIV with Suppressed Viral Load, 2017

Percent of Living Adult/Adolescent HIV Cases on 12/31/2017 where the Last Viral Load Result in 2017 was <200 copies/mL

- 72.3 – 82.4
- 63.9 – 71.5
- 62.3 – 63.9
- 53.8 – 62.1

State Rate = 61.8%

Using data as reported through 6/30/2018
Protect people at risk for HIV using potent and proven prevention interventions, including PrEP, a medication that can prevent HIV infections.
Maryland PrEP Programs

Key:
- MDH-Funded PrEP Program
- CDC and MDH-Funded Program
- Program is considering applying for funding or application is currently under review

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Maryland Department of Health
Maryland Syringe Services Programs

- Program Currently Operating
- Approved for Implementation
- Approved for Capacity Development
- Expressed Interest and/or Committed to Moving Forward
Indiana Outbreak

3 reported diagnoses of HIV in a small rural town, upon investigation, were found to be 150+ cases of IDU-associated HIV and HCV
Prevention of Indiana Outbreak

“... had the interventions deployed in Scott County in 2014-15 [testing, syringe services, HIV clinic] been available earlier, the outbreak might have been substantially blunted.”
Respond rapidly to detect and respond to growing HIV clusters and prevent new HIV infections.
Cluster Identification

- Five types of clusters of HIV cases
  - Clusters of diagnoses reported by clinicians
  - Clusters of cases with named partners identified from partner services interviews
  - Co-infections with other disease outbreaks (Hepatitis A, Shigella, Tuberculosis)
  - Geospatial (time-space) clusters identified using epidemiological data
  - Sequence-linked clusters identified using results from genotypic resistance tests
- Can identify networks of people with active transmission of HIV
Importance of Clusters

• The overall U.S. HIV transmission rate was 4 new HIV diagnoses per 100 person-years of people living with diagnosed HIV infection

• CDC analyzed the first 13 identified sequence-linked HIV clusters in the U.S.

• Among the sequence-clusters, the transmission rate ranged from 21 to 132 per 100 person-years with a median of 44 per 100 person-years

• **Clusters had a transmission rate 11 times that of the average**

Cluster Response

- Clusters are a way to target data-to-care (D2C) activities and other services to communities at greatest risk

- Three level response:
  - Cases – link to services, move to viral suppression
  - Contacts – screen for HIV, treat for HIV or provide PrEP
  - Community – identify social networks, provide resources as needed

- Prioritize people in clusters and communities with clusters for interventions

- Have responded to 45 clusters since the Indiana outbreak (4 years)
Awaiting more details (maybe gone?) ...
HIV Transmission

Virally suppressed people do not transmit HIV

43% of transmissions are attributable to the 23% of people living with diagnosed HIV infection and not in care

34% of transmissions are attributable to the 14% of people living with undiagnosed HIV infection

Li, et al., MMWR, Mar. 22, 2019