

# Section 1: Introduction

## About the Community Need Index Report Series

The Community Need Index (CNI) Report Series (2006 Edition) is published by the New York State Department of Health AIDS Institute as a resource for HIV/AIDS-related need assessments, program planning, and evaluation. The report series covers all 62 New York counties with eight regional reports classified in three CNI statistical areas (see Table 1.1). Each regional report provides summary tables and thematic maps that display levels of HIV/AIDS related service needs in local communities as indicated by the CNI and the nine indicators used in the CNI calculation. In addition, socio-demographic characteristics of local communities are presented in a separate section of the report to facilitate program planning and evaluation activities. All data are reported at the ZIP code level by county. The definitions and the sources of the nine indicators are presented in Table 1.2.

*Table 1.1. CNI statistical areas, report regions, and constituent counties.*

| <i>CNI Statistical Area*</i> | <i>Report Region</i>  | <i>Counties</i>  |
|------------------------------|-----------------------|--|
| New York City (NYC)          | New York City         | Bronx, Kings, New York, Queens, Richmond   |
| New York City Vicinity (NYV) | Hudson Valley         | Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester  |
|                              | Nassau/Suffolk        | Nassau, Suffolk  |
| Rest of State (ROS)          | Central New York      | Cayuga, Cortland, Herkimer, Jefferson, Lewis, Madison, Oneida, Onondaga, Oswego, Saint Lawrence, Tompkins  |
|                              | Finger Lakes          | Chemung, Livingston, Monroe, Ontario, Schuyler, Seneca, Steuben, Wayne, Yates  |
|                              | New York Penn         | Broome, Chenango, Tioga  |
|                              | Northeastern New York | Albany, Clinton, Columbia, Delaware, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington |
|                              | Western New York      | Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming  |

\* A CNI statistical area is made up of one or more regions within which CNI scores of the ZIP codes are computed.

*Table 1.2. Description of the nine health statistical indicators used in the CNI composite measure.*

| <i>Indicator</i>               | <i>Description</i>  | <i>Source</i>   |
|--------------------------------|---|---|
| Teenage Pregnancy              | Average annual rate of 2000, 2001, and 2002 pregnancies among females aged 10-17, per 1,000 females aged 10-17                                | Bureau of Biometrics, NYSDOH  |
| Cocaine Hospital Discharges    | Average annual rate of 2001, 2002, and 2003 cocaine-related discharges among persons aged 13-64, per 100,000 persons aged 13-64               | Statewide Planning and Research Cooperative System (SPARCS), NYSDOH |
| Opioid Hospital Discharges     | Average annual rate of 2001, 2002, and 2003 opioid-related discharges among persons aged 13-64, per 100,000 persons aged 13-64                | Statewide Planning and Research Cooperative System (SPARCS), NYSDOH |
| Sexually Transmitted Diseases  | Average annual rate of 2001, 2002, and 2003 syphilis, gonorrhea, and chlamydia cases among persons aged 13-64, per 100,000 persons aged 13-64 | Bureau of STD Control, NYSDOH and Bureau of STD Control, NYCDOHMH   |
| Maternal Seroprevalence        | Ratio of 2001, 2002, and 2003 newborns that tested positive for HIV, per 100 tested newborns  | Bureau of HIV/AIDS Epidemiology, NYSDOH                             |
| Male HIV Hospital Discharges   | Average annual rate of 2001, 2002, and 2003 HIV-related discharges among males aged 13-64, per 100,000 males aged 13-64                       | Statewide Planning and Research Cooperative System (SPARCS), NYSDOH |
| Female HIV Hospital Discharges | Average annual rate of 2001, 2002, and 2003 HIV-related discharges among females aged 13-64, per 100,000 females aged 13-64                   | Statewide Planning and Research Cooperative System (SPARCS), NYSDOH |
| AIDS Cases                     | Average annual rate of 2001, 2002, and 2003 AIDS cases diagnosed among persons aged 13-64, per 100,000 persons aged 13-64                     | Bureau of HIV/AIDS Epidemiology, NYSDOH                             |
| HIV Cases                      | Average annual rate of HIV cases among persons aged 13-64 diagnosed during 2001, 2002, and 2003, per 100,000 persons aged 13-64               | Bureau of HIV/AIDS Epidemiology, NYSDOH                             |

## What is the Community Need Index?

HIV, the virus that causes AIDS, affects every community in New York but impacts some localities more than others. Accordingly, the need for HIV/AIDS-related health care and prevention services may vary across neighborhoods. The CNI was created to identify spatial variation in the presence of HIV/AIDS and related risk behaviors and to facilitate comparative assessment among local communities at the ZIP code level.

### *Interpreting the Community Need Index*

In this report series, every ZIP code that has an identifiable geographic boundary is treated as a representation of a local community. Nine health statistics associated with each ZIP code are used as indicators of service need. The indicators are analyzed and combined into a single CNI score for each ZIP code. The ZIP codes are then rank-ordered from high to low based on their CNI scores. The top 20% of the ZIP codes (80th percentile and above) are classified as high need communities (H); the next 20% of the ZIP codes are classified moderate need communities (M); and the remaining 60% are considered as low need communities (L). It should be noted that different locations within a ZIP code may not exhibit the same level of need as measured by its CNI score. Also, a ZIP code covers a large area that may include residential as well as non-residential areas such as parks and other public works.

