



**SOCIAL RISK-INFORMED CARE:  
SCOPING REVIEW AND  
QUALITATIVE RESEARCH TO  
INFORM IMPLEMENTATION AT  
KAISER PERMANENTE  
FINAL REPORT**

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### **Abbreviations**

ADA – American Diabetes Association  
ACC – American College of Cardiology  
AHA – American Heart Association  
APA – American Psychological Association  
KP – Kaiser Permanente  
KPCO – Kaiser Permanente Colorado  
KPHI – Kaiser Permanente Hawaii  
KPMA – Kaiser Permanente Mid-Atlantic  
KPNW – Kaiser Permanente Northwest  
KPNC – Kaiser Permanente Northern California  
KPSC – Kaiser Permanente Southern California  
KPWA – Kaiser Permanente Washington  
KP SOM – Kaiser Permanente School of Medicine  
NASEM – National Academies of Sciences, Engineering, and Medicine  
SONNET - Social Needs Network for Evaluation and Translation

# TABLE OF CONTENTS

<b><u>Recommendations to Implement Social Risks-Informed Care at KP</u></b>	<b>Page 3</b>
<b><u>Introduction</u></b>	<b>Page 5</b>
<b><u>Methods</u></b>	<b>Page 5</b>
<b><u>Scoping Review</u></b>	<b>Page 5</b>
<b><u>Qualitative Research</u></b>	<b>Page 6</b>
<b><u>Results</u></b>	<b>Page 7</b>
<b><u>Scoping Review</u></b>	<b>Page 7</b>
<b><u>Summary of Scoping Review</u></b>	<b>Page 11</b>
<b><u>Qualitative Research</u></b>	<b>Page 12</b>
<b><u>Health System Leader Interviews</u></b>	<b>Page 12</b>
<b><u>Provider Interviews</u></b>	<b>Page 14</b>
<b><u>Barriers to Implementing Social Risks-Informed Care</u></b>	<b>Page 17</b>
<b><u>Member Focus Groups</u></b>	<b>Page 18</b>
<b><u>Summary of Qualitative Research</u></b>	<b>Page 19</b>
<b><u>Concluding Thoughts and Future Directions</u></b>	<b>Page 19</b>
<b><u>References</u></b>	<b>Page 20</b>
<b><u>Appendices</u></b>	<b>Page 22</b>

**Table 1.** Social Risks-Informed Care – Key Characteristics by Study

**Table 2.** Social Risks-Informed Care – Type by Study

**Table 3.** Health System Leader Interview Participants by Region

**Table 4.** Provider Interview Participants by Region

**Table 5.** Provider Suggestions/ Needs for Training on Social Risks-Informed Care

**Table 6.** Examples of Social Risks-Informed and Targeted Care by Region

**Table 7.** Patient Partner Focus Group Participants by Region

**Figure 1.** Scoping Review Flow Diagram

## I. RECOMMENDATIONS TO IMPLEMENT SOCIAL RISKS-INFORMED CARE AT KAISER PERMANENTE

<b>Leadership</b>
<ol style="list-style-type: none"><li>1. Make social risks-informed care a national and regional priority.</li><li>2. Advocate at the national, state, and local legislative levels for health policies that support and facilitate delivery of social risks-informed care (e.g., social risks screening and referrals as quality metrics tied to financial incentives).</li><li>3. Frequent and ongoing communications regarding the progress of relevant initiatives to facilitate social risks-informed care via KP digital newsletter or regional townhalls, for example.</li><li>4. Develop standard materials and language to be used across KP regions to describe social risks-informed care initiatives.</li><li>5. Recognize and promote regional and departmental efforts to implement social risks-informed care as a form of positive reinforcement.</li></ol>
<b>Training</b> (see Table 5 for detailed list of training suggestions)
<ol style="list-style-type: none"><li>6. Develop trainings on the definition, purpose, benefits, screening protocols, documentation, available community resources, and delivery of social risks-informed care at all levels – leadership, clinicians, medical staff, and administrators.</li><li>7. Embed social risks-informed care related curriculum and practicums at the KP SOM.</li><li>8. Offer updated trainings (e.g., new case examples, new data or research) at least annually along with continuing education credit for completion.</li></ol>
<b>Infrastructure</b>
<ol style="list-style-type: none"><li>9. Develop standardized, but flexible (to allow for certain nuances per region or department) protocols for social risks screening and documentation.<sup>1</sup></li><li>10. Ensure that there is a sufficient number of trained staff to support providers with delivering social risks-informed care such as to conduct screening and document reported social risks, place referrals for social services and community resources, and follow-up with members and document outcomes in the electronic medical record.</li><li>11. Reorganize clinic workflow to allow providers more time to actually deliver social risks-informed care; doing this in 10-15 minute visits is likely not feasible or optimal for either the provider or the member.<sup>2</sup></li><li>12. Enhance HealthConnect to facilitate a streamlined process for delivering social risks-informed care, from screening to care planning to closed-loop social care referrals.<ol style="list-style-type: none"><li>a. This includes having the capability for bi-directional referrals for health and social care between HealthConnect and Thrive Local in each region.</li></ol></li><li>13. Make clinical decision support tools to facilitate social risks-informed care less burdensome and more usable with the fewest number of clicks.</li><li>14. Design HealthConnect so that it is fast and easy for providers and other care team members to access social health data.</li></ol>
<b>Patient-Provider Interaction</b>
<ol style="list-style-type: none"><li>15. Create a member-facing campaign (commercials, posters in the exam room, mailed letters) to let members know what social risks-informed care is, why KP is implementing this approach, and what it means for their quality of care at KP.</li><li>16. As part of the trainings, make sure providers have the skills to start the conversation regarding social risks, can identify and probe contextual red flags, and can collaborate effectively with the member to adjust their care plan based on reported social risks.<sup>3,4</sup><ol style="list-style-type: none"><li>a. Engaging in clear and empathic communication and creating a sense of ‘cultural safety’<sup>5</sup> helps the provider and member overcome the social distance between them and fosters member trust, which is key to successfully delivering social risks-informed care.</li></ol></li></ol>

### **Community**

17. Invest in the community and community resources so that providers have somewhere to refer members to for assistance in addressing social risks.
18. Build partnerships with national, state, and local level community-based organizations at the KP national and regional levels.
  - a. Consider building partnerships between local level community-based organizations and clinics or specific medical departments that serve that community. This will help further extend care beyond the clinic walls and enhance community linkages/support for ongoing disease prevention and self-management.

### **Evaluation**

19. To determine the effectiveness of social risks-informed care training, consider measuring provider and medical staff social competency, structural competency, and self-efficacy at pre and post.
  - a. Social competence – a process based on knowledge, skills, and attitudes that supports effective provider-patient interaction, despite social distance<sup>6</sup>
  - b. Structural competency (<https://structuralcompetency.org/>) – the ability to understand how patient symptoms, clinical problems, attitudes and beliefs about health and healthcare are influenced by social determinants of health
  - c. Self-efficacy – confidence in delivering social risks-informed care<sup>7</sup>
20. Establish databases, dashboards, and metrics for ongoing assessment of initiatives to implement social risks-informed care.
21. Involve KP regional research centers and investigators in the evaluation of these efforts (*with adequate funding of course*) to foster a true collaborative, learning health system.

These recommendations were informed by findings from the scoping review and qualitative interviews described in further detail below.

## II. INTRODUCTION

**Social risks** are social conditions that have a negative impact on health, such as housing instability, food insecurity, lack of transportation, social isolation, and financial hardships.<sup>8</sup> It has been well documented in the literature that the presence of social risks are associated with increased prevalence and poor management of diabetes and cardiovascular disease.<sup>9,10</sup> Recent national guidelines such as the ADA Standards of Diabetes Care<sup>11</sup> and the ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease,<sup>12</sup> highlight the importance of assessing social risks (context) to inform treatment decisions. However, these guidelines provide little to no guidance on how best to do this or implement it as standard of practice.

**Contextualized care** is identifying and integrating a patient's context in treatment decision making.<sup>13</sup> This involves providers eliciting contextual factors that may be related to the presenting clinical problem such as the patient's: cognitive abilities, emotional state, cultural background, spirituals beliefs, caretaker responsibilities, attitude towards illness, and relationship with the health care provider. As a component of contextualized care, **social risks-informed care**, specifically, involves modifying or adjusting traditional medical care to account for the patient's social risks (e.g., economic situation, access to care, social support).<sup>14</sup> Social risks-informed care or adjustment is one of the five activities health care systems should engage in to enhance social care integration along with awareness (screening), assistance (referrals to resources), alignment (invest in community assets), and advocacy (advocate for policies that create and redeploy resources to address social risks).<sup>15</sup> Although Kaiser Permanente (KP) has initiated several efforts to enhance awareness (e.g., social risk screening and documentation in HealthConnect), assistance (i.e., Thrive Local), and alignment (e.g., Community Clinic Integration grants from KPNW Community Health), how and to what degree social risks-informed care is happening during clinical encounters at KP is less clear.

