Rapid Decision Support
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Newfoundland & Labrador Centre for Applied Health Research



# Equity, Diversity, and Inclusion (EDI) in Healthcare: An Evidence Scan

## Research-Based Evidence and Research-Based Toolkits

*Equity, Diversity, and Inclusion policies are intended to reduce or eliminate health inequities and to promote workplaces that ensure fair treatment and opportunity for all by eradicating prejudice and discrimination on the basis of an individual or group of individual's protected characteristics. This evidence scan is intended to provide a broad research-based perspective on EDI for health systems to help inform the design of EDI policies within NL Health Services. Accordingly, it consists of search results of research publications and gray literature that address equity, diversity, and inclusion policies, programs, and practices that have been implemented in health systems or that could be applied to health systems. While inter-related, sub-areas of focus that emerged from the results include EDI policies or implementation in regards to: Health System Organization and Operation, Health System Leadership, Health Data, and Public Health.*

## EDI Related to Health System Organization and Operation

### Systematic Reviews

Beijbom M. (2022). **Striving for Equity, Inclusion, and Safer Spaces at Work: A Review of the Literature**. LINK.

- "This research report was prepared to inform Calian Ltd.'s efforts to ensure they are offering the most up-to-date, informed curriculum and training related to advancing equity, diversity, and inclusion (EDI) practices in workplaces. Calian seeks to better understand the academic and

community literature related to fostering EDI, with a particular interest in the concept of "safe spaces."
- Not health system specific.
- Appendices include:
    - Details on Workplace Cultural Audits
    - Chief Diversity Officer Positions
    - Table of Promising Practices

Wang ML, Gomes A, Rosa M, Copeland P, Santana VJ. **A systematic review of diversity, equity, and inclusion and antiracism training studies: Findings and future directions**. Transl Behav Med. 2024 Feb 23;14(3):156-171. LINK

- From the abstract: "A growing number of organizations are prioritizing diversity, equity, and inclusion (DEI) and antiracism in the workplace, including investing resources in DEI or antiracism training. However, such trainings vary widely in curriculum, objectives, delivery, and evaluation, with little known about the efficacy of existing trainings. The aim of this systematic review is to evaluate training characteristics, measures, and results of peer-reviewed studies (published between 2000 and 2022) testing DEI or antiracism trainings."

- From the abstract: "The majority of studies (75% of antiracism training; 66.6% of DEI training) utilized a one-time training session. Content, objectives, measures, and impact varied widely across studies. Randomized designs were uncommon (13%), and over 70% of studies had majority female participants. Findings highlight several strategies to advance the field of DEI and antiracism training, such as shifting curriculum from targeting individual knowledge to supporting behavioral and organizational change, providing longitudinal training, standardizing outcomes of interest, and implementing rigorous evaluation methods."

Williams JH, Silvera GA, Lemak CH. **Learning Through Diversity: Creating a Virtuous Cycle of Health Equity in Health Care Organizations. Responding to the Grand Challenges in Health Care via Organizational Innovation**. 2022 Dec 12;21:167-89. LINK.

- From the abstract: "The purpose of this chapter is to review existing scholarship and evidence using an organizational lens to examine how health care organizations can advance DEI initiatives in the pursuit of reducing or eliminating health inequities. First, this chapter defines important terms of DEI and health equity in health care. Next, we describe the methods for our narrative review. We propose a model for understanding health care organizational activity and its impact on health inequities based in organizational learning that includes four interrelated parts: intention, action, outcomes, and learning. We summarize the existing scholarship in each of these areas and provide recommendations for enhancing future research. Across the body of knowledge in these areas, disciplinary and other silos may be the biggest barrier to knowledge creation and knowledge transfer."

## Other Reviews

Liblik K, Desai V, Yin G, Ng R, Maho S, Cohen N, Soleas EK. **Professional Development in Health Sciences: Scoping Review on Equity, Diversity, Inclusion, Indigeneity, and Accessibility Interventions**. J Contin Educ Health Prof. 2023 Jun 29. LINK.

- **Introduction**: Equity, diversity, inclusion, indigeneity, and accessibility (EDIIA) are critical considerations in the formation of professional development (PD) programs for health care workers. Improving EDIIA competency in health care serves to enhance patient health, staff confidence and well-being, delivery of care, and the broader health care system. There is a gap in the literature as to the efficacy of EDIIA-based PD programs and their individual components. The present article will review available quantitative data pertaining to EDIIA-based PD programs for health care workers as well as their effectiveness.
- **Discussion**: Despite an increased interest in developing EDIIA-based PD curricula for health care workers, there are glaring disparities in the quality of care received by marginalized and equity-seeking populations. The present scoping review delineated key features which were associated with increased quantitative efficacy of EDIIA-based PD training programs. Future work should focus on large-scale implementation and evaluation of these interventions across health care sectors and levels of training.

## Primary Research

Anggoro A, Anjarini AD. **Building an Organizational Culture that Supports Diversity and Inclusion**. Management Studies and Business Journal (PRODUCTIVITY). 2024 Jan 31;1(1):190-7. LINK.

- Abstract: "Building an organizational culture that supports diversity and inclusion is a significant challenge for organizations in this era of globalization. Through this research, we analyze the factors that influence the effectiveness of diversity and inclusion initiatives in organizations. The research results show that leadership commitment, inclusive policies, employee cultural awareness, employee involvement, and innovation play an important role in creating an inclusive and supportive work environment. Measuring the effectiveness of diversity and inclusion initiatives was also identified as an important step to ensure successful implementation. The practical and theoretical implications of these findings are discussed in the context of building an inclusive and supportive organizational culture."

Arunima KV, Bolar K. **Integrating Diversity, Equity, and Inclusion (DEI) Effectiveness Metrics Into Recruitment Analytics**. InHR Analytics in an Era of Rapid Automation 2023 (pp. 1-19). IGI Global. LINK.

- Abstract: "The proposed book chapter aims to integrate diversity, equity, and inclusion (DEI) metrics into recruitment analytics of the hiring process of a data science start-up company. A CRISP-DM (cross-industry standard process for data mining) methodology is used to develop a

predictive model that can accurately predict whether a candidate will be hired based on the available data to identify the best features highly correlated to hiring. HR metrics focusing on DEI would be integrated into the model to help build a more diverse and inclusive team. The proposed chapter contributes to the growing research on integrating DEI metrics into recruitment analytics. It provides a practical example of achieving this in a real-world setting. Integrating DEI metrics into recruitment analytics provides insights to organizations to build more diverse and inclusive teams, leading to better decision-making, and increased productivity."

Betancourt JR, Tan-McGrory A, Kenst KS, Phan TH, Lopez L. **Organizational Change Management For Health Equity: Perspectives From The Disparities Leadership Program**. Health Aff (Millwood). 2017 Jun 1;36(6):1095-1101. LIN K.

- Abstract: "Leaders of health care organizations need to be prepared to improve quality and achieve equity in today's health care environment characterized by a focus on achieving value and addressing disparities in a diverse population. To help address this need, the Disparities Solutions Center at Massachusetts General Hospital launched the Disparities Leadership Program in 2007. The leadership program is an ongoing, year-long, executive education initiative that trains leaders from hospitals, health plans, and health centers to improve quality and eliminate racial and ethnic disparities in health care. Feedback from participating organizations demonstrates that health care leaders seem to possess knowledge about what disparities are and about what should be done to eliminate them. Data collection, performance measurement, and multifaceted interventions remain the tools of the trade. However, the barriers to success are lack of leadership buy-in, organizational prioritization, energy, and execution, which can be addressed through organizational change management strategies."

Corbie G, Brandert K, Fernandez CSP, Noble CC. **Leadership Development to Advance Health Equity: An Equity-Centered Leadership Framework**. Acad Med. 2022 Dec 1;97(12):1746-1752. LINK.

- Flagged as particularly interesting/relevant in original search.
- Abstract: "Enduring questions about equity are front and center at this watershed moment in health care and public health. Inequities that became evident in the COVID-19 pandemic in 2020 have highlighted long-standing disparities in health by race and ethnicity. Current crises require examining and reorienting the systems that have, for decades, produced these health inequities; yet, public health and health care leaders are inadequately prepared to respond. The authors offer an equity-centered leadership framework to support the development of visionary leaders for tomorrow. This framework for leadership development programs interweaves traditional leadership and equity, diversity, and inclusion domains in both conceptual knowledge and skills-based teaching for health care and public health leaders, grouping competencies and skills into 4 domains: personal, interpersonal, organizational, and community and systems. A framework

such as this will equip leaders with the mindset and skill set to challenge the paradigms that lead to inequity and health disparities."

Corbie G, Brandert K, Noble CC, Henry E, Dave G, Berthiume R, Green M, Fernandez CSP. **Advancing Health Equity Through Equity-Centered Leadership Development with Interprofessional Healthcare Teams**. J Gen Intern Med. 2022 Dec;37(16):4120-4129. LINK.

- Flagged as particularly interesting/relevant in original search.
- **Aim:** This article highlights program evaluation results for this Clinical Scholars National Leadership Institute (CSNLI) specific to EDI. We will show that CSNLI imparts the valuable and essential skills to health professionals that are needed to realize health equity through organizational and system change.
- **Program description:** The CSNLI is a 3-year, intensive leadership program that centers EDI skill development across personal, interpersonal, organizational, and systems domains through its design, competencies, and curriculum.
- **Program evaluation:** A robust evaluation following the Kirkpatrick Model offers analysis of four data collecting activities related to program participants' EDI learning, behavioral change, and results.
- **Discussion:** Over the course of the program, participants made significant gains in competencies related to equity, diversity, and inclusion. Furthermore, participants demonstrated growth in behavior change and leadership activities in the areas of organizational and system change. Results demonstrate the need to center both leader and leadership development on equity, diversity, and inclusion curriculum to make real change in the US Healthcare System.

Douglas MD, Josiah Willock R, Respress E, Rollins L, Tabor D, Heiman HJ, Hopkins J, Dawes DE, Holden KB. **Applying a Health Equity Lens to Evaluate and Inform Policy**. Ethn Dis. 2019 Jun 13;29(Suppl 2):329-342. doi: 10.18865/ed.29.S2.329. LINK.

- Health disparities have persisted despite decades of efforts to eliminate them at the national, regional, state and local levels. Policies have been a driving force in creating and exacerbating health disparities, but they can also play a major role in eliminating disparities. Research evidence and input from affected community-level stakeholders are critical components of evidence-based health policy that will advance health equity. The Transdisciplinary Collaborative Center (TCC) for Health Disparities Research at Morehouse School of Medicine consists of five subprojects focused on studying and informing health equity policy related to maternal-child health, mental health, health information technology, diabetes, and leadership/workforce development. This article describes a "health equity lens" as defined, operationalized and applied by the TCC to inform health policy development, implementation, and analysis. Prioritizing health equity in laws and organizational policies provides an upstream foundation

for ensuring that the laws are implemented at the midstream and downstream levels to advance health equity.

Eissa A, Rowe R, Pinto A, Okoli GN, Campbell KM, Washington JC, Rodríguez JE. **Implementing High-Quality Primary Care Through a Health Equity Lens**. Ann Fam Med. 2022 Mar-Apr;20(2):164-169. LINK.

