Collecting and Exchanging Social Determinants of Health Data in the Pharmacy

Version 10
July 2023

NCPDP®

The purpose of this white paper is to highlight the current challenges in collection and exchange of SDOH in the pharmacy and being able to utilize timely and accurately the data to improve patient safety and outcomes.

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Version10
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1. Introduction

Social determinants of health (SDOH) are those aspects of a patient's life that affect their health but are not medical problems or concerns. These areas include nutrition, housing, transportation, workplace and other factors. SDOH affects how patients interact within healthcare settings, including pharmacies, and as a result, their medication adherence and health outcomes. To address these factors, healthcare providers, including pharmacists and health plans, need to identify SDOH and use standards to document them so information can be accurately captured and shared electronically.

Definitions[1]:

Health disparities:
A particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; sex; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.

Health equity:
Equity is the absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically or by other means of stratification. "Health equity" or "equity in health" implies that ideally everyone should have a fair opportunity to attain their full health potential and that no one should be disadvantaged from achieving this potential.

Health equity is the attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities.

Social determinants of health (SDOH):
The social determinants of health are the conditions in which people are born, grow, live, work, and age. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels. The social determinants of health are mostly responsible for health inequities — the unfair and avoidable differences in health status seen within and between countries.

According to the 2020-2025 Federal Health IT Strategic Plan, many challenges exist in healthcare related to SDOH. "The goals, objectives, and strategies detailed in this Plan support the federal government's broader aim to mitigate many of the healthcare challenges that exist in the U.S. These challenges include

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[1] Adapted from "Social Determinants of Health and Diabetes: A Scientific Review"
https://diabetesjournals.org/care/article/44/1/258/33180/Social-Determinants-of-Health-and-Diabetes-A

increased healthcare spending, poor health outcomes, increased rates of mental illness and substance use disorders, and inconsistent access to care, technology, and information. Social determinants of health (SDOH) — the conditions in which people live, learn, work, and play – can contribute to disparities. As federal agencies and other partners work together toward a more interoperable healthcare system, they should consider the ways in which health IT can address these challenges equitably and in ways that do not exacerbate existing disparities associated with SDOH."[2]

In addition to the challenges listed above, "the U.S. healthcare system is continuing progress toward value-based care, in which payment is linked to measures of provider performance and patient outcomes and is based on evidence-based practices and guidelines. In 2018, approximately 61 percent of public and private healthcare spending was part of a value-based payment or pay-for-performance model, up from 23 percent in 2015. This movement is likely to continue and perhaps accelerate due to projected increases in healthcare spending. The shift to value-based care has created new incentives for providers in a variety of settings to improve quality and patient outcomes. These incentives place greater importance on addressing SDOH and patient health behaviors and engaging in preventive care, population health management, and disease management."[3]

Common sources of SDOH data include patient self-administered screening tools, provider-administered screening tools, casual observation and statements made by the patient or their caregivers. In a paper record world, and even in a free-text digital world, it is hard for the health care team to share or use this data, so it is incorporated into a patient-centered care plan. Standardized codes exist in multiple terminologies (e.g., SNOMED CT, ICD-10) (for a full list see Terminology) for the use in clinical decision support applications.

Although there are standards to share SDOH data within care settings, including pharmacies, there is little agreement around which codes (e.g., SNOMED, LOINC®, CPT codes, ICD-10 Z codes) should be used for documentation of various types of claims. "In May 2019, the Gravity Project was launched as a multi-stakeholder public collaborative with the goal to develop, test, and validate standardized SDOH data for use in patient care, care coordination between health and human services sectors, population health management, public health, value-based payment, and clinical research."[4]

The Gravity Project has identified several SDOH domains including food insecurity, transportation insecurity, housing instability, homelessness, inadequate housing, education, elder abuse, financial insecurity, intimate partner violence (IPV), material hardship, social connectedness, unemployment, stress and veteran status. Although these have been identified, more work is underway to determine how these domains will be shared electronically. This white paper will investigate the details of SDOH, why pharmacies should care about SDOH data collection and different code sets to be utilized.