In this project commissioned by SONNET we aimed to: 1) understand to what degree social risks-informed care is being implemented across the eight KP Regions; 2) determine organizational readiness and plans to enhance this practice; and 3) inform best practices/ strategies to facilitate social risks-informed care based on current literature. To do this we used a two-pronged approach that consisted of a scoping review and a series of qualitative interviews and focus groups conducted across all eight regions. ***Our hope is that the findings will be considered as foundational and evidence-based knowledge that will be used to inform future KP initiatives designed to enhance social risks-informed care practices*** (e.g., provider and care team training, medical student instruction and/or practicums, and advanced clinical decision support tools).

## III. METHODS

### Scoping review

Scoping reviews are conducted to understand the existing evidence on a broad topic, but not to answer a specific research question such as with systematic reviews.<sup>16,17</sup> We conducted a scoping review to explore the availability of literature on the following topics:

- **The types and key characteristics of social risks-informed care;**
- **The effectiveness of social risks-informed care based on clinical outcomes, patient engagement, or healthcare cost; and**
- **Health care system strategies to implement social risks-informed care (e.g., provider trainings, technology, community partnerships, expanding the workforce).**

For the literature search we used two electronic databases: Medline via Ovid and PsychInfo via APA. Search terms were based on keywords used in relevant seminal articles published to date and via recommendations from SONNET colleagues. The full search strategy along with search terms is available in [Appendix 1](#) for reproducibility, but the basic structure of the search was the following:

*(social needs OR food insecurity OR housing insecurity OR illiteracy OR poverty/poor OR unemployed OR limited English)*

*AND*

*(social needs informed care OR terms related to care delivery)*

*AND*

*(diabetes OR hypertension OR obesity OR mental health)*

The search was for any published literature based on our selected search terms written in the English language from January 1, 2010 to March 30, 2021. Once all of articles were extracted by the librarian, they were stored in Endnote to facilitate title and abstract screening by SLF. At the title and abstract screening stage, articles were excluded if they were:

- Duplicates (i.e., came up in the search in both electronic databases)
- Did not involve providers or provision of clinical care
- Cross-sectional studies to establish association between social determinants of health and health and healthcare outcomes among a patient population
- Centrally focused on social risks-targeted care (i.e., addressing patients' social risks directly via referrals to social services or community resources)
- Disease/ disease management focused only with no reference to social determinants of health or social risks
- Patient-level only intervention studies (not multilevel or provider component)

Full text of the remaining articles was then reviewed by SLF and included if they addressed one of the three scoping review topics listed above. In addition, reference lists of all included and excluded articles were checked for other potentially relevant articles that were not captured in the initial search. Lastly, any articles recommended by SONNET colleagues that were not captured in the initial search were also reviewed.

### **Qualitative research**

The qualitative component of this study focused on conducting interviews with Permanente providers, health system leaders, and members across all eight regions of KP. Prior to proceeding with this work, we received exemption of regulatory oversight from the KPNW Institutional Review Board.

### ***Interview guide development***

Interview guides were developed following a review of existing literature, as well as input from stakeholders associated with various KP social health initiatives to determine relevant concepts for exploration. We also considered the number of questions to account for the length of time it would take to conduct the interview and ensure that prospective participants would have available time to participate.

There were four unique interview guides (see [Appendix 2](#)) developed to address the specific roles and potential experiences with social health data for providers, medical directors, health system leaders, and patient members. Drafts of the interview guides were reviewed by KP clinicians and researchers who either had experience with social risks-informed care, were a member of SONNET or affiliated with the KP Bernard J. Tyson School of Medicine. The review focused on ensuring the relevance and clarity of questions and identifying missing concepts. Appropriate revisions were applied to each guide based on reviewer recommendations.

Concepts covered during the interviews included:

- Knowledge, awareness, and experience with social risks-informed care in a clinical setting
- Current infrastructure (if present) for social risks screening and follow-up
- Potential barriers and facilitators to implementing social risks-informed care
- Provider readiness
- Training considerations for social risks-informed care among medical staff
- Priorities and support systems in place needed for a successful implementation of establishing social risks-informed care as the new KP standard of care

### ***Recruitment***

We sought to recruit and interview providers of diverse specialties (i.e., emergency medicine, endocrinology, etc.), with priority given to representation of primary care providers. The Permanente leaders we aimed to recruit were either medical directors or had a leadership role in quality or population health. In developing a list of prospective providers and health system leaders to interview from all the KP regions, we solicited input from SONNET Evaluation & Research Committee members to recommend various Permanente providers that represent different specialties and would also have a general understanding and familiarity with social health initiatives at KP. As the interviewer, DPT also sought input from interviewees on recommendations of other providers and leaders in their region that could speak to their experience with social risks-informed care and familiarity with social health data.

We sent a recruitment email to 48 providers and health system leaders and received responses from 40 who either expressed interest or recommended someone else for the interview. We reached out to those who expressed interest and scheduled 30–45-minute telephone interviews based on their availability. All interviews were audio recorded and transcribed verbatim. Prior to the scheduled interviews the interviewees were provided with working definitions of social risks-informed care and social risks-targeted care (in order to distinguish), including a list of the interview questions.

To recruit patient members for focus groups, we outreached to the Person and Family Centered Care (PFCC) leads in each region who oversee a number of patient advisory councils made up of members who serve as patient partners. We also recruited members from the KP National Patient Advisory Council and engaged the Medi-Cal Advisory Councils from the KPNC and KPSC regions. Over email correspondence and meetings with the leads, we clarified the need to engage 5-6 patient partners per region, who would be interested in taking part in a one-time, 90-minute virtual focus group to discuss social health and social risks-informed care at KP. For several sites, DPT also presented the opportunity at PFCC monthly recurring meetings to provide additional details regarding the components of the focus group. Once the patient partners self-identified as being interested in participating, we administered Doodle polls to accommodate scheduling based on participants' availability. Members received an Amazon e-gift card as a token of appreciation for their participation. All focus groups were conducted via Zoom and recorded for transcription purposes. Prior to each scheduled focus group, the patient partners were also provided with the working definitions of social risks-informed care and social risks-targeted care as well as a list of the focus group questions. The interview guide consisted of six questions with multiple components to solicit robust discussion.

### ***Qualitative data analysis***

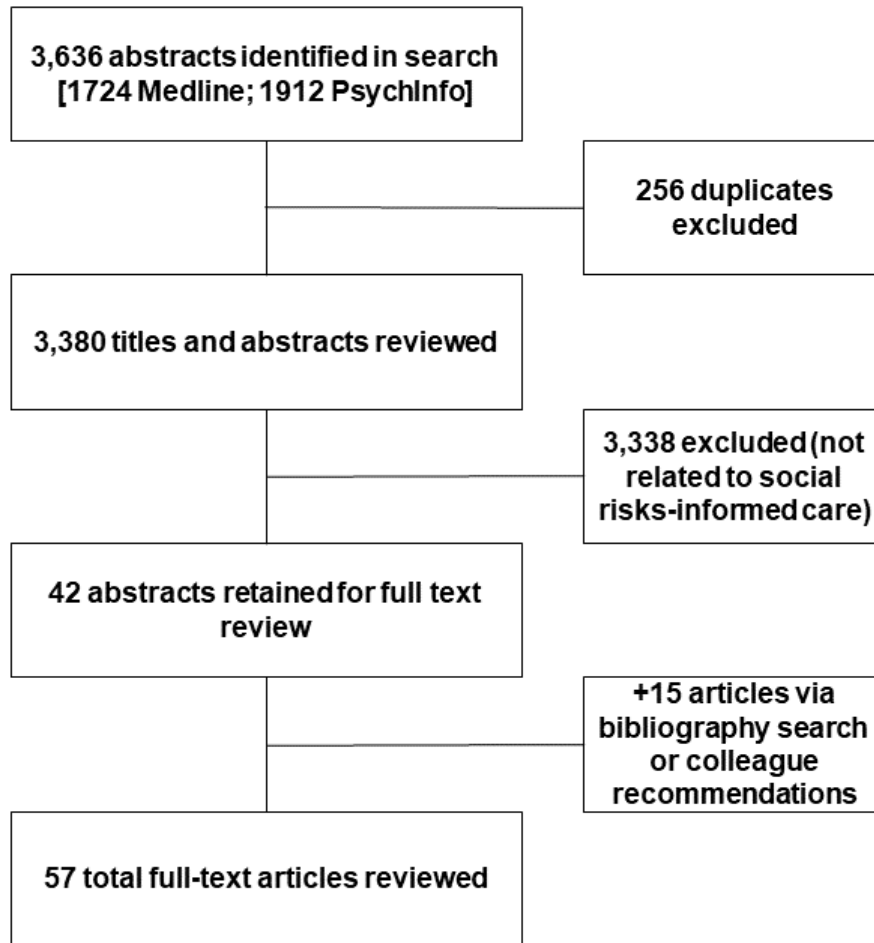
DPT combined inductive and deductive approaches for coding interview responses. A code book was developed based on predefined topics of interest, the interview guides, and topics that surfaced during the initial review of the transcripts. All the transcripts were coded by DPT using the NVivo qualitative software. The final code book for the providers contained 15 codes, the code book for the health system leaders and medical directors contained 14 codes, and the code book for the focus groups contained 14 codes.

