

## APPENDIX 1

# INDICATOR DEVELOPMENT AND PROGRESS

As part of the Update process, a work group comprised of Federal agency representatives was charged with developing recommendations for indicators, measures, and targets to monitor progress toward achieving the Strategy goals. The work group established criteria (see box) for reviewing existing, and developing new, indicators; selecting data sources; and evaluating measures and targets. The work group reviewed surveillance data and pertinent published literature; and conducted focused consultations with stakeholders from the Federal government, academia, clinical care, and advocacy. Many of the indicators from the 2010 Strategy were retained, but measures or data sources were changed to reflect current science, practice, and the indicator criteria. Table A1 shows a comparison of the original indicators through 2015 and the updated indicators through 2020, noting indicators that have been changed, are new, or were dropped. Specific changes are described below. The work group sought to develop updated indicators with ambitious, yet feasible, targets that would inspire action and maintain progress toward meeting the Strategy's HIV prevention, treatment, and care outcomes.

Three key issues were designated to be “developmental indicators,” meaning that data sources, measures, and targets will be identified and progress monitored thereafter. These three issues are PrEP, stigma, and HIV among transgender persons. Data and measures exist for all three but do not currently meet the indicator criteria. Working with stakeholders, the Federal government will develop indicators for these three issues during the next five years.

### PROGRESS REPORT, 2010 - 2013

The indicators, baseline and annual data, and progress assessments are included in Table A2. Each indicator and its progress is described briefly below; more detailed specifications for the indicators, including data sources and measures, will be available on the ONAP website. The baseline year was set at 2010 for all indicators to reflect the ongoing Strategy work. The year for reaching the final targets is 2020. After careful consideration, the work group decided to set annual targets by allocating the total amount of change needed between the 2010 baseline and the 2020 target as follows: five percent of the total change is expected for each of the initial three years (2011–2013), ten percent is expected for each of the subsequent four years (2014–2017), and fifteen percent of the total change is expected for each of the final three years (2018–2020). This allows for implementation activities begun after the 2010 release of the Strategy to take hold and their effects to accelerate over time, rather than expecting slow advances year by year.

### CRITERIA FOR THE INDICATORS

Establishing criteria for the indicators allowed the work group to adhere to a systematic process that ensured consistency and efficiency in developing recommendations for up to 12 indicators. The criteria it used were as follows:

**Indicators:** All indicators were required to have a direct relationship to one or more of the Strategy goals. In addition, each indicator needed to reflect current HIV science, policy, and practice; represent measurable outcomes or impacts rather than processes; and be derived from quantitative data from an appropriate source.

**Data Sources:** In evaluating data sources, the work group considered favorably those that were nationally representative; provided data on a timely, routine basis; expected that the data would be comparable across years; had data that were amenable to stratification by age, geographic region, race/ethnicity, sex, and transmission category to monitor disparities; and retained sufficient flexibility to adapt definitions, as needed, in response to changes in guidelines or clinical practice. A priority was placed on data sources that would allow States to monitor progress toward Strategy goals in their jurisdictions.

**Measures:** The measure for each indicator needed to demonstrate face validity, in that it appeared to assess what was intended. In addition, measures needed to be simple and easy to communicate to a range of audiences.

Progress was assessed by comparing the most recent year of data to the annual target for that year. For the indicators with preliminary data shown in Table A2, progress was assessed for the most recent year that the data were not preliminary.

Overall, there is a mixed picture of progress. Important gains are underway toward increasing the percentage of persons living with HIV who know their status, are linked to care, and have achieved viral suppression. Progress also is being made in reducing the number of new diagnoses and the death rate. More work is needed to reach the targets for other indicators. Concerted action for 2016-2020 will be necessary to meet the accelerated annual targets for all indicators. This Update and the bold targets it has set offer new opportunities to reinvigorate the combined national effort to reduce new infections, improve access to and outcomes of HIV care, and reduce health disparities.

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### **INDICATOR 1**

Increase the percentage of people living with HIV who know their serostatus to at least 90 percent, from the baseline of 85.7 percent.