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[2] https://www.healthit.gov/sites/default/files/page/2020-10/Federal%20Health%20IT%20Strategic%20Plan_2020_2025.pdf

[3] https://www.healthit.gov/sites/default/files/page/2020-10/Federal%20Health%20IT%20Strategic%20Plan_2020_2025.pdf

[4] https://www.healthit.gov/sites/default/files/facas/2021-04-08_Gravity_Project_Presentation.pdf

2. Purpose

The purpose of this white paper is to highlight the current challenges in collection and exchange of SDOH in the pharmacy and being able to utilize timely and accurately the data to improve patient safety and outcomes. Because it is still a largely fee-for-service model society, many of the pathways for collecting and documenting this data are unavailable for pharmacists. While reimbursement is not the sole purpose for the collection of this data, currently pharmacists lack incentives in the fee-for-service model to collect or utilize this data. Additionally, a manual process, as well as digital processes that do not leverage data standards, to collect and utilize the SDOH data can be very time consuming with no clear way to apply the information collected. Some of the current challenges of SDOH assessment include consent management, standardization of SDOH data collection and storage, lack of interoperability to have access to previously collected data, concerns about information collection and sharing, accounting for change lack of labor support for collection, lack of proper pharmacy software to collect and share the data and connecting patients with identified medication related issues to appropriate social service resources. As more payers move to value-based care, the collection and implementation of SDOH in the pharmacy will become key.

3. Background

Healthy People 2030 is an HHS-led initiative that sets data driven objectives for each decade. It began in 1990 with the release of Healthy People 2000. There have been prior areas of focus that have encompassed components of SDOH, but Healthy People 2020 was the first time SDOH was separately identified as its own focus. However, Healthy People 2020 was really focused on education with a leading indicator of high school graduation. With Healthy People 2030, general topics such as health conditions, populations and SDOH are priorities with objectives underneath. Their categorization(s) of SDOH include economic stability, education access and quality, health care access and quality, neighborhood and built environment, social and community context[5]. Healthy People 2030 is currently working on seven objectives under these categories. These objectives gather data as leading indicators to show an overall improvement in health outcomes.

Improving SDOH leads to improvement of health outcomes since 90% of health outcomes are attributed to SDOH.[6] The National Low Income Housing Coalition[7] estimates unstable housing costs the U.S. $111 billion in avoidable healthcare costs. Over 50% of hospital readmissions within 30 days are attributable to SDOH.[8] Even with the prioritization from Healthy People 2020 and 2030 as well as the many studies showing the linkage of SDOH and health outcomes, only 24% of hospitals and 16% of physician practices screen for SDOH. Payers are also concerned about SDOH because of the avoidable utilization and costs that are incurred when lack of resourcing around SDOH occurs. Centers for Medicare and Medicaid Services (CMS) released guidance in January 2021[9] to state health officials designed to drive the adoption of strategies that address the SDOH in Medicaid and the Children's Health Insurance Program (CHIP) by highlighting the importance of payers participating in routine screening for SDOH. The entire healthcare system sees impact to care quality and outcomes when patients defer treatment or become readmitted to the hospital due to financial, transportation, technology and other non-clinical barriers to care.

Quality care is a focus for all in the healthcare ecosystem, but the growth in value-based or pay-for-performance reimbursement models is driving much of the spotlight on SDOH and the more holistic care efforts being prioritized today. About 57% of healthcare professionals are participating in value-based reimbursement engagements that incentivize or penalize providers based on care quality/health

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[5] Healthy People 2030 https://health.gov/healthypeople/objectives-and-data/social-determinants-health
[6] https://www.japha.org/article/S1544-3191(21)00182-5/fulltext
[7] https://nlihc.org/resource/childrens-healthwatch-unstable-housing-will-cost-us-111-billion-avoidable-healthcare-costs
coalition donors https://nlihc.org/about/major-donors
[8] https://www.beckershospitalreview.com/care-coordination/social-determinants-of-health-contributed-to-half-of-hospital-readmissions-study-finds.html Becker's Hospital Review - *Social determinants of health contributed to half of hospital readmissions, study finds,* 2018
[9] https://www.cms.gov/newsroom/press-releases/cms-issues-new-roadmap-states-address-social-determinants-health-improve-outcomes-lower-costs

outcomes.[10] According to *Pharmacy Times*, pharmacy marked 2020 as a time of "significant changes" as they, too, shifted to value-based care payment systems.[11]

The main outcome measure affected by SDOH seen in pharmacies is medication adherence. For the pharmacy industry, patients with unstable housing or unreliable access to care, medication or food have a harder time taking medications as prescribed and are more likely to stretch a prescription until they can afford to refill it or may abandon their prescription altogether. Medication non-adherence or "non-optimized prescription drug use" costs the pharmacy industry $495.3 billion to $672.7 billion each year,[12] impacting pharmacy inventory, morbidity rates and more.