## **IV. RESULTS**

### **Scoping review**

The flow of articles from identification through final inclusion is represented in Figure 1. From the initial search, 3,636 abstracts were identified and 3,380 were reviewed. There were 42 abstracts identified for full-text review plus 15 additional articles that were identified via article bibliography or colleague recommendations. Of the 57 total articles reviewed, 14 (25%) were included to inform the scoping review, 32 (56%) were excluded, and 11 (19%) articles are included in this report as additional citations to further validate our qualitative findings and list of recommendations. Full citations of all 57 articles are provided in [Appendix 3](#).





**Figure 1. Scoping Review Flow Diagram**

### Type and Key Characteristics of Social Risks-Informed Care

Of the 14 articles included for the scoping review, 5 (36%) addressed key characteristics of social risks-informed care (Table 1).

**Table 1. Social Risks-Informed Care – Key Characteristics by Study**

	Key Characteristics
<p>Weiner et al., 2004<sup>13</sup> Weiner et al., 2007<sup>18</sup> Weiner, 2021<sup>19</sup></p>	<p>Contextualized care involves adapting research evidence (clinical guidelines) to the patient’s context</p> <p><b>Steps of contextualizing care:</b></p> <ol style="list-style-type: none"> <li><b>1) Identify contextual red flag</b> <ol style="list-style-type: none"> <li>a. Contextual red flag – clues that patient is struggling with life circumstance that is getting in the way of care (e.g., missed appointments, not refilling prescriptions, lab values outside of target range)</li> </ol> </li> <li><b>2) Probe contextual red flags</b> (<i>risk of contextual error if not probed</i>)           <ol style="list-style-type: none"> <li>a. “Is something going on that is making it hard for you to make your appointments; manage your high blood pressure; refill your prescriptions on time?”</li> </ol> </li> <li><b>3) Determine contextual factors</b> (facilitators and barriers to optimal health outcome – <i>Table 1 in Weiner, 2021 for full list</i>)           <ol style="list-style-type: none"> <li>a. Access to care</li> <li>b. Competing responsibilities</li> <li>c. Social support</li> <li>d. Financial situation</li> <li>e. Skills, abilities, and knowledge</li> <li>f. Cultural perspective/ spiritual beliefs</li> <li>g. Attitude towards provider and health care system</li> <li>h. Attitude towards illness</li> </ol> </li> <li><b>4) Develop contextualized care plan</b> (<i>risk of contextual error if contextual factor not addressed in care plan</i>)</li> </ol>
<p>Kruse et al., 2013<sup>20</sup></p>	<p>Involves providers using more of a ‘patient-centered approach’ rather than ‘check listing’ during encounters</p> <ul style="list-style-type: none"> <li>• <b>Patient-centered</b> – shared decision-making process so that treatment plans fit the patient’s social context and priorities</li> <li>• <b>Check listing</b> – uses a one-size-fits-all approach to cover quality metrics (HEDIS measures) that may not be meaningful to the patient and does not acknowledge their social context</li> </ul>
<p>Loignon et al., 2015<sup>6</sup></p>	<p>Main strategies for working with patients living in poverty:</p> <ol style="list-style-type: none"> <li><b>1) Build personal connection to overcome social distance</b> <ol style="list-style-type: none"> <li>a. Spend time getting to know patients to reduce the hierarchy/class barrier between provider and patient</li> <li>b. Get details about the patient’s social health</li> </ol> </li> <li><b>2) Align medical expectations (and care plan) with patient’s social risks</b> <ol style="list-style-type: none"> <li>a. Acknowledge and leverage patient’s strengths to avoid judgmental attitudes</li> <li>b. Pay attention to nonverbal cues and gestures to determine if patients understand and agree with treatment plan</li> </ol> </li> <li><b>3) Strong team-based care coordination to empower patients and promote continuity of care</b></li> </ol>

The different forms/approaches to social risks-informed care were addressed in 3 (21%) of the 14 included articles (Table 2).

**Table 2. Social Risks-Informed Care – Type by Study**

	Type
<b>O’Toole et al., 2010<sup>21</sup></b>	Homeless-Oriented Primary Care at the VA: <ol style="list-style-type: none"> <li>1) <b>Open access</b> – fixed day schedule that allowed veterans to drop-in for acute, episodic, and follow-up care when needed instead of placing the burden on veterans to schedule appointments</li> <li>2) Homeless-specific (<b>social risk specific</b>) <b>assessment administered at initial and quarterly visits</b></li> </ol>
<b>Briggs et al., 2013<sup>22</sup></b>	Homeless youth and their families: <ol style="list-style-type: none"> <li>1) <b>Update youth immunizations during non-related visit</b> instead of having family come back for separate visit</li> <li>2) Identify the issues and patterns of homelessness and housing insecurity by <b>conducting routine screenings</b></li> <li>3) <b>Partner with families to develop care plans that acknowledges social risks</b> <ol style="list-style-type: none"> <li>a. Communications plan - how to communicate in between visits if poor access to phone or unstable housing</li> <li>b. Assist with transportation so youth doesn’t miss medical appointments</li> <li>c. More flexible office visit schedules to account for youth and/or family members not being available during the day</li> <li>d. Prescribing most affordable treatments available</li> </ol> </li> </ol>
<b>Hessler et al., 2019<sup>23</sup></b>	Providers adjust diabetes management recommendations and care plan to account for social risks: <ol style="list-style-type: none"> <li>1) Healthy food intake               <ol style="list-style-type: none"> <li>a. “Go to food bank or discount grocery store to buy vegetables weekly”</li> </ol> </li> <li>2) Increase physical activity               <ol style="list-style-type: none"> <li>a. “Walk in neighborhood”</li> <li>b. “Walk inside perimeter of nearby Walmart or mall for 30 mins, 3 times a week”</li> </ol> </li> <li>3) Take medications as prescribed               <ol style="list-style-type: none"> <li>a. “Utilize community food resources to have food available as needed when taking medications”</li> <li>b. “Examine low-cost options for medications and bill assistance resources”</li> </ol> </li> </ol>

**Effectiveness of Social Risks-Informed Care**

Five (36%) of the 14 included articles addressed the effectiveness of social risks-informed care. One study was an observational study (audio-recorded clinical encounters) of 774 patients and 139 physicians from two VA sites;<sup>24</sup> two of the studies were quality improvement projects, both conducted at VA sites;<sup>21,25</sup> one was a mixed methods study conducted with 17 physicians and 123 patients from a health system in Virginia;<sup>26</sup> and one was a cohort study of 92 patients with hypertension and 27 providers across 3 safety-net primary care clinics.<sup>27</sup>

In O’Toole et al.,<sup>21</sup> 79 homeless veterans who participated in the Homeless-Oriented Primary Care (refer to Table 2 for components of social risks-informed care) had an **increased number of primary care visits** and **greater reduction in hospitalizations** compared to the 98 matched controls over a 12-month period. In addition, intervention veterans experienced **improvements in blood pressure, hemoglobin A1C, and LDL cholesterol** at 6-month follow-up. Similarly, in the other two VA-based studies, use of contextualized

care planning was significantly associated with **greater likelihood of improved clinical outcomes**<sup>24,25</sup> (based on medical chart review) and **reduced hospitalizations**,<sup>25</sup> which was further associated with **cost savings**.<sup>25</sup>

In the mixed methods study, social risk screening conducted by clinicians appeared to increase provision of contextualized care in 22.5% of encounters and **helped the clinician know their patient better** in 52.5% of encounters based on clinician diaries.<sup>26</sup>[Tong, 2018] Specifically, clinicians spent more time providing behavioral lifestyle counseling, kept medication costs in mind when recommending prescriptions, addressed behavioral health, and facilitated transportation services for follow-up clinical visits. Lastly, Schoenthaler et al.,<sup>27</sup> demonstrated that a lack of social risks-informed care significantly predicted poor medication adherence, particularly among Black patients.

