Social Determinants of Health

This document was developed by the Data Standardization Work Group (DSWG) of the Council of State and Territorial Epidemiologists (CSTE) Surveillance Practice and Implementation Subcommittee (SPIS) as a part of a larger data harmonization effort. It will be published and maintained in a repository on the CSTE website.

More information about the DSWG and data harmonization can be found here: *[link to DSWG Core Surveillance Project Brief (pending)]*.

Background

In public health frameworks, a distinction has been made between social determinants of health (SDOH) at the community level and health-related social needs at an individual level. Acknowledging this distinction, the work of DSWG focuses on person-level data because case data are collected and sent to CDC at the individual level. While the naming convention for this data class is the colloquially well-recognized term "SDOH", the data elements defined in this document are related to individual health-related social needs. These are "social and economic needs that individuals experience that affect their ability to maintain their health and well-being".[1] These data points help public health identify which individuals may be at higher risk of adverse health outcomes due to their social conditions, but also highlight factors that may increase the risk of acquiring or spreading disease.

The Gravity Project is a "national public collaborative that develops consensus-based data standards to improve how we use and share information on SDOH". The group has created standard value sets that group codes for questions, answers, and diagnoses related to SDOH data elements such as homelessness, food insecurity, health insurance coverage, and others. Definitions created by the Gravity Project for data elements applicable to this DSWG effort are shown in Table 1. Work related to language barriers is currently in progress.

Table 1. A subset of Gravity Project data elements and associated definitions.

Data Element	Gravity Project Definition
Sheltered Homelessness	Currently living in a shelter, motel, temporary or transitional living situation, scattered-site housing, or not having a consistent place to sleep at night
Unsheltered Homelessness	Residing in a place not meant for human habitation, such as cars, parks, sidewalks, abandoned buildings, on the street.
Less than High School Education	Failing to meet academic criteria for high school diploma or equivalent.
Financial Insecurity	A state of being wherein a person has difficulty fully meeting current and/or ongoing financial obligations and/or does not feel secure in their financial future
Health Insurance Coverage Status	Documentation of presence and type of insurance

[1] Social Drivers of Health and Health-Related Social Needs | Centers for Medicare and Medicaid Services. (August 21, 2024). https://www.cms.gov/priorities/innovation/key-concepts/social-drivers-health-and-health-related-social-needs

Three topic areas were chosen to first focus standardization efforts on by the DSWG: residence type, primary/preferred language, education, income and insurance. These areas were chosen based on an initial poll of group members and prioritized to capture data elements that are not better transmitted within the Exposures or Risk Factors data classes *[link to ERU document in final version]*. The Exposures data class is meant to transmit information on potential exposures a person had during their exposure window, therefore the scope of SDOH data elements addressed by DSWG are not intended to capture the status of the person as it existed for the entire exposure window. The Risk Factors data class is meant to transmit information on factors that increase the likelihood of developing a disease or condition, such as information like "has the person ever been incarcerated?". The scope of SDOH information tackled by DSWG is to capture a snapshot of someone's status at a timeframe relevant to the condition being reported.

Residence Type

The Centers for Medicare & Medicaid Services (CMS) have implemented several key initiatives that address residence type as an important social determinant of health. The Accountable Health Communities Model is focused on identifying housing instability among Medicare and Medicaid beneficiaries. Through this model, CMS has established screening protocols to identify patients who are experiencing housing challenges, and the model facilitates connections to community-based housing resources. Through Medicaid Innovation Waivers, CMS encourages states to implement programs that directly address housing instability and homelessness. Additionally, CMS has integrated housing status as a metric in several of its Quality Programs. By tracking and reporting on housing-related data, these programs help healthcare providers focus on improving care for patients who face housing challenges. This includes efforts to reduce hospital readmissions among homeless populations and ensuring that housing needs are considered as part of the overall care plan.

