

# Inclusion of Social Determinants of Health in a De-identified Electronic Health Record Data Mart

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## Social Determinants of Health



**Social determinants of health (SDOH) are the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.**

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# Our Project

The purpose of this project is to make SDoH data available within the de-identified electronic health record data mart (CRANE).

Aim 1: Identify, develop terminology to support infrastructure and implement changes to the data mart (Patient level data).

Aim 2: Identify reliable and valid secondary source(s) of information about the communities where individual patients live (Community level data).



# Aim 1

- We have identified SDOH data elements in several locations within the medical record:
  - Billing (insurance coverage)
  - Nursing flowsheets (admission, discharge, etc)
  - Social history
- Clinical observations in CDM v.6

LOINC	Fully Specified Name	Scale
88123-5	Within the past 12 months, the food that you bought just didn't last and you didn't have money for more	Nominal



# Aim 2

- Working with 2 nationally known social scientists, we identified the American Community Survey
- Requires new data structure external to CDM because these are not patient-level data
- Indexes based on ACS data:
  - Bird Index (6 item calculation)
  - Neighborhood Index based on the Area Deprivation Index (HRSA)

<https://www.census.gov/programs-surveys/acs>. Accessed 10/19/2021.

Gardner, B. J., Pedersen, J. G., Campbell, M. E., & McClay, J. C. (2019). Incorporating a location-based socioeconomic index into a de-identified i2b2 clinical data warehouse. *Journal of the American Medical Informatics Association*, 26(4), 286-293.

<https://www.neighborhoodatlas.medicine.wisc.edu/>

# Aim 2 (cont)

- Identified, developed calculations and terminology for data elements within each category

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Fully-specified name	ACS Name	ACS calculation	Value Set	SNOMED CT/LOINC
Percent of census block households receiving public assistance income or food stamps/SNAP in the past 12 months	100*( PUBLIC ASSISTANCE INCOME OR FOOD STAMPS/SNAP IN THE PAST 12 MONTHS FOR HOUSEHOLDS%Households%Total%With cash public assistance or Food Stamps/SNAP / PUBLIC ASSISTANCE INCOME OR FOOD STAMPS/SNAP IN THE PAST 12 MONTHS FOR HOUSEHOLDS % Households %Total)	100 * (B19058_002 / B19058_001)	%	



# Next Steps

- Complete development of terminology
- Build additional patient table for community-level data
- Confirm quality and accuracy
- Test value within research study (in planning)