Social Health Surveillance Systems

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Title	Author(s)	Date	Population Served	Surveillance Type	Standardized Data Measurement	Data Collection Approach	Volume of data Collected	Ownership of SDH interventions	Specific SDH variables	Data storage approach	Medical integration approach	Medical care outcomes
Screening for Social Determinants of Health in Michigan Health Centers	Byhoff, E., Cohen, A.J., Hamati, M.C., Tatko, J., Davis, M.M., & Tipirneni, R.	Aug-17	Patients of Michigan Primary Care Association health centers; 70% urban, 26% rural, majority of patients below 200% of FPL	Active	Yes, although variation across health centers (a mean of 11 of the15 core domains (range, 6–15)).	Copies of SDH screening forms were requested from 39 health centers in Michigan. Each health center's data about characteristics, resources, and patient demographics were obtained from the Uniform Data System. This research did not involve patient data.	Collected SDH data for 34% to 52% of the 459,313 total patients receiving care at 167 delivery sites in 2014 (156,000-238,842).	Michigan health centers	15 core domains, including culture, Demographics, Economic Indicators, Education, Employment Status, Family/Living Arrangements, Functional Status, Health Care Access, Health-Related Behaviors, Language, Material Hardship (housing, food, utilities, child care), Mental Health, Social Support, Trauma/Violence, and Veteran Status, and 102 subdomains. However, only only 4 (Demographics, Employment Status, Family and Living Arrangements, Mental Health) collected across all 39 health centers	Filled out in electronic health record or scanned into electronic health record.	Projects implemented to better understand and address issues related to SDH in Michigan, including Michigan's State Innovation Model (SIM) and Michigan Pathways to Better Health	"{M}onitoring of and feedback on how HCs and other providers identify needs and take necessary action steps to improve health."
Exploring 2-1-1 service requests as potential markers for cancer control needs	Alcaraz, K.I., Arnold, L.D., Eddens, K.S., Lai, C., Rath, S., Greer, R., & Kreuter, M.W.	Dec-12	Residents of Missouri, primarily low-income, disproportionately female and minorities, and are seeking assistance with basic human needs.	Passive	Yes, 2-1-1 Missouri currently uses less than 2000 terms of the Alliance of Information and Referral Systems taxonomy (9431 terms total) to describe social service needs.	Data from callers were analyzed using logistic regression to tudy correlations betweeen caller demographics, service requests, and cancer prevention needs	166,000 calls in 2011	2-1-1 Missouri	Coded service requests into 6 broad categories: bills, home and family, employment, health, housing, or other	2-1-1 database	Identified associations of social needs with need for cancer control services	Cancer prevention behaviors available for free to low-income and uninsured populations: mammography, colonsocopy, Pap smear, HPV vaccination, smoking cessation.
Proactive screening for health needs in United Way's 2-1-1 information and referral service	Eddens, K.S., Kreuter, M.W., & Archer, K.	Mar-11	Residents of Missouri, primarily low-income, disproportionately female and minorities, and are seeking assistance with basic human needs.	Passive	Yes, see Alcaraz (2012). Note: United Way 2-1-1 Missouri does not collect race or income data.	Participants completed questionnaires depending on thieir age, sex, screening history, and whethe they had children. The programs automatically identifies their needs and aach participant received at least one referral	135,352 in 2008	2-1-1 Missouri	Housing, shelter, electricity, heat, food, health insurance	2-1-1 database	Health referrals were related to six cancer prevention behaviors.	Cancer prevention behaviors available for free to low-income and uninsured populations: mammography, colonsocopy, Pap smear, HPV vaccination, smoking cessation.
Promoting Health by Addressing Basic Needs: Effect of Problem Resolution on Contacting Health Referrals	Thompson, T., Kreuter, M.W., & Boyum, S.	Aug-15	Residents of Missouri, primarily low-income, disproportionately female and minorities, and are seeking assistance with basic human needs.	Passive	Yes, see Alcaraz (2012). Note: 2-1-1 service requests are referred to as "reasons for calling."	Collected callers' reason(s) for calling 2-1-1, their health needs, and demographic information. Follow-up measures administered 1 month later assessed whether the reason participants called 2-1-1 had been resolved ("problem resolution") and whether they had contacted any of the health referrals they received.	940 callers in a randomized control trial conducted from 2010 to 2012.	2-1-1 Missouri	Utilities, home and family, rent, food assistance, health, employment, housing , and others	2-1-1 database	Health referrals were related to six cancer prevention behaviors. Evaluated referral uptake success.	Cancer prevention behaviors available for free to low-income and uninsured populations: mammography, colonsocopy, Pap smear, HPV vaccination, smoking cessation.
