

ACCORDS
ADULT AND CHILD CONSORTIUM FOR HEALTH OUTCOMES
RESEARCH AND DELIVERY SCIENCE
UNIVERSITY OF COLORADO | CHILDREN'S HOSPITAL COLORADO

Designing for Dissemination

A participant workbook to supplement the workshop:

Bridging the Science and Practice of Designing for Dissemination: Going from Unicorns to Workhorses

University of Colorado Anschutz Medical Campus

October 2-3, 2018

Featuring Distinguished Guests

David Chambers, DPhil

National Cancer Institute

Matt Kreuter, PhD

Brown School at Washington
University in St. Louis

Borsika Rabin, PhD, MPH, PharmD

University of California San Diego

Shale Wong, MD, MSPH

University of Colorado,
Farley Health Policy Center

A special thank you to all of our invited guests and speakers, without whom this event would not have been possible.

WELCOME!

Your Introduction to Designing for Dissemination

We are delighted you are able to join us for this workshop on the emerging field of Designing for Dissemination! As investments in research grow, we are faced with the need to ensure that our innovations and discovery reach those who may benefit. Considering the needs and context of the end users of our research products at the beginning, rather than the end, of the process speeds translation and enhances impact on health—the ultimate goal of the research enterprise.

Workshop Learning Objectives—Participants will be able to:

- Describe the scientific rationale for Designing for Dissemination, including biomedical, clinical, and community-based research
- Identify key *processes*, study designs and *outcomes*, and *products* for designing health interventions for successful dissemination, implementation, and sustainability
- Outline a plan for design, evaluation, and dissemination of research *products* that take the needs of the end users into account

This workbook is designed to support learning and application of the principles and methods of Designing for Dissemination to research across the translational spectrum. Completing the activities in this workbook is intended to help researchers prepare detailed plans for intervention and program design, evaluation, and dissemination of their research.

Workshop sponsors and supporters span multiple institutions and programs affiliated with the University of Colorado School of Medicine that are focused on the broad interdisciplinary science of Dissemination and Implementation. The translational research community is here to support your learning and application of Dissemination and Implementation Science today and in the future.

Sponsor: The Adult and Child Consortium for Health Outcomes Research and Delivery Science (ACCORDS)

Further support from: Colorado Clinical Translational Sciences Institute (CCTSI); Eugene S. Farley, Jr. Health Policy Center; Geriatric Research Education and Clinical Center (GRECC); Center of Innovation for Veteran-Centered & Value Driven Care, Denver|Seattle (COIN); US Department of Veteran Affairs (VA)

Workshop planning committee from The University of Colorado School of Medicine

Hillary Lum, MD, PhD
Assistant Professor, Division of Geriatric Medicine
Workshop Lead, ACCORDS D&I Program

Bethany Kwan, PhD, MSPH
Assistant Professor, Department of Family Medicine
Director, ACCORDS Education Program

Russell Glasgow, PhD
Research Professor, Department of Family Medicine
Director, ACCORDS D&I Program

Bryan Ford
Program Coordinator, ACCORDS Education Program
Program Coordinator, ACCORDS D&I Program

This workshop would not have taken place without the contributions from: Allison Kempe, MD, MPH; Noy Pimphasone-Brady, PhD; Daniel Matlock, MD; & Jodi Summers Holtrop, PhD, MCHES

DESIGNING FOR DISSEMINATION

Overview of the Concept & Definitions

Designing for Dissemination (D4D)

The process of ensuring that the products of research (interventions, materials, and findings) are developed in ways that match well with the needs, resources, workflows, and contextual characteristics of the target audience and setting. (Brownson, Colditz, & Proctor, 2018, p. 19-46)

Processes, Outcomes, and Products of D4D

Throughout the workshop, we will distinguish the *processes*, *outcomes*, and *products* of designing for dissemination.

Designing for your Audience

The *processes* of D4D include the methods used to identify and design for the needs and characteristics of patients and communities, the public health system, health care practices and systems, industry, and health policy.

Designing Interventions and Dissemination Strategies

The *products* of D4D can include design of novel interventions, technologies or techniques for improving health and health care, and messages, materials and media strategies for disseminating and sustaining evidence-based practices to target audiences.

Evaluating the Impact of D4D

Identify the *outcomes* that matter to your audience(s) to ensure communications and messages inform local decisions about adoption and scale-up of evidence-based practices.

October 2, 2018 - Day 1 Agenda: The POP of Designing for Dissemination: Processes, Outcomes, and Products

Time	Topic	Title	Speakers	Activity
7:30 – 8:30 AM	Registration & Continental Breakfast			
8:30 – 9:00 AM	Welcome	Workshop Introduction from ACCORDS	Allison Kempe, MD, MPH (Director, ACCORDS) Hillary Lum, MD, PhD	Networking
9:00 – 9:45 AM	Plenary Address	Designing Interventions for Real-World Impact: A Conceptual Background	Borsika Rabin, PhD, MPH	Lecture & Discussion
9:45 – 10:50 AM	Ignite Presentations	University of Colorado examples of Designing for Dissemination in different types of translational research	Toan Ong, PhD Emily Cox-Martin, PhD Allison Gustavson, PT, DPT, PhD(c) Drew Sayer, PhD Noy Phimphasone-Brady, PhD Comments by Dr. Borsika Rabin & Dr. David Chambers	Rapid Presentations & Comments
10:50 – 11:00 AM	Break			
11:00 – 11:50 AM	Roundtable Discussions	Designing for Context <ul style="list-style-type: none"> Designing patient-level interventions Designing primary care-level interventions Designing hospital and health care system-level interventions Designing public health/policy interventions <i>(See name badge for session assignment)</i> 	Facilitators: <ul style="list-style-type: none"> Dan Matlock, MD, MPH & Bethany Kwan, PhD, MSPH Jodi Summers Holtrop, PhD, MCHES & Amy Huebschmann, MD, MPH Borsika Rabin, PhD, MPH & Catherine Battaglia, PhD, RN Russ Glasgow, PhD, Jeanette Waxmonsky, PhD & Hillary Lum, MD, PhD 	Highly Interactive
11:50 – 12:00 PM	Break & Pick-up Lunch			
12:00 – 1:00 PM	Plenary Address	Dissemination and Implementation Research: Optimizing the Success of Health Care	David Chambers, DPhil	Lecture & Discussion
1:00 – 1:15 PM	Break			

