Social Determinants of Health and *All of Us*

Food Insecurity Trends in Clinical Reporting

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Faculty and Disclosures

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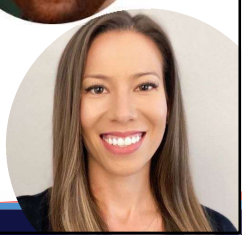

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The faculty have no relevant disclosures.

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Learning Objectives

- Evaluate the current utilization of z-codes for food insecurity and its implications for healthcare delivery.
- Explore the role of provider training and awareness in addressing social determinant of health (SDOH) complexities within healthcare systems using the *All of Us* data.
- Explore the implications of this misalignment on medical decision-making and value-based population health models.

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The SDOH Lexicon[1]

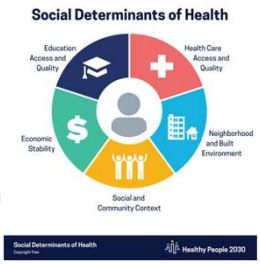
Health Equity: Health equity is the state in which everyone has a fair and just opportunity to attain their highest level of health

Social Determinants of Health (SDOH): "The conditions in which people are born, grow, live, work and age," which are "shaped by the distribution of money, power and resources

Negative Forces

Social Risks: Adverse social conditions associated with poor health.

Social Needs: Patient-prioritized social risks.



[1] Alderwick and Gottlieb (2019) Meanings and Misunderstandings: A Social Determinants of Health Lexicon for Health Care Systems Center for the Study of Social Policy (2018) About Strengthening Families and the Protective Factors Framework https://www.cdc.gov/nchhstp/healthequity/index.html

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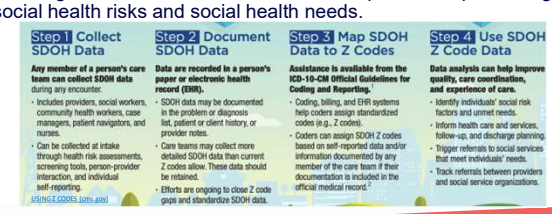
SDOH & Clinical Care Delivery

Data collecting standards exist to support the collection, use, and exchange of data to address the SDOH for patients experiencing social health risks and social health needs.



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Health Related Social Needs Screening & Assessment

SDOH Screening: The standardized questions and answers used as screening tools to identify patient social risks as part of population health and patient-centered approaches. [2]

SDOH Assessment/Diagnosis: The concepts that a licensed provider would use to assess (or in clinical speak, diagnose) social risks. [2]

For the full list of approved screening and assessments visit: Gravity-Accepted Social Risk Screening Assessment Instruments - Gravity Project - Confluence (hl7.org)

[2] Activity Types- Explanations 20210125.pdf

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Clinical Identification/Diagnosis:

SDOH-related Z codes range from ICD-10-CM categories Z55-Z65 and are used to document SDOH data [3]

- e.g., housing, food insecurity, lack of transportation

These codes can be assigned when the documentation specifies that the patient has an associated problem or risk factor that influences the patient's health [3]

For more resources about social risk codes visit: Resources for Social Risk Coding in Care Settings - Gravity Project - Confluence (hl7.org)

[3] IMPROVING THE COLLECTION OF Social Determinants of Health (SDOH) Data with ICD-10-CM Z Codes (cms.gov)
[4] 2024 April 1-ICD-10-CM Guidelines (cms.gov)

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SDOH Treatment/Intervention

The activities to address the assessed social risk and help the patient meet their identified goals including the direct provision of aid, counsel, education, referral to other providers and agencies, evaluation of eligibility for programs, and assistance with applications. [2]

[2] Activity Types- Explanations 20210125.pdf

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Studies to date confirm limited clinical use of SDOH data collecting standards

The World Health Organization (WHO) estimates that SDOH accounts for 30-55% of health outcomes [5].

