Council of State and Territorial Epidemiologists

Health Disparities Assessment 2015

Health Disparities Subcommittee Report

Acknowledgements

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Introduction and Background

Health disparities are differences in health outcomes and their determinants between groups of the population, as defined by social, demographic, environmental and geographic attributes that reflect social inequalities and thus should be preventable (1). Race and ethnicity, sex, sexual identity, age, disability, socioeconomic status and geographic location all contribute to an individual's ability to achieve good health (2). Public health authorities must track these common attributes in order to monitor the health of disadvantaged populations.

Over the years, Healthy People's overarching goals have been focused on tracking and reducing diseases. One goal of Healthy People 2020 is to achieve health equity, eliminate disparities, and improve the health of all groups (2). One of Healthy People 2020's public health infrastructure objectives relevant to this assessment is PHI 7.3, to increase the proportion of population-based Healthy People 2020 objectives for which national data are available by socioeconomic status (SES)(3).

Consistent estimates of health disparities at national, state, tribal and local levels enable informative comparisons across indicators of health status and across time for each health indicator; setting targets for reducing inequalities at multiple geographic levels; and comparing inequality in the need for services with availability of those services for different populations (4). For health conditions without available data by individual SES, it is often possible to use area-based SES measures to make informative comparisons (5).

The Council of State and Territorial Epidemiologists (CSTE) Health Disparities Subcommittee developed an assessment to determine the prevalence of states with population-based data on selected nationally notifiable and state reportable conditions with available SES measures (either individual or area-based), and identify barriers that state health departments may encounter to tracking and reporting SES. As part of this, the assessment addressed whether geocoding was being done for selected conditions across several program areas for which there were HP 2020 objectives, most of which had no individual SES data, including infectious diseases, malignancies, and vital statistics.

Among the states reporting use of SES measures and/or routine geocoding for these conditions, the Subcommittee was interested in determining:

- what SES measures are being used and their prevalence,
- the proportion of SES measures that are area-based,
- whether geocoded data are being linked to census SES measures, and
- whether any recent reports have been made for each condition using an SES measure.

Methods

Assessment Development and Distribution

The CSTE Health Disparities Assessment 2015 was developed in collaboration with the CSTE Health Disparities Subcommittee members. Nationally notifiable and state reportable conditions were cross-mapped to the conditions Healthy People 2020 set objectives in an effort to align with national priorities. The assessment was pilot tested in May 2015 by three subcommittee members. The assessment consisted of 16 questions in total with many questions involving a table of conditions for completion. The assessment was finalized and distributed by CSTE staff to all State Epidemiologists on June 8, 2015 with instructions to forward the assessment to the person most knowledgeable on this topic. One response was requested per state. Results were collected using a web-based assessment tool with data collection closing on August 31, 2015. All non-responders were followed up by email.

Data Cleaning

Respondents were requested to complete tables of individual and area-based SES measures and geocoding practices for selected conditions in the program areas: Malignancies, Reportable Conditions Group 1 (categorically funded infectious diseases and blood lead level), Reportable Conditions Group 2 (non-categorically funded infectious diseases), and Births and Deaths. For a full list of conditions, please see Annex 1.

To ease the burden of data entry, respondents with similar data collection and geocoding practices for all of the conditions within the program area only needed to complete the top row in the table. If data collection and geocoding practices differed between the subconditions within the table, respondents were requested to complete the table in full. Not all respondents read and interpreted the directions in the same way and there were three types of data entry for the tables: 1) the top row (applying to all conditions) was completed and only certain subconditions in the table below were completed, with different values (indicated exceptions to the rule); 2) the top row was partially completed with partial completion of the subconditions below; and 3) the top row and all of the subconditions were completed with the same values.

To apply consistent interpretation of data within the top row of each table, and to enable easier interpretation of the results, data cleaning procedures were applied as follows:

- Responses with similar data in the subcondition rows were moved to the top row to apply to all conditions and subconditions with differing responses were left to indicate exceptions to the top row rule.

Thirty-seven responses underwent some form of data cleaning to address the different interpretations of the top row rule.

All results were stratified by state population to determine if any given result varied statistically significantly by state population. Three state population groups were

created based on the 2010 US Census: states with <3 million population (n=21), with 3-<6 million population (n=12) and with ≥6 million population (n=18).

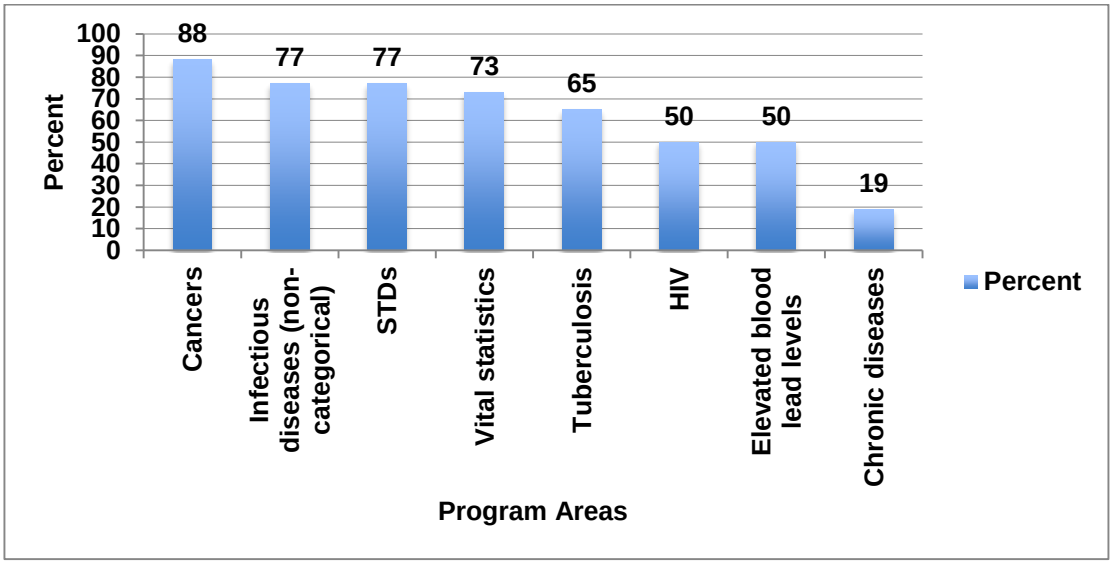
Descriptive statistics from the assessment were analyzed using Microsoft (MS) Excel 2011. All figures were created in MS Excel and tables were created in MS Word 2011.

Results

Respondents for forty-five of fifty-one state health departments (including the District of Columbia) completed the assessment for a response rate of 88%. Twenty-six (58%) of respondents were State Epidemiologists, 10 (22%) indicated they were staff epidemiologists and the remaining nine (20%) respondents were health data analysts or GIS coordinators. There were no significant ($p<0.05$) differences in response rate by state population size. None of the other results significantly differed by state size. Thus all results are presented without stratification by state size.