1:15 – 2:45 PM (25 minute sessions)	Concurrent Small Group Sessions	Introduction to Methods for Designing for Dissemination (See name badge for session assignment)	Facilitators will give 10 min overview, followed by 15 min discussion of method	Highly Interactive	
Room ->	Room 202	Room 204	Room 304/305	Shore Family Forum	
1:15-1:45 PM	i-Corps: Designing for Commercialization ⇒ Demetria McNeal, PhD, MBS, CPLP & Dan Holtrop, MA	Message Development and Testing: Designing for Social Media ⇒ Jenna Reno, PhD	Microcosting Methods: Designing for Sustainability ⇒ Martha Meyer, PhD, MPH	User-Centered Design: Designing Engaging Technology ⇒ Kelsey Ford, MPH	
1:45-2:15 PM	Participatory Research: Designing for Translation to Public Health ⇒ Heather Gilmartin, PhD, NP	Message Development and Testing: Designing for Social Media ⇒ Jenna Reno, PhD	Boot Camp Translation: Designing for Dissemination of Evidence to Communities ⇒ Don Nease, MD & Mary Fisher, MPH	User-Centered Design: Designing Engaging Technology ⇒ Kelsey Ford, MPH	
2:15-2:45 PM	Participatory Research: Designing for Translation to Public Health ⇒ Heather Gilmartin, PhD, NP	Microcosting Methods: Designing for Sustainability ⇒ Martha Meyer, PhD, MPH	Boot Camp Translation: Designing for Dissemination of Evidence to Communities ⇒ Don Nease, MD & Mary Fisher, MPH	User-Centered Design: Designing Engaging Technology ⇒ Kelsey Ford, MPH	
2:45 – 3:00 PM	Break				
3:00 – 4:00 PM	Panel Discussion	Multilevel Stakeholder Engagement Panel and Q&A. Moderator: Romana Hasnain-Wynia, PhD	Panel: Matt Kreuter, PhD, Matt Wynia, MD, Shale Wong, MD, MSPH, Don Nease, MD	Highly Interactive	
4:00 – 5:00 PM	Networking Reception Refreshments and snacks provided by ACCORDS				Networking

October 3, 2018 - Day 2 Agenda:

Getting evidence to practice via marketing and policy: Considering the end user from the beginning

Time	Topic	Title	Speakers	Activity
8:00 – 9:45 AM (Pre-registered)	Small Group D&I Consultation	Reviewers provide feedback on proposals submitted and accepted for discussion.		Highly Interactive (for applicants only)
10:00-10:15 AM	Welcome Remarks	Highlight of Designing for Dissemination Tools	Bethany Kwan, PhD, MSPH (Education Director, ACCORDS)	
10:15 – 11:15 AM	Plenary Address	Enhancing Dissemination for Health Equity: A Marketing and Distribution Perspective	Matt Kreuter, PhD, MPH	Lecture & Discussion
11:15 – 12:00 PM	Panel Discussion	Operational Partners Panel and Q&A Moderator: Russ Glasgow, PhD	Panel: Amy Friedman, MA, Cari Levy, MD, PhD, Romana Hasnain-Wynia, PhD, Judy Shlay, MD	Highly Interactive
12:00 – 12:15 PM	Break & Pick up Lunch			
12:15 – 1:15 PM	Plenary Address	Designing For Your Policy Maker	Shale Wong, MD, MSPH	Lecture & Discussion
1:15 PM	Conclusion & Evaluations			Evaluation

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Keynote and Plenary Speakers:



David Chambers, DPhil

Deputy Director for Implementation Science

Division of Cancer Control & Population Sciences, National Cancer Institute

Dr. Chambers manages a team focusing on efforts to build and advance the field of Implementation Science (IS) through funding opportunity announcements, training programs, research activities, dissemination platforms, and enhancement of partnerships and networks to integrate research, practice and policy. Prior to this, Dr. Chambers served as Chief of the Services Research and Clinical Epidemiology Branch (SRCEB) of the Division of Services and Intervention Research at the National Institute of Mental Health (NIMH). At NIMH, he ran the Dissemination and Implementation Research Program within SRCEB, developing a portfolio of grants to study the integration of scientific findings and effective clinical practices in mental health within real-world service settings. He has lead NIH initiatives around the coordination of dissemination and implementation research in health, including research announcements across several NIH Institutes and Centers, annual scientific conferences, and a summer training institute.



Matthew Kreuter, PhD, MPH

Kahn Family Professor of Public Health

Brown School, Washington University in St. Louis

Senior Scientist, The Health Communication Research Laboratory

Dr. Kreuter is founder and senior scientist of the Health Communication Research Laboratory (HCRL). His research seeks to develop, apply and disseminate strategies to increase the reach and effectiveness of health information to low-income and minority populations, and use information and technology to connect them to needed health services. Key partners in this work include United Way 2-1-1, tobacco quitlines, Medicaid managed care companies and other health care organizations.



Borsika Rabin, PhD, MPH

Assistant Professor, Department of Family Medicine and Public Health, University of California San Diego

Dr. Rabin serves as an Implementation Scientist for the Center of Excellence in Stress and Mental Health at the San Diego VA and as the co-lead of the Implementation Core for the Triple Aim QUERI Program for the Veteran Administration Eastern Colorado Health Care System in Denver, Colorado. Her research focuses on dissemination and implementation (D&I) of evidence-based interventions, communication and coordination around care for chronic conditions, and the evaluation and development of interactive, web-based interventions and tools with a special emphasis on cancer survival prediction tools and tools that can support planning for D&I interventions. She designed and developed a number of web-based resources including the Make Research Matter (www.makeresearchmatter.org) web tool, the Cancer Prognostic Resources (www.cancercalculators.org) and D&I Models in Research and Practice (www.dissemination-implementation.org) website.



Shale Wong, MD, MSPH

Professor, Departments of Pediatrics and Family Medicine

Director, Eugene S. Farley, Jr. Health Policy Center

University of Colorado School of Medicine

Dr. Wong is a pediatrician and professor of pediatrics and family medicine at the University of Colorado School of Medicine, teaching child health, advocacy, policy and health care reform with focused interests in integrated care and achieving health equity. She is director of the Eugene S. Farley, Jr. Health Policy Center and Vice Chair for Policy and Advocacy in the Department of Pediatrics. She served as health policy advisor to First Lady Michelle Obama for development and implementation of her signature child obesity initiative, Let's Move, and assisted in launching Joining Forces to improve wellness and resilience of military families. Additionally, she was a senior program consultant to the RWJF. As a lifelong dancer, she is inspired to advance health through the arts.

Workshop Presenters, Panel Members and Facilitators:



Cathy Battaglia, PhD, RN

Associate Professor, Health System Management & Policy, Colorado School of Public Health

Nurse Scientist, University of Colorado, Seattle-Denver VA Center of Innovation

Dr. Battaglia a nurse scientist and core investigator at the VA Eastern Colorado Health Care System and Director of the Denver Research Education and Mentor Program at the Denver site of the Seattle-Denver Center of Innovation (COIN). She has a strong background in health services research, dissemination/implementation of interventions in routine clinical practice and mixed methods analyses. Dr. Battaglia is Principal Investigator of the Triple Aim QUERI and the Transition of Care quality improvement project as well as the Site PI of a mixed-methods Investigator-Initiated Research (IIR) grant. As an Associate Professor in the Health System Management and Policy Department in the Colorado School of Public Health at the University of Colorado Denver, she co-directs the Health Services Research PhD program and the Data Science to Patient Value (D2V) Training Core.



Emily Cox-Martin, PhD

Assistant Professor, Division of Medical Oncology, Department of Medicine and Department of Psychiatry

Dr. Cox-Martin received her doctorate in Clinical Psychology with a specialization in Health Psychology from Virginia Tech. She completed her APA clinical internship at the Boston Consortium, and was a National Cancer Institute R25 postdoctoral fellow in Cancer Prevention at the University of Texas MD Anderson Cancer Center. Within the field of Psycho-Oncology Dr. Cox-Martin engages in research at the intersection of cancer and mental health, particularly as it applies to health behavior change and treatment-related sequela (e.g., pain) in cancer survivorship.