- Flagged as particularly interesting/relevant in original search.
- Abstract: "The COVID-19 pandemic highlighted the importance of centering health equity in future health system and primary care reforms. Strengthening primary care will be needed to correct the longstanding history of mistreatment of First Nations/Indigenous and racialized people, exclusion of health care workers of color, and health care access and outcome inequities further magnified by the COVID-19 pandemic. The National Academies of Sciences, Engineering, and Medicine (NASEM) released a report on *Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care*, that provided a framework for defining high-quality primary care and proposed 5 recommendations for implementing that definition. Using the report's framework, we identified health equity challenges and opportunities with examples from primary care systems in the United States and Canada. We are poised to reinvigorate primary care because the recent pandemic and the attention to continued racialized police violence sparked renewed conversations and collaborations around equity, diversity, inclusion, and health equity that have been long overdue. The time to transition those conversations to actionable items to improve the health of patients, families, and communities is now."
- "Recommendation 1: Pay for Primary Care Teams to Care for People, Not for Doctors to Deliver Services"
- "Recommendation 2: Ensure That High-Quality Primary Care is Available to Every Individual and Family in Every Community"
    - "Ontario's experience suggests that incentivizing primary care teams to improve after-hours clinic access outside regular working hours helps to reduce emergency department visits". See also:
        - Hong M, Thind A, Zaric GS, Sarma S. **Emergency department use following incentives to provide after-hours primary care: a retrospective cohort study**. CMAJ. 2021 Jan 18;193(3):E85-E93. LINK.
    - "Interventions that focus on community engagement, outreach programs (fixed or mobile), housing, case management, and integration of services are essential to ensuring that traditionally underserved populations (ie, homeless, incarcerated, and those with mental illness and substance use disorders) have access to high-quality primary care. For example, access to psychiatric care and expansion of mental health services was improved in Indigenous Cree communities in Manitoba, Canada, by using an intersectoral community-based approach that connected mental health services to primary care for adults". See also:

        - Health Quality Ontario. **Interventions to Improve Access to Primary Care for People Who Are Homeless: A Systematic Review**. Ont Health Technol Assess Ser. 2016 Apr 1;16(9):1-50. LINK.
        - Kouyoumdjian FG, Lamarche L, McCormack D, Rowe J, Kiefer L, Kroch A, Antoniou T. **90-90-90 for everyone?: Access to HIV care and treatment for people with HIV who experience imprisonment in Ontario, Canada**. AIDS Care. 2020 Sep;32(9):1168-1176. LINK.
- "Recommendation 3: Train Primary Care Teams Where People Live and Work"
    - "Indigenous people and communities in remote areas of Canada face unique health access challenges with fewer health care services, and in many instances, access is fly-in only. As a result, hiring and retention in these communities is difficult, and the time needed to build trusting relationships with primary care clinicians is hampered. In addition, people living in indigenous reserves and rural regions tend to have higher rates of illnesses and increased prevalence of comorbidity and multimorbidity. Health care professionals trained to work and live in the communities they serve would develop a deeper understanding of the community's cultural and health needs and train to provide holistic care as primary care clinicians."
    - "Canada's Northern Ontario School of Medicine is one example of situating training within rural and remote communities, which has a positive impact on trainees and the community."
- "Recommendation 4: Design Information Technology That Serves the Patient, Family, and the Interprofessional Care Team"
- "Recommendation 5: Ensure High-Quality Primary Care is Implemented"
    - "Direct evidence on the importance of having an equity-focused approach to primary care quality improvement is also reflected in a recent comparative study of adult mortality rates in Ontario and England. The study showed a significant improvement of 10% in the relative gap in mortality by income in England compared to Ontario, because England had prioritized an explicit primary care policy targeting health inequity reduction. In contrast, Ontario focused on improving overall access (in addition to increasing screening and other specific services) for the entire population." See also:
        - Cookson R, Mondor L, Asaria M, Kringos DS, Klazinga NS, Wodchis WP. **Primary care and health inequality: Difference-in-difference study comparing England and Ontario**. PLoS One. 2017 Nov 28;12(11):e0188560. LINK.

Enders FT, Golembiewski EH, Pacheco-Spann LM, Allyse M, Mielke MM, Balls-Berry JE. **Building a framework for inclusion in health services research: Development of and pre-implementation faculty and staff attitudes toward the Diversity, Equity, and Inclusion (DEI) plan at Mayo Clinic**. J Clin Transl Sci. 2021 Jan 5;5(1):e88. LINK.

- Flagged as particularly interesting/relevant in original search.

- "Objective: To mitigate the impact of racism, sexism, and other systemic biases, it is essential for organizations to develop strategies to address their diversity, equity and inclusion (DEI) climates. The objective of this formative evaluation was to assess Mayo Clinic Department of Health Sciences Research (HSR) faculty and staff perceptions toward a proposed departmental DEI plan and to explore findings by diversity and professional subgroups.
- Materials and methods: Key plan components include recruitment and support for diverse individuals; training for all HSR employees and leaders; and a review system to capture diversity and inclusion feedback for leaders. Additional activities include building inclusion "nudges" into existing performance reviews. To assess pre-implementation beliefs about specific plan components, we polled attendees at a departmental staff meeting in July 2020.
- Results: Overall, respondents (*n* = 162) commonly endorsed a blinded promotion review process and DEI training for all staff and leaders as most important. In contrast, respondents expressed less support for plan activities related to "nudges." However, attitudes among certain diversity or professional groups toward specific plan activities diverged from their non-diversity group counterparts. Qualitative feedback indicated awareness of the need to address DEI issues.
- Discussion: Overall, HSR faculty and staff respondents conveyed support for the plan. However, some specific plan activities were perceived differently by members of certain diversity or professional subgroups.
- Conclusion: These findings present a DEI framework on which other institutions can build and point to future directions for how DEI activities may be differentially perceived by impacted faculty and staff.
- Keywords: Diversity; academic medicine; equity; inclusion; organizational culture."

Harre, J. (2023). ***The impact of focused diversity, equity, and inclusion training on a rural midwest healthcare System's executive leadership team*** (Order No. 30422816). Available from ProQuest One Academic. (2803745538). LINK

- This project explored a rural healthcare system where the executive team consisted of Caucasian men and woman. No formal D/E & I training existed outside of the mandatory annual PowerPoint training. The goal of this project was to determine if intentional evidence-based D/E & I training, with the executive leadership team, impacted the cultural intelligence (CI). The measurement of training effectiveness was the executive team's CI pre-and post-assessments. The D/E & I training started in December of 2021 with 20 members of the executive leadership team. The training completed in December of 2022 with 17 members of the executive leadership team. The group completed pre-and post-assessments that resulted in an increase in overall CI. The executive leadership team also completed proposals to the CEO recommending new CI approaches for team meetings with the goal of helping all executive team members feeling heard and valued.

Henry TL, Britz JB, Louis JS, Bruno R, Oronce CIA, Georgeson A, Ragunanthan B, Green MM, Doshi N, Huffstetler AN. **Health Equity: The Only Path Forward for Primary Care**. Ann Fam Med. 2022 Mar-Apr;20(2):175-178. LINK. Erratum in: Ann Fam Med. 2022 May-Jun;20(3):203. LINK.

- Abstract: "The 2021 National Academies of Sciences, Engineering, and Medicine (NASEM) report on *Implementing High-Quality Primary Care* identifies 5 high-level objectives regarding payment, access, workforce development, information technology, and implementation. Nine junior primary care leaders (3 internal medicine, 3 family medicine, 3 pediatrics) invited from broad geographies, practice settings, and academic backgrounds used appreciative inquiry to identify priorities for the future of primary care. Highlighting the voices of these early career clinicians, we propose a response to the report from the perspective of early career primary care physicians. Health equity must be the foundation of the future of primary care. Because Barbara Starfield's original 4 Cs (first contact, coordination, comprehensiveness, and continuity) may not be inclusive of the needs of under-resourced communities, we promote an extension to include 5 additional Cs: convenience, cultural humility, structural competency, community engagement, and collaboration. We support the NASEM report's priorities and its focus on achieving health equity. We recommend investing in local communities and preparatory programs to stimulate diverse individuals to serve in health care. Finally, we support a blended value-based care model with risk adjustment for the social complexity of our patients.

Herrin J, Harris KG, Spatz E, Cobbs-Lomax D, Allen S, León T. **Hospital Leadership Diversity and Strategies to Advance Health Equity**. Jt Comm J Qual Patient Saf. 2018 Sep;44(9):545-551. LINK.

- Background: Diversity in hospital leadership is often valued as important for achieving clinical excellence. The American Hospital Association surveyed hospitals about their actions to identify and address health disparities. The survey asked about the degree of representation of racial and ethnic minorities and women among executives and board members.
- Methods: The survey contained 78 items in four domains: Leadership and Strategic Planning, Workforce, Data Collection, and Reducing Disparities. All items were standardized and pooled within each domain to construct four variables. Logistic regression models were used to assess the difference in domain scores, for each domain, between hospitals with (a) high and low representation of people of color in the C-suite, (b) high and low representation of women in the corporate (C-) suite, (c) high and low representation of people of color on the board, and (d) high and low representation of women on the board.
- Results: Hospitals with more diverse boards with respect to race and ethnicity had significantly higher scores for all domains, indicating that these hospitals were pursuing substantially more strategies in all domains. In contrast, more racially and ethnically diverse executive suites were associated only with the Data Collection domain, while hospitals with a higher percentage of women in executive positions had lower scores for all domains except Data Collection.
- Conclusion: Hospitals with greater representation of racial and ethnic minorities in leadership positions had greater commitments to diversity initiatives. However, hospitals with women-

particularly white women-in leadership positions reported fewer diversity initiatives. Future research is needed to examine the mechanisms and causality behind these associations.

Hogan TH, O'Rourke BP, Weeks E, Silvera GA, Choi S. **Top-level leaders and implementation strategies to support organizational diversity, equity, inclusion, and belonging (DEIB) interventions: a qualitative study of top-level DEIB leaders in healthcare organizations**. Implement Sci. 2023 Nov 7;18(1):59. LINK.

- Flagged as particularly interesting/relevant in original search.
- **Background**: The Black Lives Matter movement and COVID-19 pandemic motivated the wide-scale adoption of diversity, equity, inclusion, and belonging (DEIB) initiatives within healthcare organizations and the creation of DEIB top-level leader positions. The next step is to understand how these leaders contribute to the implementation of DEIB interventions, a task with notable salience due to not only the historical difficulties associated with DEIB strategy execution, but also the substantial evidence that leadership plays a significant role in implementation processes. Therefore, the objective of this qualitative study is to understand the role of top-level DEIB leaders in the implementation of healthcare organizational DEIB interventions.
- **Methods**: A qualitative research approach which used an in-depth semi-structured interview approach was employed. We conducted thirty-one 60-90-min semi-structured interviews with DEIB top-level leaders between February 2022 and October 2022 over Zoom. An iterative coding process was used to identify the key implementation strategies and activities of DEIB top-level leaders.
- **Results**: Interviewees were mostly Black, majority female, and mostly heterosexual and had a variety of educational backgrounds. We identified the DEIB top-level leader as the DEIB strategy implementation champion. These leaders drive five DEIB implementation strategies: (1) People, (2) Health Equity, (3) Monitoring and Feedback, (4) Operational Planning and Communication, and (5) External Partners. Within these, we identified 19 significant activities that describe the unique implementation strategies supported by the DEIB top-level leaders.
- **Conclusions**: To move toward sustained commitment to DEIB, the organization must focus on not only establishing DEIB interventions, but on their successful implementation. Our findings help explicate the implementation activities that drive the DEIB initiatives of healthcare organizations and the role of DEIB leaders. Our work can help healthcare organizations systematically identify how to support the success of DEIB organizational interventions

Khan BN, Dang-Nguyen M, Gordon D, Chandra S, Abejirinde IO. **What comes after strategy: Moving beyond statements and open letters–An analysis of three Toronto hospitals' diversity, equity and inclusion (DEI) plans**. BMJ Leader. 2023 Aug 1;7(Suppl 2). LINK

- Flagged as particularly interesting/relevant in original search.

- **Introduction** The murders of Breonna Taylor and George Floyd in 2020 forced institutions to publicly acknowledge systemic racism. In the Canadian healthcare sector, some hospitals used this pivotal moment to create strategic equity plans to address anti-Black racism and ongoing health inequities.
- **Methods** Through a case study approach, we selected three hospitals in Toronto, Canada and analysed their most recent publicly available diversity, equity and inclusion (DEI) strategic plans.
- **Results** All three hospitals released new DEI strategies following 2020 that covered similar grounds: incorporating DEI into HR practices, cultural adaptations of services, race-based data collection and investments in training. While two out of three hospitals reported progress on their anti-Black racism commitments, specific actions to be taken and metrics to monitor and track progress varied.
- **Conclusions** DEI plans analysed are set to reach maturity as early as 2023 and as late as 2025. We provide high level recommendations to guide this work beyond these timelines. Antiracism reform and reconciliation is not a one-time event, but requires thoughtful planning, collaboration with communities, investment in labour (ie, resources and staff), reflection and deep reckoning.
- **LINK to DEI Plans**

Kuljeet Chattha. (2023). **Discovering the Meaning of Equity, Diversity, and Inclusion at the Environmental Health Department of Vancouver Coastal Health**. MA in Leadership thesis. LINK

- Flagged as particularly interesting/relevant in original search.
- Abstract: "Framed through a system-thinking lens of transformational change, this action-oriented inquiry presented an opportunity to explore the diverse background and perspectives of many frontline Vancouver Coastal Health Authority (VCH) Environmental Health officers (EHOs) to determine the importance of equity, diversity, and inclusion (EDI) to them. Applying the 5-D model of the Appreciative Inquiry, the EHOs of VCH were engaged to learn what the topic of EDI means to them, both individually and for the organization. This inquiry involved two methods - a survey, and two focus groups. The survey was conducted with all EHOs working in the Richmond to Garibaldi Coast area, followed by two focus group sessions with participants from the same population. These officers shared stories of success and their future vision of EDI in the Environmental Health Department while describing barriers and the needed resources. The thematic analysis of the data found that various opportunities exist for EH leadership to enhance the organization's culture and psychological safety at all levels. This inquiry revealed that success is achieved through collaboration towards a shared vision, EDI has differing interpretations, procedures need to be more consistent, and a change in culture and behaviour is required for a safe and equitable work environment. Six recommendations emerged from these findings providing specific calls to action. This inquiry recommends continuing this study using an Appreciative Inquiry approach to understand EDI in all Health Protection departments,

implementing clear benchmarks for promotions and new hires, and developing actionable metrics to transform the current culture."