Healthcare Navigation Service in 2-1-1 San Diego: Guiding individuals to the care they need	Rodgers, J.T., & Purnell, J.Q.	Dec-12	Residents of San Diego County, primarily from low-income households, seeking assistance with transportation, appointment scheduling, child/elder care, and personal finance.	Passive	Yes, 2-1-1 San Diego collects demographics, stated and unstated needs, and social care referrals given to clients.	Demographic, social need, and healthcare access data were collected from callers. Participants were referred to the appropiate local social service agencies.	13,313 over 6 months (July and December of 2011)	2-1-1 San Diego Healthcare Navigators, described as a "concierge-based approach."	Health insurance coverage, prescription and food assistance, transportation, appointment scheduling, child/elder care, and personal finance	2-1-1 database	Created Healthcare Navigation Program with partner, Ascension Health, to guide clients to needed services, such as making appointments with health clinics and screening for eligibility for healthcare and food assistance programs. Database of community agencies provides platform for collaboration among healthcare providers.	Patients' percieved ability to manage health needs.

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Developing Electronic Health Record (EHR) Strategies Related to Health Center Patients' Social Determinants of Health	Gold, R., Cottrell, E., Bunce, A., Middendorf, M., Hollombe, C., Cowburn, S., Mahr, P., & Melgar, G.	Feb-17	OCHIN primary care community health centers serving patients of whom 91% below 200% of federal poverty level	Active	Yes, Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences (PRAPARE) screeening instrument.	Three different data collection approaches: (1) SDH "documentation flowsheets" at point of care (2) paper surveys entered by patient at point of care then coded into EHR flowsheets by staff, and (3) a patient portal questionnaire completed by patient before health service visit.	By June 2016, expanded to "97 sites in 18 states" (LaForge et al., 2018).	OCHIN's Community Health Clinics.	SDH measures from the IOM list, including , and depression, and additional questions or alternate wording from PRAPARE and KP's SDH screening tools, and other domains currently collected in OCHIN. Domains include race/ethnicity, tobacco/alcohol use, education, exposure to intimate partner violence, physical activity, social connections and isolation, stress, financial resource strain, housing, food, sexual orientation, and gender identity.	OCHIN hosts a centrally managed EMR research warehouse	SDH data tools are incorporated with the EMR and identified social needs can be summarized with any past SDH referralsm and presented alongside any of the patients' SDH-related ICD-10 codes.	SDH data collection and presentation in EMR could improve "patient and population health outcomes in CHCs and other care settings" (pg. 444).
Moving Electronic Medical Records Upstream: Incorporating Social Determinants of Health	Gottlieb, L.M., Tirozzi, K.J., Manchanda, R., Burns, A.R., & Sandel, M.T.	Feb-15	Pediatric patients of Johns Hopkins Children's Center Harriet Lane Clinic	Active	Yes, social needs captured as structured data within Epic EHR physician note templates and Health Leads' system.	In Case 1 of the article, pediatricians screen for social needs and store the information in the social history electronic medical record (Epic).	Over 20,000 outpatient visits a year.	Health Leads	Education, health insurance, job resoures/training, food, child care, housing, utiities, other	Health Leads system & social history electronic medical record (Epic).	Relevant SDH tracked in EMRs	Clincal leaders can study how addressing social needs through resource interventions can impact "on individual or population health over time" (pg. 216).
Addressing families' unmet social needs within pediatric primary care: the health leads model	Garg, A., Marino, M., Vikani, A.R., & Solomon, B.S.	Dec-12	Low-income children and their families at Harriet Lane Clinic in Baltimore, MD	Active	Yes, patient parents complete brief screening survey for social issues.	At Harriet Lane Clinic in Baltimore, referrals, family needs, and receipt of resources data were compiled and analyzed.	Over 1,000 families used the Health Leads desk in 30 month time period.	Health Leads	Employment, Housing, Child care, Health insurance, Food, Adult education, utilities, transportation, financial assistance, commodities	Health Leads database	Health Leads desk within primary care office	Health Leads "model integrates primary care with the existing public health infrastructure (ie, community-based resources) and may promote greater health equity" (pg. 1193).