Mary Fisher, MPH

Professional Research Assistant, Department of Family Medicine

Mary Fisher, MPH, is the project coordinator for both CCTSI Community Engagement and the SNOCAP Practice-Based Research Networks (PBRNs). Her focus within CCTSI Community Engagement is primarily with supporting the Community Research Liaisons and the Community Engagement Consults & Ethics Committee. Within SNOCAP, Mary works with and among the 5 individual PBRNs, coordinates projects involving SNOCAP practices, co-facilitates Boot Camp Translation work, and works closely with patient advisory groups in both the Denver metro area as well as the San Luis Valley.



Kelsey Ford, MPH

Senior Professional Research Assistant, Colorado School of Public Health, The mHealth Impact Lab

Kelsey Ford is a senior professional research assistant within The mHealth Impact Lab, a center for rapid and responsive research of digital health innovations. She has an additional appointment in the Department of Family Medicine, where she works with projects on remote patient monitoring, socio-technical design, and community engagement efforts promoting health information exchange. She has a Master of Public Health degree concentrating in Community and Behavioral Health and a graduate certificate in Human Centered Design and Innovation from Inworks at the University of Colorado Denver. She is a doctoral student in the DrPH program, focusing on mHealth and digital technologies in health promotion.



Amy Friedman, MA

Chief Experience Officer, Denver Health Hospital

Amy Friedman is the Chief Experience Officer at Denver Health and serves as a member of the Executive Leadership Team. She provides strategic leadership focusing on initiatives to improve patient and family experience of care to promote a patient and family-centered environment. She established an active Patient and Family Advisory Council at Denver Health and has led the development and implementation of programs to ensure that the voice of patients and families is represented to improve quality of care. Ms. Friedman has extensive customer service experience in the private and public sectors, including serving on the governor's staff. Ms. Friedman is a member of the Mayor's Multi-Modal Advisory Committee to support improved transportation for patients and the community at large. She recently partnered with Dr. Romana Hasnain-Wynia, Denver Health's Chief Research Officer, on a survey to assess how Denver Health patients use information technology for accessing and managing their healthcare. The results of this study will be used to further efforts to engage patients in managing their own healthcare.



Heather Gilmartin, PhD, NP

*Assistant Professor, Dept of Health Systems, Management, and Policy
VA Eastern Colorado Healthcare System*

Dr. Gilmartin is an investigator and nurse scientist at the Denver/Seattle Center of Innovation for Veteran-Centered and Value Driven Care, VA Eastern Colorado Healthcare System, an assistant professor at the University of Colorado, School of Public Health, and adjunct faculty at the University of Colorado, School of Nursing. Her research focuses on understanding and optimizing the culture of healthcare to enhance patient safety and facilitate organizational learning.



Russell Glasgow, PhD

*Director, Dissemination and Implementation Science Program, ACCORDS
Research Professor, Department of Family Medicine
VA Geriatric Research Education and Clinical Center (GRECC)*

Dr. Glasgow's research focuses on issues of designing for implementation and sustainability, adaptations to programs, and pragmatic models and measures. Dr. Glasgow has 15 years of experience in implementation science. He has over 450 peer reviewed publications and has been PI on over 25 grants from the NIH, AHRQ, CDC and the RWJF. He served as Deputy Director of Implementation Science at the National Cancer Institute from 2010-2013.



Allison Gustavson, PT, DPT

PhD Candidate, Program in Rehabilitation Science

Dr. Gustavson received her doctorate in Physical Therapy from the University of Minnesota and is currently a PhD candidate in the University of Colorado Rehabilitation Sciences Program, under the mentorship of Dr. Jennifer Stevens-Lapsley. Her research interests include 1) exploring the barriers to practice change and the uptake of evidence based practice in post-acute care, 2) developing and refining multi-modal and interdisciplinary interventions to maximize patient outcomes following hospitalization, and 3) employing strategies for implementation and dissemination to post-acute settings nationwide.



Romana Hasnain-Wynia, PhD

Chief Research Officer, Denver Health

Dr. Hasnain-Wynia oversees Denver Health's research and sponsored programs through the Office of Research and represents research interests as a member of the Executive Leadership Team. Prior to joining Denver Health, Dr. Hasnain-Wynia served as the director of the Addressing Disparities program at the Patient Centered Outcomes Research Institute where she was responsible for providing strategic oversight and leadership for the program's funding priorities. Dr. Hasnain-Wynia uses mixed methods approaches in her research and has expertise in designing pragmatic trials in "real world settings." Recently, Denver Health's Office of Research partnered with Denver Health's Chief Experience Officer to conduct a mixed-mode survey to assess whether and how patients use information-technology (IT) for health information access and management. The survey provided information and insight to address a key operational initiative at Denver Health and presented a model for how the Office of Research can support organizational goals.



Jodi Holtrop, PhD, MCHES

Associate Professor, Department of Family Medicine

Senior Implementation Scientist at ACCORDS and the Center on Aging

Dr. Holtrop has extensive experience as an implementation scientist, qualitative and mixed methods researcher, health educator and practice-based research director. She has participated in primary care research for over 20 years, which includes serving as a PI on NIH, AHRQ, and foundation grants and is regularly engaged as co-investigator to lead the dissemination and implementation aspects of studies. Additionally, she is a master certified health education specialist (MCHES) with expertise in patient education and health behavior change, which is applied to intervention development in programs and approaches in a variety of settings.



Amy Huebschmann, MD

Associate Professor of Medicine, Department of Medicine

Dr. Huebschmann's research broadly seeks to improve chronic disease management in primary care, with a focus on designing interventions for dissemination among patients with type 2 diabetes that improve lifestyle behaviors such as physical activity. She has adapted effective methods to screen primary care patients for health risks in response to the different needs of patient and clinic provider end-users (myownhealthreport.org). Dr. Huebschmann has also worked with several partners to promote health equity. This includes the University of Colorado Center for Women's Health Research to identify and address sex differences in cardiovascular outcomes for people with diabetes, and work with colleagues at the University of Colorado San Francisco to understand how better to implement social determinants of health in primary care settings.



Allison Kempe, MD, MPH

Director, ACCORDS

Professor of Pediatrics, Colorado School of Public Health

Dr. Kempe is a tenured Professor of Pediatrics at the University of Colorado School of Medicine and the Colorado School of Public Health. She has extensive experience in health services research and program evaluation during the past thirty years with over 170 publications in areas such as immunization and other preventive care delivery, evaluation of prenatal and neonatal health services, pediatric care delivery methods, and evaluation of state health insurance plans for children of low-income families. She is the Director of ACCORDS (Adult and Child Consortium for Health Outcomes Research and Delivery Science) and was the founding Director of the SCORE Research Fellowship (Surgical/subspecialists Clinical Outcomes REsearch). She has received numerous R01 level grants from NIH, CDC and AHRQ and was the PI on a Center of Excellence in Implementation Science and Prevention funded by AHRQ which formed the basis for the current Dissemination and Implementation Science Program at ACCORDS. She has substantial methodological expertise in pragmatic trials in clinical and community settings, comparative effectiveness, program evaluation, and evaluation of evidence for translation into practice.



Bethany Kwan, PhD, MSPH

*Assistant Professor, Department of Family Medicine
Director, ACCORDS Education Program*

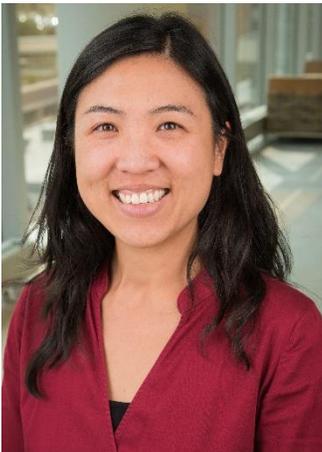
Dr. Kwan is a social psychologist and dissemination and implementation scientist in the Department of Family Medicine at the University of Colorado School of Medicine. She is an investigator and the education program lead for the Adult & Child Consortium for Health Outcomes Research and Delivery Science, where she conducts patient-centered outcomes research on chronic disease in primary care.



