

CONSORTIUM FOR CANCER IMPLEMENTATION SCIENCE

MEETING SUMMARY REPORT



Wednesday, October 6–Thursday, October 7, 2021
Virtual Meeting



NATIONAL CANCER INSTITUTE
Division of Cancer Control
& Population Sciences



WELCOME AND OVERVIEW

Dr. Cynthia Vinson, Senior Advisor of Implementation Science (IS) in the Division of Cancer Control and Population Sciences (DCCPS) at the National Cancer Institute (NCI), opened the meeting and welcomed attendees and panelists. She also announced the new name for the consortium, the Consortium for Cancer Implementation Science (CCIS). Although we are disappointed not to be live, the meeting used a new collaboration technology known as Mural to allow online visual collaboration between participants.

Dr. Vinson also thanked the planning committee for providing guidance on the agenda, panelists, interactive technology, and action groups. The consortium action groups made great efforts to move implementation cancer research forward, including an award program to engage more people in this work. There were 7 winners out of many outstanding applicants, each receiving up to \$20,000 for time and materials. The grantees included junior investigators or researchers who do not currently hold National Institutes of Health (NIH) implementation science grants. The 2021 CCIS award winners were:

- Jessica Austin, PhD, MPH of the Mayo Clinic College of Medicine and Science/ Cancer Center
- Cici Bauer, PhD of the University of Texas Health Science Center at Houston
- Cory Bradley, PhD of Washington University School of Medicine in St. Louis
- Jamie Chriqui, PhD of the University of Illinois, Chicago
- Tara Friebel-Klingner of Johns Hopkins School of Public Health
- Gloria Guevera, PhD of New York University

- Erin Kenzie, PhD of Oregon Health & Science University

Dr. Vinson then reviewed the agenda for the 2-day meeting, which included two plenary sessions and eight action group sessions, covering topics related to implementation science (IS) and policy, global health, community participation, and healthcare systems on Day 1; while technology, context and equity, complex/multilevel interventions, and study design associated with IS were covered on Day 2. Participants were able to attend 2 different action groups, and a town hall was held at the end of the second day to solicit opinions from the consortium to prioritize work from each group.

The platform was then turned over to Dr. Karen Emmons, Professor of Social and Behavioral Science at the Harvard T.H. Chan School of Public Health, to introduce Dr. Robert Croyle, Director of DCCPS, who is retiring. She noted Bob's significant impact on the field, first as a researcher, and then in leadership positions at NCI. She shared the thanks of the implementation field for all that Bob has done to support the growth of implementation science in cancer. In his brief remarks, Dr. Croyle stated that his successor, Dr. Katrina Goddard, who was previously a Distinguished Investigator and Director of Translational and Applied Genomics at the Kaiser Permanente Center for Health Research (CHR) in Portland, OR. Dr. Goddard is a trained biostatistician and genetic epidemiologist who has a significant research portfolio in genetics/genomics focused on cancer as well as many other disease domains. She is well-qualified to lead DCCPS and is familiar with the field of IS. Dr. Croyle also noted that there are multiple transitions now at NIH, including Dr. Frances Collins who is stepping down as director. These changes provide

opportunities for new input, directions, and planning, which can impact NIH across institutes. For example, the onboarding of a different NIH director provides a chance to advocate for IS, based on recent experience with the vaccine during the pandemic. Dr. Croyle thanked everyone for the advice and criticism and implored the audience to “speak up and speak out.”

Panel Discussions

There were two panel discussions held, one on each day of the consortium. Members of the IS community conferred about lessons learned in IS from COVID-19, then focused on challenges and opportunities in re-emerging and moving forward post-pandemic. Audience members were given the opportunity to ask questions and interact in real time, using the Mural board.

The Day 1 discussion covered how panelists from various academic and government organizations navigated challenges associated with the pandemic, including health inequities, misinformation, data standardization and integration, and community connections.

The Day 2 panel discussed issues related to social and racial justice, health inequities, and how implementation science can adapt research to be more responsive to and engaged with the community.

Day 1 Panel: Lessons Learned in IS from COVID-19

The panel moderator, Dr. Jennifer DeVoe welcomed audience members to the session. The initial topic of discussion involved the roles and challenges associated with the COVID-19 pandemic, and how panelists addressed these issues.

Moderator:

Jennifer DeVoe, MD, Professor and Chair, Oregon Health & Science University

Panelists:

Howard K. Koh, MD, MPH, Harvey V. Fineberg Professor of the Practice of Public Health Leadership, Harvard T.H. Chan School of Public Health, Harvard Kennedy School

Nadia Islam, PhD, Associate Professor, NYU School of Medicine

Matthew Kreuter, PhD, Professor, Brown School of Social Work, Washington University in St. Louis

Elecia Miller, Community Coordinator, Mayor’s Health Task Force in the City of Lawrence, Massachusetts

- Dr. Howard Koh began by lauding Dr. Croyle for his work supporting the mission and teamwork between NCI and other institutions related to cancer policy and prevention. He stated that preparedness should be maintained, and that while cancer-related work should continue, the IS community must also always be aware of national and global health threats. The United States needs a stronger and revitalized public health system.
- Dr. Nadia Islam reviewed the need for connections between communities through systems of care using community health workers (CHWs) and culturally adapted linkage models. The pandemic amplified and highlighted how data and social narratives drive public-health program implementation. Community voices are imperative,

and without them there can be inaccurate assessments of specific minority groups. For example, there were impacts in the Asian American population, which was to be expected because they are often in low-wage jobs and multigenerational households. Patient data from New York City Public Health Solutions (NYCPHS) showed high positivity rates in this population, particularly among Chinese immigrants. Community Health Workers (CHW) functioned in dual service/advocacy roles, providing culturally tailored messaging. We need both quantitative and qualitative information to adequately assess and engage various communities.

- Dr. Matthew Kreuter also thanked Dr. Croyle, specifically for his efforts related to countering the spread of misinformation and addressing health equity. Intervention and implementation science are attempting to reduce health disparities and address the needs of low-income Americans. The pandemic has provided an opportunity to share resources, but public health workers and partners are exhausted from working in crisis mode for almost two years. There were many challenges, including working in a politically charged environment with evolving knowledge. Implementation of public-health programs during COVID-19 was limited by the ability to respond, and the bandwidth to develop needed solutions.
- Ms. Elecia Miller stated that communication and countering misinformation were huge problems. The challenge was to obtain the most relevant data to the community and respond to this information. Messaging included important non-medical procedures for the public to follow, including hand hygiene, masks, social distancing, and vaccine administration.

Next, panelists considered how their team amplified and focused on health equity related to transmission and treatment of COVID-19, including missed opportunities.

- Dr. Islam stated that partnerships between CHWs and the community was a central strategy. They used capacity enhancing and leadership models through use of these trusted gatekeepers. The establishment of a public health and neighborhood core of approximately 500 CHWs for both short- and long-term preparedness ensured the presence of these connections, rooted in history within these communities. These initiatives provide an opportunity to learn how to integrate into primary care and linkage models.
- Ms. Miller shared that her department began early outreach prior to the shutdown, as well as culturally centered approaches to communication, particularly for the Spanish-speaking community. Strategies included radio public service announcements (PSAs), dedicated call lines, help with vaccine registration, and information translated into various languages. Transportation was an important barrier to vaccination, so mobile units were deployed to neighborhoods and workplaces. The biggest opportunity missed was failing to vaccinate people who were willing to get the shot, even if they were not in an at-risk group.
- Dr. Kreuter noted that data showed areas with low vaccination rates had greater economic and health impacts from COVID-19. They used this information to partner with organizations to reach specific target populations. However, strategies that reflect negative trends within a community can be harmful, thus Dr. Kreuter suggested that public health officials reframe this narrative and highlight progress.

An audience member then posed a question to Ms. Miller regarding critical infrastructure during the pandemic and how IS can assist in building and disseminating these important facets of public health response.