Twenty-six of forty-four respondents (59%) indicated a plan to geocode state reportable and nationally notifiable conditions within their health department. Two other states indicated they were conducting some geocoding, but lacked an overall plan. Of the 26 states with a plan for routine geocoding, varying numbers indicated implementing routine geocoding for the following program areas: 23 (88%) indicated routinely geocoding cancers, 20 (77%) non-categorical infectious diseases, 20 (77%) sexually transmitted diseases (STDs), 19 (73%) vital statistics data, 17 (65%) tuberculosis, 13 (50%) elevated blood lead levels and HIV data, and 5 (19%) chronic diseases (Figure 1).

Figure 1. Percentage of 26 responding states conducting routine geocoding for individuals by program area, CSTE Health Disparities Assessment, 2015.



Barriers

Respondents were asked about barriers to regularly geocoding addresses for the condition groups listed in Table 1. Only those reporting at least some routine geocoding for some conditions responded (one state skipped this question). For most program areas, the majority reported no known barriers. The exceptions were HIV (35%), elevated blood lead levels (38%) and chronic disease (27%) (Table 1). The two most commonly cited barriers for not regularly geocoding addresses were “lack of funding” and “not a high priority for the program.” These two barriers were most commonly cited for Infectious diseases, HIV, tuberculosis, STDs, elevated blood level, and chronic diseases. The primary barrier to regularly geocoding for cancer was reported as limitations on sharing geocoding resources.

Table 1. Barriers to regularly geocoding addresses as reported by the 26 respondents indicating a plan for routine geocoding. CSTE Health Disparities Assessment, 2015.

	Barriers to Regularly Geocoding Addresses					
Program Areas	**No known barriers (%)**	**Limitations on sharing geocoding resources across programs (%)**	**Lack of funding (%)**	**Lack of expertise/don't know how to geocode**	**Not a high priority for the program**	**No software**
Infectious Diseases	15 (58)	1 (4)	6 (23)	2 (8)	4 (15)	2 (8)
HIV	9 (35)	4 (15)	8 (31)	7 (27)	7 (27)	2 (8)
Tuberculosis	13 (50)	3 (12)	6 (23)	5 (19)	7 (27)	3 (12)
STDs	15 (58)	1 (4)	4 (15)	3 (12)	6 (23)	2 (8)
Elevated blood lead level	10 (38)	4 (15)	8 (31)	5 (19)	5 (19)	2 (8)
Cancer	17 (65)	4 (15)	1 (4)	0	0	0
Chronic Diseases	7 (27)	3 (12)	6 (23)	1 (4)	4 (15)	0
Vital statistics	16 (62)	4 (15)	2 (8)	1 (4)	3 (12)	0

Of the 26 states with a plan to geocode, relatively few reported no known barriers to collecting individual SES, indicating that most have barriers (Table 2). Only one state reported no known barriers across all program areas, whereas all others cited at least three barriers in at least one other program area. Only for Vital Statistics (23%) did more than 20% of states report no known barriers. Most states indicated numerous barriers for numerous program areas. The most commonly cited barriers to collecting individual SES data were limitations on time, lack of funding and not a high priority for the program across all condition groups. Not interviewing cases was a commonly cited barrier for STDs and cancer, whereas it was less commonly cited in the other program areas.

Table 2. Barriers to collecting individual socioeconomic status (SES) as reported by 26 respondents with a plan for routine geocoding. CSTE Health Disparities Assessment, 2015.

	Barriers to Collecting Individual SES					
Program Areas	**No known barriers**	**Limitations on time**	**Lack of funding**	**Lack of expertise**	**Not a high priority for the program**	**Don't interview cases**
Infectious Diseases	1	15	11	3	13	5
HIV	2	13	11	5	12	3
Tuberculosis	3	10	8	5	12	2
STDs	3	13	11	3	10	10
Elevated blood lead level	3	9	7	1	6	6
Cancer	1	5	5	2	5	11
Chronic Diseases	5	5	5	2	4	6
Vital statistics	6	4	2	3	5	6

Of the 26 respondents who indicated a plan to routinely geocode state reportable or nationally notifiable conditions within the health department, 18 (69%) indicated they would be willing to include census-tract level SES data along with reporting data of nationally notifiable and state reportable conditions to the Centers of Disease Control and Prevention.

Malignancies

Forty-three (96%) responding states conduct cancer or tumor surveillance. All forty-three respondents addressed the questions related to data collection and geocoding activities, though not all respondents addressed every question.

The majority of the 43 respondents conducting tumor or cancer surveillance (32, 74%) were not able to collect individual SES for all of the malignancies within the category (Table 3).

Table 3. Ability to collect individual socioeconomic status (SES) such as individual or household income, education level, etc, for malignancies. CSTE Health Disparities Assessment, 2015.

	Yes and data are routinely collected No. (%)	Yes but data are not routinely collected No. (%)	Yes but I don't know how routinely collected No. (%)	No No. (%)	Don't know No. (%)
All malignancies listed below (n=43)	7 (16)	2 (5)	1 (2)	32 (74)	1 (2)
Cancer – breast	0	0	0	0	0
Cancer – colorectal	0	0	0	0	0
Cancer – melanoma	0	0	0	0	0
Cancer – oropharyngeal	0	0	0	0	0
Cancer – prostate	0	0	0	0	0
Cancer – uterine cervix	0	0	0	0	0

Thirty-nine of 43 (91%) respondents were able to routinely geocode the addresses for all listed malignancies, of whom 30 reported routinely geocoding malignancies (Table 4).

Table 4. Ability to geocode the addresses for malignancies among the 43 responding states that conduct surveillance for malignancies. CSTE Health Disparities Assessment, 2015.

	Yes, and data are routinely geocoded No. (%)	Yes, but data are not routinely geocoded No. (%)	Yes, but I don't know how routinely geocoded No. (%)	No No. (%)	Don't know No. (%)
All malignancies listed below (n=43)	30 (70)	8 (19)	1 (2)	4 (9)	0
Cancer – breast	0	0	0	0	0
Cancer – colorectal	0	0	0	0	0
Cancer – melanoma	0	0	0	0	0

Cancer – oropharyngeal	0	0	0	0	0
Cancer – prostate	0	0	0	0	0
Cancer – uterine/cervix	0	0	0	0	0

Twenty-three of the 30 (77%) respondents that routinely geocoded malignancy reported linking the geocoded data with either census tract or census block group or both, with most (22, 96%) linking to at least census tract (Table 5).

Table 5. Geocoded data linked to census tract or census block group data for malignancies among the 30 states that routinely geocoded malignancies. CSTE Health Disparities Assessment, 2015.