SDOH Z codes were only documented for 1.23% of patients in a large statewide sample in South Carolina[6]

Research showed providers agreed that assessing and documenting patient SDOH were very important and beneficial for improved health outcomes and that they had limited clinical reporting due to [7]:

- Limited time with patient and no universal protocols for screening/assessment
- Little incentive to screen for SDOH or to use Z codes
- Inadequate accessible referral infrastructure for interventions

[5] Social determinants of health. World Health Organization. URL: https://www.who.int/health-topics/ social-determinants-of-health#tab=tab_1
[6] Yang X, Yelton B, Chen S, Zhang J, Olatosi BA, Qiao S, et al. Examining social determinants of health during a pandemic: clinical application of Z codes before and during COVID-19. Front Public Health 2022;10:888459 [FREE Full text] [doi: 10.3389/fpubh.2022.888459] [Medline: 35570965]
[7] Yelton B, Rumthao JR, Sakhuja M, Macaud a MM, Donelle L, Arent MA, Yang X, Li X, Noblet S, Friedman DB.Assessment and Documentation of Social Determinants of Health Among Health Care Providers: Qualitative Study JMIR Form Res 2023;7:e47461 URL: https://formative.jmir.org/2023/1/e47461 doi: 10.2196/47461

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SDOH Prevalence Of Food Insecurity

- Food Insecurity Domain Definition:
  - Uncertain, limited, or unstable access to food that is:
    - adequate in quantity and in nutritional quality;
    - culturally acceptable;
    - safe and acquired in socially acceptable ways
- In 2022, How Many People Lived in Food-insecure Households? [8]
  - 44.2 million people lived in food-insecure households.
  - 11.7 million adults lived in households with very low food security.
  - 7.3 million children lived in food-insecure households in which children, along with adults, were food insecure.
  - 783,000 children (1.1% of the Nation's children) lived in households in which one or more child experienced very low food security.

[8] USDA ERS - Frequency of Food Insecurity

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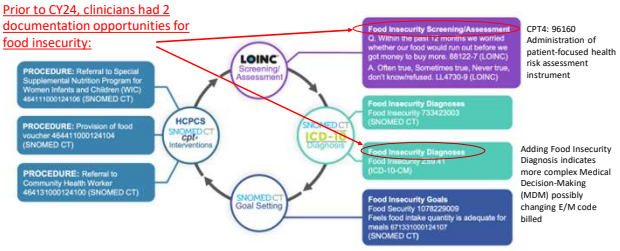
Clinical SDOH Reporting Of Food Insecurity

Prior to CY24, clinicians had 2 documentation opportunities for food insecurity:



CPT4: 96160 Administration of patient-focused health risk assessment instrument

Adding Food Insecurity Diagnosis indicates more complex Medical Decision-Making (MDM) possibly changing E/M code billed

For the full data element concept to date related to the food insecurity domain visit Food Insecurity - Gravity Project - Confluence (hl7.org)

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Problem: Reported food insecurity vs. limited clinical diagnosis utilization

Research Question: Using the *All of Us* dataset, can we illustrate a disconnect between self-assessed food insecurity (FI) and claims-based protocols designating FI within clinical data?

- *All of Us* uses the OMOP data model to harmonize EHR records from approximately 400,000 participants across the country.
- Participant EHR data can be linked to survey responses.
  - Intake and optional breakout surveys fielded by *All of Us*
  - We focused on "The Basics", "Healthcare Utilization", and "Social Determinants of Health".

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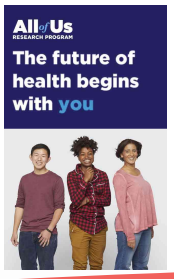
Methodology 1: *All of Us* Dataset

- *All of Us (AoU)*: Online data source comprised of diverse health information contributed by participants.
- 410,361 individuals within our initial assessment of the use of Z codes, nutrition-based observation codes, and procedure codes.
- Data collected between 2017 and 2023
- Approximately 117,000 of whom participated in the SDOH survey



We extend our sincere gratitude to the cohort of participants who generously contributed to the *All of Us* Research Program, without whose involvement this research endeavor would have been infeasible.