Cari Levy, MD, PhD

*Professor of Medicine, Division of Health Care Policy & Research
Associate Director, Center of Innovation for Veteran-Centered and Value-Driven Care,
VA Health Care System*

Dr. Levy is a Professor of Medicine at the University of Colorado School of Medicine with board certification in geriatrics and palliative medicine. Dr. Levy serves as Director of Palliative Medicine at the Rocky Mountain Regional VA and is current President of the American Medical Directors Association. Her research focuses on innovative models of care for older adults and improving end-of-life care in nursing homes.



Hillary Lum, MD, PhD

*Assistant Professor, Division of Geriatric Medicine
VA Geriatric Research Education and Clinical Center (GRECC)*

Dr. Lum is a geriatrician, palliative care physician, and health services research. Her work focuses on helping older adults with serious illnesses receive care that is aligned with their preferences. She designs, tests, and implements innovative models for advance care planning and palliative care through primary care, community, population health, or policy-based approaches. She was a 2015-2016 Health and Aging Policy Fellow through which she worked at the Colorado Department of Health Care Policy and Financing.



Dan Matlock, MD, MPH

*Associate Professor, Department of Medicine, Geriatrics
VA Geriatric Research Education and Clinical Center (GRECC)*

Dr. Matlock is the Director of the Colorado Program for Patient Centered Decisions at ACCORDS. His work is on developing and implementing decision aids for high stakes decisions.



Demetria McNeal, PhD, MBA, CPLP

Research Associate, School of Public Health, Rocky Mountain Regional Colorado Healthcare System

Dr. McNeal is an academically trained health communication scientist with prior corporate healthcare experience as well as clinical experience. As a rising dissemination & implementation scientist, she strives to work with clinics and communities to implement evidence-based sustainable health interventions to address health disparities in diabetes and cardiovascular disease within the African American community. Dr. McNeal has dual appointments; Research Associate in the University of Colorado Adult and Child Consortium for Health Outcomes Research and Delivery Science (ACCORDS) and the School of Public Health, Department of Health Systems Management & Policy, and HSR&D Fellow with Rocky Mountain Regional Health Care System.



Martha Meyer, PhD, MPH

Post-doctoral Fellow, D2V

Martha received her MPH and PhD from University of Colorado, Colorado School of Public Health. She is a health services researcher and has expertise health care policy and economics. Martha is completing her post-doctoral fellowship with the Data Science to Patient Value (D2V) initiative under the guidance of Dr. Mark Gritz, a health economist with the Department of Health Care Policy and Research. Martha has focused her post-doctoral training on cost analysis, specifically micro-costing using time-driving activity-based costing to better understand the actual cost and cost drivers of health care interventions.



Donald Nease, MD

Green-Edelman Chair for Practice-Based Research, Vice Chair for Research, Department of Family Medicine

Director of Community Engagement and Research, Colorado Clinical and Translational Sciences Institute

Dr. Nease is Associate Professor of Family Medicine at the University of Colorado and Director of the SNOCAP Practice Based Research Network Collaborative. Dr. Nease's passion is to improve health in partnership with communities, patients, clinicians and their practices. He works this territory from the level of individual interactions to community-to-community and population-based interventions. Dr. Nease is engaged actively in partnering with communities and practices throughout Colorado, with special focuses on the San Luis Valley and Longmont.



Toan Ong, PhD

Assistant Professor, Pediatrics

Dr. Ong is an Assistant Professor at the University of Colorado School of Medicine. He has a PhD in Computer Science and Information Systems. He has been involved in national projects funded by AHRQ and PCORI such as SAFTINet, PEDSNet or pSCANNER. He has extensive experience with linking, designing, harmonizing and loading large-scale healthcare datasets. In pSCANNER, Dr. Ong has been involved in developing secure centralized and distributed identity linkage methods. Dr. Ong's other research interests are schema mapping, record linkage, data mining and natural language processing.



Noy Phimphasone-Brady, PhD

Postdoctoral Fellow, Department of Family Medicine, Center on Aging, ACCORDS

Dr. Phimphasone-Brady currently serve as a postdoctoral fellow in implementation science with the Department of Family Medicine, Center on Aging, and the Adult and Child Consortium for Health Outcomes Research and Delivery Science (ACCORDS). Informed by her background training in clinical health psychology, her program of research centers on the study of implementation strategies and local and cultural adaptations of evidence-based interventions to improve behavioral health (obesity, pain, sleep, smoking cessation, etc.) among disadvantaged and medically underserved populations in both primary care and community settings.



Jenna Reno, PhD

Research Instructor, Data Science to Patient Value (D2V) Program

Dr. Reno is completed a postdoctoral research fellowship with ACCORDS after her PhD in Communication with an emphasis in health campaign and message design at the University of Kentucky. Her research aims to investigate the role of an evolving media and technology environment on health promotion. Specifically, she focuses on developing, implementing, and evaluating theoretically based, mHealth specific communication and dissemination strategies to promote positive healthcare decisions and health outcomes. Her research examines mediated, technological, and social influences on health and is guided by interdisciplinary theories, specifically persuasion and behavior change theories that address the role of socio-cultural and information processing factors.



Drew Sayer, PhD

Instructor, Division of Endocrinology, Metabolism, and Diabetes

Dr. Sayer received his PhD in Nutrition Science from Purdue University where he received training in randomized clinical trial development and neural control of eating behavior in adults with obesity. He has been working with Dr. Jim Hill as a postdoctoral fellow since 2016 and has gained additional training in long-term randomized trials for weight loss and maintenance as well as community-based participatory research methods. Dr. Sayer's research interests include studying the socio-environmental factors influencing diet and physical activity behaviors with the goal of developing more effective and pragmatic interventions to treat obesity. His work has been supported by protein commodity groups such as the National Cattlemen's Beef Association, National Pork Board, and American Egg Board.



Judith Shlay, MD, MSPH

*Associate Director, Denver Public Health
Professor, School of Medicine*

Dr. Shlay has been working on various programs at Denver Public Health over 30 years. She has been the principal investigator for a number of projects focusing on health promotion and disease prevention, HIV-related metabolic and neurologic disorders, immunization delivery, reproductive health, sexually transmitted infections, substance abuse, teen pregnancy prevention, and tobacco prevention. She co-leads the Center for Addictions Medicine at Denver Health. From 2008 to 2012, she was the PI on two CDC-sponsored grants focusing on the feasibility of offering vaccinations through school-located vaccination clinics and billing health insurance plans for reimbursement. This work involved partnerships between public health, Denver Public Schools, and researchers affiliated with ACCORDS and Kaiser. These studies resulted in addressing the important public health function of improving vaccination coverage using alternative settings, which potentially are sustainable. From 2010 to 2016, Dr. Shlay was the PI on an Office of Adolescent Health Tier 2 grant. This randomized controlled trial assessed the use of social media to enhance the impact of the Teen Outreach Program. Partnerships included Denver Public Health, The Boys & Girls Club of Metro Denver and the Colorado School of Public Health.