	Yes—Census tract No. (%)	**Yes—Census block group No. (%)**	**Yes—both No. (%)**	**Neither No. (%)**	**Don't know/No Response No. (%)**
All malignancies listed below (n=30)	9 (30)	1 (3)	13 (43)	5 (17)	2 (7)
Cancer – breast	0	0	0	0	0
Cancer – colorectal	0	0	0	0	0
Cancer – melanoma	0	0	0	0	0
Cancer – oropharyngeal	0	0	0	0	0
Cancer – prostate	0	0	0	0	0
Cancer – uterine/cervix	0	0	0	0	0

Relatively few (12 of 31, 39%) states that routinely conducted geocoding or routinely collected data on individual SES reported conducting analyses of malignancies using SES measures in the past five years (Table 6). Analyses using area-based SES measures were done by more states than analyses done using individual SES measures (nine vs one), with two states doing both.

Table 6. Analyzed malignancies using individual* or area-based** SES in the past five years among the 31 states that routinely conducted geocoding or routinely collected information on individual SES. CSTE Health Disparities Assessment, 2015.

	Yes—Individual SES No. (%)	**Yes—Area-based SES No. (%)**	**Yes—both No. (%)**	**No No. (%)**	**Don't know/No Response No. (%)**

All malignancies listed below (n=31)	1 (3)	9 (29)	2 (6)	14 (45)	5 (16)
Cancer – breast	0	0	0	0	0
Cancer – colorectal	0	1	0	0	0
Cancer – melanoma	0	0	0	3	0
Cancer – oropharyngeal	0	0	0	3	0
Cancer – prostate	0	0	0	1	0
Cancer – uterine/cervix	0	0	0	1	0

*Individual SES such as individual or household income and education level
**Area-based SES such as census-tract poverty, median household income, percentage less than high school education, ZIP code-level poverty, etc.

Among the 12 states that linked geocoded information to census area-based SES or collected individual SES data and then conducted data analyses, all reported the measures they used. Ten respondents (83%) used census tract poverty SES for all malignancies. Fewer (two, 17%) used census tract median income. None used ZIPcode poverty, individual income, or individual education (Table 7). Five additional states reported using “other measures,” which included census block (data available when requested), SES data only for underserved, uninsured, and underinsured women (as part of breast and cervical cancer screening program), and individual education data that can be collected but is not currently used by the state.

Table 7. Socioeconomic measure used for malignancies among the 12 states that either linked geocoded data to area-based SES measures or collected individual SES data and conducted analyses of this data. CSTE Health Disparities Assessment, 2015.

	Census tract median income No. (%)	**Census tract poverty No. (%)**	**ZIPcode poverty No. (%)**	**Individual income No. (%)**	**Individual education No. (%)**	**Other No. (%)**	**Don’t know No. (%)**
All malignancies listed below (n=12)	2 (17)	10 (83)	0	0	0	0	0
Cancer – breast	0	0	0	0	0	0	0
Cancer – colorectal	0	0	0	0	0	0	0
Cancer – melanoma	0	0	0	0	0	0	0

Cancer – oropharyngeal	0	0	0	0	0	0	0
Cancer – prostate	0	0	0	0	0	0	0
Cancer – uterine cervix	0	0	0	0	0	0	0

Eight (67%) of twelve respondents who analyzed individual-based and/or area-based measures in malignancies in the past five years also indicated data was published online for all malignancies (Table 8).

Table 8. Data for malignancies analyzed using either individual-based and/or area-based SES posted online or published in the past five years. CSTE Health Disparities Assessment, 2015.

	Yes No. (%)	**No No. (%)**	**Don't know No. (%)**
All malignancies (n=12)	8 (67)	3 (25)	1 (8)

Reportable Conditions Group 1

For the conditions within Reportable Conditions Group 1 (categorically funded infectious diseases and blood lead level), the majority of respondents indicated they were not able to collect individual SES measures (32, 73%). Ten respondents (23%) indicated some ability to collect individual SES data for all of the conditions with only one doing it routinely for all conditions. Tuberculosis was the condition with the highest number routinely collecting individual SES data (n=4) (Table 9).

Table 9. Ability to collect individual socioeconomic status (SES) such as individual or household income, education level, etc. for Reportable Conditions Group 1. CSTE Health Disparities Assessment, 2015.

	Yes and data are routinely collected No. (%)	Yes but data are not routinely collected No. (%)	Yes but I don't know how routinely collected No. (%)	No No. (%)	Don't know No. (%)
All Reportable Conditions Group 1 listed below (n=44)	1 (2)	8 (18)	1 (2)	32 (73)	2 (5)
Blood lead level in children	3	0	1	2	3
Chlamydia trachomatis infection	1	2	0	3	0
Gonorrhea	2	2	0	1	0
Haemophilus influenzae, invasive disease	0	0	0	0	1
Hepatitis B, acute	0	0	0	0	0
Hepatitis B, chronic	0	0	0	2	0
Hepatitis C, acute	1	0	0	0	1
Hepatitis C, past or present infection	1	1	0	0	0
HIV Infection	1	2	0	0	2
Measles	0	0	0	0	0
Mumps	0	0	0	0	0
Pertussis	0	0	0	0	0
Syphilis	3	2	0	1	0
Tuberculosis	4	1	0	3	1
Varicella	0	0	0	0	0

Thirty-eight (88%) of 43 respondents indicated the ability to geocode for addresses for all of the subconditions within Reportable Conditions Group 1. Of those that have the ability to geocode addresses, 19 (44%) geocode addresses routinely for all conditions and another 18 (42%) geocode some but not all conditions. Conditions with the most respondents conducting routine geocoding were chlamydia, gonorrhea and syphilis (22 each), followed by HIV and Hib (21 each) (Table 10).

Table 10. Ability to geocode addresses for Reportable Conditions Group 1. CSTE Health Disparities Assessment, 2015.

	Yes and data are routinely geocoded No. (%)	Yes but data are not routinely geocoded No. (%)	Yes but I don't know how routinely geocoded No. (%)	No No. (%)	Don't know No. (%)
All Reportable Conditions Group 1 listed below (n=43)	19 (44)	18 (42)	1 (2)	5 (12)	0
Blood lead level in children	0	2	0	3	3
Chlamydia trachomatis infection	3	1	0	3	0
Gonorrhea	3	1	0	3	0
Haemophilus influenzae, invasive disease	2	1	0	0	1
Hepatitis B, acute	1	0	0	0	1
Hepatitis B, chronic	1	0	0	2	0
Hepatitis C, acute	1	0	0	1	2
Hepatitis C, past or present infection	1	0	0	4	0
HIV Infection	2	5	1	3	0
Measles	0	0	0	0	0
Mumps	0	0	0	0	0
Pertussis	1	0	0	0	0
Syphilis	3	2	0	2	1
Tuberculosis	0	1	0	3	1
Varicella	1	0	0	1	0

Of the 19 states who indicated the ability to routinely geocode conditions within Reportable Conditions Group 1, eight (42%) indicated linking geocoded data to at least census tract, of whom three also linked to census block group. No respondents

indicated linking geocoded data to only census block group for Reportable Conditions Group 1 conditions.