- Ms. Miller stated that long-term relationships with medical centers and hospitals were extremely important. In communities where there is not a robust health department, medical providers played a key role in pandemic response. In the city of Lawrence, partnerships with the state were also helpful with information dissemination and pivoting to serve community needs. The challenge for IS was how to provide this information to the community and strengthen public health work.

The conversation then transitioned to a discussion regarding data, including the critical role data played during the pandemic, as well as other data-related topics such as standardization, presentation to avoid penalization, and access to this information.

- Dr. Kreuter stated that in St. Louis data access was limited across communities, and standardization was lacking. However, public health officials improved data processing to rapidly disseminate information, providing the opportunity to make decisions and allocate resources. They also created panels with local community members and healthcare workers to determine the source of misinformation, allowing for quick counter responses.
- Ms. Miller shared that her team was working with Harvard School of Public Health to combat COVID-19 fatigue and create messaging that resonates with the community to spur action. They are focusing on vaccinating minority populations.

- Dr. Koh reiterated the importance of county-level and local data. Focusing on the community at the granular level garners attention to issues. Communication and messaging using this information is a huge theme to motivate vaccination among reluctant populations.

Dr. Koh also commented on how to shift the focus to prevention in public health in a sustainable manner, so that the current response is not short-term. Dr. Koh stated that the infusion of money after public-health emergencies is typically not maintained over time. The pandemic provides an opportunity to educate crucial policy makers on the need to be proactive to protect society.

Dr. Islam discussed criteria for hiring and training CHWs. She stated that most CHWs do not have a health background, but rather are trusted leaders within their communities. This access-based approach highlights not only community needs, but also local strengths such as family and other social support. Regarding training, there is a well-established scope of work for CHWs along with associations that can provide core competencies. Both the model and workforce were already established pre-pandemic, and only needed to pivot delivery strategies and community engagement. Another important facet for CHWs was helping community members navigate technology for remote activities.

Panelists then considered challenges with staying current with rapidly evolving public-health information and best practices for widespread adoption and implementation.

- Ms. Miller shared that they divided the work among partners and services in the field with various teams and non-profits addressing small-business needs, housing, childcare, transportation, and education. They also simplified information coming from multiple federal, state, and local sources to distribute to community members.

- Dr. Kreuter also emphasized the need for support outside of healthcare, and the high social burden various communities have suffered during the pandemic. He recommended the concept of bundling, where vaccinations are offered during community events that also provide PPE, housing relief, school supplies, or other social services.
- Dr. Koh commented that certain transmission precautions, such as wearing a mask, need to be normalized. For example, implementation science denormalized tobacco use, while normalizing the use of seatbelts and helmets.
- Dr. Islam stated that misinformation outpaces fact through social media and other digital platforms. She said that data does not appear to change opinions on important public-health measures, but personal stories may be effective. A participatory approach may be effective for communication with minorities, including vaccine narratives and one-on-one engagement.

Other members of the panel commented on the effectiveness of these narratives. Dr. Koh stated that “conversion narrative approaches” may be emotionally compelling, but people still find ways to deny risk by emphasizing differences between themselves and the narrator. We need to find methods to reduce story rejection through greater personalization. Dr. Islam stated that misinformation is not the only barrier to widespread adoption of important protective public-health measures. There is a warranted history of mistrusting institutions, which should be addressed by acknowledging the diversity of issues and factors driving problems like vaccine reluctance.

Ms. Miller addressed a question about how to make government leaders trust the strength of local resources, rather than using and investing in private companies

for services such as contact tracing and testing. She stated that organizations should create their own programs to demonstrate impact, and also have conversations with key players who can get past barriers. Dr. Koh stated that public health systems need to be funded so that they do not need supplementation through episodic private enterprise. We need to build a workforce of CHWs.

Panelists then discussed the ideas within IS that show promise and require further study.

- Dr. Islam cited examples using the psychological validity model to adapt information for a community. For example, they culturally adapted resources in 11 different languages guided by feedback on community needs. They also created plain-language glossaries on COVID-19 terms to provide basic knowledge that was lacking in many populations. She also described use of The Community Engagement Alliance (CEAL) Against COVID-19 Disparities, a network of 25 community-based organizations across 5 boroughs, 5 academic medical centers, 2 networks of FQHC and the NY public housing system. They brought the vaccine to trusted community sites that deliver social-service provisions, and removed structured requirements to receive the shot, such as appointments.
- Ms. Miller stated that they also believed it was important to help people understand terms related to COVID-19. She said they started with the basic terms, then included the requested action. Ms. Miller also reiterated the importance of preparedness and sustaining public health systems post pandemic.
- Dr. Kreuter shared that while implementation science is broadly interested in adaptation, solutions uptake, and spread regarding change for specific populations, the pandemic

required frequent and rapid pivoting to address new challenges. This constant need to change provides an opportunity to learn. However, much needs to be done to improve efficiency and sharing – including how to share innovations locally without duplicating public health efforts. Longitudinal engagement is also important, including interaction with surveys conducted via mobile phones. Redefining community engagement and use of technology can assist with these efforts. He also stated that we need to keep conversations, such as those around vaccines, in the public consciousness.

The last question involved what public health professionals know now that they wish they knew in March of 2020. Dr. Islam stated that we knew what was necessary, but underserved populations did not have access to needed safety nets, and the pandemic worsened this problem. Ms. Miller reinforced the importance of maintaining relationships at the local, state, and federal level.

Implementation science examines current trends and builds the evidence base to inform policy. Implementation science helps to mobilize, accelerate, and support services that need to be sustained for the long term, while showing decision makers that interventions work and should be continued.

Day 2 Panel Discussions: Re-emerging and Moving Forward from the Pandemic

Dr. Simon Craddock Lee moderated the discussion, which focused on social justice, health inequities, and reducing disparities in healthcare. He stated that progress for social justice includes providing equal access across systems to underserved populations, but that the freedom to achieve wellbeing depends on the social determinants of health. The first question was whether social justice is an initiative, intervention, or outcome?

Moderator:

Simon Craddock Lee, PhD, MPH, Associate Professor, UT Southwestern Simmons Comprehensive Cancer Center

Panelists:

Michael Curry, Esq, President and CEO, Massachusetts League of Community Health Centers

Rebecca Etz, PhD, Associate Professor and Co-Director of the Larry A. Green Center, Virginia Commonwealth University

Erin Johnson, Vice President, Community Investment, Central Carolina Community Foundation

Sara Rosenbaum, JD, Professor, Milken Institute School of Public Health, George Washington University

- Ms. Erin Johnson stated that social determinants of health were important. There are four pillars of philanthropy including relief (such as food), self-improvement (such as scholarship and capacity building), social reform (such as healthcare access), and community engagement. She stated they are listening to the community and doing fewer “directive” grants, while trusting partners to do the necessary work in their localities.
- Mr. Michael Curry discussed how pandemic outcomes were related to the social determinants of health. He stated that those “closest to the pain need to be closest to the power.” Community health centers seek to address why health problems develop and minority populations live 5–15 years less than average.

The next exchange considered policy and shaping through legislative perspectives.

- Dr. Sara Rosenbaum shared her history of advocacy as a civil rights lawyer. She stated that change needs to occur locally and emphasized the importance of incremental progress. Lawyers are advocates and must get real evidence to make a case for a particular position, but this evidence does not have to be peer-reviewed or published.
- Dr. Rebecca Etz explained that policy is about making decisions, and issues occur because of a failure to act. She conducts a survey of the primary care environment, collecting only data points that can be addressed over the next year. While rigorous methods in research are important, there are other methods to obtain valid information and this data exists. For example, there is ample evidence showing primary care is effective and reduces health disparities, lowers costs, and improves health.