Morrison V, Hauch RR, Perez E, Bates M, Sepe P, Dans M. **Diversity, Equity, and Inclusion in Nursing: The Pathway to Excellence Framework Alignment**. Nurs Adm Q. 2021 Oct-Dec 01;45(4):311-323. LINK.

- Abstract: "The promotion of diversity, equity, and inclusion (DEI) in nursing is a topic of renewed importance, given the civil unrest following the death of George Floyd and identified disparities in health and health outcomes during the COVID-19 pandemic. Despite its progress, the nursing profession continues to struggle with recruiting and retaining a workforce that represents the cultural diversity of the patient population. The authors completed a review of the literature on DEI in nursing and found a scarcity of studies, and that a limitation exists due to the strength of the evidence examined. This article aims to provide a review of the literature on DEI in nursing, outcomes and strategies associated with organizational DEI efforts, and knowledge on how the American Nurses Credentialing Center Pathway to Excellence® Designation Program framework supports DEI initiatives. The authors further provided recommendations for nurse leaders and a checklist of proposed questions for assessing commitment, culture, and structural empowerment initiatives toward a more diverse, equitable, and inclusive organization."

Mullin AE, Coe IR, Gooden EA, Tunde-Byass M, Wiley RE. **Inclusion, diversity, equity, and accessibility: From organizational responsibility to leadership competency**. Healthc Manage Forum. 2021 Nov;34(6):311-315. LINK.

- Abstract: "An awakening to systemic anti-Black racism, anti-Indigenous racism, and harmful colonial structures in the context of a pandemic has made health inequities and injustices impossible to ignore, and is driving healthcare organizations to establish and strengthen approaches to inclusion, diversity, equity, and accessibility (IDEA). Health research and care organizations, which are shaping the future of healthcare, have a responsibility to make IDEA central to their missions. Many organizations are taking concrete action critically important to embedding IDEA principles, but durable change will not be achieved until IDEA becomes a core leadership competency. Drawing from the literature and consultation with individuals recognized for excellence in IDEA-informed leadership, this study will help Canadian healthcare and health research leaders-particularly those without lived experience-understand what it means to embed IDEA within traditional leadership competencies and propose opportunities to achieve durable change by rethinking governance, mentorship, and performance management through an IDEA lens."

Peek C et al. **Coming together in action for equity, diversity, and inclusion**. Family medicine. 2021. LINK

- Flagged as particularly interesting/relevant in original search.
- **Aim**: "To make a strong start in taking all faculty and staff on a participatory journey that brings changes in everything they do, using inclusive means to this inclusive end."
- **Context**: "This article offers our story of framing and initiating action as a whole family medicine department—for possible benefit to and conversation with others. Our department10 has 98 faculty, eight residency programs, four fellowship programs, plays a large role in medical student education, and has an active research enterprise ranked number three for National Institutes of Health funding among family medicine departments nationally. Our department has programs in health disparities research, sports medicine and in human sexuality. Five residencies in the Twin Cities and three in greater Minnesota produced 55 graduates in 2020. The majority of faculty and residents are White."
- **Includes sections on**:
    - **Initial Achievements**: A Shared Intellectual Framework—Definitions and Goals Across the Three Pillars (Table 1 shows EDI definitions with translations for each pillar and a high-level goal or "north star" to seek in each.); Shared Acceptance of Uncomfortable Local Reality and Need for Change; A Department Self-assessment—Top Growth Areas With Actions to Take
    - **Ongoing Action**: Becoming Centered on How Change Occurs—Principles of Emergence; Climate and Culture; Bring an Equity Lens to the Conduct of Departmental Relationships; Model a Constructive Approach to Specific EDI Incidents; Provide JEDI Tools and Education; Policy Review Using an Equity Lens; JEDI Evaluation and Measurement
    - **Invitation to Further Conversation Among Departments**: "Though our journey is far from complete, we offer for conversation among departments a set of operating principles from which we are now working (Table 4). These are not recommendations. They are only a reconstruction of how we have been going about this work. Our journey will be more successful by engaging our larger institution and our colleagues across the country. We hope this article stimulates conversation about beginning and proceeding constructively with EDI change in family medicine departments."

Shah N, Tiwari R, Brar G. **Evaluating program planning using an equity framework**. Healthcare Manage Forum. 2022 Nov;35(6):339-343. LINK.

- Flagged as particularly interesting/relevant in original search.
- Abstract: "To plan for an expansion of healthcare services in newly developed neighbourhoods, a planning initiative was conducted to better understand the needs of the population. Ensuring equity of care was identified as a priority for this initiative. To evaluate how closely the planning adhered to the principles of health equity, we applied Ontario Health's Equity, Inclusion, Diversity, and Anti-Racism Framework to determine which areas of action were successfully addressed, and which areas of action require further focus. The framework contains 11 components, each delineating a key area of action. Using this framework helped identify areas where the principles of equity were well addressed, as well as pointing to additional areas

where further efforts are required. Healthcare organizations must take a leadership role in advancing health equity by planning, delivering, improving, and advocating for the services and systematic changes that will allow its local community members to realize their highest attainable standard of health. Using such a framework can help develop strategic approaches to advancing equity."

Shin TM, Dodenhoff KA, Pardy M, Wehner AS, Rafla S, McDowell LD, Denizard-Thompson NM. **Providing Equitable Care for Patients With Non-English Language Preference in Telemedicine: Training on Working With Interpreters in Telehealth**. MedEdPORTAL. 2023 Dec 14;19:11367. LINK.

- **Introduction:** The COVID-19 pandemic has led to a large increase in telemedicine encounters. Despite this rise in virtual visits, patients who speak non-English languages have experienced challenges accessing telemedicine. To improve health equity, medical education on telehealth delivery should include instruction on working with interpreters in telehealth.
- **Methods:** We developed a 25-minute self-directed module with collective expertise of faculty with experience in medical education, interpreter training, and communication training. The module was delivered online as part of a longitudinal health equity curriculum for third-year medical students. In addition to didactic information, the module contained video examples of interpreter interactions in telehealth.
- **Results:** Sixty-four third-year medical students participated in the study, and 60 completed a postmodule survey. Students were satisfied with the content of the module, as well as the duration of time required to complete the tasks. Approximately 90% would recommend it to future students. Nearly 80% of students rated the module as being quite effective or extremely effective at increasing their comfort level with visits with patients with non-English language preference.
- **Discussion:** Our module provides a basic framework for medical students on how to successfully work with interpreters during a language-discordant virtual visit. This format of asynchronous learning could also be easily expanded to resident physicians and faculty seeking more resources around working with interpreters in telemedicine.

Uehling M, Hall-Clifford R, Kinnard C, Wimberly Y. **Advancing Equity in U.S. Hospital Systems: Employee Understandings of Health Equity and Steps for Improvement**. J Healthc Manag. 2023 Sep-Oct 01;68(5):342-355. LINK.

- Flagged as particularly interesting/relevant in original search.
- Goals: Equity in the U.S. healthcare system remains a vital goal for healthcare leaders. Although many hospitals and healthcare systems have adopted a social determinants of health approach to more equitable care, many challenges have limited the effectiveness of their efforts. In this study, we wanted to explore whether healthcare leaders and providers understand the concept of equity and can link the concepts to practical applications within healthcare systems.

- Methods: We explored how hospital leadership and providers at a major public hospital in Atlanta, Georgia, understand equity topics both conceptually and at a practical implementation level. We conducted 28 focus groups for >4 months involving 233 staff members, during which participants were asked about their understanding of various equity-related terms and equity implementation within the hospital.
- Principal findings: Our findings reveal that there is little consensus among staff regarding the conceptual meanings of various health equity-related terms, and only a small minority of staff can articulate a conceptual definition that reflects current research-based understandings of equity. Furthermore, there is little consensus regarding how staff believes that health equity is practically enacted through various hospital programs, even among interviewees who could correctly articulate equity topics. These findings have no association with a role in the organization or length of time employed at the hospital.
- Practical applications: These findings indicate a need for a more nuanced understanding of health equity and further clarification and education on how to implement health equity. Although understanding at the conceptual level is an important first step, conceptual knowledge alone is not enough to support health equity at either the individual staff level or the system level. Our recommendations cover strategic development; education specific to the hospital system and its unique needs; consideration of the specific roles of individuals in the organization; and the designation of diversity, equity, and inclusion staff and offices in a hospital organization.

## Implementation of EDI

Booysen LA, Gill P. **Creating a culture of inclusion through diversity and equity**. Book chapter in: Management and Leadership Skills for Medical Faculty and Healthcare Executives: A Practical Handbook. 2020:135-44. LINK

- Abstract: "This chapter focuses on the importance of equity, diversity, and inclusion (EDI) as critical workforce and leadership issues in health care. It highlights the business case for EDI, and shows how inclusivity leads to employee engagement that directly impacts services and outcomes. Inclusive leadership is offered as the best practice in optimizing diversity and creating cultures of inclusion where all people are valued equally with proportional representation and equitable inclusion. Four inclusive leadership competencies are singled out to be of particular importance in the health care context, namely: (1) engagement through relational practice, (2) enablement by creating environments for others to flourish, (3) empowerment by building confidence and communities, and (4) recognizing and developing talent. This chapter also features examples of everyday workplace triggering events that make inequity or discrimination noticeable, that might spark diversity-based conflict, and poses corrective boundary spanning organizational strategies to deal with these conflicts. The section on managing inequities and insensitivities focuses on practical applications dealing with LGBTQi issues and sexual harassment in the workplace and concludes with a case study of action taken by an exemplary health care institution in an effort to raise awareness about unconscious bias in light of the #MeToo movement. Lastly, this chapter identifies pearls and pitfalls in leading EDI..."

- This chapter is from **Management and Leadership Skills for Medical Faculty and Healthcare Executives: A Practical Handbook** LINK
    - About this book: "Recognizing that leaders in healthcare institutions face different questions and issues in different stages of their careers, this handy, practical title offers a comprehensive roadmap and range of solutions to common challenges in the complex and changing Academic Medical Center (AMC) and health care organization. Fully updated from the very well-received first edition and including new chapters, this concise handbook offers a guide for personal career development, executive skill acquisition, and leadership principles, providing real-world, actionable advice for faculty and executives seeking help on a myriad of new issues and situations.

      "… New material has been added to reflect what is happening as health care undergoes major transformation. With a broader panel of renowned authors from a mix of healthcare institutions as well as nonmedical experts in leadership and management, the book again meets its primary objective: to provide medical faculty, healthcare executives and other leaders with a contemporary, directly relevant resource that emphasizes practical skills and leadership development advice, including personal improvement, which can be used at any stage of one's career."

Bryan JM, Alavian S, Giffin D, LeBlanc C, Liu J, Phalpher P, Shelton D, Morris J, Lim R. **CAEP 2021 Academic Symposium: recommendations for addressing racism and colonialism in emergency medicine**. CJEM. 2022 Mar;24(2):144-150. LINK.

- Purpose: Racism and colonialism impact health, physician advancement, professional development and medical education in Canada. The Canadian Association of Emergency Physicians (CAEP) has committed to addressing inequities in health in their recent statement on racism. The objective of this project was to develop recommendations for addressing racism and colonialism in emergency medicine.
- Methods: The authors, in collaboration with a 40-member working group, conducted a literature search, held a community consultation, solicited input from expert medical, academic and community advisors, conducted a national survey of emergency physicians, and presented draft recommendations at the 2021 CAEP Academic Symposium on Equity, Diversity and Inclusion for a live facilitated discussion with a post-session survey.
- Results: Sixteen recommendations were generated in the areas of patient care, hospital and departmental commitment to Equity, Diversity, and Inclusion, physician advancement, and professional development and medical education.