Table 11. Geocoded data linked to census tract or census block group data for Reportable Conditions Group 1 for the 19 states that have the ability to geocode and routinely do so. CSTE Health Disparities Assessment, 2015.

	Yes—Census tract No. (%)	Yes—Census block group No. (%)	Yes—both No. (%)	Neither No. (%)	Don't know/No Response No. (%)
All Reportable Conditions Group 1 listed below (n=19)	5 (26)	0	3 (16)	10 (53)	1 (5)
Blood lead level in children	0	0	2	1	3
Chlamydia trachomatis infection	1	0	0	0	0
Gonorrhea	1	0	0	0	0
Haemophilus influenzae, invasive disease	0	0	1	0	1
Hepatitis B, acute	0	0	1	0	0
Hepatitis B, chronic	0	0	1	0	0
Hepatitis C, acute	0	0	1	0	0
Hepatitis C, past or present infection	0	0	1	0	0
HIV Infection	3	0	2	1	0
Measles	0	0	0	0	0
Mumps	0	0	0	1	0
Pertussis	0	0	1	0	0
Syphilis	0	0	1	0	0
Tuberculosis	0	0	1	1	1
Varicella	0	0	0	1	0

Of the 23 states conducting routine geocoding or routinely collecting individual-based SES measures, two (9%) states indicated analyzing their data using either individual or area-based SES measures in the past five years for all of the conditions within Reportable Conditions Group 1. Leading individual conditions for which SES analyses were conducted included blood lead level in children (four states), chlamydia (six states) and HIV infection (seven states) (Table 12).

Table 12. Analyzed Reportable Conditions Group 1 using individual* or area-based** SES in the past five years by the 23 states that routinely conducted geocoding or routinely collected individual SES measures. CSTE Health Disparities Assessment, 2015.

	Yes—Individual SES No. (%)	Yes—Area-based SES No. (%)	Yes—both No. (%)	No No. (%)	Don't Know No./No Response (%)
All Reportable Conditions Group 1 listed below (n=23)	0	2 (9)	0	16 (70)	5 (22)
Blood lead level in children	1	1	0	2	5
Chlamydia trachomatis infection	2	2	0	0	0
Gonorrhea	2	1	0	0	0
Haemophilus influenzae, invasive disease	1	0	0	1	1
Hepatitis B, acute	1	0	0	0	0
Hepatitis B, chronic	1	0	0	0	0
Hepatitis C, acute	0	1	0	0	0
Hepatitis C, past or present infection	0	1	0	0	0
HIV Infection	1	4	0	0	1
Measles	0	0	0	0	0
Mumps	0	0	0	0	0
Pertussis	0	1	0	0	0
Syphilis	1	2	0	0	1
Tuberculosis	0	0	1	1	0
Varicella	0	0	0	0	0

*Individual SES such as individual or household income and education level
**Area-based SES such as census-tract poverty, median household income, percentage less than high school education, ZIP code-level poverty, etc.

Of the 11 states that conducted at least one analysis using individual or area-based SES, 10 reported the SES measure they used for conditions in the Reportable Conditions Group 1. Three states reported using area-based SES for all conditions within this group. Census tract poverty was used most often: three states used it for gonorrhea, four for HIV infection, one for pertussis, and four for syphilis. One state used census tract median income for blood lead level in children. Three states used ZIP code poverty for blood lead level in children, and no states used individual income or individual education. One state reported using "other measures" for specific conditions, which included using WIC and Medicaid qualifications as an SES proxy, individual income plus assets to estimate individual level SES, and income and family size for persons receiving HIV-related medications.

Of the 11 states that analyzed either individual or area-based SES measures, four indicated that there was information posted on the web or published for the conditions with Reportable Conditions Group 1. Conditions for which data was available included blood lead level in children (two states), chlamydia (one state), gonorrhea (one state), and HIV infection (three states).

Reportable Conditions Group 2

Forty-three respondents addressed the questions related to data collection and geocoding for Reportable Conditions Group 2 (non-categorically funded infectious diseases), though the actual response rate varied by question. Nine (21%) respondents have the ability to collect individual SES data on all conditions but do not do so; no states routinely collect individual SES on all listed conditions, though several do on selected individual conditions. Seventy-four percent (32) do not have the ability to collect individual SES for the conditions within Reportable Conditions Group 2 (Table 13).

Table 13. Ability to collect individual socioeconomic status such as individual or household income, education level, etc. for Reportable Conditions Group 2. CSTE Health Disparities Assessment, 2015.

	Yes and data are routinely collected No. (%)	Yes but data are not routinely collected No. (%)	Yes but I don't know how routinely collected No. (%)	No No. (%)	Don't know No. (%)
All Reportable Conditions Group 2 listed below (n=43)	0	9 (21)	0	32 (74)	2 (5)
Campylobacteriosis	0	0	0	2	1
Cryptosporidiosis	0	0	0	0	0
Cyclosporiasis	0	0	0	0	0
Giardiasis	0	0	0	0	0
Hemolytic uremic syndrome, post-diarrheal	0	0	0	0	0
Hepatitis A, acute	0	0	0	1	0
Invasive pneumococcal disease	2	0	0	0	0
Legionellosis	0	0	0	0	0
Listeriosis	0	0	0	0	0
Lyme disease	0	0	0	0	1
Malaria	1	0	0	0	1
Meningococcal disease	1	0	0	0	0
Salmonellosis	1	0	0	0	0

Shiga toxin-producing Escherichia coli	1	0	0	0	0
Shigellosis	1	0	0	0	0
Vibriosis	1	0	0	0	0
West Nile Virus	0	0	0	0	0

Forty-two states responded to a question about their ability to geocode addresses for the Reportable Conditions Group 2. The majority (38, 90%) of respondents indicated the ability to geocode addresses with varying frequency and only four states (10%) indicated an inability to geocode addresses (Table 14). Among those with an ability, 20 do it routinely for all conditions and two more do it for selected conditions.

Table 14. Ability to geocode the addresses for Reportable Conditions Group 2. CSTE Health Disparities Assessment, 2015.