Dr. Craddock Lee transitioned the conversation to the topic of rapid data collection, the need for prompt reporting and exchange of this information, and how researchers can respond faster. Dr. Etz stated that structural inequities prevent not only good healthcare, but good research as well. She emphasized the importance of keeping current and engaging with people and disciplines involved in the work. These conversations are important and drive methodology.

The pandemic brought inequality to the forefront, not only related to disease outcomes, but the provision of services. Healthcare systems realized the need to provide more than just medical care in the community. Related issues include organizational alignment of missions, with community needs from various sectors. Ms. Johnson stated that her organization took a multisector, integrative approach, tapping diverse groups and businesses with

specific resources. The pandemic forced coordination and continuous evaluation for immediate change based on rapid feedback.

Dr. Craddock Lee stated that NCI built research collaborators to stay connected over time for priority alignment. Public health professionals must adapt and get out of the “project mentality” to make science relevant. It is important for community partners to co-design research protocols and show a connection and incorporation of real-life information.

- Dr. Etz expressed that building relationships can be difficult, secondary to the nature of research and grant funding. There is a prolonged grant review process in many organizations, including NCI, making it difficult to complete work or disseminate information quickly. Practitioners also have limited time to give researchers, made worse by structural inequities. Changes need to occur to make research more functional for public-health advocacy; for example, providing smaller funds for quick application and use.
- Mr. Curry discussed how to determine opportunities through community partnership, not waiting for a program announcement from NIH. In terms of racial justice, researchers did not study issues in people of color, because they did not want to be held accountable or provide programs to address the findings. We should be embedded with health centers to determine the challenges, then address in a socially competent manner. The pandemic also provided a new consciousness about science, which can be parlayed to improve engagement of underserved populations.
- Ms. Johnson remarked that researchers should approach communities with humility and be clear that there are problems with racial justice and inequity. There should be organizational

leaders who are people of color from underserved counties, and who can highlight the differences between inequality and inequity.

Dr. Craddock Lee then broached the topic of opportunities to change how local levels of leadership broker relationships across different levels of government – municipal, state, and federal agencies. He asked panelists how non-government actors may think differently about leverage points for government advocacy or agitation, and how researchers can drive these conversations.

- Mr. Curry stated that the field of healthcare is favored among both political parties, but public health is divisive now, secondary to mandates. Healthcare professionals are in the position to advocate and bring more people to the table – patients, researchers, board members – to move the agenda. Clinicians at primary care centers who treat a large proportion of people of color do not want to just treat these patients, then send them back to unhealthy environments. There need to be partnerships, like with HIV/cancer, that can influence government and policy on every level.
- Ms. Johnson identified the need for non-profit input. These organizations have not done much advocacy – they typically ask for money, which changes the dynamic. However, non-profit organizations know the community. Government is often reluctant to bring additional groups to the table, and there is often indecision. Federal money stops because no one knows what to do. Providing community groups with access to decision makers can improve proper use of funding opportunities.
- Dr. Craddock Lee stated that this may also be an opportunity to involve health-communication researchers to partner with community organizations, and other researchers outside the

health science environment, to help communicate their points to legislators and other decision makers.

The subsequent topic reviewed dissemination and implementation (D&I) research and understanding the capacity building of the workforce. There are many people between providers and patients, and this workforce is critical. Issues include the ability to measure capacity and sustainability of the workforce, and helping communities invest in the workforce. Dr. Etz presented data from a survey of 32,000 primary care workers, showing they handle 54% of all patient visits, and represent 32% of the healthcare workforce, but receive only 5% of the budget. Reimbursement was further reduced during telehealth visits, even when there was no other way to access care. Hospitals and specialists received most of the funding. The data also showed poor mental health among primary care workers, with 50% reporting they were in crisis. Primary care practices are time consuming and difficult to establish and cannot be created easily when funding reappears. Implementation science researchers should be aware of the problems and pressures providers face in this setting.

The last topic involved improving D&I research and the diversity of people conducting this work. The public health profession needs to find colleagues with community relationships to bring various coalitions together. Mr. Curry commented that people of color are not involved in IS work because they were screened off from society, with white or privileged people given the opportunity. We need to identify minority or female candidates early in their development to channel them toward this type of work. Dr. Craddock Lee commented that community advisory panels provide stronger and more relevant research questions and improve participation.

Described as the heart of the consortium meeting, the CCIS action groups allow participants to become more deeply

engaged and involved in work that will be happening in the coming year. The eight action groups from 2020 continued for 2021 to brainstorm “public goods” to benefit the field, identify concrete next steps, and identify volunteers to lead/co-lead/ collaborate on specific actionable ideas.

Community Participation

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

The Community Participation in Implementation Science Action Group focused on identifying public goods to fill existing research and practice gaps. The main gaps identified were insufficient or late engagement of stakeholders; challenges in finding a place on the engagement continuum; and limited measures for competencies, engagement, and impact. Building on the 2020 action group activities, we discussed products developed and those in progress in the areas of building capacity¹, best practices, and conveying the value of engagement. Through small and large group discussions and a process of refining and prioritizing, the following top three choices were identified by the action group through a voting process.

1. Supporting Parallel Paths for Engaged Implementation Science

Crowdsource existing resources and adapt or develop new resources to provide guidance for engaged implementation science based on perspectives of researchers and partners along the continuum of engagement. Resources will ideally be collated for a range of different levels of experience – for both researchers and stakeholders. Specific examples include what to expect, how to negotiate, warning signs, characteristics of good partnerships. Public goods, e.g.,:

- Compilation of existing resources (case studies, dissemination products to be determined)

- Series of one-pagers for researchers and community partners/stakeholders across the engagement continuum
- Multimedia resources, such as brief videos and podcasts
- Visual aids, such as flowcharts (“you are here”)
- Case studies showcasing success stories and lessons learned

2. Building Institutional Capacity to Support Engaged Implementation Science

Identify and disseminate strategies to reduce community partners/stakeholders burden in research by building institutional capacity to support engaged implementation science.

Public goods, e.g.,:

- Letters or white papers directed at funders
- Advocacy packages for institutions
- Institutional Review Board (IRB) protocol examples (foster connectivity between IRBs)
- Checklists and other tools to aid in tenure and promotion review related to understanding the value of engaged implementation science

3. Identifying and Activating the Right Champions

Champions are an increasingly popular implementation strategy. Researchers and community partners/stakeholders need each other for engaged implementation science to result in meaningful and successful outcomes for mutual benefit. A tool or process for matching appropriate types of champions, place on the continuum of engagement, and project needs would be an ideal contribution.

Public goods, e.g.,:

¹ Resources for Stakeholder and Community Engagement: https://cancercontrol.cancer.gov/sites/default/files/2021-08/CCIS_Engagement-Bibliography_080931_508.pdf

- Manuscript: Literature review
- Manuscript: Qualitative interviews across studies and contexts about champion attributes
- Community-researcher guide to support champion identification, activation, and training
- Tool to assess partner organization and/or champion readiness to engage in dissemination and implementation research, linked to strategies to increase readiness

Context and Equity in Implementation Science

Facilitators: Prajakta Adsul, Rachel Shelton, Stephanie Wheeler, April Oh, Ariella Korn

The action group is focused on how the IS community could advance and make more explicit the incorporation of health equity and context across cancer prevention and control research. An important first step for this group was to set the stage by reviewing ongoing relevant projects in the field, including, but not limited to, the public goods (e.g., resources, webinars, one-pagers, videos, papers, meetings, trainings, toolkits, etc.) resulting from the 2019 and 2020 Context and Equity action groups and the work of other initiatives and networks. This “connecting the dots” activity was important for understanding existing efforts before embarking on new ones and to make sure the action group is engaging and inviting new voices and perspectives. Participants also noted the importance of examining equity with current events in mind (e.g., the COVID-19 pandemic). We heard from Drs. Tabak, Bradley, Baumann, Woodward, Boyce, Oh, Scher, Shelton, Wheeler, Adsul, Brandt, Ramanadhan, and more during this initial discussion, as well as from the new CCIS awardees for the development of public goods, Drs. Bradley and Bauer.