Jeanette Waxmonsky, PhD

Associate Professor, Department of Family Medicine

Dr. Waxmonsky is the Director of Research Innovation at Jefferson Center's Office of Healthcare Transformation, and an Associate Professor in the University of Colorado Department of Family Medicine and the Colorado School of Public Health. Her research focuses on community based, integrated healthcare services. She has 15 years of experience in conducting research on the implementation and sustainability of integrated behavioral and medical healthcare interventions for low-income, minority, and vulnerable populations. She has expertise in the implementation and evaluation of integrated care interventions for psychiatric disorders and medical comorbidities, and in the use of evidence based implementation strategies to improve the uptake of evidence-based behavioral health practices.



Matthew Wynia, MD, MPH

Director, CU Center for Bioethics and Humanities

Dr. Wynia is Board certified in Internal Medicine and Infectious Diseases, with additional training in public health and health services research. He led the Institute for Ethics at the American Medical Association for 15 years and founded its Center for Patient Safety before moving in 2015 to become the Director of the University of Colorado's Center for Bioethics and Humanities (CBH). Dr. Wynia has led national projects on issues including public health and disaster ethics; ethics and quality improvement; communication, team-based care and engaging patients as members of the team; and medicine and the Holocaust. He leads the Stakeholder Engagement Core for the Data Science to Patient Value (D2V) Program.

RELEVANCE TO YOUR WORK

Learning happens best when applying new content to your own work. As the workshop begins, please take a moment to identify at least one project you are working on that may be relevant to Designing for Dissemination. **Label the project(s) with a brief name** so that you can refer to them in the workbook throughout the workshop. You may come up with new ideas or refine existing ideas —feel free to come back and add to the list throughout the day. For each project, provide a brief description of what the **research products** may be (e.g., the knowledge produced, the devices, materials, or programs developed) and who the **end users** of the research products may be.

My Project List

Project Name	Research Products	Potential End Users of the Research Products

DESIGNING FOR REAL-WORLD IMPACT

Plenary Address by Dr. Borsika Rabin

Title: Designing Interventions for Real-World Impact: A Conceptual Background

Learning objectives:

- Identify terminology, theoretical underpinnings, and conceptual models of Designing for Dissemination (D4D)
- Define common Processes, Outcomes, and Products related to D4D

Strategies for D4D:

1. Plan for dissemination from the start
2. Engage your target users
3. Select and apply theoretical models
4. Use learnings from the Diffusion of Innovations literature and Social marketing
5. Select measures that work and matter in the 'real world'
6. Select designs that allow you to evaluate 'real world' performance
7. Use an iterative approach to develop your intervention/products
8. Package your intervention to support future adopters

Advanced discussion topics:

- ⇒ How D4D is different from Dissemination science?
- ⇒ How does D4D differ from D4I and D4S? Do these differ substantially?
- ⇒ What are some additional D4D strategies?
- ⇒ How do we measure the impact of D4D and whether D4D is successful?

DESIGNING FOR REAL-WORLD IMPACT

Plenary Address by Dr. Borsika Rabin

Notes:

EXAMPLES FROM THE FIELD

Ignite Presentations

Dissemination of an Electronic Health Record Linkage Software Solution Using an Animated Explainer Video

Toan Ong, PhD

Assistant Professor, Pediatrics

The advancement of translational data science may benefit from the dissemination of methods for the design of materials to communicate value propositions and scale-up use of novel healthcare informatics tools. We present a process for disseminating an electronic health record linkage software called CU Record Linkage (CURL) for linking patient health records from disparate systems (e.g., clinical and claims data). A 4-minute animated explainer video will be the final product to be used as part of a workshop for investigators and data managers to tell the story of key functionalities and solutions provided by CURL. Three phases have comprised the video creation process including dissemination planning, animation prototyping, and video development. Phase 1 consisted of outlining a plan for the design of the dissemination materials, including identifying goals and a target audience for the dissemination effort. Phase 2 involved posting a job solicitation on *Upwork*, a global freelancing platform where businesses and independent professionals connect and collaborate remotely. Phase 3 has begun for final development of the video. The storyboard and mock-ups created during Phase 1 were shared with our contractor and used to craft a script that links animation/images to text/audio for each time block of the video.

Chronic Pain Management in Cancer Survivors: Tales of a D&I Newbie

Emily Cox-Martin, PhD

Assistant Professor, Division of Medical Oncology, Department of Medicine and Department of Psychiatry

There are over 15 million cancer survivors in the United States, a number that will only increase over the next decade. As this population grows, it is imperative to address the late effects of their diagnosis and related treatments. Nearly 40% of cancer survivors experience chronic cancer-related pain, which can last for more than a decade after active treatment has ended. Psychological interventions have proven to be efficacious for non-malignant chronic pain; however, many of these have yet to be tested for clinical effectiveness and implementation in cancer survivors. The objective of this study is to investigate the clinical effectiveness and implementation potential of Acceptance and Commitment Therapy (ACT) for chronic pain in cancer survivors seen in an oncology setting. Key areas of exploration include the core and adaptable components of ACT for the target audience as well as determine acceptability, feasibility, and fidelity outcomes in the service setting. Qualitative methods will be used for improved patient engagement in the research process and to evaluate the key concepts of ACT that align with cancer survivors needs. Results of this study will enhance our knowledge of the clinical effectiveness of this psychological intervention for cancer related chronic pain, target factors that will influence the adoption and sustainability of ACT for cancer survivors, and provide preliminary information to improve the dissemination of this intervention.

EXAMPLES FROM THE FIELD

Ignite Presentations

Transforming Rehabilitation in Skilled Nursing Facilities

Allison Gustavson, PT, DPT, PhD(c)

PhD Candidate, Program in Rehabilitation Science

Skilled Nursing Facilities (SNFs) provide short-term, rehabilitation services to older adults post-hospitalization. However, recovery of physical function during a SNF stay remains inadequate under usual care and may be a major reason that 63% of SNF patients discharge to institutionalized settings and incur greater costs. Currently, SNF rehabilitation is conducted at low-intensity doses that are unlikely to confer significant gains in physical function. However, specific barriers exist to providing high-intensity rehabilitation in SNFs including: regulatory constraints, treatment time limitations, lack of leadership involvement in care quality, and the absence of clinical advocates of change. These barriers perpetuate the knowledge gap between current clinical practice and best practice, providing an opportunity to shift rehabilitation approaches. To promote a cultural shift in SNF rehabilitation, we designed the “*IntenSive Therapeutic Rehabilitation for Older Skilled NursinG Home Residents*” (I-STRONGER) program to address the needs of SNF patients while complying with current rehabilitation reimbursement regulations. I-STRONGER integrates evidence-based principles of physiologic tissue overload (i.e., high-intensity) into rehabilitation interventions, while utilizing concepts from PRISM to address previously documented barriers to cultural change. The implementation of I-STRONGER will be evaluated using the RE-AIM framework. Using designing for dissemination strategies (e.g., integrating techniques to improve health care; disseminating evidence-based practices to target audience) to promote effective rehabilitation approaches has the strong potential to reduce rising healthcare costs by lowering hospital readmissions and rates of discharge to costly, institutionalized settings.

Industry-Sponsored Nutrition Research: Biased Market Research or Valuable Public-Private Partnerships?