	Yes and data are routinely geocoded No. (%)	**Yes but data are not routinely geocoded No. (%)**	**Yes but I don't know how routinely geocoded No. (%)**	**No No. (%)**	**Don't know No. (%)**
All Reportable Conditions Group 2 listed below (n=42)	20 (48)	15 (36)	3 (7)	4 (10)	0
Campylobacteriosis	0	0	0	0	1
Cryptosporidiosis	0	0	0	0	0
Cyclosporiasis	0	0	0	0	0
Giardiasis	0	0	0	0	0
Hemolytic uremic syndrome, post-diarrheal	0	0	0	0	0
Hepatitis A, acute	0	0	0	1	0
Invasive pneumococcal disease	2	0	0	0	0
Legionellosis	0	0	0	0	0
Listeriosis	0	0	0	0	0
Lyme disease	0	0	0	0	1
Malaria	1	0	0	0	1
Meningococcal disease	1	0	0	0	0
Salmonellosis	1	0	0	0	0

Shiga toxin-producing Escherichia coli	1	0	0	0	0
Shigellosis	1	0	0	0	0
Vibriosis	1	0	0	0	0
West Nile Virus	0	0	0	0	0

Of the 22 respondents who routinely perform geocoding for some or all conditions, 11 linked their data to census tract or block group at least some of the time, with most (nine states) doing it for all conditions (Table 15). Linkage to census tract (10) was more common than linkage to block group (three states).

Table 15. Geocoded data linked to census tract or census block group for Reportable Conditions Group 2 of the 22 states who routinely perform some geocoding. CSTE Health Disparities Assessment, 2015.

	Yes—Census tract No. (%)	**Yes—Census block group No. (%)**	**Yes—both No. (%)**	**Neither No. (%)**	**Don't know/No Response No. (%)**
All Reportable Conditions Group 2 listed below (n=22)	6 (27)	1 (5)	2 (9)	12 (55)	1 (5)
Campylobacteriosis	0	0	0	0	1
Cryptosporidiosis	1	0	0	0	0
Cyclosporiasis	0	0	0	0	0
Giardiasis	0	0	0	0	0
Hemolytic uremic syndrome, post-diarrheal	0	0	0	0	0
Hepatitis A, acute	0	0	0	0	0
Invasive pneumococcal disease	1	0	0	0	0
Legionellosis	0	0	0	0	0
Listeriosis	0	0	0	0	0
Lyme disease	0	0	0	0	0
Malaria	0	0	0	0	0
Meningococcal disease	1	0	0	0	0
Salmonellosis	1	0	0	0	0
Shiga toxin-producing Escherichia coli	1	0	0	0	0
Shigellosis	1	0	0	0	0
Vibriosis	1	0	0	0	0
West Nile Virus	0	0	0	0	0

For the 11 states linking geocoded data to census tract or block group or collecting individual SES, five (45%) reported analyzing their data using area-based SES measures in the past five years, and one state reported using both individual and area-based SES measures. Among those doing area-based analyses, three used median household income, and two used ZIP code poverty. None of the states reported having published or posted their analyses online.

Births and Deaths

Forty-three respondents provided data for data collection and geocoding activity for conditions related to births and deaths. Twenty-three (53%) respondents were able to collect individual SES measures for all conditions within Births and Deaths (Table 16).

Table 16. Ability to collect individual socioeconomic status such as individual or household income, education level, etc. for birth and death conditions. CSTE Health Disparities Assessment, 2015.

	Yes and data are routinely collected No. (%)	Yes but data are not routinely collected No. (%)	Yes but I don't know how routinely collected No. (%)	No No. (%)	Don't know/No Response No. (%)
All Birth and Death Conditions listed below (n=43)	18 (42)	3 (7)	2 (5)	16 (37)	4 (9)
Birth data	2	0	1	0	0
Mortality (all deaths)	0	0	0	1	0
Influenza-associated pediatric mortality	0	0	0	12	1

Thirty-five (81%) respondents indicated the ability to geocode all birth and death data; 26 (60%) did so routinely for all conditions and another two for some conditions (Table 17).

Table 17. Ability to geocode the addresses for Birth and Death conditions. CSTE Health Disparities Assessment, 2015.

	Yes and data are routinely geocoded No. (%)	Yes but data are not routinely geocoded No. (%)	Yes but I don't know how routinely geocoded No. (%)	No No. (%)	Don't know/No response No. (%)
All Birth and Death Conditions listed below (n=43)	26 (60)	8 (19)	1 (2)	5 (12)	3 (7)
Birth data	0	0	0	0	0
Mortality (all deaths)	0	0	0	1	0
Influenza-associated pediatric mortality	2	3	0	3	1

Of the 28 states conducting some routine geocoding, 14 (50%) reported linking to at least census tract and/or block group (Table 18). Linkage to census tract (14) was more common than block group (8).

Table 18. Geocoded data linked to census tract or census block group data for Birth and Death conditions for 28 states conducting some routine geocoding. CSTE Health Disparities Assessment, 2015.

	Yes—Census tract No. (%)	Yes—Census block group No. (%)	Yes—both No. (%)	Neither No. (%)	Don't know/No response No. (%)
All Birth and Death Conditions listed below (n=28)	7 (25)	0	7 (25)	11 (39)	2 (7)
Birth data	1	0	2	1	0
Mortality (all deaths)	0	1	0	0	0
Influenza-associated pediatric mortality	0	0	0	3	3

Among the 26 states that linked geocoded data to census data or collected individual SES measures, 9 (41%) reported they had analyzed birth and death conditions using individual or area-based SES measures in the past five years (Table 19).

Table 19. Analyzed birth and death conditions using individual* or area-based** SES measures in the past five years among the 26 states that linked geocoded data to census data or collected individual-level SES data. CSTE Health Disparities Assessment, 2015.

	Yes—Individual SES No. (%)	Yes—Area-based SES No. (%)	Yes—both No. (%)	No No. (%)	Don't know/No response No. (%)
All Birth and Death Conditions listed below (n=26)	3 (12)	2 (8)	4 (15)	9 (35)	3 (12)
Birth data	1	1	0	0	0
Mortality (all deaths)	0	2	0	0	1
Influenza-associated pediatric mortality	1	0	0	8	0

*Individual SES such as individual or household income and education level

**Area-based SES such as census-tract poverty, median household income, percentage less than high school education, ZIPcode-level poverty, etc.

Of the nine states that analyzed geocoded data using area-based SES measures or individual SES measures, seven reported the SES measures used for all birth and death conditions. Three states reported using census tract poverty, two used individual education, and one used census tract median income. Influenza-associated pediatric mortality was analyzed by ZIPcode poverty by one state and individual education by another. The state that listed other did not make note of which measures they used (Table 20).

Table 20. Socioeconomic status measures used for Birth and Death conditions for the seven states that analyzed data using individual SES or area-based SES. CSTE Health Disparities Assessment, 2015.

	Census tract median income No. (%)	Census tract poverty No. (%)	ZIPCode poverty No. (%)	Individual income No. (%)	Individual education No. (%)	Other No. (%)	Don't know/No response No. (%)
All Birth and Death Conditions listed below (n=7)	1 (11)	3 (33)	0	0	2 (22)	0	1 (11)
Birth data	1	0	0	1	1	0	0
Mortality (all deaths)	0	0	0	0	0	1	0
Influenza-associated pediatric mortality	0	0	1	0	1	1	1

Of the nine states that analyzed SES measures, five (56%) have published data online.