The Agency for Healthcare Research and Quality (AHRQ) conducted a study to understand interventions to help patients overcome barriers driving medication non-adherence. According to the study, "interventions to improve adherence across multiple clinical conditions include policy interventions to reduce copayments or improve prescription drug coverage, systems interventions to offer case management, and patient-level educational interventions with behavioral support.[13]" To apply these interventions at the patient level, care teams can screen or use consumer data to understand risks tied to financial, technology and transportation barriers, as well as prioritize programs to aid in the cost of prescriptions and enroll patients in prescription drug subscriptions to ensure timely delivery.

According to *Pharmacy Times* [14], retail pharmacies will grow their SDOH solution offerings, including health screenings and connecting with patients to address their SDOH through food, clothing, transportation and more. CVS is investing $9.2 million[15] in affordable housing in Washington, D.C., as one example of efforts being prioritized in the pharmacy landscape to address SDOH. Programs to provide stable housing and food security mean an individual can use their limited resources to face the next-most-important need. Stable housing might mean a child lives in a setting free from their asthma triggers. Finding a housing program is not the typical role for health care providers, but routine screenings to identify the need can trigger a referral to the right type of programs.

There are many disparate projects that have worked on improving SDOH as well as code sets and screening tools created and used throughout the healthcare setting. Because there is a lack of standardization across tools, projects and code sets, the approach to identify, document and provide resources for SDOH are fragmented.

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[10] https://healthpayerintelligence.com/news/value-based-care-assessment-calls-for-payer-provider-collaboration xtelligent Healthcare Media: Value-Based Care Assessment Calls for Payer-Provider Collaboration, 2020

[11] https://www.pharmacytimes.com/view/2020-trends-in-pharmacy-care-value-based-pharmacy-and-social-determinants-of-health Pharmacy Times: 2020 Trends in Pharmacy Care: Value-Based Pharmacy and Social Determinants of Health, 2020

[12] https://pubmed.ncbi.nlm.nih.gov/29577766/ National Library of Medicine: Annals of Pharmacotherapy: Cost of Prescription Drug-Related Morbidity and Mortality, 2018

[13] https://www.acpjournals.org/doi/10.7326/0003-4819-157-11-201212040-00538 Agency for Healthcare Research and Quality study, ACP Journal: Annals of Internal Medicine, *Interventions to Improve Adherence to Self-administered Medications for Chronic Diseases in the United States*, 2012

[14] https://www.pharmacytimes.com/view/2020-trends-in-pharmacy-care-value-based-pharmacy-and-social-determinants-of-health Pharmacy Times: 2020 Trends in Pharmacy Care: Value-Based Pharmacy and Social Determinants of Health, 2020

[15] https://healthpayerintelligence.com/news/cvs-health-contributes-9.2m-to-address-sdoh-homelessness-in-dc
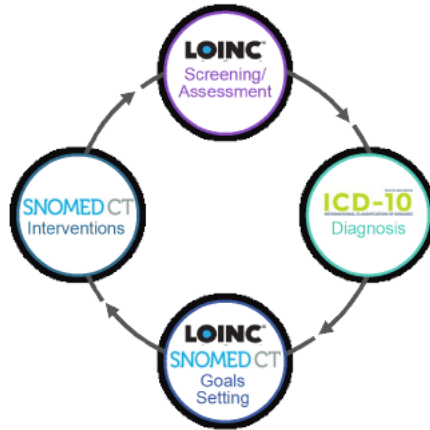
4. Terminology Standards

Multiple terminology standards exist to accommodate documentation systems common in different practice settings. As of the release date of this document, there is no named or industry agreed upon standard for documentation of SDOH. The Interoperability Standards Advisory[16] published by the Office of the National Coordinator for Health Information Technology is a compilation of tables showing standards and their level of adoption sorted by interoperability need (e.g., represent allergic reaction, represent patient contact info). Programs designed to address SDOH could use one or more terminology standards depending on the participant and the needs of the program. Allowing the use of more than one standard results in pharmacies and other organizations that contract with health plans often deferring to the payer's preferred terminology. For example, exchanging information about a specific social determinant that applies to a specific patient (a SDOH "diagnosis") will use IDC-10 codes whereas sharing goals with the care team could be done using LOINC® or SNOMED CT codes.

