

CONSORTIUM FOR CANCER IMPLEMENTATION SCIENCE

MEETING SUMMARY REPORT



Wednesday, October 12–Thursday, October 13, 2022
Virtual Meeting

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CCIS 2022 OVERVIEW

Dr. Cynthia Vinson welcomed participants to the 2022 Consortium for Cancer Implementation Science (CCIS) Annual Meeting. She provided a synopsis of the mission of CCIS, which began in 2019 and is part of the Cancer MoonshotSM:

“CCIS focuses on cancer control priorities, cross-collaboration, and innovative solutions in implementation science (IS).

CCIS seeks to develop a new approach for the field to work together to address key challenges and identify and develop new areas of investigation toward advancing the implementation science agenda in cancer control.”

Dr. Vinson emphasized that this event is not a conference but rather a consortium to bring a variety of groups together to engage in IS and move the field forward through the development of public goods. Action groups were created to prioritize the type and development of these products. The consortium has evolved over the past 4 years, including the name and governance structure. This year, Dr. Jen DeVoe, Oregon Health and Science University, is the chair, which is a rotating position. A planning committee has consistently assisted with determining the agenda and convening action groups, where the majority of CCIS work is done. The current action group leadership includes the following:

- Community Participation in Implementation Science (Heather Brandt and Shoba Ramandhan)
- Context and Equity in Implementation Science (Jennifer Tsui and Montserrat Soler)
- Implementation of Complex Multilevel Interventions (Melinda Davis, Maria Fernandez, Erin Kenzie, and Jessica Austin)

- Implementation Science in Global Health (Donna Shelley, Anne Rositch, and Vidya Vedham)
- Implementation Science Study Designs (Steve Bartel and Ramzi Salloum)
- Learning Healthcare Systems as Natural Laboratories (Brian Mittman and Alanna Rahm)
- Policy and Implementation Science (Jamie Chriqui and Karen Emmons)
- Technology in Implementation Science (Rachel Gold and Constance Owens)

The new structure includes developing and mentoring leaders, with a 3-year commitment to service. Action groups now consist of a chair, vice chair, and former chair. CCIS is looking for self-nominations to head these groups.

Dr. David Chambers, deputy director for implementation science at the National Cancer Institute’s Division of Cancer Control and Population Sciences, thanked everyone for participating in the consortium and reiterated the commitment of CCIS to “embrace diversity, equity, inclusion, and accessibility for all.” Current sustainability planning for CCIS aims to create a better system across the cancer continuum. Dr. DeVoe described the themes of CCIS, created based on panel feedback, starting with equity; then moving on to mentoring, training, and diversity; and ending with multisectoral approaches and collaboration.

Panel Discussions

There were three panel discussions held during the meeting—two on the first day and one on the second day. Panelists first discussed methods to enhance equity within IS, including key experiences and lessons, effective strategies for community engagement, and the use of data-driven priorities. Mentoring, training, and diversity also were reviewed, with members of the IS community providing recommendations for training future researchers in the field.

Day 1 Panel Discussion: Evolution of Efforts to Enhance Equity

Moderators:

Dr. Prajakta Adsul, Assistant Professor, Department of Internal Medicine, University of New Mexico

Dr. Yue Guan, Research Assistant Professor, Rollins School of Public Health, Emory University

Panelists:

Dr. Reginald Tucker-Seeley, Vice President of Health Equity, ZERO—The End of Prostate Cancer

Dr. Juliet Iwelunmor-Ezepue, Associate Professor, Behavioral Science and Health Education, College for Public Health and Social Justice, Saint Louis University

Dr. Elsie Taveras, Conrad Taff Professor of Pediatrics in the Field of Nutrition, Harvard Medical School

Dr. Adsul and Dr. Guan moderated the first panel. Panelists described various words that came to mind related to equity. Dr. Tucker-Seeley mentioned “fair” because it encompasses “just opportunity.” Dr. Iwelunmor-Ezepue chose “justice,” declaring that people are still dying despite

the vast knowledge that healthcare professionals possess. Dr. Adsul selected the phrase “commitment to action” because change occurs as a result of actual practice and strategic direction.

Dr. Iwelunmor-Ezepue reflected on her key experiences and lessons connected to enhancing and maintaining health equity. She stated that she is interested in the sustainability of implementation outcomes and strategies, as well as accurately portraying major issues and project perception. Changing from previously used methods may be necessary to correct imbalances and achieve fairness. Her work in Nigeria highlights the need to understand assets and context, with IS providing the indispensable framework for equity within society. Minorities often suffer without acknowledgment, secondary to cultural complacency, although tools and evidence to remediate these problems already exist. Dr. Iwelunmor-Ezepue also stated that, internationally, countries are similar in terms of equity provision and do not realize that the resources are already available.

Dr. Taveras discussed effective strategies to engage communities, with a link to equity. She described the need to involve community members from the beginning to provide information and develop partnerships. Trustworthiness is important and is obtained through reflective/active listening. Projects also are data driven, and her organization works with community health centers to use this information to determine areas of focus. Dr. Taveras and her colleagues set measurable goals for the performance of key indicators from these interventions, then provided stakeholder feedback. While there is an evidence base for many interventions, certain strategies may require additional studies within a specific community.

Dr. Tucker-Seeley described how data can guide development, adaptation, and implementation of interventions related to addressing health disparities.

Focusing on key strategic directions for investigators, he stated that explicit definitions are needed because this informs the type of intervention. For example, how can researchers define, measure, and report financial hardships and health equity? Convening health equity leaders from community centers, health plans, and healthcare systems was useful for sharing best practices across organizations. However, healthcare professionals must be trustworthy partners, which includes providing explicit program details related to leveraging community assets to eliminate disparities. To achieve sustainability, systemwide problems also must be addressed.

Dr. Taveras stated that problems became apparent during the COVID-19 pandemic, including the digital divide that excluded people without computer and internet access. Systems need activities that are united against inequities, such as multilingual translation of health information, literacy assessment, and technology assistance. Furthermore, organizations cannot improve what is not measured. Inequities have formed over hundreds of years and are entrenched. Dr. Taveras believes that allies in the fight against structural racism can be useful and should be welcomed to the partnership.

Dr. Iwelunmor-Ezepue stated that healthcare professionals should use plain language that the public can understand. The information needs to be taken out of the journal and brought to the community at a basic level. The dissemination of information to the public should follow proven methods beyond the traditional paths. There may not be any IS regarding sustaining evidence-based interventions in certain contexts and within various populations, including countries such as those in Africa.

Dr. Tucker-Seeley expressed the need to provide funding for interventions shown to be effective and to apply these to underserved populations, such as Black

men, who often have undiagnosed cancer and worse outcomes. Leaders should be carefully selected, without the assumption that one or two representatives from a stakeholder group will suffice to address inequities. Supporters outside of a minority group should approach these projects with cultural humility. Providing information from research should involve three or four talking points to simplify the material for those who do not have time to read academic papers.

Day 1 Panel Discussion: Mentoring, Training, and Diversifying the Workforce

Panelists:

Dr. Cheryl Boyce, Assistant Director for Re-engineering the Research Enterprise, OSC -The Common Fund, National Institutes of Health (NIH)

Dr. Olakunle Alonge, Assistant Professor, International Health, Johns Hopkins University

Dr. Ross Brownson, Steven H. and Susan U. Lipstein Distinguished Professor, Washington University in St. Louis

Each panelist shared the focus of their work related to mentoring, training, and diversifying the workforce. Dr. Boyce shared that NIH is expanding programs across various levels to involve communities in IS. Recently funded programs included providing resources to communities in order to review current needs within established partnerships. They are offering training and capacity development, and building research expertise beyond traditional mechanisms. Dr. Alonge stated that his team is working on the application of IS and reviewing needed research competencies for IS practitioners. They also are focused on creating training products responsive

to the needs of researchers. Dr. Brownson described his involvement with a program that provided evidence-based public health training to implementors, not scientists. He also has been involved with the Implementation Research Institute and mentor training, as well as a program in global health implementation, science, and infectious diseases related to HIV research. Dr. Brownson stated that there is a science to mentorship, and few academic institutions have well-established mentorship programs.

Dr. Boyce detailed her approach to mentorship, which includes treating others respectfully, understanding mentees' roles and responsibilities, and making appropriate mentorship assignments based on skills and strengths. Dr. Alonge stated that it is important to be sensitive when mentoring across cultures and to be aware of different perspectives. Mentors should be respectful of individual experiences, which might differ from their own, and alter guiding principles. Dr. Brownson recommended determining the mentee's passion and how that work can make a difference. The accessibility and time that a mentor can provide are other important considerations, which can be addressed by having a team of mentors within and outside an institution. Lastly, he advised sharing credit with and providing opportunities to the mentee.

Dr. Boyce stated that there are a variety of opportunities for both traditional and nontraditional career tracks; however, navigating these choices can be a challenge. Job seekers should consider career options, with a focus on the future and the understanding that fields evolve and grow. The skills learned in IS are malleable and can be applied to a variety of positions within cancer care delivery. Dr. Alonge described the seamlessness of many related activities, such as research, practice, and advocacy. Professionals should determine areas of potential impact for their work and associated goals. Dr. Brownson reiterated

these themes and recommended pursuing tasks deemed to be enjoyable while obtaining as much experiential learning as possible.

Methods for mentoring a practitioner mid-career also were reviewed. Dr. Boyce described mid-career transition awards, funded through NIH, which encompass both the mentor and mentee. Dr. Alonge advocated for the use of mentorship when changing careers, along with schools of public health. He also endorsed the need for intentionality and networking with other professionals within a space. Dr. Brownson detailed techniques for capacity building, such as Centers for Disease Control and Prevention funding and workshops for grant writing.

To assist students coming into IS with varying levels of knowledge, Dr. Boyce advised using untapped resources in academia, which can be accessed following a baseline needs assessment. However, she cautioned that mentors should be cognizant of ethical concerns regarding novice practitioners from nonprivileged backgrounds. Helping to locate appropriate resources and support is also key. Dr. Alonge repeated the necessity for sensitivity to differences in a mentee's background, pivoting to other sources of assistance if the current mentor cannot meet the mentee's needs. Provide patience and flexibility related to the strengths and weaknesses of the practitioner. Failure to provide support can have lasting negative effects on the mentee, and power imbalances should be considered. Dr. Brownson stated that many competing opportunities can be overwhelming and frequent meetings can facilitate clarity.