Additionally, we express our appreciation to the National Institutes of Health's *All of Us* Research Program for facilitating access to the participant data pivotal to the statistical tests we conducted.

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Methodology 2: Food Insecurity (FI) Codes

- SNOMED: 733423003 (Food Insecurity)
- ICD10CM:
  - Z59.4 (Lack of adequate food)
  - Z59.41(Food Insecurity)
  - Z59.48 (Other specified lack of adequate food)
- CPT4: 96160 (Administration of patient-focused health risk assessment instrument)
- ICD10/9/9CM: Condition codes for "Nutritional deficiency" other or unspecified

Measure		N	Percent (%)
Food Insecurity Observation	Not Present	409,861	99.9
	Present	500	0.1

Note: Present reflects the participants in the data who had SNOMED code "733423003" for "Food insecurity" within the AoU dataset (410,361).

Measure		N	Percent (%)
Food Insecurity Z Code	Not Present	409,863	99.9
	Present	498	0.1

Note: Present reflects the participants in the data who had ICD10CM codes "Z59.4, Z59.41, or Z59.48 within the AoU dataset (410,361).

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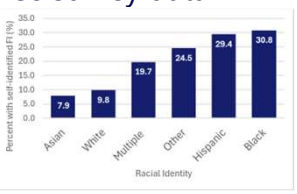
Methodology 3: *All of Us* survey data

Question ID "40192517" and "40192426" within the *AoU* SDOH survey module

- Responses of "sometimes true" or "often true" were coded as FI in the last 12 months.
- 28.5% response rate

Additional survey responses from "The Basics" and "Healthcare Utilization" survey were merged into SDOH by unique participant id to obtain demographic data.

- SDOH subsample: *N* = 117,023
- Chi Square tests were used on the subsample to examine the intersection of self/clinically reported FI.



Measure		N	Percent (%)
Food Insecurity (Self Report)	Present	15,566	13.3
	Not Present	101,366	86.6

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Findings: Part 1

The current organic use of z-codes to indicate food insecurity as a complexity related to medical decision making is markedly lower than self-reported FI .

Table 1: Self-Identified Food Insecurity by Presence of Food Insecurity Z Code

Variable	Food Insecurity Z Code	
	No	Yes
Food Insecurity (Survey)		
Missing	121	0
No	101,311	25
Yes	15,506	60
Chi-square statistic:	242.07	
P-value:	< 0.001	
df:	2	

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Findings: Part 2

None of the participants in the *AoU* dataset who had a procedure code for a health assessment screening (CPT 4: 96160) had any of the z-codes relating to FI (Z59.4, Z59.41, or Z59.48).

Table 2: Presence of Health Assessment Procedure by Presence of Food Insecurity Z Code

Variable	Food Insecurity Z Code	
	No	Yes
Health Assessment Procedure		
No	116,653	85
Yes	285	0
Chi-square statistic:	0	
P-value:	1	
df:	1	

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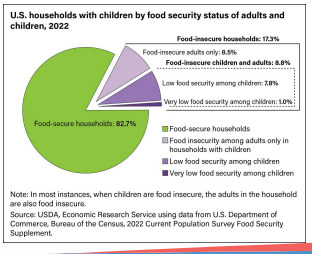
Conclusion:
Food insecurity is not being clinically reported adequately

Clinicians are not routinely screening or assessing patients for food insecurity and are missing assessing and identifying patients who are food insecure.

In patients who identify as food insecure, clinicians are not reporting food insecure as a social risk using existing SDOH data standards.



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Research in Action

Additional Research Goals:

- Evaluating and validating across larger datasets the frequency of food insecurity z-code utilization
- Segmenting and evaluating datasets for equitable distribution and impact
- Develop methodology and measure SDOH & health equity clinical training and education programs for competency, adoption, and impact
- Monitor for CY24 SDOH Health Equity Services code usage for assessment and interventions

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CY24: Incentives to collect SDOH data

CMS has issued new patient benefits for SDOH clinical care assessment, identification, and intervention.