The most common data code sets used for SDOH are ICD-10, SNOMED CT, and LOINC®. Screening tool assessment questions and responses are communicated using LOINC®, a terminology standard also used for laboratory results. Assessment responses might identify, or diagnose, SDOH making ICD-10 codes common for documentation. Patient goals in programs to address SDOH may be coded using LOINC® or SNOMED CT and the interventions to reach those goals are coded in SNOMED CT.

1. **ICD-10-CM (**referenced as ICD-10 throughout this paper**)** is a U.S. code set based on the World Health Organization (WHO) International Classification of Diseases (ICD). ICD-10 has a set of codes that can be used like the international codes for diagnosing a condition. Included are codes known as Z-codes [17] that all begin with the letter "Z", a quick indication that the code isn't diagnosing a medical condition, but rather some other finding that affects health outcomes and is relevant to an encounter that leads to a service claim.
2. **SNOMED CT** is a comprehensive, organized set of codes that represent clinical concepts including clinical findings, procedures, and social context. SNOMED CT is used for documenting the interventions and outcomes and not used in service claims.
3. **LOINC®** is a code set typically used for health measurements and observations such as laboratory results and vital signs.

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[16] https://www.healthit.gov/isa/sites/isa/files/inline-files/2022-ISA-Reference-Edition.pdf
[17] https://www.cms.gov/files/document/zcodes-infographic.pdf

Other applicable reference material:

    a. Interoperability Standards Advisory reference:
https://www.healthit.gov/isa/sites/isa/files/inline-files/2022-ISA-Reference-Edition.pdf

    b. USCDI
https://www.healthit.gov/isa/uscdi-data/social-determinants-health

    c. Example of using LOINC® codes for SDOH responses to screening questionnaires such as the Adverse Childhood Experience (ACE) questionnaire.

    d. National Library of Medicine Value Set Authority Center (VSAC)

        i. https://vsac.nlm.nih.gov

            1. Unified Medical Language System® UMLS® License is needed to access NLM VSAC https://uts.nlm.nih.gov/uts/assets/LicenseAgreement.pdf

SDOH Pharmacy HIT Value Sets

National Library of Medicine — Value Set Authority Center

Name	Code System	Type	Steward	OID	Code Count
Assessments Related to Medication Management	SNOMEDCT	Grouping	PharmacyHIT	2.16.840.1.113762.1.4.1096.84	44
Assessments Related to Medication Management, General Assessments	SNOMEDCT	Extensional	PharmacyHIT	2.16.840.1.113762.1.4.1096.83	16
Findings Related to Medication Management, Referral Source	SNOMEDCT	Extensional	PharmacyHIT	2.16.840.1.113762.1.4.1096.1	25
Interventions Related to Care Coordination	SNOMEDCT	Grouping	PharmacyHIT	2.16.840.1.113762.1.4.1096.170	62
Interventions Related to Care Coordination, Referrals for Specific Services	SNOMEDCT	Extensional	PharmacyHIT	2.16.840.1.113762.1.4.1096.89	22
Interventions Related to Care Coordination, Referrals to Other Providers	SNOMEDCT	Extensional	PharmacyHIT	2.16.840.1.113762.1.4.1096.88	21
PharmacyCareCoordination	SNOMEDCT	Grouping	PharmacyHIT	2.16.840.1.113762.1.4.1096.202	95
PharmacyEncounterReason	SNOMEDCT	Grouping	PharmacyHIT	2.16.840.1.113762.1.4.1096.181	373
PharmacyInterventions	SNOMEDCT	Grouping	PharmacyHIT	2.16.840.1.113762.1.4.1096.198	294
PharmacyReasonsForInterventions	SNOMEDCT	Grouping	PharmacyHIT	2.16.840.1.113762.1.4.1096.200	236
PharmacyReferralsFrom	SNOMEDCT	Grouping	PharmacyHIT	2.16.840.1.113762.1.4.1096.216	25
PharmacyReferralsTo	SNOMEDCT	Grouping	PharmacyHIT	2.16.840.1.113762.1.4.1096.203	43
Social Determinants of Health Problem Observation	SNOMEDCT	Extensional	PharmacyHIT	2.16.840.1.113762.1.4.1096.224	31