Discussion

This assessment was conducted in the context of determining state readiness to contribute to the Healthy People 2020 public health infrastructure objective to increase the proportion of population-based HP 2020 objectives for which national data are available by socioeconomic status. It focused on the current status of HP 2020 disease-specific objectives for which state-level data are usually collected by disease surveillance.

The findings showed that a majority of reporting states has no ability to collect and use individual SES measures except for Vital Statistics data.

- Few states collect or are prepared to collect data on the SES status of individuals, with the one exception of Vital Statistics data, for which at least 18 (35% of all 50 states + D.C.) states routinely collect such data and 6 (12%) analyze it using individual SES measures.
- The majority of states reported barriers to collecting individual SES, the key ones being limitations of program staff time, lack of funding and not currently a high priority.

The findings for readiness to use area-based SES measures were much more encouraging.

- Overall depending on the disease area, 35–39 states have the ability to geocode their surveillance data and 26 have a discrete plan to routinely geocode all surveillance data that has the residential street address of each case.
- Already 30 (59%) states routinely geocode the six malignancies included in HP 2020 objectives, 19-20 (37-39%) routinely geocode infectious disease data (some variation by disease) and 26 (51%) routinely geocode birth and death data.
- Of the 26 states with a plan to routinely geocode, 18 (69%) would be willing to send census tract-level SES status of cases to CDC.
- However, many fewer (range, 45% for malignancies to 16-17% for infectious diseases) routinely link their geocoded data to census tract or block group information, and even fewer (range, 22% for malignancies to 4-6% for infectious diseases) analyze their data using area-based SES measures.
- On another positive note, the majority of the states with a plan to regularly geocode reported no barriers to do so. The most common barriers to geocoding reported among those reporting them were lack of funding, lack of expertise or not a high priority.

These findings suggest that, although we are far from being able to conduct national all-state surveillance by individual SES for most of the HP 2020 diseases, we are part way to reaching a goal of most states being able to analyze case-based surveillance data by area-based SES and set objectives to reduce any disparities and inequities found..

There is high current potential to obtain national estimates of disease incidence by SES status using census tract-based SES measures and a representative sampling of states with the capacity to geocode case data and link it to census tract of residence – i.e., a sentinel system. There are already several models for this. Beginning in 2010, as part of the National HIV/AIDS Strategy for which one of the 3 overarching goals is to "reduce HIV-related disparities and health inequities," the HIV Division at CDC has funded up to 29 state and local health departments to geocode HIV case data, link it to a number of census tract SES measures and send them to CDC. This has resulted in several reports that describe disparities by census tract-level SES measures collectively (national estimates) and by contributing site (6-8). In 2013, the 10 CDC-funded Emerging Infections Program sites, which are national sentinel systems for a number of acute bacterial, vaccine-preventable and foodborne diseases, established a Health Equity Workgroup which developed guidelines for geocoding all EIP-generated surveillance data (9). EIP sites are now geocoding all data and linking it with census tract, and have established the precedent outside of HIV of sending census tract identifier to CDC to match with census tract-level SES measures. One analysis of all site data has been completed (influenza hospitalizations), has been presented at several national meetings (10-11) and recently was submitted for publication.

It would not be difficult to expand these precedents to other HP 2020 conditions for which there are national reduction objectives and no individual SES data. It would require commitment, coordination and, possibly, some supportive funding for the work of geocoding and linking to census tract from the relevant CDC programs. In addition, use of census tract SES measures in lieu of individual ones for monitoring HP 2020 and HP 2030 objectives would need to be accepted by CDC and the National Center for Health Statistics (NCHS). In the current description of SES measures in HP 2020, only individual education level and family income are mentioned and accepted as SES measures by which to describe national objectives (12). We can plan for HP 2030 to include standards for geocoding and using area-based SES linked to public health surveillance data to describe and monitor national population health disparities.

Limitations

This assessment has some important limitations. First, the response rate was 88%, leaving the potential for results not to be fully representative of all states. Given this, we carefully defined denominators and, when using all 51 potential respondents for denominator in the Discussion, assumed the non-responders did not collect SES data or geocode. Second, the condition-specific tables that were designed to reduce burden of response by the end-user may have confused the respondents as the tables were populated with data in varying patterns. Due to this, applying the data cleaning rules as mentioned in the Methods section may have inadvertently resulted in misclassification of data regarding geocoding practices for certain conditions. Also, respondents were queried as to whether geocoded data was available online for certain conditions though respondents may have interpreted this question to apply to any data available online for those conditions. Further follow up to verify the data on any links provided by

respondents still needs to be conducted. This may have resulted in an over estimation of the amount of geocoded data that is available online for these selected conditions

Conclusions

Few states routinely collect information about individual SES except via birth certificates, and a majority of responding states reported no ability to collect individual SES data due to several barriers. However, the majority of states are either planning to or are capable of and already doing some geocoding of case address data and those doing geocoding are willing to send SES data linked to census tract of residence to CDC. Given this, the foundation exists for a nationally coordinated effort to establish a sentinel system in which geocoded address data is linked to census tract SES on HP 2020 conditions currently lacking individual SES or HP 2030 conditions that allow the use of census tract SES measures, and the resulting data are sent to CDC to generate national-level surveillance data by SES to more adequately describe and monitor health disparities in this country.

References

1. Carter-Pokras O, Baquet C. What is a “health disparity”? Public Health Rep 2002;117:426–34.
2. Healthy People 2020 [Internet]. Washington, DC: U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion [cited [16 September 2015]]. Available from: [http://www.healthypeople.gov/2020/about/foundation-health-measures/Disparities].
3. US Department of Health and Human Services. Healthy People 2020 topics and objectives: public health infrastructure [cited 2015 date]. http://www.healthypeople.gov/2020/topics-objectives/topic/public-health-infrastructure/objectives]
4. Truman, B et al. Rationale for regular reporting on health disparities and inequalities – United States. CDC MMWR Suppl Vol.60. Jan 2011; 3-10.
5. Krieger N, Chen JT, Waterman PD, Rehkopf DH, Subramanian SV. Painting a truer picture of US socioeconomic and racial/ethnic health inequalities: The Public Health Disparities Geocoding Project. Am J Public Health. 2005;95:312–23. DOI PubMed
6. Centers for Disease Control and Prevention. Social determinants of health among adults diagnosed with HIV infection in 18 areas, 2005-2009. *HIV Surveillance Supplemental Report* 2013;18 (no.4). http://www.cdc.gov/hiv/pdf/statistics_2005_2009_HIV_Surveillance_Report_vol_18_n4.pdf. Published April 2013. Accessed January 4, 2016.
7. Centers for Disease Control and Prevention. Social determinants of health among adults diagnosed with HIV infection in 20 states, the District of Columbia and Puerto Rico, 2010. *HIV Surveillance Supplemental Report* 2014;19 (no.2). Revised edition. http://www.cdc.gov/hiv/pdf/surveillance_Report_vol_19_no_2.pdf. Published July 2014. Accessed January 4, 2016.