CDC and Fulton County, Ga have worked together to develop and validate a question set for accurate capture of housing status (whether someone is housed, experiencing sheltered homelessness, or experiencing unsheltered homelessness) or living in a congregate setting *[cite tool once published]*. The person would be asked to provide information about where they are living in their own words, and the investigator would then select the appropriate options from an extensive list. Depending on those selections, additional follow-up questions may be required, such as "is the location made for a human to live in" or "paid for by charity". CDC is working with the Gravity Project to develop standards and value sets related to this question set.

Current CDC Message Mapping Guides (MMGs) for case notifications sent to the National Notifiable Diseases Surveillance System (NNDSS) contain various data elements related to residence and homelessness (Table 2). As stated previously, some of these data elements contain information on specific time periods as relevant to exposure (e.g. for 6 weeks to 6 months prior to onset of symptoms) and would better be captured in the Exposures data class, or ask about "ever" as the time period and would better be captured in the Risk Factors data class.

Table 2. Data elements related to residence and homelessness from CDC Message Mapping Guides (MMGs).

MMG	Data Element Name	Identifier	Data Element Description	Value Set Name
Foodborne and Diarrheal Disease	Homeless	32911000	No fixed residence for any given period of time	Yes No Unknown (YNU)
COVID-19	Residence	75617-1	Which would best describe where the patient was staying at the time of illness onset?	Residence Type (COVID-19)
Respiratory and Invasive Bacterial Disease (RIBD)	Residence	75617-1	Where was the patient a resident at time of initial culture?	Residence Location (RIBD)
Respiratory and Invasive Bacterial Disease (RIBD)	Homeless	32911000	Was the patient homeless at time of symptom onset?	Yes No Unknown (YNU)
Hepatitis	Type of Incarceration Facility	INV638	Type of facility where the patient was incarcerated for the longer than 24 hours before symptom onset?	Incarceration Type (Hepatitis)
Hepatitis	Incarcerated more than 24 hours	INV637	Prior to the onset of symptoms, was the patient incarcerated for longer than 24 hours? For Acute Hep B, the time period prior to onset of symptoms is 6 weeks - 6 months. For Acute Hep C, the time period prior to onset of symptoms is 2 weeks - 6 months.	Yes No Unknown (YNU)
Hepatitis	Incarcerated more than 6 months	INV639	Was the patient ever incarcerated for longer than six months during his or her lifetime?	Yes No Unknown (YNU)
Hepatitis	Ever Incarcerated	INV649	Was the patient ever incarcerated?	Yes No Unknown (YNU)
Hepatitis	Incarcerated more than 24 hours	INV637	Prior to the onset of symptoms, was the patient incarcerated for longer than 24 hours? For Acute Hep B, the time period prior to onset of symptoms is 6 weeks - 6 months. For Acute Hep C, the time period prior to onset of symptoms is 2 weeks - 6 months.	Yes No Unknown (YNU)
STD	Been incarcerated	STD118	Been incarcerated within the past 12 months	YNRD (CDC)

	within the past 12 months			
Tuberculosis and Latent TB	Type of Correctional Facility	INV1119	If patient was a Resident of Correctional Facility at Diagnostic Evaluation, indicate the type of correctional facility.	PHVS_CorrectionalFacilityType_NND

Primary/Preferred Language

Collection of data on language is important for public health response, communication, and health equity efforts. It allows for effective communication of health materials in a language that individuals can understand, identifies language barriers that might affect access to healthcare services, and allows public health to offer services or materials that are culturally or linguistically appropriate. The terms primary language and preferred language are regularly used interchangeably. The Joint Commission requires collection and documentation of the patient's preferred language (the language the patient would like to use when discussing health care) to enable access for Limited English Proficiency (LEP) patients. Similarly, CDC's National Healthcare Safety Network (NHSN) requires documentation of the "preferred language(s) spoken by patients" and the need for medical interpretation services. NHSN has asked all EHR vendors to use the standard accepted ISO 639 codes for living languages and, at minimum, provide the NHSN Abridged Primary Language List of over 500 languages that includes more common languages spoken in the U.S. Other languages can be added to this list based on local geographic language needs, using the ISO 639 master list.