Gill GK, McNally MJ, Berman V. **Effective diversity, equity, and inclusion practices**. In Healthcare management forum 2018 Sep (Vol. 31, No. 5, pp. 196-199). Sage CA: Los Angeles, CA: SAGE Publications. LINK.

- From the abstract: "For successful transformation to take place, strategies should focus on "Diversity, Equity, and Inclusion" (DEI) versus "diversity" alone and on creating inclusive team environments for positive staff experiences/engagement. There is a growing understanding of the relationship between the providers' work environments, patient outcomes, and organizational performance. This article leverages the principle of improving the healthcare provider's experience based on Health Quality Ontario's Quadruple Aim ("people caring for people"). Based on learnings/experiences, the top three successful practices from the organization's DEI strategy have been outlined in this article."

Heffern, S. J. (2020). ***Collaboration and stakeholder engagement in healthcare transformation*** (Order No. 27999801). Available from ProQuest Central; ProQuest One Academic. (2421954165). LINK.

- From abstract: "Leaders of efforts to transform large systems such as healthcare need ways to alleviate the enormous time and energy investment required in developing relationships and engaging stakeholders to work collaboratively. The problem addressed by this research study was the perceived ineffective and time-consuming collaboration between cross-sector healthcare stakeholders who have participated in the Alaska Healthcare Transformation Project. The purpose of this non-experimental quantitative, survey study was to explore the attributes of collaboration perceived as having the most significant positive impact on the collaborative process and whether stakeholder engagement influenced the attributes deemed most important… The study results suggested there is a relationship between level of engagement and attributes of collaboration rated as most important... The findings from this study can assist practitioners in the field by providing a framework to design and manage large scale collaborative efforts. Study results can be used in future meta-analysis of stakeholder engagement in collaborative efforts."

Holladay CL, Cavanaugh KJ, Perkins LD, Woods AL. **Inclusivity in Leader Selection: An 8-Step Process to Promote Representation of Women and Racial/Ethnic Minorities in Leadership**. Academic Medicine. 2023 Jan 1;98(1):36-42. LINK.

- From the abstract: "… those in more senior roles are more likely to select, sponsor, and/or mentor individuals like themselves, thereby depriving minority populations of experiences directly correlated with career development and advancement. Hence, the authors posit a focus on the characteristics and competencies of a leader along with a structured selection process is an effective intervention to reduce bias and support inclusion by recalibrating the representation of leadership within academic medical centers. To this end, the authors

developed a sequential 8-step leader selection process informed by their model of leadership characteristics and competencies. This process includes a policy update, selection of interview panels, training of panelists, screening the candidate pool, structured interview guides, final candidate slates, assessments of final candidates, and development of newly selected leaders. By following this process, the authors' organization has seen an increase in the representation of women and racial/ethnic minority leaders, an increase in employees' favorable perceptions specific to representation, and data indicative of developing and maintaining an internal diverse leadership candidate pipeline."

Marjadi B, Flavel J, Baker K, Glenister K, Morns M, Triantafyllou M, Strauss P, Wolff B, Procter AM, Mengesha Z, et al. **Twelve Tips for Inclusive Practice in Healthcare Settings**. *International Journal of Environmental Research and Public Health*. 2023; 20(5):4657. LINK.

- Abstract: "This paper outlines practical tips for inclusive healthcare practice and service delivery, covering diversity aspects and intersectionality. A team with wide-ranging lived experiences from a national [Australia] public health association's diversity, equity, and inclusion group compiled the tips, which were reiteratively discussed and refined. The final twelve tips were selected for practical and broad applicability. The twelve chosen tips are: (a) beware of assumptions and stereotypes, (b) replace labels with appropriate terminology, (c) use inclusive language, (d) ensure inclusivity in physical space, (e) use inclusive signage, (f) ensure appropriate communication methods, (g) adopt a strength-based approach, (h) ensure inclusivity in research, (i) expand the scope of inclusive healthcare delivery, (j) advocate for inclusivity, (k) self-educate on diversity in all its forms, and (l) build individual and institutional commitments. The twelve tips are applicable across many aspects of diversity, providing a practical guide for all healthcare workers (HCWs) and students to improve practices. These tips guide healthcare facilities and HCWs in improving patient-centered care, especially for those who are often overlooked in mainstream service provision."

Moreno JV, Marshall DR, Girard A, Mitchell NMB, Minissian MB, Coleman B. **An Organizational Commitment to Diversity, Equity, Inclusion, and Justice: A Multipronged Strategic Approach**. Nurs Adm Q. 2024 Jan-Mar 01;48(1):33-48. LINK.

- Abstract: "Cedars-Sinai is a sixth continuous Magnet organization in Southern California that embodies inclusive leadership in support of diversity, equity, inclusion, and justice (DEIJ) principles. The organization adheres to a strategic model prioritizing staff sense of belonging, empowerment, engagement, curiosity, and creativity. Employing inclusive leadership, we have implemented strong programs of professional development and continuous learning, innovation, and research. This leadership and these programs have fostered a culture of inquiry, support evidence-driven practice, quality improvement, and staff engagement. Our organization is committed to creating a caring and healing environment that promotes performance. We

believe in practicing loving-kindness toward ourselves and others as a core value. Executive leadership support has been a key element in our successful implementation of DEIJ strategies, including employee resource groups, Shared Leadership Councils, transition to practice programs, health equity research, and innovative solutions. These strategies have been shown to yield a significant return on investment."

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Narayan AK, Schaefer PW, Daye D, Alvarez C, Chonde DB, McLoud TC, Flores EJ, Brink JA. **Practical Tips for Creating a Diversity, Equity, and Inclusion Committee: Experience From a Multicenter, Academic Radiology Department**. J Am Coll Radiol. 2021 Jul;18(7):1027-1037. LINK.

- Purpose: … The purpose of this review is to provide readers with a framework and practical tips for creating a comprehensive, institutionally aligned radiology DEI committee.
- Methods: The authors describe key components of the strategic planning process and lessons learned in the creation of a radiology DEI committee, on the basis of the experience of an integrated, academic northeastern radiology department.
- Results: A hospital-based strategic planning process defining the DEI vision, mission, goals, and strategies was used to inform the formation of the radiology department DEI committee. The radiology department performed gap analyses by conducting internal and external research. Strengths, weaknesses, opportunities, and threats analyses were performed on the basis of consultations with institutional and other departmental DEI leaders as well as DEI leaders from other academic medical centers. This framework served as the basis for the creation of the radiology departmental DEI committee, including a steering committee and four task forces (education, research, patient experience, and workforce development), each charged with addressing specific institutional goals and strategies.
- Conclusions: This review provides academic radiology departments with a blueprint to create a comprehensive, institutionally aligned radiology DEI committee.

Powell T, Bischoff J, Reddy K, Nagy SE, Lawrence TM, Bates M, McCright M. **Achieving a Diverse, Equitable and Inclusive Environment Using the Pathway to Excellence® Framework as a Model**. JONA: The Journal of Nursing Administration. 2023 Sep 1;53(9):474-80. LINK.

- Abstract: "Diversity, equity, inclusion, and belonging (DEIB) are essential in building effective healthcare teams to provide quality patient care. Striving to achieve a DEIB culture in the healthcare setting presents challenges and opportunities, and using a framework facilitates this important work. This article details how 2 Pathway to Excellence® (Pathway) designated organizations used the Pathway framework foundations around leadership, shared decision-making, professional development, safety, quality, and well-being to build and support their DEIB structures."

Royeen CB. **Increasing Diversity, Equity, and Inclusion (DEI) in Allied Health Using Ten Best Practices**. Journal of Allied Health. 2023 Sep 6;52(3):99-102. LINK.

- Abstract: "Major events and growing social justice movements have placed a spotlight on health disparities and created an urgency for action addressing racism in healthcare and education. Selected literature highlights the importance of incorporating Diversity, Equity and Inclusion (DEI) into organizational culture and strategy. This commentary summarizes ten best practices as operationalized at a midwestern college within an academic medical center. These best practices include systematic assessment, committed funding, appropriate selection of who does the work, intentionality, setting expectations, identity formation, dissemination, record keeping, and prioritization of DEI. Additionally, adoption of a strong diversity statement, allotment of scholarship support, an inventory of diversity and inclusion activities, the appointment of a Director of Diversity and Inclusion, and two DEI training initiatives are discussed: SEED training focuses on individual development and self-awareness, while Stepping In training provides concrete skills to address instances of racism. The commentary concludes by emphasizing the need for ongoing formal assessments to gage degree of change and DEI competence achieved."

Straatman L, Matlow A, Dickson GS, Van Aerde J, Gautam M. **The times are changing: articulating the requisite leadership behaviours needed to embed equity, diversity and inclusivity into our healthcare systems**. BMJ Leader. 2023 Aug 1;7(Suppl 2):e000767. LINK.

- From the abstract: "Healthcare leaders, in the privileged position of influence, would benefit from an enhanced capabilities framework that articulates the specific actions and behaviours needed to embed equity, diversity and inclusivity (EDI) into their regular activities and ultimately into the healthcare system as a whole. The LEADS in a Caring Environment Capabilities Framework has been widely adopted in Canada and is similar to other national health leadership frameworks. Enhancements through an EDI lens are highly generalisable and can be contextually adapted to improve health, well-being and social justice worldwide."
- LEADS dimensions: Lead self; Engage others; Achieve results; Develop coalitions; Systems transformation.
- "Equity, diversity and inclusion (EDI) must inform the practices of current healthcare leaders to ensure quality healthcare for all. Existing healthcare leadership frameworks do not offer a comprehensive set of EDI-focused guidelines for behaviour and action. Widespread use and adaptation of the LEADS in a Caring Environment Capabilities Framework makes it an ideal framework to begin to address these issues. Five examples aligned with the five domains of

LEADS are presented which highlight modifications that can be made to existing leadership frameworks. Modifications to other frameworks to promote EDI are encouraged."

Van Gilder BJ, Austin JT, Bruscella JS, editors. **Communication and Organizational Changemaking for Diversity, Equity, and Inclusion: A Case Studies Approach**. Taylor & Francis; 2023 Nov 3. LINK.

- Description: "This book explores the opportunities, challenges, and effective approaches to organizational change regarding diversity, equity, inclusion, and belonging. Featuring application-based case studies and practical guidelines for meaningful organizational change, this book problematizes some of the current DEI initiatives in today's organizations. It examines multiple forms of diversity (e.g., race, age, and mental health) from a variety of perspectives (e.g., leadership and employee), with case studies that demonstrate how changemaking efforts can be reimagined and implemented in better, more nuanced, and more sustainable ways to produce meaningful organizational change. Through these case studies, readers learn from organizations' successes and failures in their attempts to implement DEI practices. Each chapter concludes with explicit practical implications and/or actionable recommendations for organizational changemaking. This text will make an impactful addition to courses in communication and diversity or organizational communication/change at the advanced undergraduate or graduate level, and will be an essential guide for professionals wishing to lead change in their organizations."