Drew Sayer, PhD

Instructor, Division of Endocrinology, Metabolism, and Diabetes

The role of the food industry in funding nutrition research is one of the field’s most contentious issues. Differing hardline opinions on the issue have led to the formation of two distinct “camps” among nutrition scientists; one viewing industry-sponsored research as inherently biased with no legitimate role in nutrition research and the other arguing that we must foster industry partnerships to alter the food supply and positively impact nutrition-related diseases. Regardless of the camp to which one belongs, it is readily apparent that industry sponsors have a vested interest in the outcomes of the research studies they fund and desire particular messages to disseminate to the public at their conclusion. In this respect, industry-sponsored nutrition research epitomizes designing for dissemination. This fact necessitates careful consideration of research questions and study designs as well as the management of conflicts of interest to ensure that industry-sponsored nutrition research is scientifically sound and transparent to the public, clinicians, and fellow academics. If properly and transparently designed and conducted, industry-sponsored nutrition research has the potential to positively impact the field of nutrition science and inform public health initiatives to prevent and treat nutrition-related diseases.

EXAMPLES FROM THE FIELD

Ignite Presentations

Fostering Co-learning: Stakeholder Engagement to Inform Cultural Adaptations and Identify Dissemination Strategies

Noy Phimphasone-Brady, PhD

Postdoctoral Fellow, Department of Family Medicine, Center on Aging, ACCORDS

Despite national efforts to disseminate effective obesity management interventions, such interventions are not broadly implemented and disseminated among Latina women with binge eating disorder (BED), a group who are less likely to seek treatment for obesity or BED. To better understand innovative strategies that align with the needs of this vulnerable group, we partnered and interviewed Latinas with BED (i.e., key stakeholders), in order to learn how to culturally adapt an evidence-based behavioral weight loss (BWL) program to address obesity and binge eating. We also sought to identify key strategies for dissemination in the future with community lay health advisors. Our stakeholder engagement process included building long-term relationships with community organizations and recognizing the community as a strength. Our community relational strategies yielded interviews with 20 Latinas with BED (*Age* = 30 ± 9.87 years, *Body Mass Index* = 34.40 ± 6.64 Kg/m², *Binge eating episodes/month* = 4 ± 4.92 [data shown as mean \pm SD]) in a focus group to determine how to culturally adapt an evidence-based BWL program. Qualitative results revealed a cultural understanding of barriers and facilitators to manual acceptance and sustainability, and key dissemination roadblocks and entrances. Our findings illustrate the strength of maintaining relationships with community organizations, in order to engage with key stakeholders to improve interventions' acceptability and sustainability for culturally distinct groups. When designing for dissemination, stakeholder engagement is critically important from project beginning to end.

Notes:

DESIGNING FOR CONTEXT

Roundtable Discussions with D4D Experts

Session Structure:

Participants will brainstorm and share methods for integrating methods for assessing and addressing contextual and setting characteristics in their research. Facilitated conversations will help participants identify new methods they want to explore in the Concurrent Small group sessions.

Learning objectives:

- Understand others' experiences in D4D within different contexts and target audiences
- Describe both common and unique/KEY D4D issues within these contexts
- Explore strategies for D4D and ways to overcome challenges in this setting

What strategies can be used in “designing for dissemination” for this context and target audience?

What are the unique D4D issues in this context that may not be present in other contexts?

What are the strategies presented to address the unique needs and perspectives of this context?

THE DESIGNING FOR DISSEMINATION IMPERATIVE

Plenary Address by Dr. David Chambers

Title: Dissemination and Implementation Research: Optimizing the Success of Health Care

Learning Objectives:

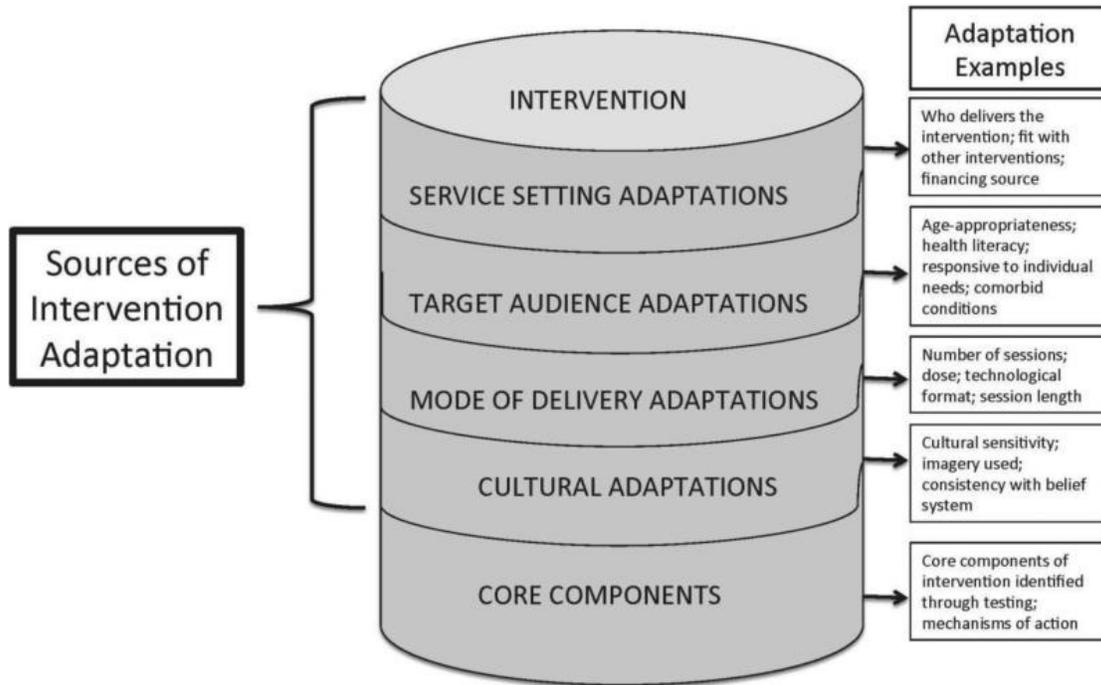
- To describe integration of Dissemination and Implementation Science into the national research agenda
- To describe the rationale for how Designing for Dissemination fits into the research process at all stages (e.g., precision medicine, learning health system)
- To describe how development of an “adaptome” and dynamic sustainability framework can enhance design and implementation of research products

Notes

Thought questions to consider relevance to your own work

What would you consider to be core components of your intervention, program, or other research product? What adaptations might be needed to fit the context and audience for your work? What adaptations are needed to ensure feasibility and sustainability in target settings and audiences. Reflect upon what you considered in the Designing for Context session. On the next page, using the Adaptations Brainstorming to think about the ways in which your project could be adapted to your target context and audience.

ADAPTATIONS BRAINSTORMING



From: Chambers, D. A., & Norton, W. E. (2016). The Adaptome: advancing the science of intervention adaptation. *American Journal of Preventive Medicine*, 51(4), S124-S131.

My Project:

Core Components

What adaptations are needed to ensure your products are designed for dissemination and sustainability?

Cultural Adaptations

Mode of Delivery Adaptations

Target Audience Adaptations

Service Setting Adaptations

CONCURRENT SESSIONS

Introduction to Methods for Designing for Dissemination

In the concurrent sessions, participants have the opportunity to attend up to three presentations on methods and approaches consistent with the goal of *Designing for Dissemination*.