### **Health Care System Strategies to Implement Social Risks-Informed Care**

Of the 4 (29%) articles that addressed health system strategies to implement social risks-informed care, two particularly focused on medical student training. Specifically, Drake et al.,<sup>28</sup> provided a nice overview of the **Social Contexts in Medicine (SCIM) program**, which was started by medical students at Tulane University School of Medicine in 2013. SCIM consist of an 18-month program with first year medical students with three components: 1) seminars on social determinants of health; 2) patient home visits (includes health screenings and patient education); and 3) group meetings with a physician mentor. Although student satisfaction with the program was high and improved their attitudes towards underserved, less-resourced patients, there is a need for additional studies to understand the effect of SCIM on the occurrence of social risks-informed care during encounters as well as the effectiveness in improving health outcomes.

In Schwartz et al., 2010,<sup>29</sup> medical students were trained to apply the concepts and skills of contextualized care (*refer to Table 1 for steps of contextualized care*) via 4 weekly case-based one-hour sessions. Students who participated in the training were significantly more likely to probe for contextual issues during practice encounters compared to non-participants (80% vs. 62%) and more likely to develop contextualized care plans (69% vs 22%). Unfortunately, in a follow-up study, trained physicians were no more likely to provide contextualized care than their untrained peers during real patient encounters,<sup>30</sup> indicating a “skills-to-performance” gap.<sup>19</sup>

To reduce the “skills-to-performance” gap, use of the **audit and feedback approach** seems promising. In a recent study with six VA sites,<sup>25</sup> clinical encounters were audio-recorded by patients, unbeknownst to the clinician, and then analyzed using the Content Coding for Contextualizing Care (4C) method.<sup>31</sup> From this analysis, clinicians received a report summarizing the contextual red flags, contextual probes (if any), contextual factors (if any), and the treatment plan indicating if it was contextualized or not. Practices also received a graph indicating the percentage of recorded encounters in which contextual probing occurred and contextual factors were addressed with a contextualized care plan. The monthly reports along with monthly case meetings and a case of the week email were part of the standard feedback condition. The enhanced feedback condition consisted of the standard feedback, but also included nurses, clinical pharmacists, and residents from the practice. Also, clinicians in the enhanced feedback condition could receive CME for completing online reflective exercises, board recertification credit based on the recorded encounters, and optional individualized reports including data on the outcomes of contextual red flags based on medical chart review. Whether receiving standard or enhanced feedback, the rate of addressing contextual factors in the care plan increased from 67% to 72%, which was associated with improved clinical outcomes 4 to 6 months following the encounter and cost savings. However, limitations of the audit and feedback approach include logistical challenges to establish and that improvements in contextualized care plateau over the long term.<sup>19</sup>

### **Summary of Scoping Review**

Social risks-informed care involves closely listening to the patient’s narrative while also noticing nonverbal cues to identify and probe contextual red flags and the contextual factors that get in the way of optimal engagement in care and disease prevention or management. To do this, providers must overcome the

social distance between them and the patient by taking the time to build a relationship with the patient and align (or perhaps realign) their medical expectations and recommendations to incorporate the patient's social risks in the care planning. However, social risks-informed care is not just about the provider-patient encounter, but also reorganizing the health care delivery such as having more open, flexible schedules, leveraging non-related visits to provide preventive care, and integrating social risk screening as part of routine care.

It is clear that there is a need for additional research related to social risks-informed care given that only 14 studies were included in this scoping review. Interestingly, only one of the articles actually used the phrase 'social risks-informed care',<sup>23</sup> while most either used the term 'contextualized care' or covered concepts and skills considered to be key characteristics of social risks-informed care (e.g., patient-centered approach). There is particularly a lack of research examining the effect of social risks-informed care on clinical and healthcare related outcomes especially for chronic diseases such as diabetes and hypertension. However, the following limitations should be acknowledged: a) we perhaps did not include all of the key search terms; b) we limited our search to the Medline and PsychInfo electronic databases; and c) only extracted articles published from 2010-2021. Additional rigorous testing of various strategies to increase the occurrence as well as long-term effectiveness of social risks-informed care during clinical encounters is also warranted. This body of work could certainly have implications for enhancing medical school curriculum and continuing education courses for providers by effectively embedding training in social risks-informed care.

### **Qualitative Research Results**

#### ***Health System Leader Interviews***

Nine health system leaders completed an interview (Table 3), which encompassed medical directors, leaders in quality and population health, and department chiefs. With the exception of one, they were all clinicians who also maintained some clinical duties in their current roles. Overarching themes from the health system leader interviews were **provider challenges to addressing social risks** as well as **organizational readiness** including **reforming clinical workflows, enhancing decision support tools, and timing.**

**Table 3. Health System Leader Participants by Region**

	# of Health System Leaders Interviewed
<b>KPSC</b>	3
<b>KPNC</b>	2
<b>KPHI</b>	1
<b>KPCO</b>	0
<b>KPNW</b>	1
<b>KPWA</b>	1
<b>KPGA</b>	0
<b>KPMA</b>	1

**Challenges to addressing social risks.** The COVID-19 pandemic

*“But even if you had...So when you're saying we race to address it [social risks], so if you're screening for homelessness, for food insecurity and you don't have anywhere to come in for food, in some ways what's the point?”*

really shed light on the challenging life situations that many KP members have faced and are currently experiencing. The prevalence of economic instability, housing and food insecurity, and loss of health insurance among KP members has increased over the past year and has taken a toll on members and their families. The pandemic

also highlighted the direct correlation between members' social vulnerabilities and their overall health, access to care, and capacity (both skills and resources) to adhere to treatment plans. Members who are very sick are showing up for care but are also in need of additional social services and resources, which often complicates the provider-patient interaction. Most KP providers are not aware of where to refer members who report social risks for assistance. Thus, increased awareness of members' social risks, but not being able to do anything about them, increases provider frustration and contributes to burn out.

*“Every once in a while, there's a provider who's like, well, I'm doing standard therapy. I'm offering the number one blood pressure medicine. I'm offering the correct insulin and the hemoglobin A1c should be this, and we've sent them to the diabetes educator. And...and that's not the issue. Right? It's lack of food, or lack of monies for the medications or lack of transportation to get to their medications. Or homelessness so they can't do the mail order because their home...their home address keeps changing. And...I think that provider will...if they don't actually have the buy-in they're either going to get frustrated, or they're always going to have sort of that wall.”*

**Readiness.** When considering readiness, health leaders discussed the **importance of social risks screening and social risks-informed care to be seen as a national priority**, not just a priority among the KP regions. Support at the national, legislative levels is necessary to account for the quality of care, value-based priorities, and incentives needed for providers to deliver social risks-informed care. Such a shift in health care delivery would facilitate health and social care integration.

*“I think from a leadership, from a more organizational standpoint, I think they’re going to be talking to a lot of people who are going to talk from both sides of their mouth. Because I think we all feel that we have this responsibility, and we need to move forward with it. Because we know that it impacts ultimately health outcomes. I mean there’s no question about that. And then health outcomes affect the bottom line too. There’s an ethical need. There’s a justice need. But the problem is, is the system setup and it’s designed to take care of sickness. And ifs and or buts, we have to deliver on that. So then how do you add this to sick care?”*

*“Especially in a large city. Large metro city with very poor public transportation. It’s a big issue. It’s not an issue that’s going away. It’s not necessarily an issue that Kaiser can fix alone. It’s something that I think the state and the city needs to really think about. But I think we can be a good force for change. We can be good advocates for our patients. And we can take that to the Capitol, and we can take it to the mayor and we can take it to various, you know groups and nonprofits who might help with this.”*

Health system leaders also noted that a critical component for increasing provider readiness was educating providers about the prevalence of social risks among KP members and the effects on health outcomes and disease self-management. On a related note, leaders expressed concern about how long it would take to build a program and develop a structure that will encompass having the right training, tools, and resources in place for providers to feel competent and comfortable in delivering social risks-informed care.