- Table of Contents:
    - 1. Introduction: Communication and Organizational Changemaking for Diversity, Equity, & Inclusion.
    - **Part 1. Envisioning More Equitable Structures, Policies, and Practices**
        - 2. Finding the Right Fit: Strategies for DEI Sourcing in AI-Driven Recruitment.
        - 3. Age Discrimination in the Workplace: An Exploration of Age-Blind Hiring Practices.
        - 4. Against Professionalism and "Good" Communication: Transforming Exclusionary Assumptions in Interviews and Beyond
        - 5. Language-Discordance as a Barrier to Health Equity: Identifying Inclusive Practices in Health Organizations from Patients' Perspectives
        - 6. Taking Action to Increase Diversity and Inclusion in the Workplace: Integrity and Compliance-Based Training as a Foundation for Training in Organizations
        - 7. Reimagining Faculty and Institutional Engagement with Equitable and Inclusive Practices to Foster Meaningful Organizational Changemaking in Higher Education
        - 8. Beyond Performative Allyship: Moving from Intention to Action in Diversity, Equity, and Inclusion Initiatives

- **Part 2. Challenging Dominant Discourses and Fostering Dialogue**
  - 9. "Work-Life Balance? That's Just for Managers": Time Policies and Practices in Blue-Collar and White-Collar Work
  - 10. Challenging Institutional Whiteness: The Lived Experiences of Structural Tensions in Diversity Work
  - 11. "#BeingBlackandMuslim": Addressing Intersectional Invisibility in Muslim American Communities
  - 12. Pedagogy and Mentorship as Organizational Changemaking: An Autoethnographic Vignette Approach
  - 13. Compassion at the Margins: Increasing Compassion for Employees from Traditionally Marginalized Groups
  - 14. Action-Oriented Dialogues for Systemic Change: A Trauma-Informed Approach
  - 15. Facilitating Structures and Processes for Ethical Dialogue Across Difference: A Case Study of an Interorganizational Collaboration for Social Change
  - 16. It's the Hope That Kills You: Belonging and Organizational Change in Ted Lasso
- **Part 3: Promoting Meaningful and Impactful Organizational Leadership**
  - 17. "It's a safe space, right?": The Complexities of Communicating LGBTQ+ Inclusion Via Artifacts
  - 18. Meandering, Mistakes, and Movement: Stages of Organizational Culture Change for DEI
  - 19. Collaborative and Inclusive Leadership: Co-Cultural Calls for Dominant Group Action
  - 20. Black Women Religious Leaders Diversifying Mental Health Training
  - 21. Equity-centered Leadership and Sustainable Change-making: An Organizational Imperative for Post-Pandemic Leadership and Advancement
  - 22. Whitewashing the Walls: Leading Organizational Change from Cultures of Mistrust to Celebrating Sisterhood
  - 23. Organizing for Transgender Inclusion: How Control and Resistance Theorizing Serve as Intervention Tools

Woodward et al. **A more practical guide to incorporating health equity domains in implementation determinant frameworks**. Implement Sci Commun. 2021. LINK.

- Guide to incorporating health equity domains in implementation determinant frameworks
- **Aim**: "We completed a consensus process with our authorship team to clarify steps to incorporate a health equity lens into an implementation determinant framework."
- **Health Equity Implementation Framework**: "The Health Equity Implementation Framework incorporates these domains known to affect health disparities and thus, equity: (1) culturally relevant factors, such as medical mistrust, demographics, or biases of recipients; (2) clinical

encounter or patient-provider interaction; and (3) societal context including physical structures, economies, and social and political forces"

- **Findings**: "We describe steps to integrate health equity domains into implementation determinant frameworks for implementation research and practice. For each step, we compiled examples or practical tools to assist implementation researchers and practitioners in applying those steps. For each domain, we compiled definitions with supporting literature, showcased an illustrative example, and suggested sample quantitative and qualitative measures."
    - Select a suitable framework or domains for an implementation disparity problem
    - Determine implementation determinants
    - Use domains to develop an implementation mechanistic process model or logic model
    - Use framework determinants to conduct and tailor implementation
    - Writing implementation reports or findings

# EDI Related to Health Data

## Systematic Reviews

Chen M, Tan X, Padman R. **Social determinants of health in electronic health records and their impact on analysis and risk prediction: A systematic review**. J Am Med Inform Assoc 2020; 27 (11): 1764–73. LINK

- Flagged as particularly interesting/relevant in original search.
- **Objective**: This integrative review identifies and analyzes the extant literature to examine the integration of social determinants of health (SDoH) domains into electronic health records (EHRs), their impact on risk prediction, and the specific outcomes and SDoH domains that have been tracked.
- **Results**: Our search strategy identified 71 unique studies that are directly related to the research questions. 75% of the included studies were published since 2017, and 68% were U.S.-based. 79% of the reviewed articles integrated SDoH information from external data sources into EHRs, and the rest of them extracted SDoH information from unstructured clinical notes in the EHRs. We found that all but 1 study using external area-level SDoH data reported minimum contribution to performance improvement in the predictive models. In contrast, studies that incorporated individual-level SDoH data reported improved predictive performance of various outcomes such as service referrals, medication adherence, and risk of 30-day readmission. We also found little consensus on the SDoH measures used in the literature and current screening tools.
- **Conclusions**: The literature provides early and rapidly growing evidence that integrating individual-level SDoH into EHRs can assist in risk assessment and predicting healthcare utilization and health outcomes, which further motivates efforts to collect and standardize patient-level SDoH information.

Cook LA, Sachs J, Weiskopf NG. **The quality of social determinants data in the electronic health record: a systematic review**. J Am Med Inform Assoc. 2021 Dec 28;29(1):187-196. LINK.

- Flagged as particularly interesting/relevant in original search.
- **Objective**: The aim of this study was to collect and synthesize evidence regarding data quality problems encountered when working with variables related to social determinants of health (SDoH).
- **Materials and Methods**: We conducted a systematic review of the literature on social determinants research and data quality and then iteratively identified themes in the literature using a content analysis process.
- **Results**: The most commonly represented quality issue associated with SDoH data is plausibility (n = 31, 41%). Factors related to race and ethnicity have the largest body of literature (n = 40, 53%). The first theme, noted in 62% (n = 47) of articles, is that bias or validity issues often result from data quality problems. The most frequently identified validity issue is misclassification bias (n = 23, 30%). The second theme is that many of the articles suggest methods for mitigating the issues resulting from poor social determinants data quality. We grouped these into 5 suggestions: avoid complete case analysis, impute data, rely on multiple sources, use validated software tools, and select addresses thoughtfully.
- **Discussion**: The type of data quality problem varies depending on the variable, and each problem is associated with particular forms of analytical error. Problems encountered with the quality of SDoH data are rarely distributed randomly. Data from Hispanic patients are more prone to issues with plausibility and misclassification than data from other racial/ethnic groups.
- **Conclusion**: Consideration of data quality and evidence-based quality improvement methods may help prevent bias and improve the validity of research conducted with SDoH data.

Patra BG, et al. **Extracting social determinants of health from electronic health records using natural language processing: a systematic review**. J Am Med Inform Assoc. 2021 Nov 25;28(12):2716-2727. LINK.

- **Objective**: Social determinants of health (SDoH) are nonclinical dispositions that impact patient health risks and clinical outcomes. Leveraging SDoH in clinical decision-making can potentially improve diagnosis, treatment planning, and patient outcomes. Despite increased interest in capturing SDoH in electronic health records (EHRs), such information is typically locked in unstructured clinical notes. Natural language processing (NLP) is the key technology to extract SDoH information from clinical text and expand its utility in patient care and research. This article presents a systematic review of the state-of-the-art NLP approaches and tools that focus on identifying and extracting SDoH data from unstructured clinical text in EHRs.
- **Materials and Methods**: A broad literature search was conducted in February 2021 using 3 scholarly databases (ACL Anthology, PubMed, and Scopus) following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A total of 6402 publications

were initially identified, and after applying the study inclusion criteria, 82 publications were selected for the final review.

- **Results**: Smoking status (n = 27), substance use (n = 21), homelessness (n = 20), and alcohol use (n = 15) are the most frequently studied SDoH categories. Homelessness (n = 7) and other less-studied SDoH (eg, education, financial problems, social isolation and support, family problems) are mostly identified using rule-based approaches. In contrast, machine learning approaches are popular for identifying smoking status (n = 13), substance use (n = 9), and alcohol use (n = 9).
- **Conclusion**: NLP offers significant potential to extract SDoH data from narrative clinical notes, which in turn can aid in the development of screening tools, risk prediction models, and clinical decision support systems.

Yan AF, et al. **Effectiveness of Social Needs Screening and Interventions in Clinical Settings on Utilization, Cost, and Clinical Outcomes: A Systematic Review**. Health Equity. 2022 Jun 24;6(1):454-475. LINK.

- **Objective**: This systematic review examined and synthesized peer-reviewed research studies that reported the process of integrating social determinants of health (SDOH) or social needs screening into electronic health records (EHRs) and the intervention effects in the United States.
- **Methods**: Following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) guidelines, a systematic search of Scopus, Web of Science Core Collection, MEDLINE, and Cochrane Central Register of Clinical Trials was performed. English language peer-reviewed studies that reported the process of integrating SDOH or social needs screening into EHRs within the U.S. health systems and published between January 2015 and December 2021 were included. The review focused on process measures, social needs changes, health outcomes, and health care cost and utilization.
- **Results**: In total, 28 studies were included, and half were randomized controlled trials. The majority of the studies targeted multiple SDOH domains. The interventions vary by the levels of intensity of their approaches and heterogeneities in outcome measures. Most studies (82%, n=23) reported the findings related to the process measures, and nearly half (43%, n=12) reported outcomes related to social needs. By contrast, only 39% (n=11) and 32% (n=9) of the studies reported health outcomes and impact on health care cost and utilization, respectively. Findings on patients' social needs change demonstrated improved access to resources. However, findings were mixed on intervention effects on health and health care cost and utilization. We also identified gaps in implementation challenges to be overcome.
- **Conclusion**: Our review supports the current policy efforts to increase U.S. health systems' investment toward directly addressing SDOH. While effective interventions can be more complex or resource intensive than an online referral, health care organizations hoping to achieve health equity and improve population health must commit the effort and investment required to achieve this goal.

## Other Reviews

Bompelli A, et al. **Social and Behavioral Determinants of Health in the Era of Artificial Intelligence with Electronic Health Records: A Scoping Review**. Health Data Sci. 2021 Aug 24;2021:9759016. LINK.

- **Background**: There is growing evidence that social and behavioral determinants of health (SBDH) play a substantial effect in a wide range of health outcomes. Electronic health records (EHRs) have been widely employed to conduct observational studies in the age of artificial intelligence (AI). However, there has been limited review into how to make the most of SBDH information from EHRs using AI approaches.
- **Methods**: A systematic search was conducted in six databases to find relevant peer-reviewed publications that had recently been published. Relevance was determined by screening and evaluating the articles. Based on selected relevant studies, a methodological analysis of AI algorithms leveraging SBDH information in EHR data was provided.
- **Results**: Our synthesis was driven by an analysis of SBDH categories, the relationship between SBDH and healthcare-related statuses, natural language processing (NLP) approaches for extracting SBDH from clinical notes, and predictive models using SBDH for health outcomes.
- **Discussion**: The associations between SBDH and health outcomes are complicated and diverse; several pathways may be involved. Using NLP technology to support the extraction of SBDH and other clinical ideas simplifies the identification and extraction of essential concepts from clinical data, efficiently unlocks unstructured data, and aids in the resolution of unstructured data-related issues.
- **Conclusion**: Despite known associations between SBDH and diseases, SBDH factors are rarely investigated as interventions to improve patient outcomes. Gaining knowledge about SBDH and how SBDH data can be collected from EHRs using NLP approaches and predictive models improves the chances of influencing health policy change for patient wellness, ultimately promoting health and health equity.

He Z, et al. **Enriching Real-world Data with Social Determinants of Health for Health Outcomes and Health Equity: Successes, Challenges, and Opportunities**. Yearb Med Inform. 2023 Aug;32(1):253-263. LINK.

- **Objective**: To summarize the recent methods and applications that leverage real-world data such as electronic health records (EHRs) with social determinants of health (SDoH) for public and population health and health equity and identify successes, challenges, and possible solutions.
- **Methods**: In this opinion review, grounded on a social-ecological-model-based conceptual framework, we surveyed data sources and recent informatics approaches that enable leveraging SDoH along with real-world data to support public health and clinical health applications including helping design public health intervention, enhancing risk stratification, and enabling the prediction of unmet social needs.

- **Results**: Besides summarizing data sources, we identified gaps in capturing SDoH data in existing EHR systems and opportunities to leverage informatics approaches to collect SDoH information either from structured and unstructured EHR data or through linking with public surveys and environmental data. We also surveyed recently developed ontologies for standardizing SDoH information and approaches that incorporate SDoH for disease risk stratification, public health crisis prediction, and development of tailored interventions.
- **Conclusions**: To enable effective public health and clinical applications using real-world data with SDoH, it is necessary to develop both non-technical solutions involving incentives, policies, and training as well as technical solutions such as novel social risk management tools that are integrated into clinical workflow. Ultimately, SDoH-powered social risk management, disease risk prediction, and development of SDoH tailored interventions for disease prevention and management have the potential to improve population health, reduce disparities, and improve health equity.

Li C, et al. **Realizing the Potential of Social Determinants Data: A Scoping Review of Approaches for Screening, Linkage, Extraction, Analysis and Interventions**. medRxiv [Preprint]. 2024 Feb 6:2024.02.04.24302242. LINK.