In breakout sessions, participants were asked to reflect on the existing gaps that need to be addressed and how the field can synergize to build public goods around existing efforts in this area. The following represents a summary of the top ideas for public goods moving forward that relate to context and equity in implementation science:

1. Mentoring, supporting, and training historically under-represented scholars in the field of implementation science.
 - **Description:** Identify existing gaps in trainings.
 - **Next steps:** Identify and link with existing programs (e.g., Geographic Management of Cancer Health Disparities (GMaP); University of Texas at Austin’s Latino Research Institute).
2. Database/review of evidence-based interventions that reduce health inequities.
 - **Description:** Potentially expand on Evidence-Based Cancer Control Programs (EBCCP) database if there are enough interventions to highlight that explicitly have been found to be effective at reducing inequities.
 - **Next steps:** Review interventions and resources from EBCCP, U.S. Preventive Services Task Force (USPSTF), and Community Preventive Services Task Force (CPSTF).
3. Creating a community for health equity and implementation science.
 - **Description:** Determine how to best stay engaged with the ongoing efforts in this space and synergize with the CCIS Community Participation action group.
 - **Next steps:** Meet with the Community Participation action group.

4. Developing a CAB of CABs (Community Advisory Boards).

- **Description:** Determine what CABs do in the community outreach and engagement (COE) space. Could there be a network of CABs across the cancer centers?
- **Next steps:** Work with a small group of COE leaders, in a collaboration between the Cancer Prevention and Control Research Network (CPCRN) and CCIS to explore this opportunity.

Implementation of Complex/ Multilevel Interventions

Facilitators: *Melinda Davis, Erin Kenzie, Maria Fernandez*

First initiated in 2020, this was the second year for an action group related to complex/multilevel interventions (MLIs) in Implementation Science (IS). The action group met on Day 2 of the CCIS with a goal to advance the science and understanding of complex/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 over 50 participants to the Mural platform, summarizing key concepts in complex/MLIs in IS, and reviewing key accomplishments since the 2020 CCIS meeting. Additionally, the facilitators graciously borrowed (stole) strategies related to pacing and engagement as modeled by Drs. Shoba Ramanadhan and Heather Brandt in their “Community Participation in IS” Action Group from Day 1. A priority identified for Complex/MLI action group members this year was to think not just of “academic products” such as manuscripts, but truly to think about the incremental activities and tools that are produced

along the way (e.g., literature review, tools, case examples). In the overview, we also highlighted two of NCI’s funded “Public Good Pilots” for 2021–2022, which align with the action group goals:

- Dr. Erin Kenzie’s project to orient implementation scientists to key concepts and methods in systems science. This will include producing an interactive, web-based instructional tool and companion manuscript. For more information or to collaborate, contact kenzie@ohsu.edu.
- Dr. Jessica Austin’s project to develop and apply a pragmatic tool and empirical examples to advance implementation of MLIs. This will include identifying 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. For more information or to collaborate, contact Austin.Jessica2@mayo.edu.

The facilitators led the group through a series of small group breakouts with a large group report-out to summarize and prioritize next steps. Inspired by the dynamic panel led by Dr. Simon Craddock Lee on “Re-emerging and Moving Forward from the Pandemic,” common themes across the 2.5-hour action group focused on balancing the need for rigor and action in complex/MLIs that are community engaged and aligned with the needs of diverse stakeholder partners. Ultimately four products were prioritized by the action group that will be advanced over the next year. In order of priority votes these include:

1. **Comparative case studies of MLIs: Distinguishing intervention and implementation strategies.** The purpose of this public good would be to share examples of how MLIs and IS have been operationalized to illustrate the diversity of approaches across multiple

contexts. In addition to a table/matrix that could be used as a template to help classify case studies, this group could also host a webinar/debate around MLIs and IS and provide individual illustrative case study examples.

2. **Guidance for measure selection and analytic approaches for testing mechanisms and interactions across MLIs.**

The goal of this product is to review current measures for assessing multilevel processes and outcomes. This could include a review of the literature and/or case studies to describe designs and analytic methods to assess effectiveness of multilevel interventions. A consensus-building meeting could also be used.

3. **Easy-to-use tool(s) for identifying core functions and adaptable periphery to facilitate scale-up of MLIs.**

The goal of this public good is to create tools that are usable by practitioners to help them adopt/implement MLIs in their unique contexts. Given the challenge with identifying core functions, a first step is to start with a definition of core functions and to iteratively refine and test prototype tools, building on work underway by Drs. Sarah Birken and Emily Haines.

4. **Identify and, if needed, develop a framework for scale-up of MLIs.**

This tool would look at different examples (such as the Barker Framework) to explore how scale-up of MLIs have been done, which could lead to a summary of approaches and ultimately a paper. This work builds on goals and ideas underway by Drs. Jennifer Leeman and Erica Lau.

Additionally, a range of ideas were raised during the session that did not make it to final voting, but were nonetheless popular among participants. Some of these include the following:

- Articulating the distinction between MLIs and implementation strategies

- Tools/strategies to support evaluation of complex or multilevel interventions, particularly rapid cycle
- Tools/strategies for understanding underlying mechanisms and managing complexity
- Tools/strategies for adapting MLIs and tracking adaptations
- Incorporating meaningful engagement of stakeholders into planning and analysis of MLIs
- A resource with information related to strategies and tools for understanding and managing complexity in IS
- A list of top 10 questions for those new to complex/ML interventions with worked examples
- Two ideas were also surfaced that provide opportunity for collaboration with other actions groups:
 - Engagement training for those developing MLIs (perhaps in partnership with the Community Participation in IS action group)
 - Notably, our action group had participants from the US as well as from Canada and Mexico, which sparked rich dialogue regarding context and assessments of context. Such a tool could potentially be produced in partnership with the IS in Global Health or Learning Health Systems Action Groups

In sum, the complex/multilevel intervention 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 for advancing our ability to attend to complexity in IS by building on tools and methods from

systems science. **The complex/MLI action group is eager to take incremental steps toward producing actionable products in the year ahead and welcomes you to reach out to any of the facilitators if you would like to lead, support, or participate in any of the products identified.**

Implementation Science in Global Health

Facilitators: Anne Rositch, Donna Shelley, Vidya Vedham

Disparities and cancer burden in low- and middle-income countries (LMICs) are increasing. By 2030 the number of new cancer cases is expected to increase more than 80% in LMICs, double the rate expected in high-income countries (40%). This disparity is due, in part, to gaps in the translation of evidence-based cancer control strategies into real-world LMIC practice contexts. We have the opportunity to close the evidence-to-practice gap by adapting and applying D&I methods in low-resource settings.

Therefore, the global health action group was focused on implementation science research and practice for global cancer control, with a particular focus on low- to middle-income countries. The goal was to identify the gaps, needs, and priorities for implementation science to improve and increase the translation of evidence-based cancer prevention and control strategies into practice in ways that are scalable and sustainable.

The group began by reviewing the strong rationale for convening a global health action group and the progress and activities of the 2020 action group: a commentary-style paper focused on the role and need for “local” evidence, several training and capacity-related presentations at international conferences, and a recent CCIS “public goods” development award focusing on the evidence for scale-up of cancer control interventions in LMICs. After this introduction, the group broke into a set of

small groups to generate ideas, reported to the larger group, and ultimately, fleshed out potential priority topics for creation of public goods, as follows:

1. A compilation of stakeholder engagement resources for global IS research and review of relevant frameworks/theories, engagement methods, and measures for evaluating participatory approaches in global context.
 - **Description:** Develop or adapt toolkit or compilation of resources for use to guide engagement (policymakers, implementers, patients) and review methods for stakeholder engagement in global contexts.
 - **Next steps:** Reach out to Community Participation and Health Equity action groups to explore collaboration on resource mapping and create subgroup to review existing literature.
2. Visual tool for simplifying D&I and global IS training modules.
 - **Description:** Mental model/simplified visual of IS models and concepts as a way of translating our IS “language” to the global community of researchers and implementers and expansion of TIDIRC to include global-focused content that is translated or subtitled. An important component of this tool will be to help clarify the differences and similarities between IS and quality improvement (QI), implementation practice, and program evaluation. In addition, there is a need to translate existing resources and training materials into other languages.
 - **Next steps:** Meet with NCI team to map out content needs for tool development and engage colleagues to create webinars/modules.