**Readiness – Decision support tools.** In addition to enhancing provider knowledge, health system leaders noted needing guidance themselves on how to collect social risks data and where to locate it in HealthConnect within a member’s electronic health record (EHR). They mentioned that for their departments to feel ready to implement social risks-informed care consistently, the information technology infrastructure is critical and must function effortlessly. In addition, whatever is developed in the EHR for either documenting or locating cannot be too time consuming so it’s easy for the provider to select the specific social risks within the EHR, with the least number of clicks, and save time for engaging directly with the member.

*“But I think what we’ve been missing all along is really visibility within the...within Health Connect, within the chart to really allow us to see those social risks in a way that makes it possible to really do social risk informed care.”*

**Readiness – Clinical workflow.** They also mentioned the **importance of having an established infrastructure in place** for providers to utilize when engaging with a patient and identifying social risks. While the providers may be able to deliver social risks-informed care and tailor the treatment plan, they will also need to be able to refer the member to services either within KP or in the community (i.e., social risks-targeted care). Leaders noted that similar to how a referral is made for a specific medical procedure within the health system, a referral to address social risks should be established with the same degree of efficiency and priority. For the clinical workflow to successfully facilitate consistent social risks-informed care, it is critical that all of the components are streamlined (i.e., social risks screening protocol, process to place community-based referrals, and documentation in HealthConnect).

**Readiness – How long will it take?** Health system leaders varied greatly on how long they thought it would take to fully implement social risks-informed care as standard of care at KP – 6 months to 2 years at

the regional level; 6 months to 5 years at the national level. They described a fully implemented approach as having a:

- Standardized process for documentation in the EHR
- Consistent member screening for social risks
- A robust referral process
- Provider and medical staff training on social risks-informed care
- Measurable outcomes to determine if providers are successful in their delivery of social risks-informed care

Lastly, health system leaders noted that the **shift to delivering social risks-informed care is within the purview of the organization’s mission and goals** and establishing an organizational commitment at the most senior leadership level is essential for this initiative to prove successful. Allocating the necessary funding and support staff to ensure this work is embedded across all levels is critical for being able to deliver wraparound services that meet the members’ needs, but also support providers in their attempts to deliver social risks-informed care.

**Provider Interviews**

Twenty-four providers and one pharmacist completed the interviews (Table 4), representing the following specialties: primary care, emergency medicine, internal medicine, pediatrics, palliative care, endocrinology, surgery, orthopedics, and geriatrics. Overarching themes for the provider interviews included **readiness via infrastructure, models of success, and training.**

**Readiness via Infrastructure.** Providers noted that one of the critical components that is needed to facilitate readiness to implement social risks-informed care is **providers having a solid understanding of what resources (in their department, region) are in place to help support members with social risks.** While they agreed that it would be helpful to have access to members’ social health information to inform care planning, they expressed the importance of having the necessary tools and support to help address patients’ social risks. This would mean being aware of the availability of support staff to screen members for social risks, as well as their capacity to make referrals (internal or external to KP) and connect members to resources. Providers noted that having

**Table 4. Provider Participants by Region**

	# of Providers Interviewed
KPSC	4
KPNC	2
KPHI	2
KPCO	3
KPNW	2
KPWA	3
KPGA	5
KPMA	4

the support of additional staff, such as medical assistants, nurses, patient navigators, and/or social workers, to administer the initial social risks screening upfront, would better enable providers to incorporate this information in the clinical visit and adapt treatment planning based on the member’s social risks. Furthermore, the same said staff must be available after the clinical visit to provide wraparound services and follow-up with members regarding next steps for pursuing and ultimately, receiving the social services or community-based resources.

*“So we need to have enough resources in place so that our providers feel secure enough that they have the tools and the people and the manpower to address these types of barriers in patients. And that’s really gonna come from having devoted...a devoted team member in each medical office building, in my opinion, that can go over these questions with patients either while they’re in the waiting room, either while they just...you know they’re waiting to be seen by the provider, someone else is gonna have to carry the load there and document it.”*

*“And I think, when I talk to PCPs who are overwhelmed and their in-basket is like another full-time job, it’s I need a social worker. I need a patient navigator. I need somebody else to help me with this part. I understand that it’s important, but I need more help. Because I’m not trained to do this. I know somebody else who’s trained to do this. Why do we not have more access to this type of help.”*

Providers stated that in addition to adequate staff providing support at the departmental level, there is also a need for both providers and staff to have sufficient time to sit down with the member, walk through their concerns (i.e., contextual factors), and identify possible community resources, as well as protected time to follow-up with those members to document outcomes. Enhancing the infrastructure to allow for this needed time would allow providers and staff to engage in optimal coordinated social risks-informed care while also protecting the time they have allotted for clinical appointments.

*“But, I think one of the things that can certainly help build patient trust, and I’ve kind of seen this in my own clinical interactions with patients is, when you take the time to ask patients how things are going in their lives, or what types of things are impacting them, you know from the family perspective, from a loneliness perspective, from financial, you name it, I think they gain a better appreciation for the work that you’re doing because they’re starting to see that, you know, my insurance company, my doctor, my pharmacy team are not just here to make sure...you know, that I’m taking my medication. They’re actually looking out for me in all facets of my life.”*

**Training.** Providers also discussed that it would be helpful to have scripting in place to explain to members why they are being screened for social risks and how it relates to their care plan and overall health. Many noted that currently there is no standardized approach for how social risks data are being captured and documented in HealthConnect. Table 5 below list provider suggestions/needs for components to include in a training on implementing social risks-informed care.

**Table 5. Provider Suggestions/ Needs for Training on Social Risks-Informed Care**

<b>Definitions/ terms/ concepts</b>
Define the concept of social risks-informed care and explain the steps for how to successfully implement this approach
<b>Provider-Member interaction/ Member perspective</b>
<ul style="list-style-type: none"> <li>○ Bring in a member who personally experienced social risks and received support from KP as a case example</li> <li>○ Case-based format</li> <li>○ Provider/member role play</li> <li>○ Provide a list of adapted care strategies for medication management depending on the member’s identified social risks (i.e., how to adapt care planning for someone facing housing insecurity, transportation limitations, food scarcity, etc.)</li> <li>○ Inform on how to engage with members regarding social needs/risks topics, especially as it may seem to be sensitive in nature</li> </ul>
<b>Questions to ask/ phrasing to use</b>
<ul style="list-style-type: none"> <li>○ Provide rationale for communication style/approach – why proceed with this approach, terminology, etc.</li> <li>○ Provide correlation on how provider questions/approach (e.g., phrasing to probe contextual red flags and determine contextual factors) can impact member’s response/willingness to share</li> </ul>
<b>Infrastructure/ Data sharing</b>
<ul style="list-style-type: none"> <li>○ Provide an overview of the resources that are available for members in that particular community or region</li> <li>○ Incorporate real data at the regional/department level regarding endorsed social risks by patient members</li> </ul>
<b>Specialist training</b>
Integrate IT infrastructure training, in addition to how social risks-informed care can intersect or be impacted by pharmacy services
<b>Overall</b>
<ul style="list-style-type: none"> <li>○ Integrate very practical – tangible, concrete examples</li> <li>○ Consider different tiers of training depending on provider degree of familiarity and understanding of what social health is and how to deliver social risks-informed care (i.e., tailor training to provider’s baseline skill set and competency)</li> </ul>



- An interactive format where attendees can write in questions/comments and feedback provided in real time
- Interactive, small group breakouts
- Use evidence-based or evidence-informed support materials/readings
- Create training content that can be disseminated and incorporated across all KP regions
- Convey the requirements and expectations for engaging in this approach on a consistent basis (i.e., how often does this training need to be completed? Annually?)
- Modules consisting of several sessions rather than one long session
- Multidisciplinary presentation consisting of a case manager and primary care provider presenting case studies

**Models of success.** One main finding through conducting the provider interviews is that **providers are more likely to attempt to deliver social risks-informed care when programs, initiatives, infrastructure and staff are in place.** When providers are aware of and/or have access to social risks data, they are more likely to pivot their approach to delivering social risks-informed care. Various providers gave examples of strategies used in their regions, either newly emerging or long standing, where programs and departments had established processes for collecting social risks information and referring members for assistance (Table 6). However, these examples illustrate that there is no coherent and standard approach to either screening, documenting, or adjusting care plans due to social risks. Also, keep in mind that most of these examples are a form of social risks-targeted care, which suggests that social risks-informed care is not occurring on a consistent basis across KP regions, similar to findings in previous observational and experimental studies.<sup>18,30,32,33</sup>