- **Background**: Social determinants of health (SDoH) like socioeconomics and neighborhoods strongly influence outcomes, yet standardized SDoH data is lacking in electronic health records (EHR), limiting research and care quality.
- **Methods**: We searched PubMed using keywords "SDOH" and "EHR", underwent title/abstract and full-text screening. Included records were analyzed under five domains: 1) SDoH screening and assessment approaches, 2) SDoH data collection and documentation, 3) Use of natural language processing (NLP) for extracting SDoH, 4) SDoH data and health outcomes, and 5) SDoH-driven interventions.
- **Results**: We identified 685 articles, of which 324 underwent full review. Key findings include tailored screening instruments implemented across settings, census and claims data linkage providing contextual SDoH profiles, rule-based and neural network systems extracting SDoH from notes using NLP, connections found between SDoH data and healthcare utilization/chronic disease control, and integrated care management programs executed. However, considerable variability persists across data sources, tools, and outcomes.
- **Discussion**: Despite progress identifying patient social needs, further development of standards, predictive models, and coordinated interventions is critical to fulfill the potential of SDoH-EHR integration. Additional database searches could strengthen this scoping review. Ultimately widespread capture, analysis, and translation of multidimensional SDoH data into clinical care is essential for promoting health equity.

Novilla MLB, Goates MC, Leffler T, Novilla NKB, Wu CY, Dall A, Hansen C. **Integrating Social Care into Healthcare: A Review on Applying the Social Determinants of Health in Clinical Settings**. Int J Environ Res Public Health. 2023 Oct 2;20(19):6873. LINK.

- Abstract: "Despite the substantial health and economic burdens posed by the social determinants of health (SDH), these have yet to be efficiently, sufficiently, and sustainably addressed in clinical settings-medical offices, hospitals, and healthcare systems. Our study contextualized SDH application strategies in U.S. clinical settings by exploring the reasons for integration and identifying target patients/conditions, barriers, and recommendations for clinical translation. The foremost reason for integrating SDH in clinical settings was to identify unmet social needs and link patients to community resources, particularly for vulnerable and complex care populations. This was mainly carried out through SDH screening during patient intake to collect individual-level SDH data within the context of chronic medical, mental health, or behavioral conditions. Challenges and opportunities for integration occurred at the educational, practice, and administrative/institutional levels. Gaps remain in incorporating SDH in patient workflows and EHRs for making clinical decisions and predicting health outcomes. Current strategies are largely directed at moderating individual-level social needs versus addressing community-level root causes of health inequities. Obtaining policy, funding, administrative and staff support for integration, applying a systems approach through interprofessional/intersectoral partnerships, and delivering SDH-centered medical school curricula and training are vital in helping individuals and communities achieve their best possible health."

Wark K, Cheung K, Wolter E, Avey JP. "**Engaging stakeholders in integrating social determinants of health into electronic health records: a scoping review**". Int J Circumpolar Health. 2021 Dec;80(1):1943983. LINK.

- Abstract: "Social, environmental, and behavioural factors impact human health. Integrating these social determinants of health (SDOH) into electronic health records (EHR) may improve individual and population health. But how these data are collectedand their use in clinical settings remain unclear. We reviewed efforts to integrate SDOH into EHR in the U.S. and Canada, especially how this implementation serves Indigenous peoples. We followed an established scoping review process, performing iterative keyword searches in subject-appropriate databases, reviewing identified works' bibliographies, and soliciting recommendations from subject-matter experts. We reviewed 20 articles from an initial set of 2,459. Most discussed multiple SDOH indicator standards, with the National Academy of Medicine's (NAM) the most frequently cited (n = 10). Common SDOH domains were demographics, economics, education, environment, housing, psychosocial factors, and health behaviours. Twelve articles discussed project acceptability and feasibility; eight mentioned stakeholder engagement (none specifically discussed engaging ethnic or social minorities); and six adapted SDOH measures to local cultures . Linking SDOH data to EHR as related to Indigenous

communities warrants further exploration, especially how to best align cultural strengths and community expectations with clinical priorities. Integrating SDOH data into EHR appears feasible and acceptable may improve patient care, patient-provider relationships, and health outcomes."

## Primary Research

Bright TJ, Williams KS, Rajamani S, Tiase VL, Senathirajah Y, Hebert C, McCoy AB. **Making the case for workforce diversity in biomedical informatics to help achieve equity-centered care: a look at the AMIA First Look Program**. J Am Med Inform Assoc. 2021 Dec 28;29(1):171-175. LINK.

- Abstract: "Developing a diverse informatics workforce broadens the research agenda and ensures the growth of innovative solutions that enable equity-centered care. The American Medical Informatics Association (AMIA) established the AMIA First Look Program in 2017 to address workforce disparities among women, including those from marginalized communities. The program exposes women to informatics, furnishes mentors, and provides career resources. In 4 years, the program has introduced 87 undergraduate women, 41% members of marginalized communities, to informatics. Participants from the 2019 and 2020 cohorts reported interest in pursuing a career in informatics increased from 57% to 86% after participation, and 86% of both years' attendees responded that they would recommend the program to others. A June 2021 LinkedIn profile review found 50% of participants working in computer science or informatics, 4% pursuing informatics graduate degrees, and 32% having completed informatics internships, suggesting AMIA First Look has the potential to increase informatics diversity."

Emani S, Rodriguez JA, Bates DW. **Racism and Electronic Health Records (EHRs): Perspectives for research and practice**. J Am Med Inform Assoc. 2023 Apr 19;30(5):995-999. LINK.

- Abstract: "Informatics researchers and practitioners have started exploring racism related to the implementation and use of electronic health records (EHRs). While this work has begun to expose structural racism which is a fundamental driver of racial and ethnic disparities, there is a lack of inclusion of concepts of racism in this work. This perspective provides a classification of racism at 3 levels-individual, organizational, and structural-and offers recommendations for future research, practice, and policy. Our recommendations include the need to capture and use structural measures of social determinants of health to address structural racism, intersectionality as a theoretical framework for research, structural competency training, research on the role of prejudice and stereotyping in stigmatizing documentation in EHRs, and actions to increase the diversity of private sector informatics workforce and participation of minority scholars in specialty groups. Informaticians have an ethical and moral obligation to address racism, and private and public sector organizations have a transformative role in addressing equity and racism associated with EHR implementation and use."

Espinoza JC, Sehgal S, Phuong J, Bahroos N, Starren J, Wilcox A, Meeker D. **Development of a social and environmental determinants of health informatics maturity model**. J Clin Transl Sci. 2023 Dec 7;7(1):e266. LINK.

- **Introduction**: Integrating social and environmental determinants of health (SEDoH) into enterprise-wide clinical workflows and decision-making is one of the most important and challenging aspects of improving health equity. We engaged domain experts to develop a SEDoH informatics maturity model (SIMM) to help guide organizations to address technical, operational, and policy gaps.
- **Methods**: We established a core expert group consisting of developers, informaticists, and subject matter experts to identify different SIMM domains and define maturity levels. The candidate model (v0.9) was evaluated by 15 informaticists at a Center for Data to Health community meeting. After incorporating feedback, a second evaluation round for v1.0 collected feedback and self-assessments from 35 respondents from the National COVID Cohort Collaborative, the Center for Leading Innovation and Collaboration's Informatics Enterprise Committee, and a publicly available online self-assessment tool.
- **Results**: We developed a SIMM comprising seven maturity levels across five domains: data collection policies, data collection methods and technologies, technology platforms for analysis and visualization, analytics capacity, and operational and strategic impact. The evaluation demonstrated relatively high maturity in analytics and technological capacity, but more moderate maturity in operational and strategic impact among academic medical centers. Changes made to the tool in between rounds improved its ability to discriminate between intermediate maturity levels.
- **Conclusion**: The SIMM can help organizations identify current gaps and next steps in improving SEDoH informatics. Improving the collection and use of SEDoH data is one important component of addressing health inequities.

Freij M, Dullabh P, Lewis S, Smith SR, Hovey L, Dhopeshwarkar R. **Incorporating Social Determinants of Health in Electronic Health Records: Qualitative Study of Current Practices Among Top Vendors**. JMIR Med Inform. 2019 Jun 7;7(2):e13849. LINK.

- Flagged as particularly interesting/relevant in original search.
- **Background**: Social determinants of health (SDH) are increasingly seen as important to understanding patient health and identifying appropriate interventions to improve health outcomes in what is a complex interplay between health system-, community-, and individual-level factors.
- **Objective**: The objective of the paper was to investigate the development of electronic health record (EHR) software products that allow health care providers to identify and address patients' SDH in health care settings.

- **Methods**: We conducted interviews with six EHR vendors with large market shares in both ambulatory and inpatient settings. We conducted thematic analysis of the interviews to (1) identify their motivations to develop such software products, (2) describe their products and uses, and (3) identify facilitators and challenges to collection and use of SDH data—through their products or otherwise—either at the point of care or in population health interventions.
- **Results**: Our findings indicate that vendor systems and their functionalities are influenced by client demand and initiative, federal initiatives, and the vendors' strategic vision about opportunities in the health care system. Among the small sample of vendors with large market shares, SDH is a new area for growth, and the vendors range in the number and sophistication of their SDH-related products. To enable better data analytics, population health management, and interoperability of SDH data, vendors recognized the need for more standardization of SDH performance measures across various federal and state programs, better mapping of SDH measures to multiple types of codes, and development of more codes for all SDH measures of interest.
- **Conclusions**: Vendors indicate they are actively developing products to facilitate the collection and use of SDH data for their clients and are seeking solutions to data standardization and interoperability challenges through internal product decisions and collaboration with policymakers. Due to a lack of policy standards around SDH data, product-specific decisions may end up being de facto policies given the market shares of particular vendors. However, commercial vendors appear ready to collaboratively discuss policy solutions such as standards or guidelines with each other, health care systems, and government agencies in order to further promote integration of SDH data into the standard of care for all health systems.

Gould LH, Farquhar SE, Greer S, Travers M, Ramadhar L, Tantay L, Gurr D, Baquero M, Vasquez A. **Data for Equity: Creating an Antiracist, Intersectional Approach to Data in a Local Health Department**. J Public Health Manag Pract. 2023 Jan-Feb 01;29(1):11-20. LINK.

- **Objective**: To develop recommendations to embed equity into data work at a local health department and a framework for antiracist data praxis.
- **Design**: A working group comprised staff from across the agency whose positions involved data collection, analysis, interpretation, or communication met during April-July 2018 to identify and discuss successes and challenges experienced by staff and to generate recommendations for achieving equitable data practices.
- **Setting**: Local health department in New York City.
- **Results**: The recommendations encompassed 6 themes: strengthening analytic skills, communication and interpretation, data collection and aggregation, community engagement, infrastructure and capacity building, and leadership and innovation. Specific projects are underway or have been completed.
- **Conclusions**: Improving equity in data requires changes to data processes and commitment to racial and intersectional justice and process change at all levels of the organization and across

job functions. We developed a collaborative model for how a local health department can reform data work to embed an equity lens. This framework serves as a model for jurisdictions to build upon in their own efforts to promote equitable health outcomes and become antiracist organizations.

Gruß I, Bunce A, Davis J, Dambrun K, Cottrell E, Gold R. **Initiating and Implementing Social Determinants of Health Data Collection in Community Health Centers**. Popul Health Manag. 2021 Feb;24(1):52-58. LINK.

- Abstract: "Successfully incorporating social determinants of health (SDH) screening into clinic workflows can help care teams provide targeted care, appropriate referrals, and other interventions to address patients' social risk factors. However, integrating SDH screening into clinical routines is known to be challenging. To achieve widespread adoption of SDH screening, we need to better understand the factors that can facilitate or hinder implementation of effective, sustainable SDH processes. The authors interviewed 43 health care staff and professionals at 8 safety net community health center (CHC) organizations in 5 states across the United States; these CHCs had adopted electronic health record (EHR)-based SDH screening without any external implementation support. Interviewees included staff in administrative, quality improvement, informatics, front desk, and clinical roles (providers, nurses, behavioral health staff), and community health workers. Interviews focused on how each organization integrated EHR-based SDH screening into clinic workflows, and factors that affected adoption of this practice change. Factors that facilitated effective integration of EHR-based SDH screening were: (1) external incentives and motivators that prompted introduction of this screening (eg, grant requirements, encouragement from professional associations); (2) presence of an SDH screening advocate; and (3) maintaining flexibility with regard to workflow approaches to optimally align them with clinic needs, interests, and resources. Results suggest that it is possible to purposefully create an environment conducive to successfully implementing EHR-based SDH screening. Approaching the task of implementing SDH screening into clinic workflows as understanding the interplay of context-dependent factors, rather than following a step-by-step process, may be critical to success in primary care settings."