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This indicator retains a focus on increasing serostatus awareness among persons living with HIV infection, as this awareness (i.e., being diagnosed with HIV infection) is necessary to access HIV medical care and support services. In addition, analyses suggest that persons unaware of their HIV infection may account for about one third of new infections, so increasing knowledge of serostatus is central to reducing new infections as well as improving health outcomes. The 90 percent target is the same as the target established by the Joint United Nations Programme on HIV/AIDS for their 2020 indicators.<sup>101</sup>

**PROGRESS:** The percentage of people living with HIV who knew their serostatus in 2012 (87.2 percent) exceeded the annual target (86.1 percent).

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### **INDICATOR 2**

Reduce the number of new diagnoses by at least 25 percent, from 43,806 at baseline to 32,855.

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This indicator measures progress towards the goal of reducing new infections. This is an ambitious target because it requires and encompasses improvement in all other indicators and in overall prevention, treatment, and care efforts.

Although HIV incidence estimates were used previously as an indicator for the Strategy to measure reductions in new infections, as noted in Table A1, these estimates have not provided a timely and consistent way to monitor progress. The estimated number of new infections has changed, and likely will continue to change over time, due to changes in HIV testing technology and incidence estimation methods. These changes make it difficult to use these data as an indicator to measure progress over time. In contrast, HIV diagnosis data are published in a routine and standardized format and are available for all States. Given these advantages, HIV diagnosis data are used for the indicator in this Update.

Using diagnosis data to track progress in reducing new HIV infections has some challenges. First, these data must be interpreted with consideration for trends in HIV testing, as changes in testing can lead to changes in diagnosis trends that are not related to trends in new infections. For example, if HIV diagnoses decrease, evaluation is required to determine whether this decrease is due to fewer HIV tests being conducted or HIV

tests being performed on persons at lower risk, versus an indication of a decline in new HIV infections. Second, efforts to increase the percentage of people living with HIV who know their HIV status require an increase in diagnoses—meaning that, at least initially, achieving progress toward Indicator 1 may have a negative impact on progress toward Indicator 2. Over the longer term, diagnosing individuals who were previously undiagnosed will ultimately result in increased linkage to and retention in care and treatment, increased viral suppression, and decreased transmission to uninfected partners. This will reduce new infections, which will be reflected in a decrease in the number of new diagnoses.

Because HIV incidence is not being used as an indicator, the 2010 indicator for transmission rate was not included (transmission rate is based on incidence).

**PROGRESS:** The number of new diagnoses in 2012 (42,616) was lower than the annual target (42,711), exceeding expected progress in reducing the number of new diagnoses.

As noted above, diagnosis trends must be considered in the context of HIV testing trends. Data used to monitor trends in HIV testing come from the Behavioral Risk Factor Surveillance System. Although a statistically significant increase in testing during 2011-2013 was seen, the amount of increase was small (from 42.9 percent ever tested to 43.5 percent).<sup>102</sup> Taken together, decreases in HIV diagnoses in the context of a slight increase in testing is encouraging. Additional years of diagnosis data and additional analyses about testing trends in high risk populations are needed to determine the extent to which these trends may reflect declining incidence in high risk populations.

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### INDICATOR 3

Reduce the percentage of young gay and bisexual men who have engaged in HIV-risk behaviors by at least 10 percent, from the baseline of 34.1 percent.

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This is a new indicator, measuring HIV prevention behaviors in young gay and bisexual men, a group in which HIV infections have increased in recent years. Having an indicator specifically measuring risk for HIV acquisition among young gay and bisexual men reflects the need for effective prevention strategies to achieve the goal of reducing new infections in at-risk groups. The indicator is measured using data from the Youth Risk Behavioral Surveillance System and thus includes males in grades 9-12. Risk behaviors are assessed for the 3 months prior to the interview and include having had multiple (3 or more) partners, not using a condom at last sex, or having ever injected any illegal drug.

**PROGRESS:** 34.1 percent of young gay and bisexual men had engaged in HIV-risk behaviors. These data were first available in 2013 so progress is not assessed.