SDOH Gravity Project Value Sets

National Library of Medicine — Value Set Authority Center

Name	Code System	Type	Steward	OID	Code Count
Health Literacy Diagnoses	ICD10CM SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.116	2
Health Literacy Diagnoses ICD10CM	ICD10CM	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.113	1
Health Literacy Diagnoses SNOMED CT	SNOMEDCT	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.112	1
Health Literacy Goals	SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.117	1
Health Literacy Goals SNOMED CT	SNOMEDCT	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.114	1
Health Literacy Interventions SNOMED CT	SNOMEDCT	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.115	1
Health Literacy Procedures	CPT SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.118	30
Health Literacy Screening Assessments	LOINC	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.141	3
Health Literacy Service Requests	CPT SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.119	30
Homelessness Diagnoses	ICD10CM SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.18	4
Homelessness Diagnoses ICD10CM	ICD10CM	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.13	3
Homelessness Diagnoses SNOMEDCT	SNOMEDCT	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.14	1
Homelessness Intervention SNOMEDCT	SNOMEDCT	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.19	59
Homelessness Procedures	CPT SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.20	88
Homelessness Screening Assessments	LOINC	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.129	4
Homelessness Service Requests	CPT SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.21	88
Housing Instability Diagnoses	ICD10CM SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.24	9
Housing Instability Diagnoses ICD10CM	ICD10CM	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.23	3
Housing Instability Diagnoses SNOMEDCT	SNOMEDCT	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.22	6
Housing Instability Intervention SNOMEDCT	SNOMEDCT	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.43	34
Housing Instability Procedures	CPT SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.44	63
Housing Instability Screening Assessments	LOINC	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.130	7
Housing Instability Service Requests	CPT SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.45	63
Inadequate Housing Diagnoses ICD 10 CM	ICD10CM	Extensional	The Gravity Project	2.16.840.1.113762.1.4.1247.47	1
Inadequate Housing Goals	SNOMEDCT	Grouping	The Gravity Project	2.16.840.1.113762.1.4.1247.50	2

5. Application

Pharmacists see the value of SDOH collection; however, they may encounter challenges. Community pharmacies are an ideal place to collect SDOH data, but challenges prevent them from implementing screening and referral programs.[18] The collection of SDOH data in most pharmacies may be challenging based on the pharmacy's software system. Some systems may be built to store this information, but others may not yet have the capability to do so. SDOH data can be collected during various patient encounters such as prescription dispensing, medication therapy management activities and other clinical interactions. This information may be obtained from the patient, caregiver, provider or payer. The data collected could be used for assessment purposes or, under certain value-based arrangements, could be used for billing purposes.

Assessments can be formulated in different ways depending on how the information is being collected, how it will be exported and with whom it will be shared. The most adopted example of an assessment tool for standard export is Protocol for Responding to and Assessing Patients Assets, Risks and Experiences (PRAPARE®).[19]

The eCare Plan is a good place for clinicians to document SDOH. There are several pharmacy system vendors (Pharmacist eCare Plan Initiative Software Solution Comparison Chart compiled September 2020[20]) that built out their clinical documentation modules with the ability to capture SDOH health concerns (assessments and problems), interventions, outcomes and goals. These vendors can use the NCPDP/HL7® Pharmacist eCare Plan (PeCP) C-CDA and FHIR® implementation guides to share captured SDOH information in an interoperable way. The Pharmacist eCare Plan was developed in NCPDP Work Group 10 Professional Pharmacy Services and successfully balloted at HL7®. Pharmacists should capture the SDOH data in the form of nationally recognized standard vocabulary codes in value sets, to be discussed below. These value sets were developed and are maintained by the Pharmacy HIT Collaborative on behalf of the pharmacy profession and are available in the National Library of Medicine's Value Set Authority Center. These value sets are referenced in later sections of this paper.

The terminology used for exporting standard SDOH assessments, interventions, problems and goals are defined in United States Core Data for Interoperability (USCDI) v3.[21] New versions of USCDI will continue to evolve and be linked to the government regulatory statements related to interoperability. The terminology will be discussed in greater detail below.

As they exist today, it is possible to exchange SDOH data in transactions in several NCPDP standards. The data element Diagnosis Code (424-DO) is found in many of the standards and, depending on the version, a code from one or more terminology standards (identified by the Diagnosis Code Qualifier (492-WE)) can be sent in a message.