Day 2 Panel Discussion: Multisectoral Approaches and Collaboration

Moderators:

Dr. Maria Fernandez, Lorne Bain Distinguished Professor in Health and Medicine, University of Texas

Ms. Kathy Briant, Assistant Director, Office of Community Outreach and Engagement, Fred Hutchinson Cancer Center

Panelists:

Dr. Asya Agulnik, Associate Member, Critical Care Medicine and Global Pediatric Medicine, St. Jude Children's Research Hospital

Ms. Robin Dubin, Co-founder & Executive Director, AliveAndKickn

Ms. Stacey Denaux, Chief Executive Officer, One80 Place

Dr. Fernandez and Ms. Briant moderated this event, which spotlighted ways that IS and community partners collaborate to advance goals in healthcare and non-healthcare settings.

Panelists first discussed the services provided by their respective organizations. Dr. Agulnik stated that at St. Jude she leads a multicenter quality improvement program to collaboratively implement evidence-based interventions. Her program is a hospital-based early warning system to identify children with cancer who are deteriorating for early intervention and the prevention of complications. This system is widely used in high-resource settings but underutilized in limited settings secondary to implementation challenges, so they are working to expand the program in regional areas across 20 countries.

Ms. Dubin's organization, AliveAndKickn, is a patient advocacy organization focused on individuals/families with Lynch syndrome, a hereditary form of cancer. Ms. Dubin stated that she started the group after discovering there was inadequate patient education, resources, awareness, and support for the disorder. Her husband and two of her three children have Lynch syndrome. AliveAndKickn focuses on collaborative work, such as patient workshops and resource development, with other advocacy entities, such as academic institutions, researchers, clinicians, and industry partners.

Ms. Denaux detailed the work that her organization, One80 Place, does related to homeless services and the provision of housing. She appreciates the recognition that housing is healthcare and that housing insecurity is an issue for many patients, including those with cancer. Community measures to prevent homelessness involve on-site, multisector collaboration with small health clinics regarding the identification of barriers.

Panelists then discussed the use of collective action to create change and improve health and the quality of life in the communities they serve. Ms. Denaux stated that collaboration has led to success and that these partnerships often occur during crises, such as the COVID-19 pandemic. Another example includes cooperative efforts with One80 Place and local Red Cross and emergency planners to develop evacuation plans for homeless shelters, which contain methods to address the medical management needs of these clients.

Ms. Dubin described the collaborations between her organization and a variety of partners. In 2019, they launched the first "Living with Lynch" workshop, working with the MD Anderson Cancer Center and professionals in the Clinical Cancer Genetics group. The researchers provided patient education, discussing the latest research on Lynch syndrome, as well as information

on cancer diagnosis and screening. They also interviewed participants to capture their stories and used this video as outreach for their larger virtual community, with all content housed on Lynch.org. In 2021, they held another workshop with the Ohio State University Comprehensive Cancer Center, with a patient community discussion series moderated by genetic counselors. AliveAndKickn then created videos on specific topics related to the syndrome. Other work includes a professional stakeholder focus group on inherited gastrointestinal cancer.

Dr. Agulnik provided her perspective on obtaining the multisectoral involvement of partners to obtain buy-in and intervention scalability. She stated that there are many challenges to implementing quality improvement (QI) in low-resource clinical settings. Many hospitals do not have QI teams nor any experience with this type of work. Thus, they have collaborated over the past 6 years to address those challenges through stakeholder engagement. Multidisciplinary involvement has improved interactions; however, to achieve culture change, high-level permission and motivational incentives are necessary. Outside of this environment, foundations are key because they provide sizable support for healthcare and also give funding for QI. Lastly, Dr. Agulnik and her colleagues work with governments through their involvement with the St. Jude Global Alliance on Childhood Cancer, which has pushed countries to think about national cancer control planning.

The next topic for panelists to consider was collaboration on new projects when no past history of linkage with an organization exists. Ms. Dubin stated that it took time for the research community to know AliveAndKickn and their capabilities. She believes that it is important to reach out early and involve the patient community in projects. For example, in work with the Lynch Syndrome Screening Network, they were able to connect patients

with researchers and the studies they are performing to improve patients' lives. To gain the attention of researchers, her organization attends conferences and advertises their resources. Researchers also sit on their scientific advisory board.

Ms. Denaux provided detailed information on a federally qualified health center with a grant for the homeless, which evolved secondarily to a shared interest in the health disparities of this population. These shelters help clients connect with the appropriate networks. One80 Place had people who were homeless and a funding source that could not access their target population. Determining the gaps that their group can fill is critically important in order to avoid duplication of effort. Building trust in people who have experienced racism, abandonment, and marginalization is difficult, requiring healthcare navigators who can establish a safe relationship.

Dr. Agulnik began the subsequent discussion of boundary issues among organizations. She stated that St. Jude's programmatic goal—to reduce disparities in childhood cancer care—is immense, with many challenges. She highlighted the need to set a clear scope of practice and determine whether there is a better partner to recommend in certain areas of expertise.

Ms. Dubin described the need to use data to help new players in the field complement work that is already in progress in order to avoid task duplication. Discovering gaps is useful, as there are many needs, and her organization is small, with few resources, and thus must be focused and strategic in their programs.

Ms. Denaux commented on a question related to how the pandemic impacted multisectoral approaches to address complex issues. She emphasized the need to understand who does not share the values of your organization and stated that it became obvious that many public health systems did not view the homeless

population as a priority. One80 Place received no help from their state health department and needed to create their own solutions for the health disparities facing this population. They forged partnerships through a federally qualified health center because there were no public hospitals, only an academic, university-affiliated hospital and a private system. However, those partnerships have grown exponentially, beyond the needs of the pandemic and are now very robust.

Dr. Agulnik described the need to reconsider program implementation. For example, St. Jude has had to pivot away from in-person hospital training for leadership implementation following the pandemic. There also were many challenges faced by hospitals that not only had to address childhood cancer care but also provide treatment for COVID-19 patients. This forced many institutions to prioritize patient care and surprisingly led to the expansion of certain programs. They moved their training and engagement to virtual platforms, which took time to scale.

Ms. Dubin stated that the pandemic was difficult for the clients she serves because these individuals require annual cancer screenings from many specialists. There is no way to perform these tests virtually and many specialty providers were providing care to COVID-19 patients. However, screening impacts the ability to diagnose cancer, so this was a very stressful period for people with Lynch syndrome to endure. Fortunately, screening returned rapidly for this patient community. Virtual opportunities increased and resources were provided completely through online platforms. This led to a chance to connect to a broader patient audience.

Panel members also reflected on the subject of building bidirectional relationships to achieve community trust. Ms. Dubin stated that it is the responsibility of researchers to engage partners, which leads to connecting patient communities with

study investigators. Dr. Agulnik agreed with Ms. Dubin and stated that these views are relevant to the global health community. Global health researchers from high-resource settings often go to limited settings with preconceived questions and study methods. St. Jude has been successful in deconstructing this colonial approach and engaging the community from the design stage. In certain settings, healthcare providers have no research experience, thus, St. Jude must provide these resources. Ms. Denaux reiterated the need to involve the target population with lived experience in developing program goals and objectives. This input may need to be fine-tuned; however, it provides the foundation for programmatic design.

Lastly, a panel member described her experience with program testimonials to attract additional collaborators. Ms. Dubin stated that detailing the work they do to potential partners has made a positive difference.

Action Group Meetings

The overall goals of these action groups were to identify important work and related public goods, such as papers, workshops/webinars, toolkits, and databases, in various areas to move IS forward. Each group examined specific topics important to the field for CCIS to address in the immediate future.

DAY 1

Context and Equity in Implementation Science

This action group focused on how the IS community can advance and specify the incorporation of health equity and context across cancer prevention and control research. Emerging and critical issues for CCIS to prioritize were brainstormed by action group members.

Suggestions included the following:

- Highlight and prioritize community-led and system-led initiatives in IS to address equity.
- Determine outreach to the global community and researchers for awareness.
- Establish training programs for IS researchers to acquire scientific expertise to engage in health equity-focused IS research.
- Emphasize the social determinants of health in contextual inquiry.
- Collaborate beyond cancer in IS.
- Establish guidelines for IS on the inclusion of equity in all public goods and measures of accountability.
- Provide resources and training on best practices in the context of equity and engaging IS partners.
- Give examples of equity metrics.
- Collaborate with community participation action groups, global health specialties, and multilevel action groups.

Challenges were identified, including funding structures, lack of resources, health system gaps, expertise, limited transdisciplinary approaches, building partner trust, agenda alignment with equity priorities, and language barriers. Breakout groups considered the most important issues for the consortium to address in the context of equity to achieve public goods. General themes surrounded mentoring, training, and collaboration, along with the creation of a multisectoral, multidomain IS community with resource guides. Mentoring, support, and training for dissemination and implementation are significant for early career researchers and students. There should be centralized resources for training opportunities, along with a data bank. Determining how to

operationalize collaborations with other action groups and systematic steps to accomplish this task should be explored.

Products should be action oriented to start the IS process, including considerations for addressing disparities. The focus should be on building connections beyond academia and creating multisectoral and multidomain products. Group members established priorities for public goods as follows:

1. Mentoring Network Program to Connect Experts with Other IS and Healthcare Professions Focused on Curriculum
 - **Description:** Focused on curriculum to address gaps in community engagement. Create spaces for connecting experts in the field beyond researchers, including stakeholders and clinicians.
2. Pocket Guide for Cross-Disciplinary Collaboration in IS Related to Cancer Care
 - **Description:** A guide that provides terminology across disciplines and addresses the increased interest in IS across a range of disciplines.
3. Formal Mentorship Infrastructure
 - **Description:** A network on an existing platform that includes available resources such as programs and conferences, as well as technical assistance and case studies. The network also would provide examples of how researchers have used an equity-focused framework, as well as methods to connect mentors to mentees.