**INDICATOR 4**

Increase the percentage of newly diagnosed persons linked to HIV medical care within one month of diagnosis to at least 85 percent, from the baseline of 70.2 percent.

In recognition of the benefits of early treatment and thus the need for immediate linkage to HIV medical care for all persons newly diagnosed with HIV, this updated indicator measures linkage to care within one month of diagnosis. This is an ambitious new target as the previous indicator called for linkage to care within three months of diagnosis (see Table A1).

**PROGRESS:** The percentage of newly diagnosed persons linked to HIV medical care within one month of diagnosis in 2013 (72.6 percent) exceeded the annual target (72.4 percent).

**INDICATOR 5**

Increase the percentage of persons with diagnosed HIV infection who are retained in HIV medical care to at least 90 percent, from the baseline of 50.9 percent.

In order for persons living with HIV infection to realize the full benefit of HIV medical care, they must stay in care over time. Doing so helps to achieve viral suppression that can improve health outcomes, reduce the risk of HIV transmission, and lower the number of new infections.

This indicator differs from the measure of retention used in 2010 (see Table A1). This updated indicator relies on surveillance data, which includes all persons diagnosed with HIV infection, rather than data reported from the HRSA Ryan White HIV/AIDS Program. With this larger pool of persons in the denominator, the baseline level of retention is lower than in the 2010 Strategy. The 2020 target will be difficult to reach, but is a key focus area of the Update. The target of 90 percent is comparable to the indicator used by UNAIDS.<sup>101</sup>

**PROGRESS:** The percentage of persons with diagnosed HIV infection who were retained in HIV medical care in 2012 (53.8 percent) did not meet the annual target (54.8 percent), suggesting that additional attention is needed in order to reach this goal. The percentage retained in care in 2012 was higher than the baseline level of 50.9 percent indicating progress in the right direction.

**INDICATOR 6**

Increase the percentage of persons with diagnosed HIV infection who are virally suppressed to at least 80 percent, from the baseline of 43.4 percent.

Accruing the full clinical and public health benefits of HIV medical care depends upon entry into a robust care continuum that includes early diagnosis, timely linkage to care, consistent access and adherence to HIV medical care and antiretrovirals, and ongoing monitoring to ensure viral suppression. As the endpoint of the continuum of care, it is important that the nation's target for viral suppression is bold and ambitious. This target for the United States aligns with the 90-90-90 goals set by UNAIDS but uses a different denominator.<sup>101</sup> That is, 90 percent of those diagnosed are retained and 90 percent of those retained are virally suppressed is approximately the same as 80 percent of those diagnosed being virally suppressed.

This indicator differs from the measures of viral suppression used in 2010 (see Table A1). The updated indicator measures viral suppression among all persons with diagnosed HIV infection, rather than only in specific groups.

**PROGRESS:** The percentage of persons with diagnosed HIV infection who were virally suppressed in 2012 (50.1 percent) exceeded the annual target (47.1 percent).

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**INDICATOR 7** Reduce the percentage of persons in HIV medical care who are homeless to no more than 5 percent, from the baseline of 7.7 percent.

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Housing status is an important factor affecting access to HIV care and health outcomes. This indicator differs in two ways from the measure of housing status used in 2010 (see Table A1). First, changes were made to allow for measurement of housing status in a broader group of persons in HIV care than those receiving services through the Ryan White HIV/AIDS Program. Second, the updated indicator focuses specifically on homelessness, rather than on the broader category of housing instability. The improved sampling frame was considered an acceptable tradeoff for the narrower focus on homelessness. As the proportion of those who are homeless decreases, it will take considerable effort to reach the small proportion of those still requiring housing assistance.

**PROGRESS:** The percentage of persons in HIV medical care who were homeless in 2012 (8.3 percent) did not meet the annual target (7.4 percent) and increased, rather than decreased. This trend suggests that additional effort is needed in order to reach this goal. As noted in the 2013 Report on the State of Homelessness in America, the trend may reflect devastating economic climate affecting the nation at the time.<sup>103</sup>

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**INDICATOR 8** Reduce the death rate among persons with diagnosed HIV infection by at least 33 percent, from the baseline of 23.5 per 1,000 persons with diagnosed HIV infection to 15.5.