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[18] https://www.sciencedirect.com/science/article/abs/pii/S1544319122000589

[19] https://prapare.org

[20] https://www.ecareplaninitiative.com/_files/ugd/b303f5_a66df3115abd40a58659bae8f51b4aad.pdf

[21] https://www.healthit.gov/isa/taxonomy/term/1801/uscdi-v3

The use cases described below were developed with the current NCPDP SCRIPT and Telecommunication Standards in mind. WG11 SCRIPT Implementation Recommendation (SIR) and WG1 Telecommunication Frequently asked Questions Task Groups provided feedback on how the use cases can be implemented within the NCPDP Standards.

The following use case can be found in the *NCPDP SCRIPT Implementation Recommendations* document[22] under section Prescription Requirements and 3.7 Communication of Social Determinants of Health (SDOH) in SCRIPT messages.

Use Case:
Ray Sunshine is at the pharmacy to pick up a prescription to treat an infection. The antibiotic prescribed has directions to take one capsule three times a day. While verifying the prescription, the pharmacist sees a free text note from the prescriber stating the patient cannot read. With this information the pharmacist takes extra time to review the directions with Ray and concludes he understands the directions because Ray asks if he should take a capsule with breakfast, at lunch and after supper.

Question:
Does the SCRIPT Standard support sending ICD-10 codes (or other applicable code set), such as Z55.0 Illiteracy, to the pharmacy to alert them there may be something about the patient's circumstances that call for extra education or services, such as compliance packaging, for optimal medication use?

Response:
In the NCPDP SCRIPT Standard V2017071, SDOH information should be communicated in the Drug Utilization Evaluation (DUE) elements utilizing the ServiceReasonCode and CoAgent elements. The SDOH information may be communicated as either an ICD-10 code or a SNOMED CT code and may be utilized in any message that contains the DUE elements, not just a NewRx message.

Additional examples of use cases that would have the same SCRIPT messaging response:

Use Case:
Mary Sunshine is at the pharmacy to pick up a prescription for a liquid antibiotic for her five-year-old daughter, Susie Sunshine, who has an ear infection. The pharmacist counsels Mary on how to administer the medication. When Mary hears the antibiotic must be stored in the refrigerator, she tells the pharmacist the place where she is temporarily staying does not have a refrigerator and asks if it really matters. The pharmacist says it does matter, but if Mary is willing to wait, they can ask the prescriber to change it to something that will work just as well, does not need to be refrigerated and is only five days of doses. The pharmacist sends an RxChange message to the physician requesting therapeutic interchange to azithromycin suspension for Susie.

Use Case:

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[22] https://member.ncpdp.org/Standards-Lookup

Donald Sunshine is at the pharmacy to pick up an opioid prescription for himself. However, he mentions to the pharmacist that he is in a substance abuse program. The pharmacist would like to notify the prescriber that Donald has substance misuse problem. His care team should monitor and/or bring this up on the next visit to ensure Donald is taking the medication as prescribed.

All of these use cases can utilize both ICD-10 Z codes or SNOMED CT codes and be communicated in SCRIPT messages. Examples of health plan SDOH guidance can be found in the Appendix A: Resources Page.

Along with the use cases above, multiple pilot projects have been completed through a collaboration with Pharmacy Quality Alliance (PQA) that document ways SDOH has been utilized within the pharmacy setting. The *PQA SDOH Resource Guide*[23] is a compilation of these studies and can help pharmacists with ideas and examples of SDOH services they can implement. Another example of capturing SDOH data is the Flip the Pharmacy[24] example of a stepwise approach to identify SDOH issues (e.g., food security, house stability, transportation access, financial stability) and reviews ways to address SDOH during the workflow process.

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[23]https://www.pqaalliance.org/SDOH-resource-guide
[24] https://www.flipthepharmacy.com/diabetes-sdoh

6. Recommendations

The support of SDOH data in standards is an important aspect of healthcare systems that hope to support the identification of health disparities and activities that can promote health equity. It is beyond the scope of this paper to elaborate on those activities and the focus is therefore on the structural aspects of capturing and exchanging data. Currently, the NCPDP standards can accommodate SDOH data.

Looking to the future, NCPDP must facilitate the exchange of codified SDOH data in alignment with USCDI in its standards, react to government regulations regarding SDOH data and encourage members to participate in these standardization processes. NCPDP will continue to promote the use of its standards for the exchange of SDOH data and coordinate pharmacy related SDOH standards development initiatives with other data and technical standards development organizations and government entities.