Two MMGs currently capture a data element of Primary Language, Carbon Monoxide and COVID-19 (Table 3). For example, in the case of CO, non-English speakers may struggle to access or comprehend safety guidelines and warnings about CO risks. By gathering more information on primary language, we can better tailor safety instructions, educational materials, and emergency responses to ensure that all individuals, regardless of language proficiency, receive the necessary guidance to prevent CO poisoning.

Table 3. Data elements related to language from CDC Message Mapping Guides (MMGs).

MMG	Data Element Name	Identifier	Data Element Description	Value Set Name
Carbon Monoxide	Primary Language	DEM142	What is the patient's primary language?	Language
COVID-19	Primary Language	DEM142	What is the patient's primary language? Please indicate for both hospitalized and not hospitalized cases.	Language

Educational Attainment

Collecting data on education allows public health professionals to analyze patterns in health behavior, access to preventive care, and susceptibility to certain health conditions across educational levels. The U.S. Census Bureau conducts multiple surveys that collect data on educational attainment, including the American Community Survey (ACS), Current Population Survey (CPS), and CDC's National Health

Interview Survey (NHIS). All three surveys collect the highest degree or level of school that a person has completed, which is distinct from the level of schooling someone is currently attending. The ACS and CPS collect this information at the same level of granularity while the NHIS has a comparable but different value set (Table 4).

Table 4. Value sets for educational attainment used by the American Community Survey, Current Population Survey, and National Health Interview Survey.

ACS & CPS	NHIS
No schooling completed	Never attended/kindergarten only
Nursery school	
Grades 1 through 11	Grade 1-11
12th grade—no diploma	12th grade, no diploma
Regular high school diploma	High School Graduate
GED or alternative credential	GED or equivalent
Some college credit, but less than 1 year of college	Some college, no degree
1 or more years of college credit, no degree	
Associates degree (for example: AA, AS)	Associate degree: occupational, technical, or vocational program
	Associate degree: academic program
Bachelor's degree (for example: BA. BS)	Bachelor's degree (Example: BA, AB, BS, BBA)
Master's degree (for example: MA, MS, MEng, MEd, MSW, MBA)	Master's degree (Example: MA, MS, MEng, MEd, MBA)
Professional degree beyond bachelor's degree (for example: MD, DDS, DVM, LLB, JD)	Professional School degree (Example: MD, DDS, DVM, JD)
Doctorate degree (for example, PhD, EdD)	Doctoral degree (Example: PhD, EdD)
	Refused
	Don't Know

Two CDC MMGs currently collect data elements related to education (Table 5). The Carbon Monoxide MMG includes a data element called "Education" that indicates the highest degree or level of school completed at the time of the event. The RIBD MMG includes a set of data elements related to education; these include: Is the patient (15-24 years only) currently attending college, their grade in school, and the name of the college or university.

Table 5. Data elements related to education from CDC Message Mapping Guides (MMGs).

MMG	Data Element Name	Identifier	Data Element Description	Value Set Name
Carbon Monoxide	Education	80913-7	Indicate the highest degree or level of school completed at the time of the event.	Education (CO)
RIBD	Attending Higher Education College	224311000	Is patient (15-24 years only) currently attending college?	Yes No Unknown (YNU)
RIBD	Grade in School	64990-5	Year of college	School Year (RIBD)
RIBD	Name of College / University	INV1092	Name of College / University	N/A – Free Text

Insurance

Different types of health insurance (e.g. private insurance, Medicare, Medicaid, uninsured) are often linked to various socio-economic factors, making insurance coverage a useful proxy for social determinants of health. The U.S. Census Bureau broadly defines health insurance coverage to include both public and private payers that finance medical expenditures for a specific population across diverse settings. It serves as a means for covering an individual's healthcare expenses. The ACS, CPS, and NHIS all assess health insurance coverage, as well as the Survey of Income and Program Participation (SIPP) also conducted by the U.S. Census Bureau. An example of a question from the ACS is "Are you currently covered by any of the following types of health insurance or health coverage plans?" with the following list of responses:

- Insurance through a current or former employer or union (of yours or another family member)
- Insurance purchased directly from an insurance company (by you or another family member)
- Medicare, for people 65 and older, or people with certain disabilities
- Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability
- TRICARE or other military health care
- VA (enrolled for VA health care)
- Indian Health Service
- Any other type of health insurance or health coverage plan – Specify

The RIBD MMG is the only condition-specific MMG that includes an "Insurance" data element. This data element is a repeating element, meaning it takes a "select all that apply" approach. The value set contains the following values: Incarcerated, Indian Health Service, Managed Care (Private), Managed Care Unspecified, Medicaid, Medicare, Military/VA insurance, Other, Private Health Insurance, Uninsured, and Unknown.

Income

Health data collection tools often include questions about household or individual income to explore its impact on health outcomes. Income is defined by the U.S. Census Bureau as income received on a regular basis (exclusive of certain money receipts such as capital gains) before payments for personal

income taxes, social security, union dues, Medicare deductions, etc. Income can be classified into earned versus unearned income, net versus gross income, or disposable income. It can be measured at the individual or household level.

The Behavioral Risk Factor Surveillance System (BRFSS), conducted by the CDC, collects health-related data, but it also includes basic questions on income to study its relationship with health behaviors and conditions. An example of this question from BRFSS is "Is your annual household income from all sources…" with a list of valid responses ranging from <$10,000 to >$200,000. There are currently no CDC MMGs for case notifications that collect data on income.

Core Surveillance SDOH Data Elements for Routine Case Notifications

The following data elements were considered by the DSWG membership to be core surveillance data under the umbrella of the SDOH data class. Data elements marked with an asterisk (*) did not reach the 80% consensus mark within the group but were supported by more than half of the participants. These are included here as core data elements with weak support from the DSWG. For each of the SDOH-related data elements, there is no pre-defined default value for what should be transmitted when the data element has not been populated. Refer to Tables 6-10 below for definitions and additional information.

- Housing Status
- Living Situation
- Preferred Language
- Educational Attainment
- Insurance Coverage Type*

While one data element of "Residence Type" was initially discussed, the group consensus was that residence type is better transmitted as two distinct data elements- Housing Status, which captures if someone is homeless or unhoused, and then separately Living Situation, which is a description of where someone lives (e.g. private residence, correctional facility, or long term care facility). The Living Situation data element conveys if someone is living in various types of congregate settings, which is important for disease control. The value sets for these data elements are aligned with the work conducted by CDC and Fulton County, GA.

During compilation of background research CDC did not identify any NNDSS program areas that have a use case for collection of income. Therefore, income was not discussed as a potential core data element. Future work by DSWG may wish to discuss standardization of collection of income data for use by jurisdictions or in potential condition-specific application if needed.

Table 6. Core Surveillance Data Element for Routine CDC Case Notification – Housing Status

Housing Status	
Definition	Housing status of a person at the first epidemiologically relevant date associated with the case (i.e., CCCD*)
Standard Code for Transmission to CDC	LOINC: 71802-3 Housing status
Value set or coding system	32911000 | Homeless (finding) 414418009 | Housed (finding) 261665006 | Unknown (qualifier value)
Abstracted/ Derived/ Created	Abstracted
Recommendations for Input Data Source(s)	• Case investigation • eCR • ELR
Notes	This data element is a snapshot of housing status at the earliest epidemiologically relevant date associated with the case (i.e., CCCD) to assess it as a health-related social need consistently across conditions. This is not intended to capture if someone has ever experienced homelessness (which could be captured in the Risk Factors data class) or if someone experienced homelessness at any point during the incubation period for the condition (which could be captured in the Exposures data class).
Data Source Details **	
eCR CDA	HL7 CDA R2 Implementation Guide: Public Health Case Report, Release 2 STU Release 1.1 - US Realm • A standardized method of transmitting housing status is not outlined, but relevant information may be found as a Social History Observation within the Social History Section. • ClinicalDocument/component/Social History Section/Social History Observation/observation/value HL7 CDA R2 Implementation Guide: Public Health Case Report – eICR Release 2, STU Release 3.1 - US Realm • ClinicalDocument/component/Social History Section/Characteristics of Home Environment/observation/value • The implementation guide specifies that the value transmitted within Characteristics of Home Environment for someone who is homeless should be the SNOMED CT code "32911000 |Homeless (finding)".
eCR FHIR	Resource Profile: US Public Health Characteristics of Home Environment • Observation.value[x] = Unless not suitable, codes SHALL be taken from Residence and Accommodation Type • Value set Includes "32911000 |Homeless (finding)".
ELR	N/A
USCDI v5	No direct comparison to this data element exists, but relevant information may be found in the following:

	SDOH Assessment • Definition: Screening questionnaire-based, structured evaluation for a Social Determinants of Health-related risk. Examples include but are not limited to food, housing, and transportation security. • Applicable vocabulary: LOINC, SNOMED CT • Part of Health Status Assessments data class SDOH Problems/Health Concerns • Social Determinants of Health-related concerns, conditions, or diagnoses. Examples include but are not limited to homelessness and food insecurity. • Applicable vocabulary: SNOMED CT, ICD-10-CM • Part of the Problems data class
USCDI+ Public Health: Case Reporting Use Case	N/A

* The Calculated Case Counting Date (CCCD) is the earliest date available of six component dates and is referenced as the earliest epidemiologically relevant date associated with the case. Data Standardization: Workgroup Proposal for Standardized Case Counting Date

** Additional information on input data sources can be found in Appendix A.

Table 7. Core Surveillance Data Element for Routine CDC Case Notification – Living Situation

Living Situation	
Definition	Living situation of a person at the first epidemiologically relevant date associated with the case (i.e., CCCD)
Standard Code for Transmission to CDC	LOINC: TBD
Value set or coding system	• Private residence in a long-term arrangement • Hotel/motel or vacation rental in a long-term arrangement • Private residence in a short-term arrangement of 14 days or less • Hotel/motel or vacation rental, short-term arrangement 14 days or less • Shelter or safe haven (incl. hotel/motel paid by charity or gov't prog) • Structure not meant for human habitation • Vehicle not meant for human habitation • Open air, part of an established encampment • Open air, not part of an established encampment • Migrant worker housing • Military barracks • School/University dormitory • Other congregate housing for workers/students • Federal correctional facility • State correctional facility • Juvenile detention facility • Jail/Local correctional facility • Other correctional/detention facility (e.g., Border detention facility) • Inpatient hospital/Acute care facility • Mental/Behavioral/Substance use treatment facility • Long term care facility • Medical respite/Recuperative care facility • Group home or residential facility not provided by employer or school • Unknown • Other
Abstracted/ Derived/ Created	Abstracted
Recommendations for Input Data Source(s)	• Case investigation • eCR • ELR
Notes	This data element is a snapshot of living situation at the earliest epidemiologically relevant date associated with the case (i.e., CCCD) to capture this health-related social need consistently across conditions. This is not intended to capture if someone has ever lived in a certain situation (which could be captured in the Risk Factors data class) or all living situations at any point during the incubation period for the condition (which could be captured in the Exposures data class).