**Table 6. Examples of Social Risks-Informed and Targeted Care by Region**

<p><b>Launched a universal social health screening initiative within the primary care department and the Complex Care Management Program</b></p> <p><b>Has an interdisciplinary team that encompasses a social worker designed to address members' social risks</b></p> <p><b>Has about half a dozen community specialists who may be social workers or case workers, and whose role is to screen all of their Medicaid members and some of their Medicare members for social risks in the primary care setting. They try to address those identified needs and are also there for providers to reach out to if a member in the exam room identifies with social risks.</b></p>	<b>KPCO</b>
<b>Utilizes the Epic social health wheel when entering member data</b>	<b>KPMA, KPCO</b>
<b>Refers members to community resources through Thrive Local</b>	<b>KPCO, KPGA</b>
<b>Mass mail campaign to all members in the region providing them with the Thrive Local connections postcard (toll free number, hours of operation, etc.)</b>	<b>KPGA</b>
<b>Program embedded in primary care that is led by social work navigators and aims to identify the social drivers for care of their most frail seniors.</b>	<b>KPHI</b>
<b>The emergency department screens all members for social risks and has social workers and patient care navigators readily available to address presented social challenges</b>	<b>KPNC</b>
<b>After an elective total joint replacement, the surgery department follows up with members via nurse navigators to ensure that they have a supportive social structure, a safe home, and transportation for physical therapy, to ensure a successful recovery</b>	<b>KPSC</b>

## **Barriers to Implementing Social Risks-Informed Care – Provider and Health System Leader Perspectives**

**Time.** Many providers and health system leaders mentioned the limited time providers have to spend with patients. **Lack of time is a major barrier to providers screening for social risks and adjusting the care plan** to account for those risks. Both providers and health system leaders were skeptical that providers would have sufficient time to implement social risks-informed care well. Some providers saw it as juggling priorities – addressing social risks vs. conducting other best practices or following specific clinical care guidelines.

*“It’s a barrier. For everything we do is...is time. And... and really, I think it comes down to prioritization. So, what can you get...What can you let go of? What can you de-prioritize so that we focus on the things that really matter? And I think that I would put this in that category. This really matters. And so, we need to figure out how to offload some other things so we can do this work.”*

**Accountability.** Both mentioned a lack of reinforcement or accountability from the top – **if they don’t see the support at the leadership, administrative, clinical or staff level then there will be no incentive for the providers to encourage and enforce social risks-informed care.** References were made to previous initiatives implemented at KP, but after the initial roll out support discontinued, such as no longer providing progress updates on the initiative, offering additional training or support, or conducting regular check-ins to inquire on the status of the providers’ efforts. Under these scenarios, staff would be left to decide at the individual level on whether to continue with the initiative. If the same situation occurs with the rollout of social risks-informed care, providers and their leaders will be left on their own to determine whether they will deliver social risks-informed care consistently. If the individual provider does not see a direct benefit or sees it as an act that would take away time from their perceived clinical duties, it will further deter the fostering of contextual competency amongst our providers and successful implementation of social risks-informed care at KP.

*“What COVID demonstrated is that this work needs to be prioritized and considered when providing patient care. Needs to be prioritized at the provider, leadership, and organizational levels. This is critical for addressing care gaps, because if providers don’t feel like they are able to keep their patients healthy, then they will be frustrated by their inability to help their patients in addressing their needs, modifying their treatment plans, and ultimately keep them healthy and safe.”*

**Training.** Various providers and health system leaders interviewed noted not having the proper training either through their formal medical education or through continuing medical education (CME) opportunities on how to deliver social risks-informed care. They acknowledged that they are lacking tangible examples that would demonstrate how taking a member’s social risks into account when developing their treatment plan can lead to improved member care and better health outcomes.

**New approach.** Another barrier identified by both providers and leaders was the concept of something new. This initiative of social risks-informed care can be a foreign concept for some providers and health leaders alike, and there can be the **tendency for some to be resistant to trying something new or including something additional in their already limited clinical appointments when not knowing whether it will provide any added benefits.** Furthermore, resistance can occur when providers see this

*“Even after we’ve gotten off of the backlog of COVID, it doesn’t matter. I think if anything else, patients have gotten more comfortable with texting their doctor. I don’t think it’s e-mailing their doctor. It’s texting your doctor now, for every little ditzy thing. And so primary care is in huge, huge danger. There are not enough physicians coming out who want to do that work, because the way in which we care for patients is really pretty overwhelming. And the shared responsibility, I think of quality documentation and coding, because everything is tied to the primary caregiver, the onus of responsibility still falls to the same physicians.”*

initiative as an additional “must do” on their already overflowing plate of best practices (or HEDIS measures) to deliver during a clinical visit.

**Member awareness.** Member response to social risks screening and probing can be an additional barrier. If members are not educated and informed on why providers and the health system as a whole is inquiring about any potential social risks, their response may be one of confusion or apprehension. While providers did mention that for the most part members are receptive to answering questions regarding their social risks, there could be occasions where members are not aware of how providers will incorporate their social risks data into their clinical care or with whom that information will be shared.

**Member Focus Group Results**

We conducted eleven focus groups with 48 patient partners representing seven KP regions (Table 6). Overarching themes across the focus groups was **comfort, trust, and measures of success.**

**Comfort.** When patient partners were asked about their comfort level with clinical staff having access to their social risks data, the majority noted the importance of their providers knowing their life circumstances when it came to treating their medical concerns. However, some patient partners noted that the nature and sensitivity surrounding social risks

carries the potential to make some uncomfortable in sharing this information, especially if there is no prior relationship or if the member does not feel heard or understood by their provider. A few patient partners gave the example of members being concerned about the provider calling child protective services or other legal ramifications if they report certain social risks (e.g., unstable housing, food insecurity, intimate partner violence).

Many of the patient partners stated that their clinical care team should have access to their social risks data, but also noted that it should be up to the member to determine when and to what degree of information their provider should have access to since situations can change. There may be instances, for example, where a member may be facing challenges with accessing reliable transportation, but it is short-term and may not be indicative of a chronic situation for the member that requires further assistance from the care team or a community resource.

**Trust.** A recurring theme that emerged from the focus groups when discussing what would make members feel comfortable was trust – with their providers, the infrastructure to deliver social risks-informed care (i.e., screening process, documentation, care plan adjustment, and referrals all via the EHR or other electronic platform), and the health system. An **established degree of trust would allow members to disclose concerns and report social risks** if they felt they were sharing the information with receptive providers and medical staff willing to understand the problem and would be proactive in resolving the issues. Associated with trust, patient partners also listed active listening, patience, empathy, and an invested interest in their wellbeing. These qualities can be achieved during an encounter when the provider is open to both experiential and vicarious learning (learning through the member’s story).<sup>34</sup>

**Measures of success.** When patient partners were asked to provide examples of what specific types of measures should be used to determine if a provider was successful in delivering social risks-informed care, they noted the following:

- Patient reported outcomes – seeking feedback from the member directly on how effective their provider was in delivering social risks-informed care
  - Submit after visit surveys directly to members after their appointments
- Review member no-show rate to medical appointments – is there a decrease in the rate over time?

**Table 7. Patient Partners by Region**

	# of Patient Partners in each Focus Group
KPSC (2 groups)	9
KPNC (2 groups)	9
KPHI	6
KPCO	2
KPNW	3
KPWA (2 groups)	12
KPGA	0
KPMA	1
Nat’l Advisory Group	6

- Health improvement – are the member’s clinical outcomes improving following a recent visit?
- Member-driven goals – assess whether the member was able to meet their personal goals regarding their health
- Updated social risks data in the medical record - are providers consistently capturing or updating social risks data and documenting in the medical record?
- Closed-loop referrals and follow-ups – does the member actually connect to a service or resource and are their social risks addressed?

### Summary of Qualitative Research

Across all three stakeholder groups, capturing social risks information and integrating it in care planning – i.e., social risks-informed care – was considered to be important and should be standard practice at KP. Yet, there is still quite a ways to go to make social risks-informed care a reality as a number of providers do not have the skills or resources, which is consistent with previous studies that found a lack of engagement in contextualized care among clinicians.<sup>30,32,33</sup> Furthermore, all three groups pointed out a number of overlapping factors that need to be in place or enhanced in order for social risks-informed care to happen consistently and successfully at KP including: a) making delivery of this approach a national and regional priority; b) adequate training for providers and medical staff; c) sufficient time and resources (e.g., staff); d) sophisticated, but not burdensome information technology to facilitate this approach from start to finish; e) and establishing patient trust.