3. Guidelines/guidance for IRB review highlighting key ethical principles relevant for IS.

- **Description:** A series of case studies to highlight key challenges faced in IS related to defining participants, the impact of informed consent, NIH data sharing rules, etc., and related guidance modules/documents to help people navigate the grant and regulatory process between institutions including defining what is implementation science and where does it fit in IRB regulatory guidelines.

- **Next steps:** Work with CGH to identify current activities on this topic, convene interest group of investigators/partners (US and global) to identify specific areas of focus for product development. Crowdsource IRB resources from CCIS colleagues/other working groups.

4. Map pragmatic approaches and methods for D&I research in global, low-resource context.

- **Description:** Activities may include review of pragmatic designs (adaptive trials, stepped wedge, rapid cycle) in global context and measurement adaptation and validation in the context of global IS. It was noted that there is little systematic validation of tools and strategies outside of HICs and that this is an important gap to fill.

- **Next steps:** Assess interest in working group to pursue literature review on pragmatic approaches and study designs, including discussion of practical considerations and case examples.

Several other themes emerged that included:

1. Overcoming the structures and negative impacts of colonialism and promoting equity in global health: There was interest in exploring how implementation science can address decolonizing global health. Related to this discussion was the frequent

mismatch between country and/or policymaker priorities and funding agency and research community goals. Suggested public goods include developing specific tools to de-implement particular practices that are identified as core to perpetuating colonialism.

2. Partnering with other action groups: The global health action group, the newest group only in its second year, has several interests and themes that overlap with several of the other groups. Therefore, a key next step is for the group to reach out to Context and Equity in IS, Technology and IS, and Community Participation in Implementation Science to identify areas for collaboration.

3. Addressing additional methodologic challenges: These included a need to identify measures of sustainability and factors that facilitate sustainability, to identify and test strategies for scaling evidence-based interventions (EBIs) in global contexts, develop or adapt existing methods for linking context assessments to strategy selection, address gaps in policy dissemination and implementation research and examine the application of current framework for mapping adaptation in global contexts.

Implementation Science Study Design

Facilitators: Stephen Bartels, Ramzi Salloum

The action group focused on identifying challenges and specific examples of accommodating, measuring, and analyzing unplanned changes in inner and/or outer context and corresponding adaptations in interventions and implementation strategies. The discussion started with an overview and examples of conventional randomized implementation research designs, followed by a discussion of their limitations when unplanned or unanticipated changes occur. The group worked to identify potential

solutions and to discuss potential public goods. The final public goods identified by the group include the following:

1. Pragmatic Methods for Measuring and Analyzing Context, Adaptations, and Changes to the Interventions and Strategies.
 - **Description:** This public good involves developing a methods paper to refine measures of adaptation based on feasibility and relevance (e.g., conducting a factor analysis). The paper would identify pragmatic measures of adaptations and context that allow for repeated measures.
 - **Next steps:** Identify and aggregate case studies for the paper.
2. “How the World Messed up my Study Design.”
 - **Description:** This public good involves developing a podcast series that involves interviewing principal investigators of implementation research studies. The interviews would follow an interview guide focused on unplanned adaptations. These interviews could then undergo qualitative analysis for common themes and measures.
 - **Next steps:** Establish interview guide; identify and invite investigators.
3. Special Issue on Responding to Unanticipated Changes in Implementation Science Designs/Methods due to COVID.
 - **Description:** This public good involves developing a special issue of an implementation science journal that would invite articles reporting on unanticipated changes in implementation science (using COVID as an example). Examples of target articles involve those reporting on multilevel changes in design, measures, and outcomes.

- **Next steps:** Identify editor for special issue.

4. Guidance for Standards for Implementation Science Grant Applications on Unanticipated Changes in Implementation Science.

- **Description:** This public good involves developing standards for grant writers and reviewers for addressing adaptations in grant proposals. The guidance would include instructions for IS grant writers that integrate unanticipated changes in context (suggested section: Potential Pitfalls); and would also address comments made in summary statements to include adaptations as a reviewer criterion.

- **Next steps:** Assemble a session that includes grant reviewers and successful grantees to identify potential standards.

Learning Healthcare Systems as Natural Laboratories

Facilitators: Alanna Kulchak Rahm, Brian Mittman

The goals of the Learning Health System as Natural Laboratories Action Group are to (1) promote and guide implementation science activities that successfully leverage the “natural laboratory” features of learning healthcare systems (LHS), and (2) to facilitate implementation research that advances the study and understanding of learning healthcare systems to improve healthcare quality, equity, and outcomes. The group aims to promote and guide implementation research *within* learning health systems as well as implementation research on learning health systems. The action group charge for the day was to develop ideas to create projects that will help the implementation science community advance research on and understanding of learning health systems as natural laboratories for cancer control.

The group began by illuminating the ongoing and emerging issues to be addressed in this area and the challenges being faced. Small groups then worked together to come up with the most important ideas to address and then how to address them through discrete action steps. The group then consolidated their ideas into four new public goods on which to focus.

Current issues revolved around defining the concept of the learning health system and articulating stages of growth and development as a learning health system (or even a blueprint), defining a basic infrastructure that facilitates engagement and mutual respect, as well as dissemination of learnings throughout the system and beyond. Challenges continue to include funding, misalignment of research and organization timelines, and the complexity of the health system where change is expected and comparators are less controlled than in fixed research programs.

The participants ultimately identified four public goods that were felt to be feasible, actionable, and could make the most impact in this space:

1. Create a curriculum to build capacity and consistency in incorporating IS into LHS work.
 - A curriculum to train researchers and clinician-researchers in LHS is needed. Such a curriculum would ideally integrate research into existing curricula (such as QI and other) to provide consistency in training of the workforce in QI and LHS. An immediate action identified to make this happen would be to bring in leaders of current programs, clinical operations, and others to develop this curriculum.
2. Support IRB decision making.
 - The group identified a critical need for tools to assist IRBs in understanding regulation as it pertains to LHS activities. The most relevant immediate actions

to be taken were determined to be a consensus statement for IRB decision making and a webinar for clinicians and researchers on how to talk to IRBs about projects at the intersection of research and QI.

3. Create a repository of LHS material and tools.
 - A repository of information was identified for much needed information and references about the LHS – both for implementing an LHS and how to work within an LHS. Ideas proposed for content within the repository included: case studies on such things as measuring context and what is success; a blueprint to operate, develop, and adapt an LHS, webinars by LHS leaders and on the basics of what is an LHS; and a catalog of “goodness” examples – working interventions, strategies that worked in specific contexts, etc.
4. Build a “buddy system” or “cultural exchange program.”
 - This program idea was proposed to foster bi-directional cultural communication and understanding by pairing clinicians (including nurses and other clinical partners) and researchers for the purpose of cultural understanding and fostering collaboration in the LHS environment. The first steps forward would need to define the program and metrics for success, as well as to find ways to cover the time (for the clinical partner and the researcher).

The public goods identified by the LHS action group are complementary and/or synergistic with goods from other action groups as well; suggesting opportunities to leverage both creating the public goods and the potential to maximize impact across action groups.