	Further implementation discussions should focus on when it is appropriate to select a value as someone's living situation versus where a person happens to physically be at the CCCD. For example, a person's "living situation" may not be considered jail if being held temporarily at the CCCD, whereas it may be considered the living situation of a person being held in jail on a longer arrangement.
Data Source Details	
eCR CDA	HL7 CDA R2 Implementation Guide: Public Health Case Report, Release 2 STU Release 1.1 - US Realm • A standardized method of transmitting living situation is not outlined, but relevant information may be found as a Social History Observation within the Social History Section. • ClinicalDocument/component/Social History Section/Social History Observation/observation/value HL7 CDA R2 Implementation Guide: Public Health Case Report – eICR Release 2, STU Release 3.1 - US Realm • The value set Residence and Accommodation Type (contains 282 values) referenced by the template Characteristics of Home Environment within the Social History Section may contain relevant information to ascertain living situation. • ClinicalDocument/component/Social History Section/Characteristics of Home Environment/observation/value
eCR FHIR	Resource Profile: US Public Health Characteristics of Home Environment • Observation.value[x] = Unless not suitable, codes SHALL be taken from Residence and Accommodation Type • This value set may contain relevant information to ascertain living situation.
ELR	N/A
USCDI v5	No direct comparison to this data element exists, but relevant information may be found in the following: SDOH Assessment • Definition: Screening questionnaire-based, structured evaluation for a Social Determinants of Health-related risk. Examples include but are not limited to food, housing, and transportation security. • Applicable vocabulary: LOINC, SNOMED CT • Part of Health Status Assessments data class SDOH Problems/Health Concerns • Social Determinants of Health-related concerns, conditions, or diagnoses. Examples include but are not limited to homelessness and food insecurity. • Applicable vocabulary: SNOMED CT, ICD-10-CM • Part of the Problems data class

USCDI+ Public Health: Case Reporting Use Case	No direct comparison to this data element exists, but "Congregate Living" is a data element within USCDI+. This concept is captured in some of the values within the Living Situation value set. Congregate Living • Definition: Shared housing includes a broad range of settings, such as apartments, condominiums, student or faculty housing, national and state park staff housing, transitional housing, and domestic violence and abuse shelters. • Part of the Social Determinants of Health data class

* The Calculated Case Counting Date (CCCD) is the earliest date available of six component dates and is referenced as the earliest epidemiologically relevant date associated with the case. Data Standardization: Workgroup Proposal for Standardized Case Counting Date

**Additional information on input data sources can be found in Appendix A.

Table 8. Core Surveillance Data Element for Routine CDC Case Notification – Preferred Language

Preferred Language	
Definition	The language a person is most comfortable using for communication
Standard Code for Transmission to CDC	LOINC: 54899-0 Preferred language
Value set or coding system	Minimum Value Set: NHSN Abridged Primary Language List Additional codes from the ISO 639-3 code set can be utilized as needed.
Abstracted/ Derived/ Created	Abstracted
Recommendations for Input Data Source(s)	• Case investigation • eCR • ELR
Notes	USCDI/eCR define preferred language as the "language the patient would like to use when discussing healthcare". The information from this field in eCR may be utilized if available, however it has limitations as a patient may provide different answers depending on if they feel translation is available or perceived stigma.
Data Source Details	
eCR CDA	HL7 CDA R2 Implementation Guide: Public Health Case Report, Release 2 STU Release 1.1 - US Realm • US Realm Header (V3): Preferred Language recordTarget/patientRole/patient/languageCommunication/languageCode • ISO 639 language code set HL7 CDA R2 Implementation Guide: Public Health Case Report – eICR Release 2, STU Release 3.1 - US Realm • US Realm Header (V3): Preferred Language recordTarget/patientRole/patient/languageCommunication/languageCode • ISO 639 language code set
eCR FHIR	US Public Health Patient: Patient.communication.language • The language which can be used to communicate with the patient about his or her health.
ELR	• PID-15: Primary Language • Vocabulary Standard: ISO 639-2
USCDI v5	Preferred Language • Definition: Documented language that the patient would like to use when discussing health care • Applicable vocabulary: IETF (Internet Engineering Task Force) Request for Comment (RFC) 5646, "Tags for Identifying Languages", September 2009. Adopted at 45 CFR 170.207(g)(2) • Part of Patient Demographics/Information data class
USCDI+ Public Health: Case Reporting Use Case	Preferred Language • Definition: Documented language that the patient would like to use when discussing health care • Applicable vocabulary: IETF RFC 5646 Language Tags • Part of Patient Demographics/Information data class

Table 9. Core Surveillance Data Element for Routine CDC Case Notification – Educational Attainment