Learning Objectives:

After participating in the session, participants will be able to:

- Describe key steps in applying the method to design of interventions, materials, and communication of findings
- Describe the intended purpose and appropriate applications of the method
- Describe the product(s) that can be expected to emerge from use of the method

On the next page, you will find a Methods Brainstorming Matrix to help you track ideas and opportunities for applying the methods to your own work. Refer back to your project list. As presenters describe appropriate applications of the method, for which projects might the method be appropriate for understanding the needs and valued outcomes of your potential end users, and designing products that fit the context in which the products will be used?

Note which methods have promise for your work, how you might use the method (and at what point in your program of research), what types of products it might inform, and what resources are available to help you implement the method. Upon completion of this session, you may have a sense of which method (s) would be a great fit for your work—or you may want to explore other options. These are just a small sampling of methods and many others, and variations on the themes, exist. We encourage you to review the resources provided and seek consultation with the many local D&I resources to select the method(s) most appropriate for your work.

Room #	202	204	304/305	Shore Family Forum
1:15-1:45	i-Corps: Designing for Commercialization	Message Development and Testing: Designing for Social Media	Microcosting Methods: Designing for Sustainability	User-Centered Design: Designing Engaging Technology
1:45-2:15	Participatory Research: Designing for Translation to Public Health	Message Development and Testing: Designing for Social Media	Boot Camp Translation: Designing for Dissemination of Evidence to Communities	User-Centered Design: Designing Engaging Technology
2:15-2:45	Participatory Research: Designing for Translation to Public Health	Microcosting Methods: Designing for Sustainability	Boot Camp Translation: Designing for Dissemination of Evidence to Communities	User-Centered Design: Designing Engaging Technology

METHODS BRAINSTORMING MATRIX

Applying D4D methods to your projects and proposals

Project	D4D Method	Purpose	Product	Resources
Example Sepsis Guidelines for Nurses	Example Boot Camp Translation	Example Design materials to disseminate evidence on new sepsis guidelines with nurses	Example Flyers and a social media campaign targeting nurses	Example CCTSI Boot Camp Training, Boot Camp Manual

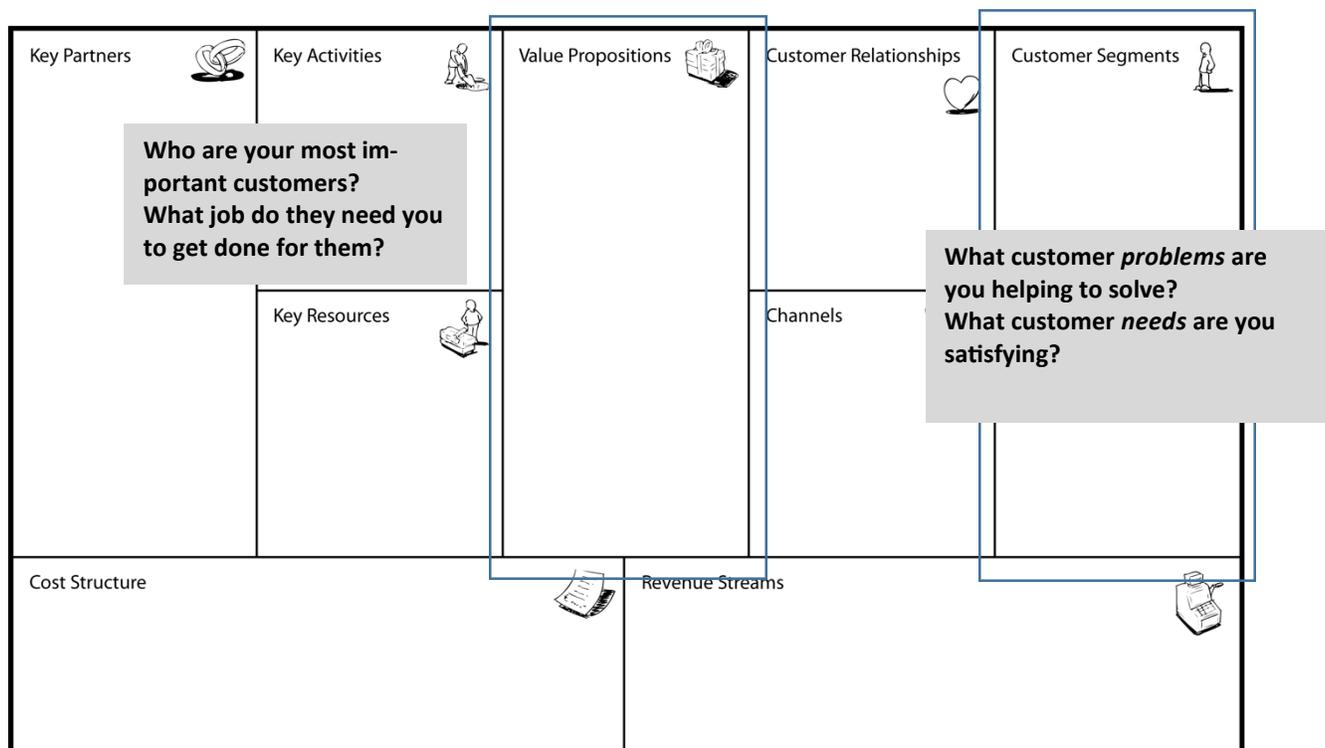
I-Corps: Designing for Commercialization

Primary Aim of the I-Corps@CCTSI program:

Teach innovation teams a structured and repeatable methodology for enhancing customer discovery, clarifying value propositions and developing a business model hypothesis. I-Corps Team can expect to:

- Build an entrepreneurship culture that embraces “adapt and pivot” of an idea, service or product offering— a pivot is not a failure.
- Increase the success rate for follow-on funding: SBIR/STTR grants, other incubator and pilot funding.
- Ultimately, create greater impact of our translational research innovation.

I-Corps is the first program to apply lean-startup up principles to complex engineering, technology, and science-based startups. Utilizing the Business Model Canvas™ as the learning template, I-Corps teams are educated across each segment of the business model however the emphasis of the course is to “get out of the building” by talking and listening to targeted customers through the **customer discovery process**.



Source: Value Proposition Design (2014).

Business Model Canvas™ definitions:

Key partners – the network of suppliers/partnerships that bring in external resources and activities.

Key activities – most important activities that need to be performed well.

Key resources – most important assets required to offer and deliver the value proposition.

Value propositions – a clear statement that explains how your product/service creates value for a customer segment.

Customer relationships – outlines what type of relationship is established and maintained with each customer segment.

Channels – the way in which a value proposition is communicated and delivered to a customer segment.

Customer segments - groups of people a company aims to reach and create value for with a dedicated value proposition.

Cost structure - all costs incurred to operate a business model.

Revenue streams – how an organization captures value with a price that customers are willing to pay.

I-Corps @ CCTSI Short Course Design

Fall 2018 program in-class dates: October 18, 19 and November 9, 2018.

Spring 2019 program in-class dates: April 11, 12 and May 3, 2019.

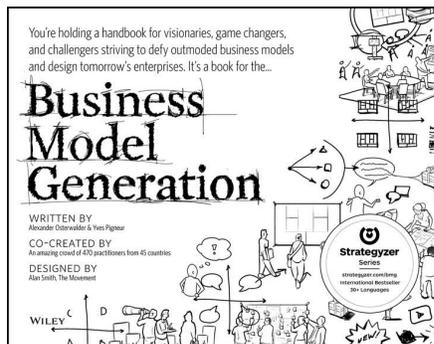
Short Course Delivery

Customer Discovery: Target 30 interviews.

End product: A business hypothesis – target customer and value proposition. A business model ecosystem framework.