Implementation of Complex/Multilevel Interventions (MLIs)

The goals of this action group were to understand the interface of MLIs and IS, explore the interface of complex interventions and IS, and produce goods and tutorials to help others seeking to work at the interface of these disciplines.

The group brainstormed critical issues for the consortium to address, such as funding opportunities, work publication, researcher tools, training on MLI findings, MLI designs for socioecological models, rapid implementation, network models, and strategies for visualizing systems.

After the consideration of priorities, the group decided on the following public goods:

1. Develop training and education around MLI to orient new users.
 - **Description:** Researchers and community partners benefit from understanding and access to foundational information, such as webinars, videos, and podcasts, to communicate key concepts, tools, and strategies. Materials include the teaching case studies in Master of Public Health programs; webinar series with experts; short videos addressing specific questions; partnerships with health communicators, including public health podcasts and recorded videos to orient users about IS tools, concepts, and strategies; and live or pre-recorded panel discussions addressing stakeholder queries.
2. Create pragmatic methods for selecting and adapting complex/MLI interventions to understand context.
 - **Description:** Products may include a manuscript describing user-centered design methods for IS adaptation; in-depth case studies; and the integration of QI methods, such as rapid-cycle research, PDSA (Plan-Do-Study-Act), Lean Six Sigma, and compilations of MLI resources and examples.

3. Establish usable, pragmatic, and rapid approaches for designing, selecting, tailoring, and adapting MLIs and complex interventions.
 - **Description:** Repositories for pragmatic measures to assess context, training modules on statistical methods and designs, and an orientation article or guide to help people identify IS measurements and contextual factors across levels. Items may include descriptions of approaches for planning these interventions, such as case studies illustrating their selection, adaptation, rapid implementation, and literature.
4. Develop MLIs for sustainability.
 - **Description:** This product may include projects such as guiding documents or tutorials for co-creating MLIs and complex interventions.
5. Establish strategies for securing funding for research and practices related to MLIs/complex interventions.
 - **Description:** List of current funding opportunities for research and practice, such as platforms for curating and sharing current funding resources and opportunities, guidance on evaluating and conducting observational studies, and engaging funding agency representatives.

Implementation Science Study Design

This action group was charged with developing ideas to expand existing projects or create new projects related to the consideration of methodological issues associated with hybrid effectiveness implementation studies with a focus on hybrid type 2 designs. The objective was to create a product, such as a taxonomy of hybrid type 2 designs and related characteristics, based on a review of funded proposals.

The members prioritized issues for the consortium to address, such as clarity regarding hybrid designs, delineating the purpose of “public goods,” expanding the scope of review, involvement of adopters and implementers, delays in hybrid type 2 studies, the use of parallel hybrid type 2 studies, and reviewing all relevant research in this area. Public goods for potential development were as follows:

1. Develop Consensus Groups

- **Description:** Lists of experts to assist with hybrid type 2 studies. Provide written guidance for research review committees and the institutional review board (IRB) process related to hybrid type 2 studies, including statisticians and other experienced professionals in this area, with the goal of identifying the correct personnel. Define IS work and educational opportunities to streamline efforts. The proposal involves small group leadership meetings to develop a guidance paper for the consensus group to create best practices.

2. Literature Review

- **Description:** Systematic/Scoping review of hybrid designs by methodologies to provide commentary on the unique value of these studies, along with infographics, portfolio analysis, and a best practices checklist for hybrid type 2 protocol papers.

Policy and Implementation Science

The goal of this action group was to develop support strategies for IS to advance research in policy implementation related to cancer prevention and control. The objectives were to work toward developing strategies, concentrating on resource identification to support IS policy and connecting IS investigators. The group identified various primary issues, including equity focus, best practices, dissemination, policy training, community engagement, measurement, and systematic methods to influence policy.

Priorities for CCIS include focusing on equity, capacity, and funding, while understanding policy and devising a shared language for use with policymakers.

1. Use an equity-focused approach to policy implementation and analysis.

- **Description:** Analyze policy with a view toward equity, including collaboration with equity groups. Differentiate the implementation of IS in this area and decide on key policies to investigate.

2. Online Platform for Training

- **Description:** Build a cloud structure to provide training on various policy measures and implementation.

3. Best Practices Document

- **Description:** Determine barriers and facilitators and communicate to advocacy organizations to draft legislation, coding lessons according to an IS framework to make policies easily enforceable. Disseminate evidence related to policy adoption lessons and expand on effective IS designs.

DAY 2

Community Participation in Implementation Science

The goal of this action group was to identify important work and related public goods in community participation in IS to move the field forward. This action group examined major gaps in the field, such as insufficient or late engagement, and determined targets on the continuum of engagement, along with contemplation of IS measures, competencies, engagement, and impact. Ideas for expanding or creating new projects included best practices in IS, supporting parallel paths for engagement, identifying and activating champions, and building institutional capacity.

Action group members identified a variety of potential priority topics, including information to engage with rural communities, key allies, and IS partners; updating the CCIS bibliography; and categorizing parallel path infographic needs and opportunities. The action group focused on finishing two public goods and furthering work on another:

1. Best Practices for Engaged IS

- **Description:** The document should include guidance on how to disseminate information, including the value of interdisciplinary teams, refining IS, sustainability, transparency, engagement, and customizing the sell to different audiences. Diverse perspectives should be considered. Systematic engagement will include research/patient advocates as IS ambassadors for bidirectional communication, as well as cancer control programs/coalitions and filling in current gaps.

2. Best Practices for Engaged IS Within Rural Communities

- **Description:** Revise the document to include strengths and challenges in working within rural communities, with a focus on actionable suggestions. Acknowledge variations among rural settings to build relationships. Conduct an environmental scan to determine important health-related questions and reorganize the document, adding visual tools or infographics.

3. Support Parallel Paths for Researcher and Partner Working Groups

- **Description:** Redefine implementation strategies to be accessible to practice audiences and also reflect their experiences. Translate Expert Recommendations for Implementing Change (ERIC) strategies for community audiences. Identify the implementation

strategies best suited for community-engaged work in various settings. Cancer control coalitions and other state-level organizations have the potential to be synergistic partners in both translating evidence to practice through their large reach/networks and conducting dissemination and implementation research in community/public health settings.

Implementation Science in Global Health

Members of this action group pondered IS science for global cancer control, focusing on low- to middle-income countries (LMIC). Objectives included identifying gaps and priorities for IS to improve and increase the translation of evidence-based cancer control strategies into both scalable and sustainable practices. Various breakout groups identified priority areas, such as developing evaluation strategies for IS in LMIC, establishing mentorship programs for student-academia partnership training for LMIC researchers, collaboration with the global IS society, and infographic/policy briefs for policymakers on IS.

After consideration of various strategies, the group recommended the following public goods:

1. Expand Existing Tools and Modules

- **Description:** Increase existing tools and modules developed by the World Health Organization (WHO) and others to include examples of cancer prevention and control across existing training. Create a bank of tools to build capacity, such as IS materials for beginners, as well as the translation and expansion of infographics in global IS. The next steps include forming a global network subgroup to identify the relevant training tools, programs, and modules.

2. Infographics for Global IS

- **Description:** Provide visual tools to understand context in IS and assist with health literacy and the translation of language concepts, with the simplification of terms and tools. Develop an infographic series for a wide audience on IS and interrelated concepts. The next steps are to gather a diverse group to lead these efforts and reduce barriers at all levels.

3. Interview Global Leaders in IS

- **Description:** Interview IS experts around the world to elevate their voices regarding the definition of this practice, context priorities, and best practices for collaborators to move the field forward. The next steps are to conduct interviews to test the action group's assumptions and bring these perspectives on global IS implementation.

4. Knowledge Dissemination Strategy for IS Public Goods

- **Description:** Create a dissemination plan to distribute information on IS public goods developed by national, state, and private organizations. The next steps include meeting with partners to map out channels and develop comprehensive strategies.

Learning Healthcare Systems as Natural Laboratories

The goals for this action group were to promote and guide IS activities to leverage the “natural laboratory” features of learning healthcare systems (LHS) and facilitate IS research for the improvement of healthcare quality, equity, and outcomes. The action group aimed to promote and guide implementation research within LHS and IS on LHS.

In breakout sessions, members discussed the need to refine LHS blueprints or models using supportive empirical work, portfolio analysis, and literature reviews. Issues such

as the essential elements of LHS—design, logistics, infrastructure, IRB approval, and project evaluation—were explored. The need to operationalize LHS and obtain successful examples were highlighted as well.

Members recommended several items as public goods:

1. Blueprint for LHS Implementation

- **Description:** This public good involves creating a standardized plan for implementing LHS. The document would be developed using literature reviews and case studies related to LHS applications and outcomes, along with other empirical work as supportive documentation. The blueprint may vary depending on system resources.

2. LHS Webinars

- **Description:** Develop webinars as a forum to present information on LHS implementation echoing various LHS styles, such as low- or high-resource settings, and program maturation. Query stakeholders to determine priority content and create criteria for the selection of case studies, existing LHS projects, and speakers.

Technology in Implementation Science

This action group focused on how health information technologies (HIT) can support guideline-concordant cancer prevention and care. The objectives were to identify effective technologies and facilitators and barriers to their adoption. Website resources, scoping reviews, webinars, patient-facing tools, dashboards, and dissemination/implementation strategies were recognized as important emerging themes and priorities.

Members recommended public goods focused on the following:

1. Create a resource repository on patient decision-making tools related to cancer as potential public resources.
 - **Description:** A public good focused on cancer-specific, patient-facing HIT, such as symptom management and shared decision-making tools.
2. Online Content
 - **Description:** Create a webinar or workshop to disseminate information about these resources and tools related to using shared decision-making tools to empower patients, particularly in primary care.
3. Guideline/Manuscript—Designing for Dissemination Implementation
 - **Description:** This product would assist with technology, such as tools for the provider, patient-facing supports, and risk stratification support, for cancer care and outcomes.