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For this Update, a new indicator to monitor all-cause death rates among persons living with HIV was added because reducing mortality is an anticipated outcome of achieving all of the goals of the Strategy. This indicator reflects the overall quality of HIV medical care received, such that sustained delivery of high quality care should lead to greater reductions in death rates for persons living with HIV.

**PROGRESS:** The death rate per 1,000 persons with diagnosed HIV infection in 2012 (18.1) was lower than the annual target (22.7), exceeding expected progress in reducing the death rate.

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**INDICATOR 9** Reduce disparities in the rate of new diagnoses by at least 15 percent in the following groups: gay and bisexual men, young Black gay and bisexual men, Black females, and persons living in the Southern United States.

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This indicator monitors disparities in diagnosis rates for disproportionately affected groups. It is a new indicator (See Table A1). The indicator measures reductions in the disparity, rather than reductions in the rate for each group by measuring changes in the ratio of the disparity rate for each group and the overall population rate. The ratio provides a measure of the disparity, such that the ratio increases as the difference widens between a selected group and the overall population and decreases as the difference narrows. The choice of measuring diagnosis rates, rather than numbers, was made to standardize measures (i.e., per 100,000 population).

**PROGRESS:** The disparity ratios for gay and bisexual men and young Black gay and bisexual men in 2012 (21.9 and 112.9, respectively) did not meet the annual targets (20.2 and 107.8, respectively) and were increasing, rather than decreasing. The disparity ratio for Black females in 2012 (1.4) was lower than the annual target (1.7), exceeding expected progress in reducing disparities. In fact, the ratio for 2012 met the 2020 target of 1.4 and achieving the 15 percent reduction in the disparity ratio. It will be important to determine whether the reduction in the disparity is sustained in future years; if so, the disparity target could be revised to be more than a 15 percent reduction. The disparity ratio for persons living in the Southern United States in 2012 (0.33) met the annual target (0.33).

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**INDICATOR 10** Increase the percentage of youth and persons who inject drugs with diagnosed HIV infection who are virally suppressed to at least 80 percent from the 29.7 percent and 37.6 percent baselines, respectively.

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This indicator extends a focus on viral suppression, as measured by Indicator 6, to youth and persons who inject drugs, given data showing important disparities in viral suppression (i.e., lower percentage virally suppressed) for these groups in comparison to the overall. Ensuring that the target for viral suppression in these groups is the same as the overall target reduces the disparity in these groups. This indicator uses a different target and specified groups as compared to the 2010 disparity indicator for viral suppression (see Table A1).

**PROGRESS:** The percentage of youth who were virally suppressed in 2012 (38.0 percent) exceeded the annual target (34.7 percent). Similarly, the percentage of persons who inject drugs who were virally suppressed in 2012 (42.8 percent) exceeded the annual target (41.9 percent).