Policy and Implementation Science

Facilitators: *Karen Emmons, Jamie Chriqui*

The goal of the Policy Action Group is to develop strategies to support the IS community in advancing research in policy implementation related to cancer prevention and control. Our focus is on identifying resources to support policy implementation science and to 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 by Dr. Chriqui that helped get all participants grounded in existing methods and literature. The group then identified and discussed potential public goods that would meet our goals. The final public goods identified by the group include the following:

1. Develop a collaboration with the Health Equity Action Group to develop a strategy for integrating equity in policy implementation processes.
 - **Description:** Develop a series of products (e.g., a commentary, case studies) to illustrate how equity can be integrated into policy IS, paying particular attention to the harms that policy can create for equity.
 - **Next steps:** Reach out to the Health Equity Action Group to gauge interest and form a working group.
2. Create a map of implementation science frameworks, constructs, study designs, outcomes, and measures that are appropriate for use in policy implementation studies.
 - **Description:** This public good would be a toolkit and a series of publications that would serve as an introduction to policy implementation science for researchers who are newer to this area.

- **Next steps:** Form a working group of interested action group members; evaluate the existing literature and develop a mapping process.
3. Develop training modules on different aspects of Policy IS.
 - **Description:** These modules will be a series of “how to’s” for policy implementation and would be an excellent companion to the mapping project (public good #2). These modules could be used as a free-standing, self-guided training resource, or integrated into formal IS training programs.
 - **Next steps:** Create a working group to identify priority training topics, identify speakers, and develop training content. Coordinate with formal IS training programs regarding needs and likely use.
 4. Create a catalogue of Policy IS resources.
 - **Description:** This public good will be a one-stop shop for people to find relevant resources for Policy IS studies (e.g., links for policy data repositories, case studies, white papers, measures).
 - **Next steps:** Begin creating public goods; develop a catalogue structure and access strategy that will make the resources widely available and will draw users in.

Technology in Implementation Science

Facilitators: *Rachel Gold, Constance Owens*

Themes and needed next steps. These discussions were organized by key topic areas identified in the 2020 Consortium meeting, below. The main themes associated with each topic area, and needed steps to address these themes, are summarized here.

How best to obtain patient-generated/reported health data using health information technology (HIT)?

Noted barriers to data collection and sharing are well described (see PMID: 30601341). Facilitators, less well understood, may include: enhancing patient engagement in providing these data (e.g., via portals) by increasing awareness of the benefits of providing patient-reported data, and supporting patient autonomy in doing so; dedicated staff support (e.g., navigators); collecting such data during inpatient stays; making it fun and easy to use data entry tools; ensuring tools are culturally appropriate (e.g., not just in English). To better understand effective facilitators requires research on strategies such as: “opt-out” vs. “opt-in”; effective patient/community outreach/education; expanding patient access to data/HIT. Alternatives to these methods include using existing data as a proxy for patient-reported data (e.g., text search, neighborhood data, other EHR data, payor data).

Next steps: a) fund research on the topics listed above; b) practice surveillance in NCI-funded IS centers to identify whether/how healthcare systems support patient HIT access; c) multi-Center administrative supplement to compare strategies for increasing patient-generated data; d) white paper of best practices to overcome regulatory barriers to collection of patient data; e) cross-center patient panel to inform strategies.

How best to use HIT/data to improve care: e.g., in clinical decision support (CDS), shared decision-making (SDM), and other approaches?

Research is needed on effective ways to: a) make CDS and SDM good enough that users will adopt them (e.g., tools tailored to specific team members); b) use social media data to improve outcomes (e.g.,

for health promotion, survivorship care/patient activation); and c) identify patient preferences that could drive implementation strategies. Addressing these needs will require funding research on: cancer-related CDS development/adoption/standardization/efficiencies; portal adoption; HIT tools for self-management; effective interventions in digital communities.

Next steps: a) fund research needs listed above; b) roadmap/standards for obtaining and leveraging data from digital media.

How best to use HIT to reduce disparities, and ensure that HIT does not exacerbate them?

Addressing the “digital divide” requires improving access to relevant HIT (e.g., portals, telehealth, internet), improving technological literacy, and reducing hesitancy/mistrust. That may involve working with stakeholders; improving the cultural fit of such HIT; policies related to broadband coverage (especially in rural areas – see <https://onlinelibrary.wiley.com/doi/full/10.1111/jrh.12619>); using navigators; and addressing misinformation.

Next steps: a) fund research on enhancing patient access to/adoption of HIT, e.g., via navigation, policies, and interventions to improve technological literacy; b) review of the literature on this topic with case studies of effective strategies; c) develop methods for using EHR data to promote equitable quality improvement, and/or identify exemplars of how this can be done, and its relevance to learning health systems.

How best to use telehealth to improve cancer care quality and outcomes; what is needed to support the equitable adoption of telehealth benefits?

Research is needed to identify: a) preferences about using telehealth in

diverse patient and provider groups (e.g., how to improve the cultural competency of telehealth-based care; how to increase the “pull” of telehealth); b) strategies that enhance patient access to/use of telehealth, in diverse populations (e.g., technologies patients need to enable telehealth use), and effective alternatives in populations with certain barriers to this adoption (e.g., SMS-based approaches in rural populations); c) the population health impacts of differential telehealth access; d) policies and payment structures that improve access and reduce these disparities, and the data needed to ensure these are enacted (e.g., what will persuade policymakers/payors); e) whether/how EBIs can be digitally adapted; f) what is known about effective models for enhancing telehealth adoption in the US and elsewhere; g) lessons about telehealth access, adoption, and equity outcomes from the COVID period, and how to maintain any identified benefits.

Next steps: a) identify implementation strategies and tools needed to sustain telehealth use; b) policy analyses to identify unmet needs in telehealth care quality and equity.

How best to use HIT to advance IS (e.g., add HIT to IS frameworks; new data sources)?

There is a need to learn from others in technology: a) how can other fields inform how we use HIT to advance IS and the implementation process (e.g., user experience/design/acceptability, marketing, gamification); b) can IS innovate using “fail fast” strategies from the corporate/technology world; c) other data sources (e.g., can we use natural language processing to expeditiously obtain or analyze data in IS; can we use cell phones for data collection, or training).

Next steps: a) scale up NCI SPRINT program to train IS scientists on bringing innovations to market, and create a platform to improve

dissemination of innovations (like edX); b) support industry-type agile thinking and collaboration with colleagues in other fields to learn about HIT development and effective dissemination (including commercialization – bring innovations “to market” as a way to get user validation/acceptability); c) create opportunities for stakeholders to bring their problems/solutions to health services researchers; d) create an online platform to enable dissemination of innovations, sharing approaches for agile thinking in IS; e) convene a multi-sectoral IS conference on how to effectively disseminate best practices involving HIT.

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

1. Create a catstrategies for obtaining patient-generated data.
 - **Description:** Multi-center administrative supplement to compare strategies to increase patient-generated data in vulnerable patient groups.
 - **Next steps:** Generate white paper on these strategies; involve patients.
2. Roadmap – social media groups.
 - **Description:** Roadmap for developing knowledge on how to use social media groups/platforms targeting cancer care patients/survivors to improve outcomes. Include needed evidence regulatory/ethical issues, theories, frameworks.
 - **Next steps:** Disseminate via white paper, scientific presentation, scientific associations.
3. Best practices for patient digital literacy (*highest votes).
 - **Description:** Overview of effective implementation strategies to promote digital literacy among vulnerable patient populations.

- **Next steps:** Generate a literature review (scoping or systematic review) to summarize the knowledge base in this area and identify knowledge gaps.

4. Innovation platform.

- **Description:** Create online platform to enable 1) dissemination of innovations, 2) sharing approaches/strategies for agile thinking (e.g., “fail fast” methods) in D&I, and 3) help D&I scientists bring innovations “to market” as a way to get user validation/acceptability.
- **Next steps:** Funding for platform development; guidance from other industries that do this well.