- CY24 Social Needs HCPCS [9]
  - SDOH Risk Assessment
  - Community Health Integration (CHI)
  - Principal Illness Navigation (PIN)

SDOH Risk Assessment	G0136	Administration of a standardized, evidence-based SDOH assessment, 5-15 minutes, not more often than every 6 months
Community Health Integration (CHI)	G0019 (1st hour)	Community health integration services performed by certified or trained auxiliary personnel, including a community health worker, under the direction of a physician or other practitioner; 60 minutes per calendar month, in the following activities to address social determinants of health (SDOH) need(s) that significantly limit the ability to diagnose or treat problems) addressed in an initiating visit.
CHI	G0022 (add'l 30 minute	Same as above (Add'l 30 min same definition different time)
CHI/ Principal Illness Navigation (PIN)	G0511 (1hr FQHCs)	Same as above for FQHCs
PIN	G0013 (1st hour)	Principal Illness navigation services by certified or trained auxiliary personnel under the direction of a physician or other practitioner, including a patient navigator; 60 minutes per calendar month, in the following activities:...
PIN	G0024 (add'l 30 minutes	Same as above (Add'l 30 min same definition different time)

[9] MLN9201074 - Health Equity Services in the 2024 Physician Fee Schedule Final Rule (cms.gov)

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SDOH Terminology and Coding Set Expansion

The Gravity Project continues to expand Standardized Data Standards for ICD 10, SNOWMED, LOINC, and CPT codes to support clinical SDOH documentation and implementation [10]

- Instrument selection (eligible screenings & assessments)
- Social risk documentation with ICD-10-CM and SNOMED CT
- Community Health Integration (CHI) activity documentation with Gravity SNOMED CT terms

Gravity Project SDOH Value Code sets are incorporated into existing NCQA (HEDIS), CMS IQR, CMS MIPS social care quality measures and social care-related regulations [11]

The Food is Medicine HCPCS Codes will be next to be expanded in The Gravity Project timeline along with Justice Equity and Language Access

[10] General Resources Library for Implementation - Gravity Project - Confluence (hl7.org)
[11] Gottlieb, L; DeSilvey, S; Fichtenberg, C; Bernheim, S; Peltz, A, "Developing National Social Care Standards", Health Affairs Forefront, February 22, 2023. DOI: 10.1377/forefront.20230221.857308

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Questions for Clinician and Practices:

- Did you know about the existing SDOH data collecting standards?
- How do you feel about integrating more social care into your patient care?
- Would you be interested in more training on SDOH data collection and implementation of SDOH quality measures?

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Thank You! Looking to connect?

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For more information about The Gravity Project and SDOH data standards:
thegravityproject.net

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References

[1] Alderwick and Gottlieb (2019) Meanings and Misunderstandings: A Social Determinants of Health Lexicon for Health Care Systems Center for the Study of Social Policy (2018) About Strengthening Families and the Protective Factors Framework https://www.cdc.gov/nchhstp/healthequity/index.htm

[2] Activity Types- Explanations 20210125.pdf

[3] 2024 April 1-ICD-10-CM Guidelines (cms.gov)

[4] IMPROVING THE COLLECTION OF Social Determinants of Health (SDOH) Data with ICD-10-CM Z Codes (cms.gov

[5] Social determinants of health. World Health Organization. URL: https://www.who.int/health-topics/ social-determinants-of-health#tab=tab_1

[6] Yang X, Yelton B, Chen S, Zhang J, Olatosi BA, Qiao S, et al. Examining social determinants of health during a pandemic: clinical application of Z codes before and during COVID-19. Front Public Health 2022;10:888459 [doi:10.3389/fpubh.2022.888459] [Medline: 35570965]

[7] Yelton B, Rumthao JR, Sakhuja M, Macauda MM, Donelle L, Arent MA, Yang X, Li X, Noblet S, Friedman DB Assessment and Documentation of Social Determinants of Health Among Health Care Providers: Qualitative Study JMIR Form Res 2023;7:e47461 URL: https://formative.jmir.org/2023/1/e47461 doi: 10.2196/47461

