Healthix

What social determinants of health do models currently use?

Healthix Analytics uses over 30 SDOH from census and CDC data to evaluate the place-based risk of the patient/member place of residence. These are classified as Community Based Social Determinants of Health in risk features.

In addition, factors influencing health (Z-codes) are used to identify additional risk at the person level. These codes are increasingly used in records to provide insight for occasions when circumstances other than a disease, injury or external cause classifiable to other codes influence the encounter. Risk models identify these diagnoses when present and express them in the feature category *Factors Influencing Health Status.*

Community social determinants of health

The community social determinants of health currently used by Spotlight models are:

Category	Name	Description
Demographics	Racial Demographics_white alone	The percentage of population who are white, black, American Indian or Asian in this geographic area.
Demographics	Racial Demographics_Black or African American alone	The percentage of population who are white, black, American Indian or Asian in this geographic area.
Demographics	Racial Demographics_Amrican Indian or Alaska Native alone	The percentage of population who are white, black, American Indian or Asian in this geographic area.
Demographics	Racial Demographics_Asian alone	The percentage of population who are white, black, American Indian or Asian in this geographic area.
Demographics	Urban ratio (or Rural ratio)	The percentage of population who live in urban area in this geographic area.
Physical Environment	Housing unit density	Housing units per square miles of land area
Physical Environment	Vehicle availability	Workers 16 years and over in households: no vehicle, 1, 2, or 3+
Physical Environment	Percent owner-occupied housing units	Percent owner-occupied housing units
Physical Environment	Percent renter-occupied housing units	Percent renter-occupied housing units
Social & Economical Environment	U.S. Citizenship	The percentage of population who are U.S. citizen in this geographic area.
Social & Economical Environment	Education level_Less than High school percentage	The percentage of population who are less than high school graduate in this geographic area.
Social & Economical Environment	Education level_High school percentage	The percentage of population who obtain High school in this geographic area.

Category	Name	Description
Social & Economical Environment	Education level_College, associate, bachelor percentage	The percentage of population who obtain bachelor degree or higher in this geographic area.
Social & Economical Environment	Education level_Graduate degree percentage	The percentage of population who obtain graduate or professional degree in this geographic area.
Social & Economical Environment	English proficiency	The percentage of population who speak English "very well" in this geographic area.
Social & Economical Environment	Median household income	The median household income among population who live in this geographic area.
Social & Economical Environment	Unemployment rate	The share of people (16 years and older) in this geographic area who are not currently employed, seeking work and able to take a job if offered one.
Social & Economical Environment	GINI index of income inequality	A measurement of the income distribution of residents in this ZIP codes, which helps define the gap between the rich and the poor, with 0 representing perfect equality and 1 representing perfect inequality.
Social & Economical Environment	Population density	Persons per square miles of land area
Social & Economical Environment	Percent of Disability	Disability status of the civilian noninstitutionalized population (percent of w/ any disability; percent of no disability).
Social & Economical Environment	Income Assistance	Living in household with Supplemental Security Income (SSI), cash public assistance income, or Food Stamps/SNAP in the past 12 months
Social & Economical Environment	Household with Food Stamp/ SNAP benefits in the past 12 months	Supplemental Nutrition Assistance Program (SNAP).
Social & Economical Environment	Percent below 100% of Federal Poverty	Proportion of residents in the census tract who were living below the US poverty level (i.e., below a specified threshold) within the last 12 months of the survey response
Clinical Care / Access to Care	Public health insurance_Medicare	The percentage of population who have public insurance (medicare) in this geographic area.
Clinical Care / Access to Care	Public health insurance_Medicaid	The percentage of population who have public insurance (medicaid) in this geographic area.
Clinical Care / Access to Care	Public health insurance_VA	The percentage of population who have public insurance (VA) in this geographic area.
Clinical Care / Access to Care	Private health insurance_Employ-based	The percentage of population who have private insurance (employer-based) in this geographic area.

Category	Name	Description
Clinical Care / Access to Care	Private health insurance_Direct-purchase	The percentage of population who have private insurance (Direct-purchase) in this geographic area.
Clinical Care / Access to Care	Private health insurance_Tricare/military-based	The percentage of population who have private insurance (Tricare/military-based) in this geographic area.
Clinical Care / Access to Care	Total Primary Care Providers (PCPs)	Total number of primary care providers
Clinical Care / Access to Care	Percent of PCSA in Rural Area	The percent of land area, in square miles, in the Primary Care Service Area (PCSA) which is designated as rural.
Clinical Care / Access to Care	Localization Index	The proportion of resident beneficiaries visiting primary care providers located within the Primary Care Service Area (PCSA).
Clinical Care / Access to Care	Number of Primary Care Physicians	The number of primary care physicians.
Clinical Care / Access to Care	Number of Primary Care Physician Assistants	The number of primary care physician assistants.
Clinical Care / Access to Care	Number of GP/IM/Pediatric Physician Assistants	The number of internal medicine, general practice, and pediatric physician assistants.
Clinical Care / Access to Care	Number of OB/GYN Physician Assistants	The number of obstetrics and gynecology physician assistants.
Clinical Care / Access to Care	Number of Physician Assistants with Specialty as Geriatrics or Unknown	The number of physician assistants with the specialty of geriatrics.

Personal social determinants of health

Factors influencing health status currently used by models are all those found in the ICD10 catalog[7] with Z prefix identified at the 3 digit level.

- Z00-Z13 Persons encountering health services for examinations
- Z14-Z15 Genetic carrier and genetic susceptibility to disease
- Z16-Z16 Resistance to antimicrobial drugs
- Z17-Z17 Estrogen receptor status
- Z18-Z18 Retained foreign body fragments
- Z19-Z19 Hormone sensitivity malignancy status
- Z20-Z29 Persons with potential health hazards related to communicable diseases
- Z30-Z39 Persons encountering health services in circumstances related to reproduction
- Z40-Z53 Encounters for other specific health care
- Z55-Z65 Persons with potential health hazards related to socioeconomic and psychosocial circumstances
- Z66-Z66 Do not resuscitate status
- Z67-Z67 Blood type
- Z68-Z68 Body mass index (BMI)
- Z69-Z76 Persons encountering health services in other circumstances
- Z77-Z99 Persons with potential health hazards related to family and personal history and certain conditions influencing health status

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[7] https://www.icd10data.com/ICD10CM/Codes/Z00-Z99