## V. CONCLUDING THOUGHTS AND FUTURE DIRECTIONS

We purposely did not begin this project with any specific hypotheses or assumptions in order to capture a broad overview of both the status of social risks-informed care in the literature, its implementation across all KP regions, and gaps to address. In other words, we wanted to lay the foundation for hopefully a number of more detailed, rigorous future evaluations and experimental and/or observational studies that may aim to focus on one particular type of social risk, a single region, or a specific patient population. There is still much to do and learn in this area and KP is in a unique position to lead this effort from the perspective of medical education, clinical practice, and research.

**Although this was somewhat acknowledged in the health system leaders and provider interviews, the importance of the community and community-based resources cannot be stressed enough. Optimal, effective social risks-informed care fails without strong partnership and investment in our communities and community resources. In the wise words of Helen Keller:**

**“Alone, we can do so little; together, we can do so much.”**

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## **APPENDICES**

**Appendix 1** – Scoping Review Search Strategy

**Appendix 2** – Qualitative Interview Guides

Appendix 2a – Health System Leaders and Medical Director Interview Guides

Appendix 2b – Provider Interview Guide

Appendix 2c – Member Focus Group Guide

**Appendix 3** – Citations for 57 articles reviewed for scoping review

## Appendix 1 – Scoping Review Search Strategy

Sources Searched	Number of items YEAR -present
MEDLINE	1724
PsycInfo	1912

Note: PsycInfo crashed before the full search strategy could be extracted. All 1912 were exported. I pasted the terms and search operators below.

Key:

/ = MeSH subject heading

\$ = truncation

ti = word in title

ab = word in abstract

pt = publication type

\* = truncation

kw = keyword

### MEDLINE

Database: Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations and Daily <1946 to March 30, 2021>

Search Strategy:

- 
- 1 \*"Social Determinants of Health"/ (2523)
  - 2 \*Social Conditions/ (3971)
  - 3 \*Social Environment/ (18260)
  - 4 \*Social Class/ (13910)
  - 5 \*Socioeconomic Factors/ (13491)
  - 6 (social\* adj1 determin\*).ti,ab,kf. (10328)
  - 7 ((determinant\* or determinate\*) adj2 health).ti,ab,kf. (11857)
  - 8 ((social\* or socio\*) adj1 condition\*).ti,ab,kf. (7735)
  - 9 ((social\* or socio\*) adj1 environment\*).ti,ab,kf. (13120)
  - 10 ((social\* or socio\*) adj1 (factor\* or gradient\*)).ti,ab,kf. (43481)
  - 11 ((social\* or socio\*) adj1 (need\* or require\*)).ti,ab,kf. (2806)
  - 12 ((social\* or socio\*) adj1 (equit\* or inequit\* or disparit\* or equal\* or unequal\*)).ti,ab,kf. (10078)
  - 13 ((social\* or socio\*) adj1 (hardship\* or depriv\* or challeng\* or difficult\* or barrier\* or vulnerab\* or disadvantag\*)).ti,ab,kf. (15015)
  - 14 ((social\* or socio\*) adj1 risk\*).ti,ab,kf. (3136)
  - 15 ((social\* or socio\*) adj1 (status\* or circumstance\* or position\* or class\*)).ti,ab,kf. (70095)
  - 16 Food Supply/ (13586)
  - 17 Hunger/ (5526)
  - 18 (food adj2 (secur\* or insecur\* or unstable or stable or stabilit\* or instabilit\* or uncertain\* or vulnerab\* or hardship\* or insufficien\* or stress\*)).ti,ab,kf. (13172)
  - 19 food desert\*.ti,ab,kf. (267)
  - 20 HOUSING/ (18172)
  - 21 Almshouses/ (53)
  - 22 Public Housing/ (1477)
  - 23 ((hous\* or home) adj3 (secur\* or insecur\* or unstable or stable or stabilit\* or instabilit\* or uncertain\* or vulnerab\* or hardship\* or insufficien\* or stress\*)).ti,ab,kf. (6458)
  - 24 Homeless Persons/ (8158)



25 Homeless Youth/ (1324)  
 26 (homeless\* or houseless\*).ti,ab,kf. (11477)  
 27 TRANSPORTATION/ (10617)  
 28 Transportation Facilities/ (56)  
 29 Parking Facilities/ (360)  
 30 transportation\*.ti. (4495)  
 31 commut\*.ti,ab,kf. (4536)  
 32 Educational Status/ (52373)  
 33 Academic Failure/ (43)  
 34 Literacy/ (904)  
 35 READING/ (23280)  
 36 (literacy or literate or illitera\*).ti,ab,kf. (28390)  
 37 (read\* adj2 (proficien\* or skill\* or comprehension or level\*)).ti,ab,kf. (8668)  
 38 ((education\* or academic\* or schola\* or school\*) adj2 (achieve\* or status or attain\* or equit\* or inequit\* or disparit\* or equal\* or inequalit\* or level\* or background\*)).ti,ab,kf. (95716)  
 39 ((education\* or academic\* or schola\* or school\*) adj2 (opportunit\* or disadvantage\* or advantage\* or marginal\* or disenfranchis\* or vulnerab\*)).ti,ab,kf. (4901)  
 40 Poverty/ (39389)  
 41 poverty areas/ (6238)  
 42 ((economic\* or income\* or financ\*) adj2 (achieve\* or status or attain\* or equit\* or inequit\* or disparit\* or equal\* or inequalit\* or level\* or background\*)).ti,ab,kf. (37881)  
 43 ((economic\* or income\* or financ\*) adj2 (opportunit\* or disadvantage\* or advantage\* or marginal\* or disenfranchis\* or vulnerab\* or low or strain\* or strugg\* or stable or unstable or stabilit\* or instabilit\* or difficult\* or problem\*)).ti,ab,kf. (60826)  
 44 (poverty or indigent\* or indigency or impoverish\*).ti. (6184)  
 45 Employment/ (47042)  
 46 UNEMPLOYMENT/ (7161)  
 47 unemployment.ti,ab,kf. (11616)  
 48 unemployed.ti,ab,kf. (9240)  
 49 underemploy\*.ti,ab,kf. (372)  
 50 (occupation\* adj2 (status or level or class)).ti,ab,kf. (7255)  
 51 jobless\*.ti,ab,kf. (308)  
 52 workless\*.ti,ab,kf. (34)  
 53 (employment adj2 (status or securit\* or insecurit\* or marginal\* or precarious\* or terminat\*)).ti,ab,kf. (10462)  
 54 limited english proficiency/ (56)  
 55 (Communication/ or communication barriers/) and (Language/ or Translating/) (4161)  
 56 (non-english or nonEnglish).ti,ab,kf. (3127)  
 57 Primary language.ti,ab,kf. (903)  
 58 ((interpretation or translation or interpreter\$ or translator\$ or barrier\$ or discordan\$ or spoken or proficien\$) and (language or communication or english or immigrant\$ or migrant or foreign\$)).ti,ab,kf. (52086)  
 59 or/1-58 (597540)  
 60 (((informed or targeted or contextuali\$ or modifi\$ or tailor\$ or adjusted or changed or based) adj2 care) or social prescribing).ti,ab,kf. or managing.ti. (55123)  
 61 \*"Delivery of Health Care"/ (61186)  
 62 \*Patient-centered care/ (12818)  
 63 \*Quality improvement/ or \*performance improvement/ or \*patient admission/ or \*program evaluation/ or \*communication/ or \*physician-patient relations/ or Decision Making, Shared/ (106918)  
 64 or/60-63 (228989)  
 65 exp \*Diabetes Mellitus/ (354306)  
 66 ((diabetes or diabetic or DM or NIDDM or T2DM) not (gestational or insipidus)).ti,kf. (367496)  
 67 exp \*Hypertension/ or \*Prehypertension/ (216432)