Expenditure Reductions Associated with a Social Service Referral Program	Pruitt, Z., Emechebe, N., Quast, T., Taylor, P., & Bryant, K.	Nov-18	Medicare Advantage or Medicaid managed care members of health plan.	Passive	Yes, more than 60 categories of social services indicating the social care need of the individuals contact the referral program.	People with unmet social needs call the program to be referred to nationwide network of local, community-based public assistance programs. The program tracks each referral in the tracking database separately.	Over 20,000 participants over 14 months.	WellCare Health Plan's social service referral service (HealthConnections, now Community Connections).	Transportation, food programs, financial assistance for utilities, education programs, and housing services.	Referral tracking database hosted by managed care organization	Social service referral tracking data connected to managed care medical claim records and, in some instances, to case management staff.	Lower health care costs
Addressing Social Determinants of Health in a Clinic Setting: The WellRx Pilot in Albuquerque, New Mexico	Page-Reeves, J., Kaufman, W., Bleecker, M., Norris, J., McCalmont, K., Ianakieva, V., Ianakieva, D. & Kaufman, A.	Jun-16	Patients in 3 family medicine clinics in Albuquerque, NM; predominently low-income	Active	Yes, a paper-based 11-item questionnaire	Either self-administered or administered by Medical Assistants.	Over 3,000 patients over 3 month period, later expanded.	WellRx Community Health Workers	Food insecurity, housing, utilities, income, employment, transportation, education, substance abuse, child care, safety, and abuse	Data was stored in the EMR	Community Health Workers based in clinic extensively trained to use electronic medical records system and connect patients to social care resources.	1. Integration of CHWs into primary care teams. 2. Improved patient engagement. 3. Better informed clinicians and staff 4. Diabetes control quality improvement project

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Improving Social Determinants of Health: Effectiveness of a Web-Based Intervention	Hassan, A., Scherer, E. A., Pikcilingis, A., Krull, E., McNickles, L., Marmon, G., ... & Fleegler, E. W.	Dec-15	Adolescents and young adults age 15 to 25 seeking medical care from an urban hospital-based clinic at Children's Hospital Boston	Active	Yes, The Online Advocate (now HelpSteps.com) questionnaire developed from validated surveys, including the Youth Risk Behavior Survey, the Growing Up Today Study, and U.S. Department of Agriculture food security scale.	Participant completed the web-based screening survey, which identifies and provides feedbacks about potential issues. Then the participant is referred to a local health and human service agency to address problems.	313 patients over 21 months	The Online Advocate resource specialist (now HelpSteps.com)	Health-related needs in 9 health-related social domains: nutrition and fitness, education, safety equipment, healthcare access, housing, food security, income security, substance use, interpersonal violence	The Online Advocate survey and referral system, now called HelpSteps.com	Surveyed about health-related social domains when seeking medical care	Smoking cessation, reduced allergies, improved diet and exercise, disease management (based on types of referrals generated)
Social disparities among youth and the impact on their health	Kreatsoulas, C., Hassan, A., Subramanian, S.V., & Fleegler, E.W.	Mar-15	Adolescents and young adults age 15 to 25 seeking medical care from an urban hospital-based clinic at Children's Hospital Boston	Active	Yes, The Online Advocate (now HelpSteps.com) questionnaire consisted of 90–130 questions with branch logic to determine question sequence.	Providers recruited patients for the study. Interested study participants completed a survey on a laptop equipped with a privacy screen. The questionnaire consisted of 90–130 questions.	297 patients over 21 months	The Online Advocate resource specialist (now HelpSteps.com)	Questions were categorized into 7 social domains: 1) education, 2) health care access, 3) income insecurity, 4) substance use, 5) food insecurity, 6) housing, and 7) interpersonal violence.	The Online Advocate survey and referral system, now called HelpSteps.com	Surveyed about health-related social domains when seeking medical care	Self-rated health
Case Study: Johns Hopkins Community Health Partnership: A model for transformation	Berkowitz, S.A., Brown, P., Brotman, D.J., Deutschendorf, A., Dunbar, L., Everett, A., Hickman, D., Howell, E., Purnell, L., Sylvester, C. & Zollinger, R.	Sep-16	Medicare and Medicaid beneficiaries receiving primary care in eight outpatient clinics surrounding JHM's two primary teaching hospitals in East Baltimore and the approximately 40,000 adult patients admitted annually to 2 Johns Hopkins hospitals.	Active	Yes, a structured “barriers to care” assessment.	Assessment administered by Community Health Workers, followed by care management assessment at the clinic with demographic, clinical, health history. Both combined to yield a care plan that was reviewed during team-based rounds.	3035 barriers-to-care assessments over 30 months	Johns Hopkins Community Health Partnership (J-CHiP)	Transportation, housing, phone, food availability, finances for medication, finances for doctor, finances for utilities, child and dependent care.	Data stored in a customized care management system along with care management assessment, demographic, clinical, health history, and other related data.	J-CHiP provided low cost bus tokens, cab or shuttle support, provided active social work involvement and a pharmacy assistance program to improve health outcomes.	Provider visit no shows; reductions in the cost of care and other utilization indices such as hospitalizations and emergency department visits