CCIS 2021 Awardee Presentations: Cycle 1 Funding Awards

Dr. Cici Bauer, associate professor of Biostatistics and Data Science, University of Texas Health Science Center in Houston: Developing Geospatial Data Visualizations for Cancer Screening Inequality and Contextual Factors

- Project Goals:
 - Develop a novel visualization tool to jointly investigate the geographical variation of breast, cervical, and colorectal cancer screening, and the contextual factors for all US counties.
 - Develop and publish a public-facing dashboard for the proposed data visualization tool.

- » Allows users to explore how cancer screening rates may correlate with the social determinants of health of their interest and choice in real time with a link to a live dashboard.

Tara Friebe-Klingner, postdoctoral research fellow, Johns Hopkins Bloomberg School of Public Health, and **Gloria Guevara Alvarez**, postdoctoral associate, New York University: Scoping Review That Identifies Strategies for Scaling Up EBIs for Early Detection and Prevention of Cancer

- Project Methods:
 - Search of six electronic databases between 2012 and 2022—PubMed, Embase, Scopus, Global Health, CINAHL, and PsycINFO
 - Inclusion criteria
 - » Reported on scale-up or met one of two definitions:
 - Deliberate efforts to increase the impact of evidence-based interventions (EBIs) to benefit more people and to foster policy and program development
 - The ability of an efficacious small-scale health intervention to be successfully expanded under real-world conditions
 - To date, the search and data abstraction have been completed and a manuscript draft is underway. The paper is scheduled for dissemination to co-authors this month, with submission for publication in November 2022. An abstract will be presented at the 15th Annual Conference on the Science of Dissemination and Implementation in Health, December 11–14, 2022.

Jessica Austin, assistant professor of Epidemiology and Cancer Population Sciences, Mayo Clinic Arizona: Tools to Advance Implementation of Multilevel Interventions

- Purpose:
 - Develop and apply a pragmatic tool and empirical examples to advance the implementation of MLIs.
 - » Identify well-designed case studies to serve as best practices for MLI implementation.
 - » Apply the function-to-form matrix to describe and characterize the motivating need/problem, core function, and customized forms for each selected case study.
- Current progress includes the identification of seven articles spanning the cancer care continuum. After application of the function-to-form matrix, they refined the motivating need/problem, core function, and form. Dr. Austin is currently writing the full publication, which will be posted on the CCIS website.

Jamie Chriqui, director, Institute for Health Research and Policy, University of Chicago School of Public Health: Series of Case Studies of Real-World Examples of Policy-Specific, IS Research Conducted at NIH

- Background Context:
 - The CCIS Policy and Implementation Science Action Group identified the lack of clarity on policy-related dissemination and IS as a priority.
- Project Goals:
 - Conduct key informant interviews and documentary research to learn from seven NIH-funded, policy-related IS research studies.
 - Develop a summary report and case profiles for each funded study.

- A final summary report and case profiles were developed and will be posted as a public good on the CCIS Public Goods Website, with a digital object identifier (DOI) generated for search engine retrieval.

Dr. Cory Bradley, postdoctoral research associate, Washington University School of Medicine in St. Louis: Podcast Series (10 episodes)

- Goals of the “Catch the Power” Podcast:
 - Translate key knowledge and insights, strategies, and methodological approaches in health equity and IS that advance health justice.
 - Broaden exposure to critical health justice dialogues in implementation research and practice.
 - Invite listening audiences to “catch the spirit” of the health justice movement and harness that power in their science, health services, and activism efforts.
 - » Two episodes are released per month, which are shown through the Anchor platform, and are accessible through Apple and Spotify. Topics include Medical Mistrust/Distrust, Critical Race Theory, Anti-Racism Praxis, Engaging Context to Address Equity, Co-Creation, and Power and Social Justice Foundations.

The National Cancer Institute is accepting proposals for purchase agreements from individuals willing to dedicate their time to developing and delivering specific tools and resources prioritized by the eight action groups. The application period starts on November 3, 2022, and ends on December 8, 2022. An information webinar will be held on November 15, 2022, from noon to 1:00 p.m. EST.

Town Hall

The meeting concluded with a Town Hall to coalesce the ideas and charges considered during the meeting, including action group presentations and the clarification of questions.

- Policy and Implementation Science
- Context and Equity in Implementation Science
- Implementation of Complex/Multilevel Interventions
- Implementation Science Study Design
- Technology in Implementation Science
- Implementation Science in Global Health
- Community Participation in Implementation Science
- Learning Healthcare Systems as Natural Laboratories

Attendees then voted on one public good for each action group to move forward with completion.

Appendix A: Action Group Summaries

The overall goals of these action groups were to identify important work and related public goods, such as papers, workshops/webinars, toolkits, and databases, in various areas to move implementation science (IS) forward. Each group examined specific topics important to the field for the Consortium for Cancer Implementation Science (CCIS) to address in the immediate future.

Context and Equity in Implementation Science

Facilitators: Jennifer Tsui, Montserrat Soler, and Yue Guan

This action group focuses on how the IS community can advance and make more explicit the incorporation of health equity and context across cancer prevention and control research. This year, the action group is led by three new facilitators who started the action group meeting by acknowledging the trailblazing work of the facilitators from prior years: Prajakta Adsul, Rachel Shelton, Stephanie Wheeler, April Oh, and Ariella Korn.

In recognition that there may be members of the action group who are new to IS and investigators across all levels of the career ladder, the action group started off by setting the stage with regard to key terminology and processes, including (1) questioning what we mean by context and equity; (2) establishing our goals of inclusion, engagement, and contributions from all participants (long-term and new members); and (3) acknowledging that there may be terms and resources discussed during the meeting (e.g., CPCR, ISC3, CTSA) that may not be widely known but which should not discourage participation and contributions to the action group.

The next important step for this group was to review public goods (e.g., literature review,

theory development, measure development, workshop/conference, expert meetings, databases, funding portfolio analysis) from the Context and Equity Action Group sessions at previous CCIS meetings (2019, 2020, and 2021). Public goods from the 2021 meeting included (1) mentoring, supporting, and training historically underrepresented scholars in the field of IS; (2) database/review of evidence-based interventions (EBIs) that reduce health inequities; (3) creating a community for health equity and IS; and (4) developing a community advisory board (CAB) of other CABs. Jennifer Tsui, who facilitated this part of the initial overview, also highlighted several recent publications, including public goods led by members of this action group, which have contributed to increased focused and greater attention to health equity and IS in cancer prevention and control research. This included the following publications:

- “Recommendations for Addressing Structural Racism in Implementation Science,” by Rachel Shelton and colleagues
- “Grounding Implementation Science in Health Equity for Cancer Prevention and Control,” by Prajakta Adsul and co-authors

Action group members also shared the following existing resources:

- Article on adapting an existing framework to an equity approach, <https://pubmed.ncbi.nlm.nih.gov/34045839/>
- Article on the extension of the Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework to incorporate context, <https://www.frontiersin.org/articles/10.3389/fpubh.2020.00134/full>
- Article on IS in community settings, <https://pubmed.ncbi.nlm.nih.gov/36039843/>

- University of Texas Health Workshops, <https://www.uth.edu/implementation-science/our-work/training/annual-workshop>

The action group charge for this year included examining and reprioritizing prior public goods, identifying new priority areas and actionable steps for new public goods in 2022, and identifying strategies to engage new members and build community in addition to the annual CCIS meetings.

In the **initial brainstorming session** on “What do you view as emerging/important issues that should be prioritized and addressed through public goods?,” the action group raised several ideas, including showcasing community-led and system-led initiatives, resources (communication tools) to connect with communities and build partnerships, collaborations with experts outside of the IS space and ways to bridge fields (e.g., health equity research, global health, digital health), and identifying collaborations with other CCIS action groups (e.g., multilevel, community, global health). Specific **challenges to advancing research on context and equity in IS** that were raised during the second part of the brainstorming session included a focus on barriers to team-based science in doing this work (e.g., resource needs, structure, funding), difficulties building and maintaining community, lack of guidelines and case study examples to build best practices, lack of mentoring, and the need to shift the IS agenda to more closely align with health equity.

In smaller breakout groups (six groups with four to seven participants each), action group members identified what they considered the **“most important areas” that the Consortium should address in context and equity**. These included mentoring and training, building partnerships and collaborations across sectors and disciplines, technical guidance on using established IS frameworks to conduct IS equity research, and resources on terminology.

In a second breakout session (four groups), participants discussed **actionable next steps and priority areas** captured in the large group discussion. Actionable steps included increasing mentorship and training in IS context and equity, creating a guide to IS terms, forming opportunities for joint collaborations between the field and action groups, resources on how to use existing IS frameworks and incorporate context and equity into existing frameworks, and community best practices for context and equity work.

In the final large group discussion, **four public groups resulted from the Context and Equity Action Group** this year:

1. Increase mentoring and networking opportunities to promote the intersection of health equity and IS research.
2. Establish a terminology resource focused on equity and context in IS.
3. Provide technical assistance and case studies on how to use equity-focused frameworks in diverse contexts.
4. Identify and collaborate on joint public goods across action groups that address context and equity.

As new facilitators of the action group, Jennifer Tsui, Montserrat Soler, and Yue Guan thanked everyone for their continued engagement and Drs. Shelton, Adsul, Wheeler, and Oh for their continued support and active feedback throughout the session.

Implementation of Complex/Multilevel Interventions

Facilitators: Melinda Davis, Erin Kenzie, Jessica Austin, and Maria Fernandez

First initiated in 2020, the Implementation of Complex/Multilevel Interventions Action Group convened at the CCIS annual meeting for the third time. The action group met on Day 1 of the 2022 meeting with the goal of advancing the science and understanding of complex/multilevel interventions (MLIs)

through three objectives: (1) understand the interface of MLIs and IS, (2) explore the interface of complex interventions and IS, and (3) produce goods and tutorials to help others seeking to work at the interface of these disciplines.

The meeting facilitators set the stage by orienting participants to the MURAL platform, summarizing key concepts in complex/multilevel interventions in IS and reviewing key accomplishments since the 2021 CCIS meeting. In our overview, the action group also highlighted past, present, and upcoming public goods projects with the action group goals.