TABLE A1: COMPARISON OF NATIONAL HIV/AIDS STRATEGY INDICATORS FOR 2015 AND 2020

NHAS INDICATORS BY 2015	NHAS INDICATORS BY 2020
<b>CHANGED</b>	
Lower the annual number of new infections by 25 percent.	Reduce the number of new HIV diagnoses by at least 25 percent.
Increase from 79 percent to 90 percent the percentage of people living with HIV who know their serostatus.	Increase the percentage of people living with HIV who know their serostatus to at least 90 percent.
Increase the proportion of newly diagnosed patients linked to clinical care within three months of their HIV diagnosis from 65 percent to 85 percent.	Increase the percentage of newly diagnosed persons linked to HIV medical care within one month of their HIV diagnosis to at least 85 percent.
Increase the proportion of Ryan White HIV/AIDS Program clients who are in continuous care from 73 percent to 80 percent.	Increase the percentage of persons with diagnosed HIV infection who are retained in HIV medical care to at least 90 percent.
Increase the percentage of Ryan White HIV/AIDS Program clients with permanent housing from 82 percent to 86 percent.	Reduce the percentage of persons in HIV medical care who are homeless to no more than 5 percent.
<b>ADDED</b>	
—	Reduce the percentage of young gay and bisexual men who have engaged in HIV-risk behaviors by at least 10 percent.
—	Increase the percentage of persons with diagnosed HIV infection who are virally suppressed to at least 80 percent.
—	Reduce the death rate among persons with diagnosed HIV infection by at least 33 percent.
—	Reduce disparities in the rate of new diagnoses by at least 15 percent in the following groups: gay and bisexual men, young Black gay and bisexual men, Black females, and persons living in the Southern United States.
	Increase the percentage of youth and persons who inject drugs with diagnosed HIV infection who are virally suppressed to at least 80 percent.
<b>DROPPED</b>	
Reduce the HIV transmission rate by 30 percent.	
Increase the proportion of HIV diagnosed gay and bisexual men with undetectable viral load by 20 percent.	
Increase the proportion of HIV diagnosed Blacks with undetectable viral load by 20 percent.	
Increase the proportion of HIV diagnosed Latinos with undetectable viral load by 20 percent.	

*Please see the narrative description of each indicator for the reasons for changes, additions, and deletions.*

Table A2. Indicators and Progress for the National HIV/AIDS Strategy, Updated to 2020

Indicator	Date by Year				Targets		Progress
	2010 Baseline	2011	2012	2013	Annual	2020	
Increase the percentage of people living with HIV who know their serostatus to at least 90 percent.	85.7%	86.4%	87.2%		86.1%	90%	■
Reduce the number of new diagnoses by at least 25 percent.	43,806	42,218	42,616	42, 018**	42,711	32,855	■
Reduce the percentage of gay and bisexual men who have engaged in HIV-risk behaviors by at least 10 percent.	n/a	n/a	n/a	34.1%	n/a	30.7%	n/a
Increase the percentage of newly diagnosed persons linked to HIV medical care within one month of diagnosis to at least 85 percent.	70.2%	70.4%	71.4%	72.6%	72.4%	85%	■
Increase the percentage of persons with diagnosed HIV infection who are retained in HIV medical care to at least 90 percent.	50.9%	51.5%	53.8%		54.8%	90%	■
Increase the percentage of persons with diagnosed HIV infection who are virally suppressed to at least 80 percent.	43.4%	46.8%	50.1%		47.1%	80%	■
Reduce the percentage of persons in HIV medical care who are homeless to no more than 5 percent.	7.7%	8.1%	8.3%		7.4%	5%	■
Reduce the death rate among persons with diagnosed HIV infection by at least 33 percent. <sup>§</sup>	23.5	20.8	18.0		22.7	15.5	■
Reduce disparities in the rate of new diagnoses by at least 15 percent among gay and bisexual men†	20.5	21.2	21.9	22.2**	20.2	17.4	■
Reduce disparities in the rate of new diagnoses by at least 15 percent among young Black gay and bisexual men†	109.4	112.4	112.9	114.9**	107.8	93.0	■
Reduce disparities in the rate of new diagnoses by at least 15 percent among Black femalest	1.7	1.5	1.4	1.3**	1.7	1.4	■
Reduce disparities in the rate of new diagnoses by at least 15 percent among persons living in the Southern United States†	0.33	0.35	0.33	0.36**	0.33	0.28	■
Increase the percentage of youth with diagnosed HIV infection who are virally suppressed to at least 80 percent.	29.7%	33.7%	38.0%		34.7%	80%	■
Increase the percentage of persons who inject drugs with diagnosed HIV infection who are virally suppressed to at least 80 percent.	37.6%	39.2%	42.8%		41.9%	80%	■

Note: Progress colors: Green = Annual target met; Yellow = Annual target not met, progress in expected direction; Red = Annual target not met, progress in the opposite direction

\* Annual targets are for the most recent data year available (does not include data marked "preliminary")

\*\* Preliminary data

§ Death rate is measured per 1,000 persons with diagnosed HIV infection.

† Measures shown are ratios of the disparity rate in the specified group to the overall rate.