Educational Attainment	
Definition	Highest degree or level of school completed by the person at the first epidemiologically relevant date associated with the case (i.e., CCCD*)
Standard Code for Transmission to CDC	LOINC: 82589-3 Highest level of education
Value set or coding system	• Less than 9th grade *[PHC2171 | Eighth grade or less]* • 9th-12th grade, no diploma *[PHC1449 | 9th through 12th grade; no diploma]* • High school graduate (includes equivalency - i.e., GED) *[PHC1450 | High School Graduate or GED Completed]* • Some college/university, no degree *[SCOL | Some college education]* • Technical/Vocational certification • Associate's degree *[PHC1452| Associate Degree]* • Bachelor's degree *[PHC1453 | Bachelor's Degree]* • Graduate or professional degree • Unknown *[UNK | Unknown]*
Abstracted/ Derived/ Created	Abstracted
Recommendations for Input Data Source(s)	• Case investigation • eCR
Notes	The American Community Survey does not include technical or vocational certification within the data element for educational attainment. This difference in data collection should be considered during analysis.
Data Source Details*	
eCR CDA	HL7 CDA R2 Implementation Guide: Public Health Case Report, Release 2 STU Release 1.1 - US Realm • A standardized method of transmitting educational attainment is not outlined, but relevant information may be found as a Social History Observation within the Social History Section using Social History Type of 105421008 | Educational achievement (observable entity). • ClinicalDocument/component/Social History Section/Social History Observation/observation/value HL7 CDA R2 Implementation Guide: Public Health Case Report – eICR Release 2, STU Release 3.1 - US Realm • A standardized method of transmitting educational attainment is not outlined, but relevant information may be found as a Social History Observation within the Social History Section using Social History Type of 105421008 | Educational achievement (observable entity). • ClinicalDocument/component/Social History Section/Social History Observation/observation/value
eCR FHIR	N/A
ELR	N/A

USCDI v5	No direct comparison to this data element exists, but relevant information may be found in the following: SDOH Assessment • Definition: Screening questionnaire-based, structured evaluation for a Social Determinants of Health-related risk. Examples include but are not limited to food, housing, and transportation security. • Applicable vocabulary: LOINC, SNOMED CT • Part of Health Status Assessments data class
USCDI+ Public Health: Case Reporting Use Case	N/A

* The Calculated Case Counting Date (CCCD) is the earliest date available of six component dates and is referenced as the earliest epidemiologically relevant date associated with the case. Data Standardization: Workgroup Proposal for Standardized Case Counting Date

** Additional information on input data sources can be found in Appendix A.

Table 10. Core Surveillance Data Element for Routine CDC Case Notification – Insurance Coverage Type

Insurance Coverage Type *or Healthcare Coverage Type?*	
Definition	Person's type of health insurance coverage *or Person's type of healthcare coverage?*
Standard Code for Transmission to CDC	TBD
Value set or coding system	All options that apply may be selected from the following value set: Private insurance (e.g., from employer, from Marketplace) *[5 Private Health Insurance]* Medicare *[1 – Medicare]* Medicaid *[2 – Medicaid]* **Either "Military (e.g., Tricare, VA, on-base)" or three separate options for Tricare, VA, 'Other Military'?** **Indian Health Service *[33 | Indian Health Service or Tribe]?*** **Correctional Facility Healthcare Service *[4 | Departments of Corrections]?*** Other public insurance (e.g. CHIP, community health care plan sponsored by local government) *[38 | Other Government (Federal, State, Local not specified)]* Other *[OTH | Other] or [92 | Other (Non-government)]* Uninsured *[81 | Self pay]* Unknown *[UNK | Unknown]*
Abstracted/ Derived/ Created	Abstracted
Recommendations for Input Data Source(s)	• Case investigation • eCR
Notes	There was weak support for inclusion of this data element in the core data for routine case notification to CDC.
Data Source Details*	
eCR CDA	N/A
eCR FHIR	N/A
ELR	N/A
USCDI v5	Coverage Type • Definition: Category of healthcare payers, insurance products, or benefits. Examples include but are not limited to Medicaid, commercial, HMO, Medicare Part D, and dental. • Applicable vocabulary: N/A • Part of Health Insurance Information data class
USCDI+ Public Health: Case Reporting Use Case	N/A

*Additional information on input data sources can be found in Appendix A.