The action group continues to support two unfunded projects related to complex/multilevel interventions identified as priorities during the 2020 and 2021 CCIS annual action group meetings.

- **Dr. Fernandez’s project** plans to produce an article (thought piece) that serves as an introduction to MLIs and discusses the differences and/or synergies between MLIs and interventions strategies. Contact maria.e.fernandez@uth.tmc.edu for more information.

- **Dr. Jennifer Leeman and Dr. Erica Lau’s project** focused on applications or modifications of Barker’s scale-up framework for MLIs. This work will produce a manuscript describing the process and will include key questions to consider when planning to scale up MLIs. Contact jleeman@email.unc.edu or erica.lau@ubc.ca for more information.

After a rousing introduction, the facilitators led the group through a series of small

List of Funded CCIS Public Goods for 2021 and 2022

2021 Awardees		
Lead	Title	Description
Dr. Jessica Austin (austin.jessica2@mayo.edu)	Advancing Our Understanding of MLIs Across the Cancer Care Continuum	Developed resources and tools to advance implementation of MLIs and complex cancer interventions using well-designed case studies illustrating best practices for implementing MLIs and applying the Function and Form Matrix to describe and characterize key dimensions of each case study.
Dr. Erin Kenzie (kenzie@ohsu.edu)	Using Systems Science for Implementation	Acquaint implementation scientists with key concepts and methods in systems science. This interactive, web-based instructional tool is in development and will include a companion manuscript.
2022 Awardees		
Lead	Title	Description
Dr. Maya Foster (maya.foster@uth.tmc.edu)	Using EBI Mapping to Understand Multilevel Evidence-Based Interventions: Enhancing the Usability of EBI Mapping Tools and Products	Enhance the usability of the EBI Mapping tool by applying the tool to MLIs listed on the evidence-based cancer control program website and through feedback from stakeholders at historically Black colleges and universities.
Dr. Bonny Morris and Dr. Sarah Birken (bemorris@wakehealth.edu , sbirken@wakehealth.edu)	An Integrative Review and Companion Matching Tool of Methods for Developing, Identifying, and Tailoring Implementation Strategies	A review of current tools and methods for developing, identifying, and tailoring implementation strategies.

group breakouts and large group discussions to generate ideas, vote on priority products, and summarize next steps. Common themes across the action group focused on connecting new researchers or community partners to a repository of foundational resources and tools related to complex/multilevel interventions. In addition, the co-creation of complex/multilevel interventions often necessitates engagement at multiple levels (e.g., patient, provider, health system, community, policy) and requires special consideration to understand local contexts. Guidance about how best to do this is needed.

Ultimately, the action group prioritized five products to be advanced over the next year. In order of priority votes, these include the following:

1. Training and materials around complex/multilevel interventions to orient new users across a range of disciplines. Participants continued to identify challenges distinguishing between core concepts and terminology, including the differences between intervention components and implementation strategies and the differences between complex interventions and MLIs. Researchers, practitioners, and community partners would benefit from better (and easier) access to foundational information (e.g., webinars, videos, study groups, panel discussions, podcasts, case studies) to communicate key concepts, tools, strategies, and resources. Clarification of terminology (e.g., multilevel versus complex) would be an added contribution, as would more clarity on how bundled interventions are related to complex/multilevel interventions. Next steps involve identifying existing training resources, unmet needs, and gaps in advertising/awareness, as well as target audience(s) and creative outreach and communication strategies (e.g., tailored to clinical, community, or research partners).

2. Tools and strategies for understanding context. Understanding the multilevel context is critical for developing, implementing, and evaluating complex/multilevel interventions. Examples of projects focusing on context include a repository of pragmatic measures to assess multilevel contextual factors, guidance regarding when and how to measure context and interdependencies across levels, new or underutilized approaches for understanding context (e.g., participatory group modeling, systems science, mixed methods), methods for linking identified functions and forms to outcomes across levels, and guidance regarding interactions between context and intervention across implementation phases. Strategies for assessing the change in context over time that include the impact of context on implementation and effectiveness outcomes are particularly needed. Next steps involve aligning efforts with the Context and Equity Action Group and identifying specific projects and leads.

3. Usable, pragmatic, rapid approaches for designing, selecting, tailoring, and adapting complex/multilevel interventions. Participants continued to be interested in understanding how best to design, select, tailor, and adapt complex/multilevel interventions across different settings and populations. Examples of projects include descriptions of usable and pragmatic approaches for planning complex/multilevel interventions; case studies illustrating selection, adaptation, or rapid implementation of complex/multilevel interventions; literature reviews to identify relevant studies; and a blog, webinar, or short film to share approaches. Approaches could draw from user-centered design, quality improvement, or systems science; align with existing repositories (e.g., evidence-based cancer control programs);

address sustainment; and address the role of the researcher in practice- or community-led efforts. Next steps involve clarifying selection versus adaptation, narrowing the focus of work, and identifying specific projects and leads.

4. Strategies, tools, and guidance for co-creating complex/multilevel interventions with communities for long-term sustainability.

Participants highlighted the importance of engaging partners across multiple levels of influence in the co-creation of complex/multilevel interventions. Examples of projects addressing this need include guiding documents or tutorials for co-creating complex/multilevel interventions with community stakeholders drawing from different intervention design approaches (e.g., co-design, design for dissemination, intervention mapping, participatory systems science), developing resources for identifying the “right” or “target” levels for an MLI, case studies of successful intervention design, and curricula for graduate classes. Next steps involve aligning efforts with other action groups, such as community engagement in IS and identifying specific projects and leads.

5. Strategies for securing funding for research and practice related to complex/multilevel interventions.

Members of the action group identified challenges in obtaining funding for preliminary work that is essential developing, co-creating, and adapting complex/multilevel interventions to different populations and settings. The research and practice communities could benefit from resources such as platforms for curating and sharing current funding opportunities; examples of successful grant applications; guidance on evaluating or conducting observational studies on existing state, health system, and practice projects;

engaging funding agency representatives to encourage more funding opportunities, identifying what has been funded and what should be funded, and recommendations for funding complex/multilevel interventions across phases (e.g., design, adaptation, implementation, sustainability). Next steps involve identifying specific projects and leads.

In sum, the Implementation of Complex/Multilevel Interventions Action Group had a robust and dynamic meeting that highlighted both the challenges with and opportunities for distinguishing MLIs and implementation strategies, advancing the study of MLIs across levels through novel tools and articulating mechanisms of action, and advancing our ability to attend to complexity in IS while also prioritizing context and stakeholder engagement. The action group plans to continue advancing work and public goods initiated following the 2020 and 2021 meetings and **is eager to produce actionable products in the year ahead. We welcome you to reach out to any of the leads if you would like to lead, support, or participate in any of the products identified.**

Implementation Science Study Design

Facilitators: Steve Bartel and Ramzi Salloum

The Implementation Science Study Design Action Group had a focus on hybrid type 2 study designs this year. Hybrid effectiveness implementation research designs have been embraced as a means to simultaneously investigate both effectiveness and implementation in research trials, resulting in potential efficiencies, synergies, and accelerated knowledge. Hybrid type 1 designs have become widely used to extend the knowledge gained in a primary effectiveness study with secondary data collected on factors such as barriers and facilitators to implementation. At the other end of the spectrum, hybrid type 3 research

studies have advanced knowledge on identifying optimal research strategies for well-established evidence-based practices.

When it comes to hybrid type 2 research designs, guidance on the merits of different approaches could be beneficial for investigators preparing or reviewing proposals. Specific examples of methodological variation that warrant discussion and evaluation include (1) the extent of pilot data and preliminary evidence needed for both the intervention and the implementation strategies being tested for a full-scale randomized controlled trial; (2) whether the effectiveness and implementation aims need to be fully powered to test related hypotheses; and (3) whether the effectiveness aim and the implementation aim need to be considered as co-equal, or whether one may be primary and the other secondary (and associated with different methods).

The objective of this action group for the upcoming year will be to consider the methodological issues associated with hybrid effectiveness implementation studies with a specific focus on hybrid type 2 designs. There were two public goods that were discussed by the action group:

Public Good 1: Best practices/checklist for hybrid type 2 design studies

- **Description:** Hybrid type 2 research designs have been less commonly employed, and guidance on the merits of different approaches could be beneficial for investigators preparing or reviewing proposals.
- **Next Steps:** Hold a small group leadership meeting to develop a paper in collaboration with a consensus group to react to and develop guidance; create a consensus group that will use findings as a jumping point; convene an expert consensus group to develop a summary of issues, methods, and recommendations; and identify statisticians/experts interested in participating in the action group.

Public Good 2: Review of the National Institutes of Health (NIH)-funded hybrid type 2 design studies

- **Next Steps:** Review the NIH-funded hybrid type 2 R01 studies to empirically examine variations of hybrid type 2 designs that have passed peer review—abstract search and code for the extent of pilot data, whether fully powered for both effectiveness and implementation outcomes, and whether outcomes are considered co-equal. A possible product of this activity may be the development of a taxonomy of hybrid type 2 designs and related characteristics based on a review of funded proposals.

Policy and Implementation Science

Facilitators: Karen Emmons and Jamie Chriqui

The goal of the Policy and Implementation Science Action Group is to develop strategies to support the IS community in advancing research in policy implementation related to cancer prevention and control. Its focus is on identifying resources to support policy IS and connect investigators working in this space. During the consortium meeting, the action group focused on identifying ways to accelerate research related to policy implementation. The discussion began with an overview of the action group members' activities in the past year by Dr. Emmons. Dr. Chriqui and Dr. Asada presented the results of their public goods project. Dr. Hudson and Mr. Schwartz briefly summarized their public goods project, which is underway.

The action group identified and discussed potential future public goods that would meet its goals.

The final public goods identified by the group included the following:

1. Equity-Focused Approach to Policy Implementation Analysis

Description: With the Health Equity Action Group, develop a strategy to examine differential implementation of policy and impact on equity.

Next Steps:

- Reach out to the Health Equity Action Group and identify collaborators.
- Identify an initial policy area to explore (e.g., smokefree housing).
- Develop a collaboration structure to allow for deep dives into what is known; policy implementation issues that arose; and, ultimately, the impact on equity that was observed.