Han S, et al. **Classifying social determinants of health from unstructured electronic health records using deep learning-based natural language processing**. J Biomed Inform. 2022 Mar;127:103984. LINK.

- **Objective**: Social determinants of health (SDOH) are non-medical factors that can profoundly impact patient health outcomes. However, SDOH are rarely available in structured electronic health record (EHR) data such as diagnosis codes, and more commonly found in unstructured narrative clinical notes. Hence, identifying social context from unstructured EHR data has become increasingly important. Yet, previous work on using natural language processing to automate extraction of SDOH from text (a) usually focuses on an ad hoc selection of SDOH, and

(b) does not use the latest advances in deep learning. Our objective was to advance automatic extraction of SDOH from clinical text by (a) systematically creating a set of SDOH based on standard biomedical and psychiatric ontologies, and (b) training state-of-the-art deep neural networks to extract mentions of these SDOH from clinical notes.

- **Design**: A retrospective cohort study.
- **Setting and participants**: Data were extracted from the Medical Information Mart for Intensive Care (MIMIC-III) database. The corpus comprised 3,504 social related sentences from 2,670 clinical notes.
- **Methods**: We developed a framework for automated classification of multiple SDOH categories. Our dataset comprised narrative clinical notes under the "Social Work" category in the MIMIC-III Clinical Database. Using standard terminologies, SNOMED-CT and DSM-IV, we systematically curated a set of 13 SDOH categories and created annotation guidelines for these. After manually annotating the 3,504 sentences, we developed and tested three deep neural network (DNN) architectures - convolutional neural network (CNN), long short-term memory (LSTM) network, and the Bidirectional Encoder Representations from Transformers (BERT) - for automated detection of eight SDOH categories. We also compared these DNNs to three baselines models: (1) cTAKES, as well as (2) L2-regularized logistic regression and (3) random forests on bags-of-words. Model evaluation metrics included micro- and macro- F1, and area under the receiver operating characteristic curve (AUC).
- **Results**: All three DNN models accurately classified all SDOH categories (minimum micro-F1 = 0.632, minimum macro-AUC = 0.854). Compared to the CNN and LSTM, BERT performed best in most key metrics (micro-F1 = 0.690, macro-AUC = 0.907). The BERT model most effectively identified the "occupational" category (F1 = 0.774, AUC = 0.965) and least effectively identified the "non-SDOH" category (F = 0.491, AUC = 0.788). BERT outperformed cTAKES in distinguishing social vs non-social sentences (BERT F1 = 0.87 vs. cTAKES F1 = 0.06), and outperformed logistic regression (micro-F1 = 0.649, macro-AUC = 0.696) and random forest (micro-F1 = 0.502, macro-AUC = 0.523) trained on bag-of-words.
- **Conclusions**: Our study framework with DNN models demonstrated improved performance for efficiently identifying a systematic range of SDOH categories from clinical notes in the EHR. Improved identification of patient SDOH may further improve healthcare outcomes.

Hudon C, et al. **How to Better Integrate Social Determinants of Health into Primary Healthcare: Various Stakeholders' Perspectives**. Int J Environ Res Public Health. 2022 Nov 22;19(23):15495. LINK.

- "This paper aims to identify challenges and opportunities related to the integration of social determinants of health (SDH) into primary healthcare at an international symposium in Orford, Quebec, Canada."
- "Many challenges were identified, leading to the identification of potential opportunities: integrate the concept of SDH in all phases of the training curriculum for health professionals to foster interprofessional and intersectoral collaboration and sociocultural skills; organize

healthcare for better outreach to vulnerable populations; organize local and regional committees to develop management frameworks to produce and use territory-specific data; develop dashboards for primary healthcare providers describing the composition of their territory's population; work collaboratively, rallying primary healthcare providers, community organization delegates, patient partners, citizens, and municipality representatives around common projects."

Khurshid A, et al. **Social and Health Information Platform: Piloting a Standards-Based, Digital Platform Linking Social Determinants of Health Data into Clinical Workflows for Community-Wide Use**. Appl Clin Inform. 2023 Oct;14(5):883-892. LINK.

- **Background**: Social determinants of health (SDoH)a are increasingly recognized as a main contributor to clinical health outcomes, but the technologies and workflows within clinics make it difficult for health care providers to address SDoH needs during routine clinical visits.
- **Objectives**: Our objectives were to pilot a digital platform that matches, links, and visualizes patient-level information and community-level deidentified data from across sectors; establish a technical infrastructure that is scalable, generalizable, and interoperable with new datasets or technologies; employ user-centered codesign principles to refine the platform's visualizations, dashboards, and alerts with community health workers, clinicians, and clinic administrators.
- **Methods**: We used privacy-preserving record linkage (PPRL) tools to ensure that all identifiable patient data were encrypted, only matched and displayed with consent, and never accessed or stored by the data intermediary. We used limited data sets (LDS) to share nonidentifiable patient data with the data intermediary through a health information exchange (HIE) to take advantage of existing partner agreements, technical infrastructure, and community clinical data.
- **Results**: The platform was successfully piloted in two Federally Qualified Health Clinics by 26 clinic staff. SDoH and demographic data from findhelp were successfully linked, matched, and displayed with clinical and demographic data from the HIE, Connxus. Pilot users tested the platform using real-patient data, guiding the refinement of the social and health information platform's visualizations and alerts. Users emphasized the importance of visuals and alerts that gave quick insights into individual patient SDoH needs, survey responses, and clinic-level trends in SDoH service referrals.
- **Conclusion**: This pilot shows the importance of PPRL, LDS, and HIE-based data intermediaries in sharing data across sectors and service providers for scalable patient-level care coordination and community-level insights. Clinic staff are integral in designing, developing, and adopting health technologies that will enhance their ability to address SDoH needs within existing workflows without adding undue burdens or additional stress.

Lyles CR, Sharma AE, Fields JD, Getachew Y, Sarkar U, Zephyrin L. **Centering Health Equity in Telemedicine**. Ann Fam Med. 2022 Jul-Aug;20(4):362-367. LINK.

- Abstract: “In the wake of the racial injustices laid bare in 2020, on top of centuries of systemic racism, it is clear we need actionable strategies to fundamentally restructure health care systems to achieve racial/ethnic health equity. This paper outlines the pillars of a health equity framework from the Institute for Healthcare Improvement, overlaying a concrete example of telemedicine equity. Telemedicine is a particularly relevant and important topic, given the growing evidence of disparities in uptake by racial/ethnic, linguistic, and socioeconomic groups in the United States during the COVID-19 pandemic, as well as the new standard of care that telemedicine represents post-pandemic. We present approaches for telemedicine equity across the domains of: (1) strategic priorities of a health care organization, (2) structures and processes to advance equity, (3) strategies to address multiple determinants of health, (4) elimination of institutional racism and oppression, and (5) meaningful partnerships with patients and communities.”

Sittig DF, Ash JS, Wright A, Chase D, Gebhardt E, Russo EM, Tercek C, Mohan V, Singh H. **How can we partner with electronic health record vendors on the complex journey to safer health care?** J Healthc Risk Manag. 2020 Oct;40(2):34-43. LINK.

- Abstract: “The Office of the National Coordinator for Health Information Technology released the Safety Assurance Factors for EHR Resilience (SAFER) guides in 2014. Our group developed these guides covering key facets of both electronic health record (EHR) infrastructure (eg, system configuration, contingency planning for downtime, and system-to-system interfaces) and clinical processes (eg, computer-based provider order entry with clinical decision support, test result reporting, patient identification, and clinician-to-clinician communication). The SAFER guides encourage healthy relationships between EHR vendors and users. We conducted a qualitative study over 12 months. We visited 9 health care organizations ranging in size from 1-doctor outpatient clinics to large, multisite, multihospital integrated delivery networks. We interviewed and observed clinicians, IT professionals, and administrators. From the interview transcripts and observation field notes, we identified overarching themes: technical functionality, usability, standards, testing, workflow processes, personnel to support implementation and use, infrastructure, and clinical content. In addition, we identified health care organization-EHR vendor working relationships: marine drill sergeant, mentor, development partner, seller, and parasite. We encourage health care organizations and EHR vendors to develop healthy working relationships to help address the tasks required to design, develop, implement, and maintain EHRs required to achieve safer and higher quality health care.”

## EDI Related to Public Health

Canadian Public Health Association. (2023). **CPHA Strategic Plan (2021-2025) Roadmap to Change**. LINK

- “CPHA has seven interconnected strategic priorities for 2021-2025. CPHA will:

    - Advocate for healthy public policy;
    - Strengthen and renew public health systems and practice;
    - Advance Truth and Reconciliation with Indigenous Peoples; (see below)
    - Advance social justice, anti-oppression and anti-racism; (see below)
    - Promote population mental wellness;
    - Promote action on the ecological determinants of health; and
    - Enhance engagement and organizational sustainability."
- **Advance Truth and Reconciliation with Indigenous Peoples**
    - CPHA recognizes that Truth and Reconciliation is an ongoing and evolving process, and that every interaction between Indigenous (First Nations, Inuit and Métis) Peoples and non-Indigenous people is an opportunity to advance truth and reconciliation. CPHA commits to being an organization that meaningfully embeds truth and reconciliation in its work and strives to have robust relations with Indigenous Peoples based on mutual respect, trust, and dialogue.
- **Strategic actions**
    - Over the next five years, CPHA will:
    - Complete the operationalization of the Indigenous Advisory Council and adopt processes to ensure effective incorporation of guidance into CPHA's policies, programs and practices;
    - Review the Truth and Reconciliation Commission's (TRC) Calls to Action and develop and implement targeted responses (relevant to health);
    - Advocate for policies and actions that promote Indigenous self-determination, self-governance, and self-reliance, and advocate for adoption in legislation of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) by the federal government; and
    - Develop an evolving program of opportunities for members of the Board of Directors, other volunteers and employees to learn about enduring colonialism, and help internalize this learning organizationally and individually.
- **Desired outcomes**
    - By 2025:
    - Guidance from the Indigenous Advisory Council is incorporated in CPHA's activities;
    - CPHA has strengthened partnerships and relations with Indigenous Peoples (organizations);
    - CPHA is seen as a model for national organizations in the response to the TRC Calls to Action;
    - An increase in the number of CPHA members who self-identify as Indigenous; and
    - Members of the Board of Directors, other volunteers and employees demonstrate increased cultural humility through increased knowledge and use in practice.
- **Advance social justice, anti-oppression and anti-racism**
    - CPHA recognizes that by working to achieve social justice, we can positively affect inequities in several domains, including health. CPHA recognizes that Canada is a nation

where racism and colonialism are social and structural determinants of health that result in inequities with regard to social inclusion, economic outcomes, personal health, and access to and quality of health and social services. CPHA commits to embedding anti-oppression and anti-racism interventions in organizational activities, and will advocate for the removal of systemic and structural barriers in society to create conditions for equity and ensure that everyone lives with dignity and equal opportunity.

- **Strategic actions**
    - Over the next five years, CPHA will:
    - Integrate explicit anti-oppression and anti-racism elements into its policy development process so that the Association's position statements, policies and procedures advance social justice;
    - Advocate for the removal of systemic and structural barriers in society to support the development of conditions for equity and ensure that everyone lives with dignity and equal opportunity;
    - Develop and implement an action plan designed to incorporate anti-oppression and anti-racism principles into CPHA's work; and
    - Continue to improve CPHA's recruitment processes for the Directors of the Board and employees that are inclusive and value a diversity of identities and experiences.
- **Desired outcomes**
    - By 2025:
    - CPHA has developed and implemented a comprehensive equity, diversity and inclusion (EDI) strategy based on the principles of anti-oppression and anti-racism;
    - CPHA's position statements, policies and procedures consistently identify existing inequities in society, are explicitly anti-oppressive and anti-racist, and make specific recommendations to further social justice;
    - CPHA's policy development process explicitly includes anti-oppression and anti-racism as elements to be addressed;
    - CPHA is recognized as a valued collaborator on social justice issues; and
    - CPHA's membership, Board of Directors, volunteers and Employees better reflect Canada's diversity (race, ethnicity, Indigeneity, gender, class, sexuality, geography, age, (dis)ability, migration status, religion, etc.).