8. Centers for Disease Control and Prevention. Social determinants of health among adults diagnosed with HIV infection in 11 states, the District of Columbia and Puerto Rico, 2013. *HIV Surveillance Supplemental Report* 2015;20(no.5). http://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillancereport-vol20-no5.pdf. Published November 2015. Accessed January 4, 2016.
9. Hadler JL, Vugia DJ, Bennett NM and Moore MR. Emerging Infections Program efforts to address health equity. *Emerg Infect Dis* 2015;21:1589-94.
10. Yousey-Hindes K, Hadler JL, Perez A, Chavez SS, FluSurv-NET Working Group. Abstract: Neighborhood poverty and influenza-related hospitalizations, Flusurv-NET, 2010-2012. Presented at 2015 CSTE Annual Conference, June 15, 2015, Boston, MA. https://cste.confex.com/cste/2015/webprogram/Paper5053.html. Accessed January 4, 2016.
11. Yousey-Hindes K, Hadler JL, Perez A, Anderson E, Bargsen M, Bohm S, Hill M, Hogan B, Laidler M, Lindegren ML, Lung KL, Mermel E, Miller L, Morin C, Parker E, Zansky SM and Chaves SS. Neighborhood poverty and influenza-related hospitalizations, FluSurv-NET 2010-2012. *International Conference on Emerging Infectious Diseases 2015*, Program and Abstracts Book, August 24-26 2015, Atlanta, pp172-3.
12. Healthy People 2020 Public Health Infrastructure PHI 7.3 Data Details. http://www.healthypeople.gov/node/5150/data_details. Accessed January 4, 2016.

Annex 1

Complete list of program areas and subconditions

Malignancies
Cancer – breast
Cancer – colorectal
Cancer – melanoma
Cancer – oropharyngeal
Cancer – prostate
Cancer – uterine/cervix

Reportable Conditions Group 1
Blood lead level in children
Chlamydia trachomatis infection
Gonorrhea
Haemophilus influenzae, invasive disease
Hepatitis B, acute
Hepatitis B, chronic
Hepatitis C, acute
Hepatitis C, past or present infection
HIV Infection
Measles
Mumps
Pertussis
Syphilis
Tuberculosis
Varicella

Reportable Conditions Group 2
Campylobacteriosis
Cryptosporidiosis
Cyclosporiasis
Giardiasis
Hemolytic uremic syndrome, post-diarrheal
Hepatitis A, acute
Invasive pneumococcal disease
Legionellosis
Listeriosis
Lyme disease
Malaria
Meningococcal disease
Salmonellosis
Shiga toxin-producing Escherichia coli
Shigellosis
Vibriosis
West Nile Virus

Births and Deaths
Birth data
Mortality (all deaths)
Influenza-associated pediatric mortality

Annex 2

CSTE Health Disparities Assessment Tool

Health Disparities Assessment

Background

The Council of State and Territorial Epidemiologists (CSTE) Health Disparities Subcommittee is conducting an assessment to determine the prevalence of states with population-based data on selected nationally reportable and/or Healthy People 2020 (HP2020) targeted conditions that are available by any non-race/ethnicity SES measure and location. This assessment addresses geocoding activities across the following program areas: infectious diseases, malignancies and vital statistics. Among the states reporting any of these conditions, the Subcommittee is interested in determining:

- **the prevalence of what SES measures are being used,**
- **the proportion of SES measures that are area-based,**
- **what area-based measures are being geocoded and**
- **whether any recent reports have been made for each condition using an SES measure.**

The assessment is estimated to take 30-40 minutes to complete but may require additional time to collect and coordinate all relevant information. We advise the respondent to print out this assessment for easy reference. We also recommend referencing the online version as the drop-down options for some of the questions are not viewable via the PDF version.

You are being asked to complete this assessment to help determine the potential for national data to be analyzed by socioeconomic measures. The data from this assessment will be analyzed by CSTE in 2015 and the final report will be made available online at www.cste.org. CSTE will not share any jurisdiction-specific information and the final report will only include de-identified, aggregate data.

Instructions

Please submit only one response per health department.This assessment addresses geocoding activities across multiple disease program areas and may require coordination within the health department. Respondents will need to know whom to contact to determine what resources and practices are in place for data gathering and geocoding in various programs within the health department.

If you have any questions on how to complete this assessment, please contact Jessica Wurster at jwurster@cste.org or call 770-458-3811.

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* 1. Respondent Information

Name	
Job role/Title	
City/Town	
State/Province	-- select state --
Country	
Email Address	
Phone Number	

2. Is there a plan to routinely geocode state reportable or nationally notifiable conditions within your health department?

- ○ Yes
- ○ No

Health Disparities Assessment

3. For data collected in **individuals** for any of the following conditions, has **routine** geocoding been implemented? (Check all that apply)

- [ ] Infectious diseases (non-categorical)
- [ ] HIV
- [ ] Tuberculosis
- [ ] STDs
- [ ] Elevated blood lead levels
- [ ] Cancers
- [ ] Chronic diseases
- [ ] Vital statistics

4. Are there any barriers to regularly geocoding addresses for the conditions listed above? Please check any barriers associated with the condition groups below: (Check all that apply)

	Limitations on sharing geocoding resources across programs	Lack of funding	Lack of expertise/don't know how to geocode	Not a high priority for the program	No software	No known barriers
Infectious diseases	☐	☐	☐	☐	☐	☐
HIV	☐	☐	☐	☐	☐	☐
Tuberculosis	☐	☐	☐	☐	☐	☐
STDs	☐	☐	☐	☐	☐	☐
Elevated blood lead level	☐	☐	☐	☐	☐	☐
Cancer	☐	☐	☐	☐	☐	☐
Chronic diseases	☐	☐	☐	☐	☐	☐
Vital statistics	☐	☐	☐	☐	☐	☐

Other (please specify)

5. As part of the demographic information sent to the CDC for reporting Nationally Notifiable Conditions and assuming you have such information available, would you be willing to include the census-tract level SES status (e.g., % below the federal poverty level in the census tract of residence) with the reporting?

- ○ Yes
- ○ No

Other (please specify)

6. Are there any barriers to collecting individual SES data for the condition groups provided below? (Check all that apply)

	Limitations on time	Lack of funding	Lack of expertise	Not a high priority for the program	Don't interview cases	No known barriers
Infectious diseases	☐	☐	☐	☐	☐	☐
HIV	☐	☐	☐	☐	☐	☐
Tuberculosis	☐	☐	☐	☐	☐	☐
STDs	☐	☐	☐	☐	☐	☐
Elevated blood lead level	☐	☐	☐	☐	☐	☐
Cancers	☐	☐	☐	☐	☐	☐
Chronic diseases	☐	☐	☐	☐	☐	☐
Vital statistics	☐	☐	☐	☐	☐	☐

Other (please specify)

Health Disparities Assessment

This next section addresses geocoding activities for various program areas within the health department: malignancies, reportable conditions and vital statistics.