2. Policy 101 Training

Description: Develop an in-depth introduction to how policy is made and by whom, along with the terminology, relevant outcomes, existing frameworks, and measures for use in policy IS. Consider multiple levels of policy.

Next Steps:

- Conduct a needs assessment of what trainings are currently available.
- Form a subgroup to develop and implement a training development plan.
- Identify potential distribution venues.

3. Best Practices Document for Evidence Dissemination and Policy Adoption

Description: Evaluate barriers/facilitators faced when engaging advocacy organizations in the use of evidence. Identify lessons learned and code lessons into an IS or policy IS framework.

Next Steps:

- Identify interested participants.
- Develop a proposal for identifying experiences to date and for developing a best practices document.
- Identify strategies for building infrastructure for ongoing collaboration with policy partners.

Community Participation in Implementation Science

Facilitators: Heather Brandt, Shoba Ramanadhan, and Aubrey Van Kirk Villalobos

The Community Participation in Implementation Science Action Group focused on completing two public goods, furthering progress on one public good, and identifying new public goods to fill existing research and practice gaps. The two public goods were completed using an iterative process focused on finalizing content for one-page handouts to guide best practices for engaged IS overall and specifically with rural communities. Progress was made on a public good to support parallel paths for researchers and partners. Additional previously identified public goods in development will continue to be completed over the next year.

In terms of new public goods, the main gaps identified continued to focus on insufficient or late engagement of key allies and partners in the research process; challenges in finding a place on the engagement continuum to engage; and limited measures for competencies, engagement, and impact. Building on the 2020 and 2021 action group activities, we discussed products developed and those in progress in the areas of building capacity, best practices, and conveying the value of engagement. Through small and large group discussions and a process of refining and prioritizing, the top three choices below were identified by action group members. Examples of potential public goods for each are provided. However, additional public goods may be identified through collaborative activities.

Idea 1: Reimagine implementation strategies for use in community and faith settings.

The focus of this effort will be to examine the existing Expert Recommendations for Implementing Change (ERIC) strategies in the context of (1) engaged IS and (2) use in faith- and community-based organizations. The effort will include translating existing implementation strategies for use in community and faith settings, while also identifying and describing implementation strategies being used successfully in these settings that are not currently featured in the literature.

Public Good: A tip sheet for community- and faith-based organizations regarding the types of implementation strategies they may find useful or appropriate.

Idea 2: Explore systematic engagement of research/patient advocates as IS ambassadors for bidirectional communication.

The focus of this effort will be on potential IS ambassadors who are serving on community, research, and/or patient advisory boards. Ambassadors can be allies for making the case for IS in organizations and systems that may not have heard of IS. To advocate for IS, they will need tools to understand IS and talking points.

Public Goods: One-page overview, talking points, and PowerPoint slides.

Idea 3: Pursue intentional engagement of cancer control programs and coalitions and other state-level organizations in conducting IS and disseminating findings.

The focus of this effort is on cancer control programs and coalitions and other state-level organizations, and the role played in furthering IS. Cancer control programs and coalitions and other state-level organizations have the potential to be synergistic partners in both translating evidence into practice through their large reach and networks and also in conducting dissemination and

implementation research in community and public health settings. Examples of implementation scientists engaging with coalitions and state organizations exist; however, we lack a more systematic and intentional outreach to these groups on a national scale.

Public Goods: Complimentary checklists with talking points for community coalitions and implementation scientists to facilitate conversations to explore mutually beneficial and synergistic organizational relationships through which to conduct IS and advance implementation practice.

Implementation Science in Global Health

Facilitators: Anne Rositch, Donna Shelley, and Vidya Vedham

Disparities and cancer burden in low- and middle-income countries (LMICs) are growing. This disparity is due, in part, to gaps in the translation of evidence-based cancer control strategies into real-world LMIC practice contexts. The Implementation Science in Global Health Action Group is identifying opportunities to close the evidence-to-practice gap by adapting and applying dissemination and implementation science in low-resource settings. The annual meeting serves as a catalyst for specifying capacity-building needs and scientific priorities for IS to improve and increase the translation of evidence-based cancer prevention and control strategies into practice in ways that are scalable and sustainable.

In 2022, progress was made on two projects funded through CCIS public goods development: (1) a scoping review that identified published reports of strategies for scaling cancer control interventions in LMICs, and (2) an interactive, visual web tool that facilitates individuals and teams to understand and assess context at different time points in the lifecycle of an evidence-based program.

This year, several themes reflected priorities from prior meetings, including tools and resources to make implementation more accessible to those new to the field (e.g., the use of infographics); and knowledge dissemination, capacity building, adapting methods and measures to global context, reframing our work in global health as an area that can move the field forward by leading efforts to make IS more relevant to global partners; and, similarly, by developing and elevating the perspectives and needs of global leadership, policymakers, and implementers. The group also emphasized the need to facilitate greater cross-action group collaboration (e.g., with the Context and Equity and Community Participation Action Groups). Among these ideas, four major themes for the development of “public goods” emerged from the breakout group discussions. These included:

1. Fill the gap in resources for learning and conducting implementation research in diverse global settings.

Description: Crowdfund training tools and capacity-building programs for the dissemination of IS research. Work with global partners to identify gaps and plan to add modules and case examples (e.g., guidance for cultural adaptation and assessing context) that can be translated and other products to improve IS capabilities in the global research community to facilitate the dissemination of IS knowledge among the global community of policymakers and implementers.

Next Steps: Form a subgroup to tackle this priority. Leverage global networks to identify relevant training tools, programs, and modules (e.g., National Cancer Institute, World Health Organization, academic and practice colleagues). Map the content to identify gaps/needs specific to cancer prevention and control in global contexts. Create a central location for resources.

2. Develop infographics related to IS concepts and tools for navigating local/project priorities.

Description: Infographics for diverse populations (e.g., policymakers, researchers, community) to demystify the language of dissemination and implementation science and make it more accessible, as well as promote adoption and applications for use in a global context.

Next Steps: Identify expertise in this area in terms of infographic designs and health literacy. Create a subgroup that includes the full range of stakeholders to engage in a process to co-create infographic materials. Pilot test the graphic series to ensure relevance and usability by the intended audience. An important component of this tool is to help clarify the differences and similarities among dissemination and implementation science and quality improvement, implementation practice, and program evaluation.

3. Decolonize IS.

Description: Prioritize local needs and highlight the contributions of global partners by including input from global stakeholders for informing adaptations to IS research for global cancer control programs and policies.

Next Steps: Two projects were proposed:

- Interview global leaders in IS on their vision for global cancer control. Interviews would aim to highlight current gaps in assessing research priorities and identify benchmarks for respectful partnerships and highlight the limitations of current collaborations, as well as opportunities for bidirectional learning.
- Invite global IS research thought leaders to develop a perspective/commentary on best practices in bidirectional learning and effective collaboration with global partners. Describe the need for adapting IS approaches to be truly responsive to local demands and

priorities. Identify potential barriers and facilitators for IS to develop and inform programs, practices, and policies in real-world settings.

4. Develop a knowledge dissemination strategy for IS public goods in a global health context.

Description: The current channels of dissemination are limited by access and language. There is a need to develop accessible knowledge dissemination strategies for a global audience.

Next Steps: Gather diverse stakeholders (e.g., users of information, data, public goods, and training materials) to discuss dissemination needs and gaps, crowdsourcing of existing channels across different media (e.g., a listserv, websites, physical structures/places, meetings), and how to overcome technology and language barriers. Continue with the development of a dissemination plan and iterate.

Learning Healthcare Systems as Natural Laboratories

Facilitators: Alanna Kulchak Rahm and Brian Mittman

Learning health systems (LHS) represent an innovative approach for generating and applying evidence while also driving research as a byproduct of clinical care. The 2022 Learning Healthcare Systems as Natural Laboratories Action Group began its deliberations by clarifying the definition of an LHS and learning healthcare system (LHCS), reviewing gaps and needs identified in prior years, and progress achieved since the action group's previous meeting. In reviewing the needs identified in the prior year, the group recognized that many of these needs may be either (1) addressed at other levels (such as institutional review boards) or (2) may be too large to tackle without breaking it down into smaller steps. From there, the 2022 action group focused on identifying public goods that could accelerate the contributions of LHS/LHCS

approaches to cancer care implementation yet are feasible for an action group and valuable for the LHS/LHCS and IS fields. Examples of potential goods were provided to participants to guide discussion and design of potential 2022 public goods.

Public goods suggested during the 2022 action group meeting met three main needs: (1) understanding the ongoing needs of researchers and implementers within the LHS/LHCS stakeholder community, (2) tools that “connect the dots” between published literature and “on-the-ground” activity in LHS/LHCS, and (3) a sustainable forum for shared learning and growth. From this, action group members devised three potential public goods for 2022 that could meet each of these needs. The proposed public goods, ranked in order of importance by the larger group of participants in the 2022 CCIS meeting, are as follows:

Public Good 1: Blueprint to operationalize and locally tailor an LHS/LHCS

- **Need Addressed:** Connecting the dots between what has been reported and what is being learned in practice.

Description: This public good will apply both a top-down and bottom-up approach to operationalize the LHS/LHCS concepts within a blueprint-type format guided by the core functions and forms of complex health interventions framework. The top-down approach involves synthesizing what the literature has identified as the principles, goals, and core features of an LHS/LHCS, presenting these as a list of core functions and menus of associated forms, while the bottom-up approach will use case studies of successful LHS/LHCS instances in the United States to identify the core functions and forms of actual LHS/LHCS models. Together, these approaches will provide an important foundation for a future handbook to help others better understand the structure and features of an effective LHS/LHCS and will efficiently tailor this guidance and determine what might work within their local settings.

Public Good 2: Identification of the questions and needs of end users in the LHS space

- **Need Addressed:** Understanding the needs of researchers and implementers with lived experience in the field.

Description: This public good would survey stakeholders (including researchers, policymakers, and practice leaders) who are seeking guidance in LHS development and management in order to better understand their needs for information, tools, and support.