NCPDP recommendations for the industry:

- The industry should refer to and adopt NCPDP standards for the collection and exchange of SDOH data.
- Stakeholders should bring their SDOH use cases to NCPDP to ensure that standards and implementation recommendations meet existing and foreseeable needs.
- NCPDP encourages all stakeholders, including value based payers, to participate in NCPDP task group meetings to address how the use of NCPDP Standards can facilitate the leveraging of SDOH data to combat health disparities.
- Technology vendors should assess their readiness to collect and exchange SDOH data. Once applications such as pharmacy dispensing and care management systems have implemented those capabilities, the next step is the exchange and use of SDOH data to help identify equity gaps.
- As changes occur to existing standards and new ones are developed for use in the pharmacy industry (e.g., NCPDP, HL7®, USCDI), SDOH considerations should be addressed to meet the needs of stakeholders.
- Through the NCPDP collaborative process, stakeholders should participate in developing educational and guidance material on evolving SDOH data collection, exchange and usage.

7. Conclusion

Social determinants of health data and the collection and usage of this data within standards is evolving. As more awareness is built around the value of SDOH data in the identification of area where health disparities may exist, pharmacies need to be able to collect and utilize this data to assist in improving health equity. NCPDP will continue to actively promote standardization and exchange of healthcare information, with the goal of industry adoption of these standards to further improve health outcomes.

Appendix A: Resources Page

This appendix lists several references that are specific to SDOH and can assist in the documentation and collection in the health care setting. These are arranged in categories to provide guidance in the various associated areas.

Other standards work:
HL7 Gravity Project
- https://www.hl7.org/gravity/
- https://confluence.hl7.org/display/GRAV/The+Gravity+Project
- https://www.mobihealthnews.com/news/north-america/social-determinants-health-program-gravity-project-joins-hl7-fhir-accelerator

Other organizations:
National Alliance to Impact the Social Determinants of Health (NASDOH)
- https://www.nasdoh.org/wp-content/uploads/2020/08/NASDOH-Data-Interoperability_FINAL.pdf
- https://www.nasdoh.org/wp-content/uploads/2019/01/NASDOH-Social-Risks-Issue-Brief.pdf

Healthcare Information and Management Systems Society (HIMSS)
- https://www.himss.org/resources/social-determinants-health-breaking-down-barriers.

Federal Government Resources:
CMS
- CMS Issues New Roadmap for States to Address the SDOH to Improve Outcomes, Lower Costs, Support State Value-Based Care Strategies (Jan 07, 2021 Medicaid & CHIP https://www.cms.gov/newsroom/press-releases/cms-issues-new-roadmap-states-address-social-determinants-health-improve-outcomes-lower-costs.
- CMS Data Element Library Fact Sheet, https://www.cms.gov/newsroom/fact-sheets/cms-data-element-library-fact-sheet, accessed December 8, 2021.
- CMS Data Element Library (DEL) User Guide, https://del.cms.gov/DELWeb/pubGetFile?fileId=10, accessed December 8, 2021.

Office of the National Coordinator (ONC)
- Social Determinates of Health: https://www.healthit.gov/topic/health-it-health-care-settings/social-determinants-health
- Social Determinants of Health (SDOH) Clinical Decision Support (CDS) Feasibility Brief, https://www.healthit.gov/sites/default/files/page/2023-02/SDOH-CDS-Feasibility-Brief.pdf, February 2023

Interoperability Standards Advisory (ISA)
- Interoperability Standards Advisory: https://www.healthit.gov/isa/social-psychological-and-behavioral-data

Examples of Organization SDOH Guidance:

Anthem®

- https://providers.anthem.com/docs/gpp/VA_CCC_SocialDeterminantsofHealthFlier.pdf?v=202103030017

Blue Cross/Blue Shield (BCBS) of Illinois

- https://www.bcbsil.com/pdf/clinical/ICD-10_Z_codes_flier.pdf

United Healthcare®

- https://www.uhcprovider.com/content/dam/provider/docs/public/policies/protocols/Social-Determinants-of-Health-Protocol.pdf

American Hospital Association™ (AHA) coding resource

- https://www.aha.org/system/files/2018-04/value-initiative-icd-10-code-social-determinants-of-health.pdf

Appendix B – History of Document Changes

Version 10

- Original publication