### *Comparing the Community Need Index Across Geographic Areas*

To facilitate meaningful comparisons of HIV/AIDS-related service needs in local communities within different geographic regions (i.e. urban vs. rural; metropolitan areas vs. small towns, etc.), the CNI scores are computed separately for ZIP codes in each of the three statistical areas – New York City (NYC), New York City Vicinity (NYV), and Rest of State (ROS). It is important to note that CNI scores can be used to compare relative need of two or more ZIP codes within the same CNI statistical area. However, the CNI scores for ZIP codes from two different statistical areas (e.g. one ZIP code from NYC and the other from NYV) should not be compared directly, since the respective CNI scores are computed based on different sets of statistical parameters unique to each CNI statistical areas.

### *Useful Features*

The CNI has two important features as a comparative assessment tool. First, the computation of the index is based on a statistical model that combines nine health statistical rates into a single scoring system. It is a composite measure that takes into consideration the multiple sources of HIV/AIDS-related risk. Second, it is a geographic information system (GIS)-based measure that allows spatial analysis of risk. Users of the CNI can identify high need communities using thematic maps and examine their spatial distribution. Together with information about other community characteristics, the CNI can help service providers plan and address the specific needs of the people residing in their service areas.

## New Features and Enhancements

The CNI 2006 has undergone substantial revisions, while still retaining the essential features and qualities of the previous edition. Changes to the report series design, its contents, and the methodological differences between this edition and previous editions are described in this section as follows.

### *Updates to the Index*

The CNI 2006 has been updated with the latest data available together with a revised composite model. One of the major updates is the change in the number and specifications of the health statistical indicators used to calculate the CNI scores. While previous editions of the CNI have used ten indicators, the CNI 2006 uses nine, as described in Table 1.2. Key improvements of the revised index include (1) the incorporation of newly diagnosed HIV case data; (2) the widening of many indicators' age bracket from age 15-54 to age 13-64; (3) the inclusion of chlamydia in the total counts of newly diagnosed STD cases; (4) limiting the scope of the indicators to exclude the incarcerated population when possible; (5) the consolidation of all AIDS cases into a single category; and (6) the removal of low birth weight as an indicator of HIV/AIDS risk.

### *Improved Reporting*

Many improvements to the presentation of the information in the report have been implemented. Highlights of the key improvements are described as follows:

#### 1. Color-coded maps with ZIP code and county boundaries

A color-coding scheme based on the CNI letter scores to denote high, moderate, and low need ZIP codes has been applied to the summary tables and maps. These enhancements provide a more efficient way for users to look for key information. In addition, both ZIP code and county boundaries have been applied to the new CNI maps. This feature allows the reader to gain a visual understanding of the fact that some ZIP codes may cross county lines. This is important to consider when interpreting the CNI. For example, the county rate of any given CNI indicator may not be equal to the rate based on aggregated ZIP code total because ZIP codes do not exactly follow county boundaries.

#### 2. Streamlined and consolidated CNI tables

In the CNI 2006, the summary table now contains the percentile rank associated with each ZIP code, which replaces the CNI raw score that has been used in the previous edition of the CNI. This change will make it easier for users to interpret the CNI, in the context of how ZIP codes rank compared to one another within a particular CNI statistical area. In addition, differences between ZIP codes that receive the same CNI letter score can be better understood.

### 3. Expanded supplementary tables to include relevant demographic data

The CNI 2006 has an expanded demographic data section. Nine different tables, which cover various demographic indicators, are available for each county at the ZIP code level.

### 4. Electronic versions available for download

A PDF of the CNI 2006 is available for download on the New York State Department of Health website: <http://www.nyhealth.gov/diseases/aids/index.htm>.

### 5. Exclusion of AIDS Institute-funded provider information

The CNI 2006 does not include AIDS Institute-funded provider information as found in previous editions. The decision to exclude this information from the CNI 2006 was based on the fact that these data were subject to frequent changes and thus provided an incomplete picture of HIV/AIDS service delivery and availability. A comprehensive reporting of HIV/AIDS service provisions is beyond the scope of this project. For more information please refer to the New York State Department of Health website: <http://www.nyhealth.gov/diseases/aids/index.htm>.

## Limitations of the CNI

Users of the CNI should exercise caution when using and interpreting the information in the report series. Some of the known limitations are discussed here. First, the CNI is a composite measure designed to describe the spatial variation of HIV/AIDS presence and aggregated risk factors across geographic units, and therefore should not be used to infer risk behavior of individuals living in a particular ZIP code. Second, it is important to recognize that every community has potential needs for HIV/AIDS-related services. However, a high need area does not necessarily imply the lack of such services. The designation of a high, moderate, or low need label to a ZIP code is based on the relative ranking of a ZIP code and therefore should be considered in the context of the CNI statistical area where the ZIP code is located. Thus, a ZIP code area in New York City designated as "low" need may in fact have a higher absolute level of need than a "moderate" need ZIP code in other CNI statistical areas. Third, the CNI and its nine indicators may not show the most current information due to lag time in data reporting. Fourth, the CNI indicates, at the aggregate level, where people with different levels of service need resided during a given period of time in the past. High need areas do not necessarily represent the locations where certain high risk behavior has taken place, nor predict future occurrence of high risk behavior. In fact, people who are at high risk of HIV infection may have been exposed to risky behavior outside their resident ZIP codes. Finally, CNI scores are based on rates, not absolute numbers. A higher CNI score from a sparsely populated area may represent fewer persons who need services than a lower CNI score from a high population area. Other technical issues pertaining to data suppression, ZIP code definitions, and index construction are discussed in Appendix A.