The survey will help determine current awareness and the use of LHS/LHCS concepts across these stakeholder groups and help LHS/LHCS researchers understand key needs, interests, and priorities for stakeholders. The survey will be developed following a review of current literature and the key definitions and information prevalent in the LHS/LHCS literature. Data from the survey will help identify priorities for subsequent public goods.

Public Good 3: Creation of a forum or community of practice to facilitate learning across LHS end users

- **Need Addressed:** Fostering shared learning and growth within and between systems.

Description: This public good would leverage the experiences of different researchers and implementers in diverse healthcare systems and settings currently employing LHS/LHCS approaches and ideas. A learning community of these stakeholders could share insights, such as the different experiences of LHS/LHCS exemplars serving different demographic groups, the range of different approaches to LHS/LHCS design and operation currently in use, and different processes employed to reach similar outcomes across different LHS/LHCS exemplars. Initial steps would require developing the learning community membership

and environment, setting agendas for community activities, developing criteria for cases and speakers, and devising methods for ensuring that the learning community activities meet the needs and preferences of community members.

Technology in Implementation Science

Facilitators: Rachel Gold and Constance Owens

The 2022 CCIS Technology in Implementation Science Action Group meeting focused on the public goods needed to improve how health information technologies (HITs) support the provision of guideline-concordant cancer prevention and care, and how such HITs can most effectively be implemented. The action group started with a review of public goods priorities from the three prior CCIS meetings. Notably, in 2021, this action group's leaders (Constance Owens and Rachel Gold) worked with other investigators across the CCIS community to conduct a scoping review, which was the first public good to address some of the priorities identified in previous years. This scoping review assesses the current state of the science and key knowledge gaps in the use and implementation of HITs in cancer prevention (colorectal, breast, and cervical cancer) in primary care. Broadly speaking, the review's findings underscored the need for implementation research on (1) the effectiveness of HITs targeting guideline-concordant breast and cervical cancer screenings; (2) the equitable implementation of HITs for cancer screening with an emphasis on reach (patient representativeness in HIT interventions), adoption, and the sustainability of effective HIT interventions; and (3) the effectiveness of implementation strategies to support HITs adoption for cancer screening in primary care. As of October 2022, the review has been presented to national audiences and the manuscript is being prepared for peer review.

New public goods priorities identified at the 2022 CCIS Technology in Implementation Science Action Group meeting focused on three areas: (1) HITs to support patient engagement, (2) HITs to support oncology care, and (3) how to improve HIT usability and design to support adoption. A summary of these themes is presented below, followed by four new needed public goods prioritized by the action group.

1. Technology to support patient engagement.

As reflected in three of the prioritized public goods listed below, this action group had a substantial interest in how HIT tools can support and empower patient engagement in cancer prevention, care, and survivorship. Such engagement could range from making decisions about needed screenings, to self-scheduling appointments, to symptom management, and much more. A related public good might involve a scoping review of the existing data on the effectiveness of such tools across the cancer care continuum, which would augment findings from the current scoping review (above) about patient-facing tools in primary care. One element of this theme was how to improve the adoption and dissemination of such tools. A related public good might be a guideline on how to make patient-facing tools more appealing and user-friendly by applying user-centered design principles or similar methods or considering different methods of delivering these tools to patients (e.g., through texting prior to a clinical encounter). It also might involve the development of public goods 1, 2, and 4.

Recommended Next Steps: Convene a working group to prioritize which of these ideas are of the highest priority and have the greatest potential impact and develop a plan for conducting a related scoping review or reviews, and/or create a relevant guideline.

2. Technology to support oncology care.

This action group identified a need for an assessment, like the scoping review described above, focused on current knowledge on how HITs can support care quality and outcomes in oncology settings. This assessment might focus on tools that support shared decision-making (SDM), patient engagement, symptom management, decision support for care teams, and so forth. It might include what is known about how to obtain patient-reported outcomes, such as symptom reporting, and use these data to support clinical decisions in oncology care (e.g., through panel management dashboards and/or longitudinal data on patient-reported symptoms). It also might include examples or case studies of how HITs have been used effectively in oncology care, including how to develop such tools so that they are optimally useful to the oncology care team. It is possible that this review would need to be specific to different cancers. As this evidence is summarized, the results might be presented both in a publication and in a public webinar or other media.

Recommended Next Steps: Convene a working group to prioritize which of these ideas are of the highest priority and have the greatest potential impact and develop a plan for conducting a related scoping review or reviews.

3. Improve technology usability and design to support dissemination.

This action group's third area of focus for future public goods involved how to improve HIT-related interventions at the development stage (pre-implementation). As noted above, this might involve designing patient-facing tools to be more user-friendly. It also might involve creating a template of a business plan to be used when developing or implementing a new tool. Lastly, it might involve creating a guideline or thought piece

on how to better design tools for future dissemination/implementation.

Recommended Next Steps: Convene a working group to develop a plan for developing these potential public goods.

Public Good 1: Website/Resource repository of patient decision-making tools

Description: Public resource (such as a website) of existing HIT-based tools meant to help patients decide whether to get certain cancer screening(s) in primary care, for cases when the need for such screening is ambiguous, and make treatment choices/care management (oncology care). This resource should include links to existing tools; information on their effectiveness, if known; and strategies for enhancing their implementation/adoption, if known.

Next Steps: Determine the optimal/appropriate “owner” of this repository as it will need to be maintained over time. Identify a project leader and collaborators. Identify resources to be posted.

Public Good 2: Webinar/Workshop on using SDM tools to empower patients in primary care

Description: Public event to present current knowledge on how to use SDM tools to enhance patient engagement in cancer prevention (e.g., tools for use when care steps are ambiguous, tools for entering family history data). This could include patient perspectives on using such tools and what is known about (1) their effectiveness and (2) supporting their adoption (e.g., through portals, through the use of patient navigators/community health workers to help patients use these tools).

Next Steps: Identify project leader/host and collaborators. Identify speakers (e.g., people doing research on such tools, patients, navigators).

Public Good 3: Thought piece/guidelines on how to design HIT tools for dissemination or implementation

Description: Guidance is needed on how the developers of HIT interventions (e.g., ranging from provider-facing decision support/risk stratification to patient-facing decision aids, reminders) can and should think about how these tools will be disseminated/implemented in practice as part of the development process. This public good will provide that guidance based on existing evidence.

Next Steps: Identify the project leader and collaborators. Specify the scope within the cancer care continuum. Review relevant evidence and create the public good.

Public Good 4: Guidelines on how to make patient-facing tools more appealing in order to increase their use

Description: Guidance is needed on how to make patient-facing tools (e.g., in primary care, whether to receive a given screening in cases where this choice is ambiguous; in oncology care, support in making care decisions) more attractive and appealing to users. This will draw on user-centered design principles or other knowledge on user engagement, technology acceptance, and so forth.

Next Steps: Identify the project leader and collaborators. Specify the scope within the cancer care continuum. Review relevant evidence and create the public good.

Appendix B: Town Hall Ranking of Proposed Public Goods Across Action Groups

Policy and Implementation Science

Public Good: Policy 101 Training

Description: More in-depth introduction to how policy is made, by whom, terminology, outcomes, existing frameworks, and measures at different levels of policy.

Next Steps:

- Conduct needs assessment.
- Form subgroup for training development.
- Identify distribution venues (e.g., webinars, TIDIRC).

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Public Good: Equity-focused Approach to Policy Implementation Analysis

Description: With Health Equity Action Group, develop strategy to examine differential implementation of policy and impact on equity.

Next Steps:

- Reach out to equity group and identify collaborators.
- Identify initial policy area (e.g., smokefree housing).
- Develop collaboration structure to allow for deep dives into what is known, policy implementation issues that arose, and equity impact.

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Public Good: Best Practices Document for Evidence Dissemination and Policy Adoption

Description: Evaluate barriers/facilitators faced in engaging advocacy organizations in use of evidence, identify lessons learned, and code lessons into an IS or IS policy framework.

Next Steps:

- Identify interested participants.
- Develop proposal for identifying experiences to date and developing a best practices document.
- Identify strategies for building infrastructure for ongoing collaboration with policy partners.

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Context and Equity in Implementation Science

Public Good: Develop Technical Assistance and Case Studies on How to Use Equity-Focused Frameworks in Diverse Contexts

Description: Concrete research examples and step-by-step action guides that exemplify how to use equity-focused frameworks in various IS research settings and contexts.

Next Steps:

- Identify equity-focused frameworks, frameworks adapted to account for context and equity, and relevant case studies to highlight as examples in the field (e.g., webinars).
- Develop a guide or set of action steps describing how to incorporate existing equity-frameworks into study design, measurement, analysis, etc.

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Public Good: Increase Mentoring and Networking Opportunities to Promote the Intersection of Health Equity and Implementation Science (IS) Research

Description: Provide more opportunities to connect mentors and mentees, IS equity researchers, and IS equity practitioners and research partners.

Next Steps:

- Identify a community of interested participants, starting with an action group
- Plan spaces of connection in addition to CCIS meetings for interested mentors/mentees, researchers, and practitioners/community members (e.g., meetups at Annual D&I conference, cancer prevention and control conferences).
- Share resources on existing training and career development programs through other centers and networks.

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Context and Equity in Implementation Science (Continued)

Public Good: Establish a Terminology Resource Focused on Equity and Context in IS

Description: Develop a guide that defines and translates terminology/jargon used by IS equity researchers for newcomers to the field, researchers from other disciplines, practitioners, community members, and others.

Next Steps:

- Identify existing equity and IS terminology resources and gaps in terminology definitions.
- Develop a pocket guide of IS terminology focused on concepts related to context and equity and aimed at researchers from other disciplines and partners outside of academia.

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Public Good: Identify and Collaborate on Joint Public Goods Across Action Groups That Address Context and Equity

Description: Integrate equity and context throughout IS, efforts for joint public goods across action groups, and outside of cancer-related disciplines.

Next Steps:

- Encourage crosstalk and collaboration across action groups following CCIS meeting to identify joint public goods.
- Brainstorm crosstalk and collaboration in IS outside of cancer-related disciplines and across disease areas.