Town Hall

The two-day workshop ended with a town hall to coalesce opinions on topics and public goods recommended by each action group. Dr. Cynthia Vinson reminded participants that the purpose of the consortium was to bring public health professionals and other interested parties together to move the field of implementation science forward.

Dr. David Chambers, Deputy Director for Implementation Science in the Office of the Director in the Division of Cancer Control and Population Science, led the meeting and thanked participants for their outstanding work. Leaders of each action group presented 3 to 4 ideas and public goods. The topics included:

- Policy and Implementation Science
- Implementation Science in Global Health
- Community Participation in Implementation Science
- Learning Healthcare Systems as Natural Laboratories

- Technology for Implementation Science
- Context and Equity in Implementation Science

Audience members were then given a chance to vote for one proposal from each group that they would like to highlight to move forward. Details of each proposal and a summary of the voting can be found in Appendix A.

Closing

Dr. Vinson closed the meeting by once again thanking Dr. Emmons for chairing, and thanking the audience for making the workshop a great success. The consortium will improve the field of implementation science in the future and although there is a lot of work, it is an exciting time. The meeting will be chaired by Oregon Health & Science University.

Save the Date:



Cycle 2 call for proposals to support the development of public goods will open in mid-January 2022

More information will be available on consortiumforcanceris.org

Appendix A: Proposed Public Goods Across Action Groups

Policy and Implementation Science	Implementation Science in Global Health
<p>Public Good: Map of implementation science frameworks, constructs, outcomes, and measures to policy questions and study designs.</p> <p>Description: Write publications and develop toolkit that would have value for researchers and practitioners</p> <p>Next Steps: Create working group; evaluate existing literature; develop mapping process.</p> <p style="text-align: right;">26</p>	<p>Public Good: A compilation of stakeholder engagement resources for global IS research and review of relevant frameworks/theories, engagement methods and measures for evaluating participatory approaches in global context</p> <p>Description: Develop or adapt toolkit or compilation of resources for use to guide engagement (policymakers, implementers, patients) and review methods for stakeholder engagement in global contexts</p> <p>Next Steps: Reach out to community participation and Health Equity action groups to explore collaboration on resource mapping, and create subgroup to review existing literature</p> <p style="text-align: right;">12</p>
<p>Public Good: Collaboration with health equity action group to develop a strategy for integrating equity in policy implementation process.</p> <p>Description: Development of a commentary and case studies to illustrate how equity can be integrated into policy IS. Will pay particular attention to avoiding deleterious consequences on policy on equity.</p> <p>Next Steps: Reach out to Health Equity Action Group to gauge interest; form working group</p> <p style="text-align: right;">28</p>	<p>Public Good: Visual tool for simplifying D&I and global D&I training modules</p> <p>Description: Mental model/simplified visual of D&I models and concepts as a way of translating our D&I "language" to the global community of researchers and implementers and expansion of TIDIRC to include global focused content that is translated or subtitled</p> <p>Next Steps: Meet with NCI team to map out content needs for tool development and engage colleagues to create webinars/modules</p> <p style="text-align: right;">16</p>
<p>Public Good: Training modules on different aspects of Policy IS</p> <p>Description: The modules will be the how to's of policy IS (e.g. what it is, what frameworks, measures, and tools exist, examples of policy IS). Could be used as free-standing, self-guided training resource, or integrated into TIDIRC, IS2, and other IS training programs.</p> <p>Next Steps: Establish a workgroup to identify priority training topics, elicit feedback on topics from broader workgroup and IS training programs (e.g., TIDIRC, WashU IS2), identify speakers and develop training content, identify forum for posting and disseminating the training modules.</p> <p style="text-align: right;">16</p>	<p>Public Good: Guidelines/guidance for IRB review highlighting key ethical principles for D&I and key challenges</p> <p>Description: A series of case studies and guidance documents</p> <p>Next Steps: Work with CGH to identify current activities on this topic, convene interest group of investigators/partners (Us and global) to identify specific areas of focus for product development. Crowd-source IRB resources from CCIS colleagues/other working groups</p> <p style="text-align: right;">18</p>
<p>Public Good Title: Catalogue of Policy IS Resources</p> <p>Description: This will be a one-stop shop for people to find relevant resources (e.g. links for policy data repository, case studies, white papers, measures, database linkages, etc).</p> <p>Next Steps: Begin creating public goods; develop a catalogue structure and access strategy that will make the resources widely available, and will draw users in.</p> <p style="text-align: right;">9</p>	<p>Public Good: Map pragmatic approaches for D&I research in global content</p> <p>Description: Activities may include review of pragmatic designs (adaptive, stepped wedge, rapid cycle) in global context and measurement adaptation and validation in the context of global D&I.</p> <p>Next next step: Assess interest in working group to pursue lit review on pragmatic approaches and study designs</p> <p style="text-align: right;">30</p>

Appendix A: Proposed Public Goods Across Action Groups, Continued

<h3>Community Participation in Implementation Science</h3>	<h3>Learning Healthcare Systems as Natural Laboratories</h3>
<p>The Community Participation in Implementation Science Action Group focused on identifying public goods to fill existing research and practice gaps. Through small and large group discussions and a process of refining and prioritizing, the following top three choices were identified by the action group through a voting process. An email summary of our discussions will be sent out to everyone who expressed interest in the action group to join us.</p> <p>Public Good Title: Supporting Parallel Paths for Engaged Implementation Science</p> <p>Description: Crowdfund existing resources and adapt or develop new resources to provide guidance for engaged implementation science based on perspectives of researchers and partners along the continuum of engagement. Resources will ideally be for a range of different levels of experience – for both researchers and stakeholders. Specific examples include what to expect, how to negotiate, warning signs, characteristics of good partnerships.</p> <p>Products:</p> <ul style="list-style-type: none"> • Compile existing resources (case studies, dissemination products to be determined) • Series of one-pagers for researchers and community partners / stakeholders across the engagement continuum • Multimedia, such as brief videos and podcasts • Visual aids, such as flowcharts (“you are here”) • Case studies showcasing success stories and lessons learned <p>Next Steps: Form teams around public goods/products. Begin working on public goods.</p> <p style="text-align: right;">18</p>	<p>Public Good Title: Support IRB decision making</p> <p>Description: assist IRBs in understanding regulating LHS activities and assist clinicians/ops/researchers present/ discuss projects with IRB</p> <p>Next Steps:- consensus statement to support IRB decision making</p> <p>- webinar - How to talk to IRB about projects at the intersection of research and QI</p> <p style="text-align: right;">17</p>
<p>Public Good Title: Building Institutional Capacity to Support Engaged Implementation Science</p> <p>Description: Identify and disseminate strategies to reduce community burden in research by building institutional capacity to support engaged implementation science.</p> <p>Products:</p> <ul style="list-style-type: none"> • Letters or white papers directed at funders • Advocacy packages for institutions • IRB protocol examples (foster connectivity between IRBs; For example: IRB Roadblock: An overly restrictive institutional review board can take down an entire academic program and weaken the research reputation of a university, writes Dale R. Wagner. https://www.insidehighered.com/views/2021/10/06/can-institutional-review-board-be-too-zealous-opinion) • Checklists and other tools to aid in tenure and promotion review understanding the value of engaged implementation science <p>Next Steps: Form teams around public goods/products. Begin working on public goods.</p> <p style="text-align: right;">28</p>	<p>Public Good Title: Repository of LHS materials and tools (the wikipedia of LHS?)</p> <p>Description: a repository of needed information and references about LHS - implementing them and doing work within them</p> <p>Next Steps: create the repository create content: - case studies: measuring context, what is success</p> <p>- blueprint: to operate and develop and adapt a LHS - webinars: what is a LHS, webinars with leaders, “good things” : working interventions, strategies found useful in specific contexts</p> <p style="text-align: right;">16</p>
<p>Public Good Title: Identifying and Activating the Right Champions</p> <p>Description: Champions are an increasingly popular implementation strategy. Researchers and community partners / stakeholders need each other for engaged implementation science to result in meaningful and successful outcomes for mutual benefit. A tool or process for understanding the most appropriate types of champions on the continuum of engagement would be an ideal contribution.</p> <p>Products:</p> <ul style="list-style-type: none"> • Manuscript: Literature review • Manuscript: Qualitative interviews across studies/contexts about champion attributes • Community-researcher guide to support champion identification, activation, and training • Tool to assess partner organization and/or champion readiness to engage in D&I research, linked to strategies to increase readiness <p>Next Steps: Form teams around public goods/products. Begin working on public goods.</p> <p style="text-align: right;">27</p>	<p>Public Good Title: Curriculum to build capacity and consistency in incorporating IS into LHS work</p> <p>Description: curriculum to train researchers/clinician-researchers in LHS. Curriculum includes how-to implement new curriculum OR how-to incorporate into existing (QI or other) curricula to provide consistency in training of workforce in IS and LHS</p> <p>Next Steps: bring in leaders of current programs, clinical ops and develop curriculum</p> <p style="text-align: right;">18</p>
	<p>Public Good Title: Buddy system / cultural exchange program</p> <p>Description: This program fosters bi-directional cultural understanding by pairing clinician (including nurses and other clinical partners) and researchers for the purpose of cultural understanding to foster collaboration in the LHS environment</p> <p>Next Steps: define program and metrics and secure ways to cover (for clinician and researcher)</p> <p style="text-align: right;">16</p>