You may need to scroll to the right to complete the table for each condition.

Health Disparities Assessment

7. Do you conduct cancer or tumor surveillance?

- ○ Yes
- ○ No

Health Disparities Assessment

8. **Malignancies:**

For each condition listed, please address each question within each column.

If the answers are the same for all conditions within this group, you only need to complete the first row, "All malignancies listed below," and answer the last three columns for each condition specifically; "Condition analyzed within the past 5 years" "What SES measure used?" and “Any posted on web or published?”

Note:
*Individual SES such as individual or household income, education level
**Area-based SES such as census tract-level poverty or median household income or % less than high-school education, ZIP code-level poverty, etc

	Able to collect individual* SES?	Able to geocode the addresses?	Has the geocoded data been linked to census track or census block group data?	FOR EACH CONDITION: Analyzed this condition using individual* or area-based** SES in past 5 years?	FOR EACH CONDITION: What SES measure used for this condition?	FOR EACH CONDITION: Any data posted on web or published for this condition?
All malignancies listed below						
Cancer - breast						
Cancer - colorectal						
Cancer - melanoma						
Cancer - oropharyngeal						
Cancer - prostate						
Cancer - uterine cervix						

Comments

9. If you indicated there were data posted on the web or published, please provide link(s), if available, to a select few publications that are most recent examples:

Health Disparities Assessment

10. **Reportable Conditions Group 1:**

For each condition listed, please address each question within each column.

If the answers are the same for all conditions within this group, you only need to complete the first row, "All Reportable Conditions Group 1 listed below," and answer the last three columns for each condition specifically; "Condition analyzed within the past 5 years," "What SES measure used?" and “Any posted on web or published?”

Note:
*Individual SES such as individual or household income, education level
**Area-based SES such as census tract-level poverty or median household income or % less than high-school education, ZIP code-level poverty, etc.

	Able to collect individual* SES?	Able to geocode the addresses?	Has the geocoded data been linked to census tract or census block group data?	FOR EACH CONDITION: Analyzed this condition using individual* or area-based** SES in past 5 years?	FOR EACH CONDITION: What SES measure used for this condition?	FOR EACH CONDITION: Any data poste on web or published for th condition?
All Reportable Conditions Group 1 listed below						
Blood lead level in children						
Chlamydia trachomatis infection						
Gonorrhea						
Haemophilus influenzae, invasive disease						
Hepatitis B, acute						
Hepatitis B, chronic						
Hepatitis C, acute						
Hepatitis C, past or present infection						

	Able to collect individual* SES?	Able to geocode the addresses?	Has the geocoded data been linked to census tract or census block group data?	FOR EACH CONDITION: Analyzed this condition using individual* or area-based** SES in past 5 years?	FOR EACH CONDITION: What SES measure used for this condition?	FOR EACH CONDITION: Any data poste on web or published for th condition?
HIV Infection (AIDS has been reclassified as HIV Stage III)						
Measles						
Mumps						
Pertussis						
Syphilis						
Tuberculosis						
Varicella						

Comments

11. If you indicated there were data posted on the web or published, please provide link(s), if available, to a select few publications that are most recent examples, if available:

12. **Reportable Conditions Group 2:**

For each condition listed, please address each question within each column.

If the answers are the same for all conditions within this group, you only need to complete the first row, "All Reportable Conditions Group 2 listed below," and answer the last three columns for each condition specifically; "Condition analyzed within the past 5 years" "What SES measure used?" and “Any posted on web or published?”

Note:
*Individual SES such as individual or household income, education level
**Area-based SES such as census tract-level poverty or median household income or % less than high-school education, ZIP code-level poverty, etc.

	Able to collect individual* SES?	Able to geocode the addresses?	Has the geocoded data been linked to census tract or census block group data?	FOR EACH CONDITION: Analyzed this condition using individual* or area-based** SES in past 5 years?	FOR EACH CONDITION: What SES measure used for this condition?	FOR EACH CONDITION: Any data posted on web or published for this condition?
All Reportable Conditions Group 2 listed below						
Campylobacteriosis						
Chlamydia trachomatis infection						
Cryptosporidiosis						
Cyclosporiasis						
Giardiasis						
Hemolytic uremic syndrome, post-diarrheal						
Hepatitis A, acute						
Invasive pneumococcal disease						
Legionellosis						
Listeriosis						
Lyme disease						
Malaria						
Meningococcal disease						

	Able to collect individual* SES?	Able to geocode the addresses?	Has the geocoded data been linked to census tract or census block group data?	FOR EACH CONDITION: Analyzed this condition using individual* or area-based** SES in past 5 years?	FOR EACH CONDITION: What SES measure used for this condition?	FOR EACH CONDITION: Any data posted on web or published for this condition?
Salmonellosis						
Shiga toxin-producing Escherichia coli						
Shigellosis						
Vibriosis						
West Nile Virus						

Comments

13. If you indicated there were data posted on the web or published, please provide link(s), if available, to a select few publications that are most recent examples, if available:

Health Disparities Assessment

14. Births and Deaths:

For each condition listed, please address each question within each column.

If the answers are the same for all conditions within this group, you only need to complete the first row, "All Birth and Death Conditions listed below," and answer the last three columns for each condition specifically; "Condition analyzed within the past 5 years" "What SES measure used?" and “Any posted on web or published?”

Note:
*Individual SES such as individual or household income, education level
**Area-based SES such as census tract-level poverty or median household income or % less than high-school education, ZIP code-level poverty, etc

	Able to collect individual* SES?	Able to geocode the addresses?	Has the geocoded data been linked to census tract or census block group data?	FOR EACH CONDITION: Analyzed this condition using individual* or area-based** SES in past 5 years?	FOR EACH CONDITION: What SES measure used for this condition?	FOR EACH CONDITION: Any data posted on web or published for this condition?
All Birth and Death Conditions listed below						
Birth data						
Mortality (all deaths)						
Influenza-associated pediatric mortality						

Comments

15. If you indicated there were data posted on the web or published, please provide link(s), if available, to a select few publications that are most recent examples:

16. If there is any additional information regarding the subject of this assessment that you think would be important for us to know, please provide the information in the space provided below:

Health Disparities Assessment

Thank you for completing the CSTE Health Disparities Assessment!

We expect to develop a final summary report of the assessment findings which will be shared and posted on the CSTE website in the following months. CSTE will not share any jurisdiction-specific information and the final report will only include de-identified, aggregate data.

CSTE appreciates your time spent on this assessment. If you have any questions, please contact Jessica Wurster at jwurster@cste.org or 770-458-3811.

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