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Implementation of Multilevel/Complex Interventions

Public Good: Strategies, Tools, and Guidance for Co-creating Multilevel/Complex Interventions with Communities for Long-term Sustainability

Description: Engage communities and interested parties at multiple levels. Projects could include developing guidance for co-creating multilevel/complex interventions with stakeholders drawing from different intervention designs (e.g., co-design, design for dissemination, intervention mapping, participatory systems science); resources for identifying the optimal levels for a multilevel intervention; case studies of successful intervention design; and curricula for graduate classes.

Next Steps:

- Align with other action groups.
- Identify specific projects and leads.

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Public Good: Tools and Strategies for Understanding Context

Description: Projects could include building a repository of pragmatic measures to assess context; developing guidance on when and how to measure context and interdependencies across levels; advancing new or underused approaches for understanding context (e.g., participatory group modeling, systems science, mixed methods); sharing methods for linking identified functions and forms to outcomes across levels; developing guidance on interactions between context and intervention across implementation phases; and advancing strategies for assessing changes in context over time.

Next Steps:

- Align efforts with context and equity action group
- Identify specific projects and leads

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Implementation of Multilevel/Complex Interventions (Continued)

Public Good: Develop Effective, Rapid Approaches for Designing, Selecting, and Tailoring Multilevel/Complex Interventions

Description: Projects could include describing ways to plan multilevel/complex interventions; developing case studies that show how to select, adapt, and quickly implement multilevel/complex interventions; reviewing literature for relevant studies; and sharing approaches via a blog, webinar, or video. Approaches could draw from user-centered design, quality improvement processes, or systems science; align with existing repositories (e.g., EBCCP); and address sustainment and the role of the researcher in practice- or community-led efforts.

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Next Steps:

- Clarify selection vs. adaptation.
- Narrow focus, identify specific projects and leads.

Public Good: Training and Materials on Multilevel/Complex Interventions to Orient New Users

Description: Provide researchers and community partners better access to resources (e.g., webinars, videos, study groups, panel discussions, podcasts, case studies) conveying key concepts, terminology, tools, and strategies.

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Next Steps:

- Identify existing training resources, unmet needs, and gaps in advertising/awareness.
- Identify target audiences, creative outreach, and communication strategies (e.g., tailored to clinical, community, or research partners).

Public Good: Strategies for Funding Research and Practice Related to Multilevel/Complex Interventions

Description: Develop and share resources to facilitate funding, such as platforms for curating and sharing current funding opportunities and guidance on evaluating or conducting observational studies on existing projects; engage funding agency representatives to encourage more funding opportunities; identify funded projects and projects that should receive funding; and recommend funding multilevel/complex interventions across design, adaptation, implementation, and sustainability phases.

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Next Steps:

- Identify specific projects and leads.

Implementation Science Study Design

Public Good: Best Practices/Checklist for Hybrid Type-II Design Studies

Description: Hybrid Type-II research designs are not commonly employed. Guidance on the merits of different approaches could benefit investigators preparing or reviewing proposals.

Next Steps:

- Hold a small group leadership meeting to develop guidance.
- Create a consensus group that will use findings to jump start guidance.
- Develop summary of issues, methods, and recommendations.
- Identify statisticians/experts interested in participating.

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Public Good: Review NIH-funded Hybrid Type-II Design Studies

Description: Review abstracts of Hybrid Type-II Effectiveness-Implementation studies that have been peer reviewed by the DIRH/SIHH Study Section and funded.

Next Steps:

- Conduct an abstract search.
- Code search results for extent of pilot data, whether fully powered for both outcomes, and whether outcomes are equal.

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Implementation Science Study Design (Continued)

Questions Applying to Both Public Goods:

- What is the extent of pilot data/preliminary evidence necessary to justify a Hybrid Type-II?
- Is there a need for equally robust/promising pilot data for both the intervention and the implementation strategy?
- Do both the effectiveness and implementation aims need to be fully powered to test related effectiveness and implementation hypotheses?
- Are the effectiveness and implementation aims equal? Or can one be primary and the other secondary?
- Is it acceptable or even necessary for the different aims to be based on different frameworks (e.g., RE-AIM vs. CFIR) or different methods (e.g., quantitative vs. mixed methods)?
- Is it possible to conduct a two-armed randomized Hybrid Type-II Trial? Or is it imperative to use three or four arms to disentangle the effect of the intervention from the implementation strategy?
- Do hybrid Type-I research designs represent a spectrum of designs? Should there be a more differentiated taxonomy (e.g., Type IIa, Type IIb, Type IIc)?

Technology in Implementation Science

Public Good: Guidance on How to Design HIT Tools for Dissemination/Implementation

Description: Guidance for developers of HIT interventions, which may range from provider-facing decision support/risk stratification to patient-facing decision aids, to use to disseminate/implement those tools in practice.

Next Steps:

- Identify project leader and collaborators.
- Specify scope within cancer care continuum.
- Review relevant evidence and create guidance.

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Public Good: Guidance on How to Make Patient-facing Tools More Appealing to Increase Use

Description: Guidance on how to make patient-facing tools in primary care (e.g., screening, oncology care, making care decisions) more appealing to patients. This will draw on user-centered design principles or other knowledge on user engagement, technology acceptance, etc.

Next Steps:

- Identify project leader and collaborators.
- Specify scope within cancer care continuum.
- Review relevant evidence and create the guidance.

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Public Good: Website/Resource Repository of Patient Decision-making Tools

Description: Public resource of existing HIT-based tools meant to help patients decide whether to get certain CA screening (if ambiguous) in primary care or make treatment choices/care management (oncology care). Include links to tools, information on their effectiveness, if known, and strategies for enhancing their implementation/adoption, if known.

Next Steps:

- Determine optimal owner of the repository, perhaps NCI, as it will need to be maintained over time.
- Identify project leader and collaborators.
- Identify resources to post.

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Technology in Implementation Science (Continued)

Public Good: Webinar/Workshop on Shared Decision-making (SDM) Tools to Empower Patients in Primary Care

Description: Public event to present current knowledge on how to use SDM tools to enhance patient engagement in cancer prevention (e.g., tools for use when care steps are ambiguous, for entering family history data). This could include patient perspectives on using such tools and what is known about their effectiveness and ways to support their adoption (e.g., through portals, use of patient navigators or community health workers).

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Next Steps:

- Identify project leader and collaborators.
- Identify speakers doing research on such tools, patients, or navigators.

Implementation Science in Global Health

Public Good: Decolonizing IS

Description: Advancing local priorities and the needs and demands of global partners. Projects could focus on 1) interviewing global leaders in IS to elevate their voices in the cancer space and 2) commenting on how methods and approaches in global IS are leading the field in translation and may need to be different than in HIC/other contexts.

Next Steps:

- Perform interviews to test our assumptions.
- Bring in perspectives of global IS leaders and practitioners to decolonize the field.
- Map research design/methodological questions, gaps, and assets that are relevant to global IS.

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Public Good: Infographics on IS and Interrelated Concepts, Navigating Tools for Local/Project Priorities

Description: Infographics for wide and diverse populations (e.g., policymakers, researchers, community). Use a process of co-creation and pilot the graphic series to ensure its usefulness to the intended audience and that it reflects their interests and needs.

Next Steps:

- Build a diverse group to co-create infographic materials.

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Public Good: Fill Gaps in Resources for Learning and Implementation Research in Diverse Global Settings

Description: Crowd-source training tools and programs to build capacity for IS and context-adjusted materials. Then identify gaps to add modules, case examples, and more.

Next Steps:

- Form a subgroup around product.
- Use global network to identify relevant training tools, programs, modules (e.g., NCI, WHO, GIS, academic and practice colleagues).
- Map content to identify gaps/needs specific to cancer and/or global contexts.

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Implementation Science in Global Health (Continued)

Public Good: Knowledge Dissemination Strategy for IS Public Goods in Global Health Context

Description: Prioritize a strategy to disseminate knowledge generated by the public good to the right global audience. The current channels of dissemination are limited by access to HIC meetings and language.

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Next Steps:

- Disseminate to LMIC partners in local/regional meetings.

Community Participation in Implementation Science

Redefine implementation strategies to be accessible to practitioners and also reflect their experiences (Leaders: Rebecca Selove, Shoba Ramanadhan, Cory Bradley, Renee Porter).

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Explore systematic engagement of research/patient advocates as IS ambassadors for bidirectional communication (Leaders: Eva May, Mona AuYoung).

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Pursue intentional engagement of cancer control programs/coalitions and other state-level organizations in conducting IS (Leaders: Aubrey Villalobos, Milkie Vu).

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Public Goods:

- 1) Best Practices for Engaged IS and
- 2) Best Practices for Engaged IS with Rural Communities

Description: Finish two public goods, and support parallel paths for researchers and partners.

Contact Shoba and Heather if you're interested in leading this group moving forward!

- Shoba: sramanadhan@hsph.harvard.edu
- Heather: heather.brandt@stjude.org

Learning Healthcare Systems as Natural Laboratories

Public Good: Blueprint to Tailor and Operationalize Learning Healthcare Systems (LHS)

Description: Combo of a top-down (following the literature) and bottom-up approach (case studies to support and create handbook) guided by form/function/need framework.

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Next Steps:

- Determine first steps in creating a blueprint and timeline.

Public Good: Poll for Questions and Needs of End Users in LHS Space

Description: Create a survey to determine awareness, needs, and ranking of interests/importance of priorities for learning within LHS. This would inform a later project such as a webinar/podcast series, the blueprint, or other program.

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Next Steps:

- Review current literature and create a survey.

Public Good: Forum or Presentation Series

Description: Ask scientists targeting different demographics in different LHS, using different methods, or studying different processes to present to a larger community

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Next Steps:

- Determine criteria for selecting cases and speakers.

Appendix C: Planning Committee Members

Prajakta Adsul, MBBS, MPH, PhD

University of New Mexico Comprehensive
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Heather Brandt, PhD

St. Jude Children's Research Hospital

Kathy Briant, MPH

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Salene Jones, PhD

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Simon Craddock Lee, PhD, MPH

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Alanna Rahm, PhD, MS, LGC

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