Appendix A. Input Data Sources for SDOH Data

See Tables 6-10 for a summary of where information related to the SDOH core data elements may be found within data transmitted to public health using existing standards (eCR, ELR) or how data may be captured within EHR systems for electronic data exchange (USCDI).

Using Patient Address to Map Residence Type

Both eCR and ELR contain fields to transmit a patient address. A patient address may contain information that is relevant to residence type. For instance, if the address listed for a patient is the address of a known correctional facility or skilled nursing facility, this conveys they may live in that kind of congregate living facility. In some cases the address field might include a term like 'homeless'. An address may also show as 'no fixed address' or a general delivery address at a post office, which are not necessarily indicators of homelessness but can be indicators that the individual does not have a permanent residence.

USCDI and USCDI+

The most recently finalized version of USCDI (version 5) includes two SDOH specific data elements, although the descriptions of these data elements are broad and therefore do not neatly align with the data elements within this document:

- SDOH Assessment, which is defined as "Screening questionnaire-based, structured evaluation for a Social Determinants of Health-related risk." This data element is currently included in the Health Status Assessments data class, which includes various health-related assessments such as functional status, disability status, and use of alcohol or other substances.
- SDOH Problems/Health Concerns, which is defined as "Social Determinants of Health-related concerns, conditions, or diagnoses." This data element is currently included in the Problems data class, which is described as "condition, diagnosis, or reason for seeking medical attention" and contains a separate "Problems" data element.

Preferred Language and Insurance Coverage Type have data elements present in USCDI v5 that support the data elements defined by DSWG (see Tables 8 & 10). Additional relevant data elements for Housing Status, Living Situation, and Educational Attainment are not yet within a published version of USCDI but exist at "Level 0", which means they are not represented by current terminology standards, only captured in limited settings or exchanged in limited environments, and the use cases apply to a limited number of care settings (see Table 11).

Table 11. Additional Relevant SDOH Data Elements in USCDI at Level 0.

Data Class	Data Element	Definition
Social Determinants of Health	Education Level	Highest level of education obtained.
Social Determinants of Health	Congregate Living	Shared housing includes a broad range of settings, such as apartments, condominiums, student or faculty housing, national and state park staff housing, transitional housing, and domestic violence and abuse shelters.
Social Determinants of Health	Housing Instability and Homelessness	Currently consistently housed, but experiencing any of the following circumstances in the past 12 months: being behind on rent or mortgage, multiple moves, homelessness; or currently living in a shelter, motel,

		temporary or transitional living situation, scattered site housing, or not having a consistent place to sleep at night; or lacking a fixed, regular, and adequate nighttime residence.
Social Determinants of Health	Incarceration History	In the past year, have you spent more than 2 nights in a row in a jail, prison, detention center, or juvenile correctional facility?

USCDI+ supports domain specific data element lists and includes a set of data classes for Public Health use, including data classes for a specific use case of Case Reporting. Relevant data elements within the Case Reporting use case are contained within Tables 6-10. While Educational Attainment and Insurance Coverage type do not have relevant data elements within the Case Reporting use case, other use cases within USCDI+ have relevant data elements (Table 12).

Table 11. Additional Relevant SDOH Data Elements in USCDI+ outside of the Case Reporting use case.

Domain - Use Case	Data Class	Data Element	Definition
Behavioral Health – Comprehensive Care	Health Insurance Information	Educational Attainment	May refer to current grade for children, or highest education level for adults (e.g. high school or general equivalency).
• Behavioral Health – Comprehensive Care • Quality – Quality Overarching & Quality Draft v1 • Maternal Health – Maternal Health Overarching	Health Insurance Information	Congregate Living	Category of health care payers, insurance products, or benefits. Examples include but are not limited to Medicaid, commercial, HMO, Medicare Part D, and dental.