Fraser MR, Castrucci BC, editors. **Building Strategic Skills for Better Health: A Primer for Public Health Professionals**. Oxford University Press; 2023. LINK

- Abstract: "While academic programs prepare public health graduates for the technical challenges of practice, many professionals new to the field also need training in the cross-cutting strategic skills required for successful leadership and management of health agencies. Successful practitioners blend subject matter expertise with administrative and leadership acumen to ensure that improvements in public health reach the communities they serve.

Building Strategic Skills for Better Health: A Primer for Public Health Professionals offers a dynamic guide for implementing and developing leadership, management, and advocacy skills to transform public health work across disease-focused services toward integrated population health initiatives. Authored by key leaders in public health, this professional primer defines the nine essential strategic skills for effective practice in public health specialties: Systems and Strategic Thinking; Change Management; Justice, Equity, Diversity, and Inclusion; Effective Communication; Resource Management; Data-Driven Decision-Making; Policy Engagement; Community Engagement; and Cross-Sectoral Partnerships. Building Strategic Skills for Better Health equips professionals at all levels with the workforce-readiness tools and knowledge needed to thrive in today's public health agencies."

Haworth-Brockman M, Betker C, Keynan Y. **Saying it out loud: explicit equity prompts for public health organization resilience**. Front Public Health. 2023 May 19;11:1110300. LINK.

- Introduction: In the early days of the COVID-19 pandemic there were numerous stories of health equity work being put "on hold" as public health staff were deployed to the many urgent tasks of responding to the emergency. Losing track of health equity work is not new and relates in part to the need to transfer tacit knowledge to explicit articulation of an organization's commitment to health equity, by encoding the commitment and making it visible and sustainable in policy documents, protocols and processes.
- Methods: We adopted a Theory of Change framework to develop training for public health personnel to articulate where and how health equity is or can be embedded in their emergency preparedness processes and documents.
- Results: Over four sessions, participants reviewed how well their understanding of disadvantaged populations were represented in emergency preparedness, response and mitigation protocols. Using equity prompts, participants developed a heat map depicting where more work was needed to explicitly involve community partners in a sustained manner. Participants were challenged at times by questions of scope and authority, but it became clear that the explicit health equity prompts facilitated conversations that moved beyond the idea of health equity to something that could be codified and later measured. Over four sessions, participants reviewed how well their understanding of disadvantaged populations were represented in emergency preparedness, response and mitigation protocols. Using equity prompts, participants developed a heat map depicting where more work was needed to explicitly involve community partners in a sustained manner. Participants were challenged at times by questions of scope and authority, but it became clear that the explicit health equity prompts facilitated conversations that moved beyond the idea of health equity to something that could be codified and later measured.
- Discussion: Using the indicators and prompts enabled the leadership and staff to articulate what they do and do not know about their community partners, including how to sustain their

involvement, and where there was need for action. Saying out loud where there is – and is not – sustained commitment to achieving health equity can help public health organizations move from theory to true preparedness and resilience.

Owens-Young JL, Leider JP, Bell CN. **Public Health Workforce Perceptions About Organizational Commitment to Diversity, Equity, and Inclusion: Results From PH WINS 2021**. J Public Health Manag Pract. 2023 Jan-Feb 01;29(Suppl 1):S98-S106. LINK.

- **Objective**: In response to calls to achieve racial equity, racism has been declared as a public health crisis. Diversity, equity, and inclusion (DEI) is an approach public health organizations are pursuing to address racial inequities in health. However, public health workforce perceptions about organizational commitment to DEI have not yet been assessed. Using a nationally representative survey of public health practitioners, we examine how perceptions about supervisors' and managers' commitment to DEI and their ability to support a diverse workforce relate to perceptions of organizational culture around DEI.
- **Methods**: Data from the 2021 Public Health Workforce Interests and Needs Survey (PH WINS) to examine the relationship between public health employees' perceptions about their organization's commitment to DEI and factors related to those perceptions. PH WINS received 44 732 responses (35% response rate). We calculated descriptive statistics and constructed a logistic regression model to assess these relationships.
- **Results**: Findings show that most public health employees perceive that their organizations are committed to DEI; however, perceptions about commitment to DEI vary by race, ethnicity, gender identity, and organizational setting. Across all settings, White respondents were more likely to agree with the statement, "My organization prioritizes diversity, equity, and inclusion" (range, 70%-75%), than Black/African American (range, 55%-65%) and Hispanic/Latino respondents (range, 62.5%-72.5%). Perception that supervisors worked well with individuals with diverse backgrounds had an adjusted odds ratio (AOR) of 5.37 ( $P < .001$); organizational satisfaction had an AOR of 4.45 ( $P < .001$). Compared with White staff, all other racial and ethnic groups had lower AOR of reporting their organizations prioritized DEI, with Black/African American staff being the lowest (AOR = 0.55), followed by Hispanic/Latino staff (AOR = 0.71) and all other staff (AOR = 0.82).
- **Conclusions**: These differences suggest that there are opportunities for organizational DEI commitment to marginalized public health staff to further support DEI and racial equity efforts. Building a diverse public health workforce pipeline will not be sufficient to achieve health equity if staff perceive that their organization does not prioritize DEI.

Sanderson, M. & Singh Flora, T. (no date) **Health Equity and Public Health In Ontario: A Scan of Health Equity Activities Taking Place in Ontario Public Health Units and the Identification of Enablers, Challenges, and Select Examples**. Ontario Public Health Association. LINK.

- Purpose of this Report: In collaboration with the aLPHa-OPHA Health Equity Workgroup, OPHA launched a project in March 2016 to better understand the work being done by public health units to advance health equity in Ontario. This report provides an overview of these findings, and serves to describe the opportunities and challenges, range of professionals involved, and the types of supports needed to further advance work in this area. In addition, it is anticipated that this report will provide select examples of the *Roles for Public Health in Advancing Health Equity* (3) as they relate to the newly released *Standards for Public Health Programs and Services* (2). The examples selected were not identified through a comprehensive review process or screened for best practice, but rather are meant to serve as inspiration that others may benefit from in tailoring programs and services to their local populations."
- Appendix C includes links to other resources and featured examples related to:
    - Partnering with other sectors
    - Assessing and reporting
    - Modifying and orienting interventions
    - Participating in policy development

## EDI in Grey Literature

### Reports/Resources from Canadian National Organizations

Alberta Medical Association. **Physician Leadership Toolkit for Encouraging and Promoting Diversity and Inclusion**. LINK

- "How the Toolkit is structured:
    - Section 1 outlines base information, including definitions of important concepts within the equity, diversity and inclusion domains. The intent is to develop a shared understanding of language used throughout the broad Healthy Working Environments framework, as well as this toolkit and other associated strategy documents.
    - Section 2 focuses on how to foster diversity and inclusivity, by examining one perspective on the features and stages of an inclusive culture. This section helps frame a vision of inclusivity that the tools are designed to foster.
    - Section 3 provides support materials in the form of "tip sheets" that will continue to be added to the toolkit as opportunities and needs are identified. This version of the toolkit consists of the following:
        - an inclusive language guide
        - recognizing and mitigating bias
        - understanding and utilizing an inclusion lens to enable recruitment planning within an intersectional
        - Alberta Human Rights Commission Guide to pre-employment inquiries

The section closes with support for individuals who respond to questions around equity, diversity and inclusivity."

Canada Economic Development for Quebec Regions. **How to create an Equity, Diversity and Inclusion (EDI) Plan**. 2022. LINK

- Flagged as particularly interesting/relevant in original search.
- Guide
- **Aim**: "Explore this guide to understand what could be incorporated into an EDI plan in an organization like yours. Please note that this guide is provided for information purposes only. For example, you may wish to adopt a phased approach and prioritize certain sections based on your context, organizational resources and consultations with your staff."
- **See guide sections**: Vision statement, priorities; Objectives and activities, roles and responsibilities; communication strategy; plan monitoring; Targets; Indicators and timelines.

Canadian College of Health Leaders in partnership with Empowering Women Leaders in Health, Canadian Health Leadership Network, and the University of Ottawa Research Chair in Gender, Diversity and the Professions. **EDI Leadership in Health Toolkit**. 2023. LINK.

- "This toolkit encourages health leaders to adopt an EDI-lens and provides resources which can enhance one's understanding of EDI or inspire ideas to improving EDI in the health sector. The toolkit is meant to serve as a reference guide for health leaders to access a variety of materials related to EDI."
- "The EDI toolkit was developed in alignment with the LEADS in a Caring Environment Framework (LEADS Framework). "LEADS" in an acronym for the five domains of the framework: Lead Self, Engage Others, Achieve Results, Develop Coalitions, and Systems Transformation. In this toolkit, each domain contains a collection of EDI-related resources. Each resource has been labelled with type of resource it is (e.g., article, blog post, report, infographic), a summary of what the resource is, and the link to access it."

Canadian Medical Protective Association. **Equity, Diversity, and Inclusion Strategy 2022-2025**. LINK

- EDI Strategy for Canadian Medical Protective Association, webpage
- **Our role in EDI**: "We have a responsibility to address this risk and help mitigate bias and inequity in the services we provide and in our own workplace. Addressing EDI is directly tied to our mission, and is why we are prioritizing this important work"
- **Mission**: "As an essential component of the Canadian healthcare system, we must prioritize equity, diversity, and inclusion in order to reflect the values of our communities and protect the integrity of physicians while contributing to safe medical care in Canada."
- "Our EDI Strategy will address **5 essential elements**: members, governance, employees, learning, and advocacy."
- "Our 3 goals to enhance EDI for members are: provide members with safe and inclusive services; Explore opportunityes to assist members in resolving medico-legal concerns using alternative approaches; Enhance representation in our services delivery model"
- "Our 3 goals to enhance employee EDI are: Build a joint accountability for fostering EDI with employees and people leaders; Evolve our workplace culture to be more open, equitable, and

inclusive to strive to better meet the needs of all employees; Enhance inclusive hiring and promotion practices to improve equitable outcomes for underrepresented or marginalized groups at all levels

- "Our 3 goals to enhance governance EDI are: Evolve Council nomination procedures to better support diversity and representation; Strengthen governance structures to support EDI initiatives; Grow inclusive governance practices

Doctors Nova Scotia. **Equity, Diversity and Inclusion Toolkit**. March 2022. LINK

- "This toolkit will help Doctors Nova Scotia's (DNS) staff, Board of Directors and members to be consistent when applying an equity lens. This toolkit will help users identify barriers where they occur; eliminate barriers by making adaptations that reflect the lived experience of those affected; and create new ways of working by considering equity and inclusion at the earliest stages."

Vardhmane, S. **Diversity & inclusion councils Toolkit for diversity and inclusion practitioners**. Canadian Centre for Diversity and Inclusion. 2017. LINK

- Flagged as particularly interesting/relevant in original search.
- Toolkit from the Canadian Centre for Diversity and Inclusion
    - CCDI has additional toolkits for the following:
        - Diversity, equity, and inclusion councils and committees
        - Employee resource groups – A toolkit for creating and sustaining effective ERGs
        - Inclusive hiring practices: Toolkit for transforming hiring practices to attract and retain diverse talent
        - Responding to social issues – The 'when' and the 'how' of workplace responses
        - Sustaining the Black Lives Matter movement in the workplace
        - Navigating race in Canadian workplaces
- **Aim**: "provides insight to having a properly structured and empowered diversity and inclusion council. In this toolkit, the author Sujay Vardhmane discusses two key pillars needed to create inclusive environments:
    - 1. leaders who are committed to diversity and inclusion, and
    - 2. the structures for successful diversity and inclusion councils.

  This toolkit defines diversity councils; describes the types; explains the value of diversity and inclusion councils to different areas of the organization and provides guidance on operationalizing diversity councils in your organization. It includes references to tools that will help you measure and report the results that will help your organization move ahead of its competition. The biggest takeaway for you the reader is the checklist for a successful diversity

and inclusion council. Overall, this toolkit provides a framework that will help you implement a diversity and inclusion council to produce organizational results from an inclusive culture."

- **Includes sections on**:
    - What are diversity & inclusion councils?
    - Value of diversity and inclusion councils
    - Checklist for establishing a diversity & inclusion council
    - Insights from our Community of Practice events
    - Maintaining and leveraging diversity councils
    - Employees
    - Organizational communications
    - Measuring success