[8] USDA ERS - Frequency of Food Insecurity

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Nonbillable ICD-10 Z codes (Z55-65) are used to report patient SDOH risks and needs [3]

Z55 – Problems related to education and literacy
- Z55.5 – Less than a high school diploma (Added, Oct. 1, 2021)
- NEW • Z55.6 – Problems related to health literacy

Z56 – Problems related to employment and unemployment

Z57 – Occupational exposure to risk factors

Z58 – Problems related to physical environment (Added, Oct. 1, 2021)
- Z58.6 – Inadequate drinking water supply (Added, Oct. 1, 2021)
- NEW • Z58.8 – Other problems related to physical environment
  - NEW • Z58.81 – Basic services unavailable in physical environment
  - NEW • Z58.89 – Other problems related to physical environment

Z59 – Problems related to housing and economic circumstances
- Z59.0 – Homelessness (Updated)
  - Z59.00 – Homelessness unspecified (Added, Oct. 1, 2021)
  - Z59.01 – Sheltered homelessness (Added, Oct. 1, 2021)
  - Z59.02 – Unsheltered homelessness (Added, Oct. 1, 2021)
- Z59.1 – Inadequate Housing (Updated)
  - NEW • Z59.10 – Inadequate housing, unspecified
  - NEW • Z59.11 – Inadequate housing environmental temperature
  - NEW • Z59.12 – Inadequate housing utilities
  - NEW • Z59.19 – Other inadequate housing
- Z59.4 – Lack of adequate food (Updated)
  - Z59.41 – Food insecurity (Added, Oct. 1, 2021)
  - Z59.48 – Other specified lack of adequate food (Added, Oct. 1, 2021)
- Z59.8 – Other problems related to housing and economic circumstances (Updated)
  - Z59.81 – Housing instability, housed, with risk of homelessness (Added, Oct. 1, 2021)
  - Z59.812 – Housing instability, housed, homelessness in past 12 months (Added, Oct. 1, 2021)
  - Z59.819 – Housing instability, housed unspecified (Added, Oct. 1, 2021)
- Z59.82 – Transportation insecurity (Added, Oct. 1, 2022)
- Z59.86 – Financial insecurity (Added, Oct. 1, 2022)
- Z59.87 – Material hardship due to limited financial resources, not elsewhere classified (Added, Oct. 1, 2022; Revised, April 1, 2023)
- Z59.89 – Other problems related to housing and economic circumstances (Added, Oct. 1, 2021)

Z60 – Problems related to social environment

Z62 – Problems related to upbringing
- Z62.2 – Upbringing away from parents
  - NEW • Z62.23 – Child in custody of non-parental relative (Added, Oct. 1, 2023)
  - NEW • Z62.24 – Child in custody of non-relative guardian (Added, Oct. 1, 2023)
- Z62.8 – Other specified problems related to upbringing (Updated)
  - Z62.81 – Personal history of abuse in childhood
    - NEW • Z62.814 – Personal history of child financial abuse
    - NEW • Z62.815 – Personal history of intimate partner abuse in childhood
  - Z62.82 – Parent-child conflict
    - NEW • Z62.823 – Parent-step child conflict (Added, Oct. 1, 2023)
  - Z62.83 – Non-parental relative or guardian-child conflict (Added Oct. 1, 2023)
    - NEW • Z62.831 – Non-parental relative-child conflict (Added Oct. 1, 2023)
    - NEW • Z62.832 – Non-relative guardian-child conflict (Added Oct. 1, 2023)
    - NEW • Z62.833 – Group home staff-child conflict (Added Oct. 1, 2023)
  - Z62.89 – Other specified problems related to upbringing
    - NEW • Z62.892 – Runaway [from current living environment] (Added Oct. 1, 2023)

Z63 – Other problems related to primary support group, including family circumstances

Z64 – Problems related to certain psychosocial circumstance

Z65 – Problems related to other psychosocial circumstances

[3] IMPROVING THE COLLECTION OF Social Determinants of Health (SDOH) Data with ICD-10-CM Z Codes (cms.gov)

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