Appendix A: Proposed Public Goods Across Action Groups, Continued

Technology for Implementation Science	Context and Equity in Implementation Science
<p>Public Good Title: Strategies for obtaining patient-generated data</p> <p>Description: Multi-Center administrative supplement to compare strategies to increase patient-generated data in vulnerable patient groups</p> <p>Next Steps: Generate white paper on these strategies; involve patients</p> <p style="text-align: right;">6</p>	<p>Respectful of all the ongoing efforts, we began our discussion by inviting conversations from several groups across implementation and health equity! We are grateful to all of them :) Appreciate all that has been done too!</p> <p>Public Good Title: Creating a community for health equity and implementation science</p> <p>Description: staying engaged with all the efforts going on in this space (re-start SLACK, e-news?)/ Synergizing with the community participation and engagement group</p> <p>Next Steps: A meeting with CE group, with leads that have been identified?</p> <p style="text-align: right;">10</p>
<p>Public Good Title: Roadmap - social media groups</p> <p>Description: Roadmap for developing knowledge on how to use social media groups / platforms targeting cancer care patients / survivors to improve outcomes. Include needed evidence, regulatory / ethical issues, theories, frameworks.</p> <p>Next Steps: Disseminate via white paper, scientific presentations, scientific associations</p> <p style="text-align: right;">13</p>	<p>Public Good Title: Database/ Review of EBIs that reduce disparities?</p> <p>Description: Expanding on EBCCP database?/ Are there enough interventions to highlights?</p> <p>Next Steps: Review EBCCP info, USPSTF, CPSTF resources</p> <p style="text-align: right;">19</p>
<p>Public Good Title: Best Practices for Patient Digital Literacy</p> <p>Description: Overview of effective implementation strategies to promote digital literacy among vulnerable patient populations</p> <p>Next Steps: Generate a literature review (scoping or systematic review) to summarize the knowledge base in this area and point to knowledge gaps</p> <p style="text-align: right;">20</p>	<p>Public Good Title: mentoring/ supporting/ trainings historically, under-represented scholars in the field of implementation science</p> <p>Description: Existing gaps in trainings and need identified</p> <p>Next Steps: Linking with GMAP, Latino training institute (TX), others?</p> <p style="text-align: right;">20</p>
<p>Public Good Title: Innovation platform</p> <p>Description: Create online platform to enable 1) dissemination of innovations, 2) sharing approaches / strategies for agile thinking (i.e., "fail fast" methods) in D&I, and 3) help D&I scientists bring innovations "to market" as a way to get user validation / acceptability</p> <p>Next Steps: Funding for platform development; guidance from other industries that do this well</p> <p style="text-align: right;">19</p>	<p>Public Good Title: CABs of CABs</p> <p>Description: What do CABs do in the COE space? Network of CABs across the cancer centers?</p> <p>Next Steps: working with a small group to connect dots; CPCRn & CCIF efforts</p> <p style="text-align: right;">7</p>
	<p>Not included for voting, ongoing efforts -</p> <p>Public Good Title: Scoping review of power in Implementation research studies</p> <p>Description: Already ongoing</p> <p>Next Steps: will be linking up!</p> <p>Public Good Title: Mapping activities in these areas to the broad recommendations in the field</p> <p>Description: Already ongoing with CPCRn</p> <p>Next Steps: will be linking folks up!</p>

Appendix A: Proposed Public Goods Across Action Groups, Continued

Implementation of Complex/ Multilevel Interventions

Public Good Title: Comparative case studies of MLIs - distinguishing intervention and implementation strategies (IS)

Description: Share examples of how MLIs and IS have been operationalized across context/settings. These examples can then feed into a comparative case study analysis. Provide examples across the cancer continuum.

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Next Steps: Create a table/matrix template for people to fill out to share case studies (e.g., challenge addressed, Context/setting, levels included, MLI components by level, IS by level, rationale for defining the MLI vs IS, etc).

Public Good Title: Guidance for measure selection and analytic approaches for testing mechanisms and interactions across MLs.

Description: Review current measures for assessing multilevel processes and outcomes. Review literature and/or case studies to describe designs and analytic methods to assess effectiveness of multilevel interventions; produce a guide to help make decisions about methods.

23

Next Steps: Convene working group to start developing examples looking at mechanisms of action and potential measures.

Public Good Title: Easy to use tool(s) for identifying core functions and adaptable periphery to facilitate scale-up

Description: Tools would need to be usable by practitioners. Will be a challenge to identify core functions. So may need to start with a definition of core functions.

11

Next Steps: Learn from Sarah Birken/Emily Haines work, identify other existing tools (if they exist), and continue to refine and test prototypes that they develop

Public Good Title: Framework for Scale-up of MLI

Description: Look at different examples (such as the Barker Framework) of how scale-up of MLI's have been done and create a paper?

4

Next Steps:

- * Apply Barkers Framework to staged scale-up.
- * Develop a summary
- * Move toward a manuscript?

Implementation Science Study Design

Public Good Title: Pragmatic measures & analyses of context, adaptations, and changes to the interventions & strategies

Description: paper to refine measures of adaptation based on feasibility and relevance (potentially run a factor analysis); identify pragmatic measures of adaptations/context, allow repeated measures (e.g., Glasgow et al 2020 frontiers in public health?)

14

Next Steps: identify & aggregate case studies

Public Good Title: "How the world messed up my study design!"

Description: Podcast series interviewing authors of implementation studies (key pubs in IS) using an interview guide about unplanned adaptations as a qualitative interview that could undergo qualitative analysis for common themes, measures, etc

22

Next Steps: establishing interview guide, identify & invite investigators

Public Good Title: Special Issue on Responding to Unanticipated Changes in IS Designs/Methods due to COVID

Description: Invite articles on unanticipated changes in IS journals, special issue (begin with COVID as an example). Multilevel changes in design, measures, outcomes, etc.

5

Next Steps: Identify editor for special issue

Public Good Title: Guidance for Standards for IS Grant Applications on Unanticipated Change in IS

Description: Develop standards for grant writers and reviewers for addressing adaptations in grant proposals, implications for rigor and reproducibility; guidance for summary sheets to include adaptations as review criterion; instructions for D&I grant writers that integrate unanticipated change in context (adapting section on Potential Pitfalls).

13

Next Steps: Assemble a session including grant reviewers and successful grantees to identify potential standards.

Appendix B: Planning Committee Members

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