- 68 (hypertensi\$ or prehypertensi\$).ti,ab,kf. (457007)  
 69 ((high or elevated) adj2 pressure).ti,ab,kf. (78141)  
 70 \*Obesity/ or \*Obesity, Morbid/ or \*Obesity, Abdominal/ or \*Overweight/ or \*Weight Gain/ (165955)  
 71 (obesity or obese or overweight or over weight).ti,ab,kf. (340511)  
 72 exp \*mental health/ or exp \*mental disorders/ (1089867)  
 73 exp \*Behavioral Symptoms/ (259257)  
 74 mental health.ti,kf. (77327)  
 75 (depress\$ or dysthym\$).ti,kf. (182067)  
 76 (anxiet\* or overanxious or anxious\* or phobia\* or phobic or panic).ti,kf. (82269)  
 77 (suicid\$ or parasuicid\$ or self harm\$ or Self Injur\$).ti,kf. (53146)  
 78 or/65-77 (2599752)  
 79 59 and 64 and 78 (2702)  
 80 remove duplicates from 79 (2700)  
 81 80 not (animals/ not humans/) (2698)  
 82 limit 81 to (english language and yr="2010 -Current") (1724)

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 OR {Income Level} OR {Social Class} OR {Social Disadvantage} OR {Socioeconomic Status} OR {Poverty} OR {Social  
 Equality} OR {Economic Inequality} OR {Food Insecurity} OR {Hunger} OR {Homeless} OR {Homeless Mentally Ill} OR  
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 Care Reform} OR {Health Care Utilization} OR {Managed Care} OR {Quality of Care} OR {Quality of Services} OR {Trauma-  
 Informed Care} OR {Program Evaluation} OR {Mental Health Program Evaluation} OR {Therapeutic Processes} OR

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## Appendix 2 – Qualitative Interview Guides

## Appendix 2a – Health System Leaders and Medical Directors Interview Guide

Thank for you for participating in this interview to help us understand how social health or social needs information, such as the ability to access healthy food or connect with friends and family, is incorporated into the delivery of health care by providers at Kaiser Permanente. To make sure that we are talking about the same things, I would like to share a couple of terms and definitions; I can remind you of their meaning as we go along.

*Kaiser Permanente is interested in helping members with two types of social health care. 1. Social risks-targeted care is defined as “activities in clinical settings that seek to address patients’ social risks directly”. Examples include referring the patient to a social worker to sign up for Supplemental Nutrition Assistance Program (SNAP) if they struggle to access food or referring to a community-based organization that can provide rental assistance or help paying for utilities for the month. 2. Social risks-informed care is defined as “activities that involve adjustments to traditional medical care to account for patients’ social situations.”*

Basically, it means that providers and care team members consider a patient’s social health when working to come up with a care plan. We will be focusing on the second term, social risks-informed care. Examples include a) the health system providing a transportation service to help patients with lack of transportation still make it to their appointments; b) interpreter services being readily available for non-English speaking patients; c) considering a diabetes treatment schedule for patients who report unstable housing, such as prescribing only oral meds or insulin pens (meds that do not need refrigeration).

We are trying to understand how or if KP providers are adjusting their care and treatment planning based on patients’ specific social needs especially for chronic diseases in which clinical outcomes are impacted by the social environment (e.g., diabetes, hypertension, cancer, obesity).

The following questions will aim to address your current understanding of what social risks are and lean on your experience as a health system leader regarding how social risks information is being used or should be used to inform future providers in their treatment planning and for better engaging the patient in their medical care.

### Health System Leaders:

1. Can you briefly tell me your role, and how you see it intersecting with the social health strategy at KP?
2. At your region, what is the general approach to collecting social risk data? Who is involved in collecting data from members and where is it documented in EPIC? To what degree is it being incorporated in EPIC?
3. How ready and prepared do you think providers currently feel in incorporating social risk factors when developing a treatment plan for their patients?
4. Are there any specific considerations that the health system should keep in mind as they embark on training providers to deliver social risk-informed care?
5. What would be the best ways to train providers and care teams in social risk informed care? Anything in addition to CME/CEUs? What will be the hardest aspect to train?
6. Are there specific outcomes that would indicate a provider training is successful?
7. What do you see as potential barriers to effectively training providers in delivering social risk-informed care?
8. How long do you think it will take to fully implement a social risk-informed care approach as standard of care at KP?
9. Are there any previous KP-initiatives that you can reference that were successful in rollout and operationalizing? What should we borrow from integrated mental health that worked well in your system/region?
  - What do you think led to their success?
  - Why do you think there was buy-in from providers?
10. Short-term and long-term goals regarding social risk screening (i.e., targeted groups, universal screening)

**Medical Directors:**

1. Can you briefly tell me your role, and any experience you have with considering patients' social risks information into delivery of care?
2. At your region, what is the general approach to collecting social risk data? Who is involved in collecting data from patients and where is it documented in EPIC? To what degree is it being incorporated in EPIC? What percent of patients do you think currently have social risk data in their chart?
3. How well do you think KP as an organization is doing with respect to social risk-informed care? In what way?
4. To what degree do providers at your site interact with navigators, resource specialists, social workers, or case managers regarding patient social risks?
5. How ready and prepared do you think providers currently feel in incorporating social risk factors when developing a treatment plan for their patients?
6. What kind of impact (if any) do you think it will have on providers to incorporate this kind of patient information into their clinical care?
7. What kind of support (from leadership, operations, other source) do you think clinicians need to consistently deliver social risk-informed care?
8. What do you anticipate as potential barriers to implementing this approach consistently as part of standard patient care delivery?
  - Any specific barriers for the clinicians directly?
  - How can clinicians be incentivized to implement this approach?
9. How would you know that social risk-informed care is being implemented successfully?
  - What health metrics or other patient outcomes would indicate this? (e.g., level of patient engagement, patient feedback [Press-Ganey], provider feedback)

## Appendix 2b – Provider Interviews

1. Can you briefly tell me your role/specialty?
2. Can you provide some examples of where social risk-informed care is happening in your region?
3. What, if any, experience do you have with incorporating a patient’s social risk information into your delivery of care?
  - How would you know that you were being successful in delivering social risk-informed care for your patients? Do you have any examples?
4. Assume that social needs/risks screening is happening at your region and there are supports in place for targeted care/referrals, how do you see yourself using/incorporating this information in clinical practice and treatment planning?
5. To what degree do you as a provider interact with navigators (or health leads, resource specialists), social workers, and/or care managers regarding patients who identify social risks?
6. What is your understanding of the current process for collecting social risk data in your Region?
  - Who is involved in collecting data and where is it documented in EPIC?
  - How visible is social risk or social needs data to you? How does social risk informed care show up in your clinical practice at this point?
  - For which patients do you use the social risk data? Do you think you have any blind spots?
7. How ready and prepared do you think that providers currently feel in incorporating social risk factors when developing a treatment plan for their patients? How much is this part of foundational training you and other providers received? Has this ever been a focus of continuing medical education opportunities? If so, what topics were covered?
8. If we were to develop a CME or CEU (i.e., a training module) to support social risk-informed care, what would it include? What should it emphasize? How would it best be delivered? With what type of follow up or additional support?
9. What kind of support do you think providers need to deliver social risks-informed care? What is unique about this type of care? To what extent is learning about the evidence in this space important?
10. What do you anticipate as potential barriers to implementing this approach when delivering patient care? What type of incentives or structures would be needed to implement this approach into routine/standard care? How could you fit this into usual care? What would it look like?

## Appendix 2c – Member Focus Group Guide

The following questions will aim to address your current understanding of what social needs/ social risks are and lean on your experience as a patient regarding how social needs information should be used to inform the provider in their treatment planning and for better engaging the patient in their medical care.

1. In your own words, can you describe your understanding of what social needs/ social risks are? (related probe – What are important examples of social risks? How do you think they impact a person’s health?)
2. What kind of social risks data do you think is appropriate for your provider to have access to? What information do you think your provider needs to know about you to make sure they understand life circumstances that may affect your health or your ability to stick with your care plan?
3. How comfortable do you feel with your provider considering your social risks information when developing a treatment plan? Does this approach sound different than your usual care? What sounds different about it? What are the advantages to this approach? Disadvantages?
4. What kind of training do you think providers/ clinical care teams need to have to best integrate your social risks information into care planning? How well suited do you think providers and care teams are to bring social health into your care? What skills might they need to do this well?
5. From your perspective, what types of specific outcomes would demonstrate that providers are being successful in delivering social risks-informed care? If providers were able to develop care plans with the whole person in mind, what would that look like? What would that mean to you? How would a care experience be different?
6. From your perspective, why is social risks-informed care important for KP providers to engage in? What might happen if KP does not make social risks-informed care a priority?



## Appendix 3 – Citations of Articles Reviewed for Scoping Review

### Included:

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### Excluded:

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