Course culture: Developed by entrepreneurs. Limited time. Direct, open and tough feedback. Friendly “Shark Tank”.

Required text: *Business Model Generation*; *Value Proposition Design*



Team time commitment

In-Class: Approx. 20 hours. Out-of-the Office: Approx. 40 hours (30 interviews and weekly office hours).

Classroom deliverables:

- Interviews: minimum of 30 customer discovery interviews
- Team workshops
- Presentations: 2 team presentations (opening and closing session)
- Participation in weekly office hours

Targeted Learning Audience: Teams with an innovation idea starting or refining their business proposition.

CCTSI Innovation Training		Level of Training	
		Introductory	Advanced
Type of Learner	Individual	<ul style="list-style-type: none"> • BEST Bioentrepreneurship Workshop • CU Innovations seminars 	<ul style="list-style-type: none"> • CU Innovation Fellowship • Bioentrepreneurship Graduate Certificate
	Team	<ul style="list-style-type: none"> • I-Corps@CCTSI 	<ul style="list-style-type: none"> • National I-Corps™ (NIH/NSF) • StartUp Health Colorado Academy

Presenters:

Demetria M. McNeal, PhD, EMBA, CPLP

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References:

Osterwalder, A., and Pigneur, Y., Smith, A., Bernarda, G., Papadakos (2015) Value Proposition

Design. Osterwalder A. & Pigneur, Y., (2010) Business Model Generation.

CU CCTSI I-Corp: <http://www.ucdenver.edu/research/CCTSI/programs-services/icorpsatcctsi/>

Pages/default.aspx NSF I-Corp: https://www.nsf.gov/news/special_reports/i-corps/

Message Development and Testing: Designing for Social Media

Jenna E. Reno, PhD; Data Science to Patient Value (D2V), University of Colorado Denver

Message design is the process of connecting insights about the priority audience with key information the audience needs to know in order to make the change the program desires. Successful, well-designed messages are simple, memorable, easily understood, culturally appropriate, and meaningful to the audience.

Message Development Processes

1. Specify call to action (desired behavior, health decision, outcome)
2. Determine relevance of target audience members' facilitators/barriers (formative research)
3. Identify applicable health communication or behavior theory (if any)
 - a. Use theory tenants/components to guide message development
 - b. Verify content validity (e.g., reference theory experts, manipulation checks)
4. Identify appropriate social media sites/apps and message packaging (e.g. text only, image + text, infographic, gif, video, hashtags, etc.)
 - a. Consider target audience when choosing social media channel
 - b. Message packaging (static, animated, video, etc.) choices should consider:
 - i. Financial/design resources
 - ii. Message clarity
 - iii. Message source
 - iv. Message engagement
5. Approach design process iteratively
 - a. Get feedback from experts and target audience members
6. Process Evaluation and Outcome Evaluation

Resources required:

- ◇ Time: 1-6 months
- ◇ Expertise: health comm or behavior theory, health literacy, social marketing, advertising
- ◇ Materials/Resources: varies based on design/dissemination plan; may include:
 - Graphic design(er)
 - Web developer/programmer
 - Marketing/advertising/PR professionals

Strengths of the method: Theory or evidence-based message design builds on previous research for identifying what works (or perhaps what doesn't).

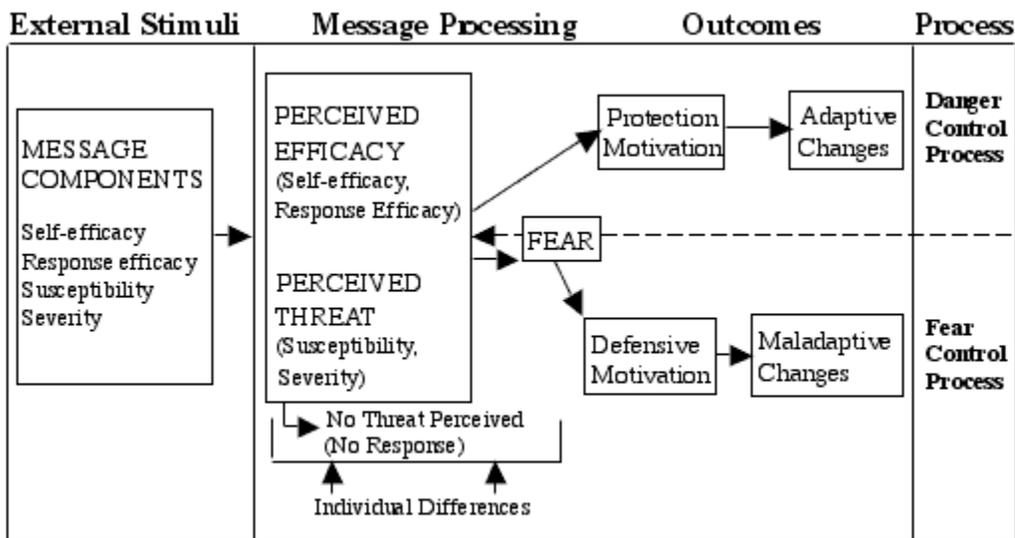
Caveats or limitations of the method: Thorough formative research and message pre-testing is time and money intensive but can lead to greater message impact.

Example: A Simple Message Design Project for HPV Vaccine Promotion as Cancer Prevention

Audience	Audience Characteristics	Desired behavior	Barriers	Facilitators
1. Latinx Parents of Adolescents (ages 11-17) 2. Latinx Young Adults (ages 18-26)	1. Decision-makers; Higher rates of HPV related cancers 2. Decision-makers; Higher rates of HPV related cancers	1. Get more information about HPV vaccines to get vaccinated. 2. Get more information about HPV vaccines to get vaccinated.	1. Lack of knowledge/concern about HPV 2. Lack of knowledge/access	1. Care about children's long-term health 2. Care about their short-term health

Key Promise	Support Points	Message
The HPV vaccine lowers your chances of getting (certain types of) male and female cancers.	<ul style="list-style-type: none"> The HPV vaccine effectively prevents high-risk strains of HPV. Most Americans will be exposed to HPV at some point in their life. HPV also causes genital warts. 	Educate yourself on how to prevent cancer and/or genital warts by getting the HPV vaccine.

Extended Parallel Process Model (Witte, 1992) aka How to Use Fear Appeals



Messages:

- Most Americans will be exposed to HPV by the time they turn 25. Nearly 90% of **genital wart** cases can be prevented by getting vaccinated for HPV. Click [here](#) to find out what you need to know about HPV.
- This year 4,100 women will die from **cervical cancer**. The HPV vaccine is 98% effective at preventing infections that cause cervical cancer. Click [here](#) to get answers to your questions about HPV.
- HPV is a harmful disease. Click [here](#) to get more info.

Additional Readings:

[How to Design SBCC Messages](#). TheHealthCOMpass.org

Harrington NG. [Persuasive Health Message Design](#). Oxford Research Encyclopedia of Communication. 2016 Jun 9; Available from: Communication.oxfordre.com

[CDC Social Media Tools, Guidelines & Best Practices](#). | CDC. 2017. Available from: CDC.gov

Harrington NG. [Introduction to the Special Issue: Message Design in Health Communication Research](#). Health Commun. 2015 Feb;30(2):103-105. PMID: PMC4255327

Micro-costing Method: Designing for Sustainability Using Time-Driven Activity-Based Costing (TDABC)

Martha Meyer, PhD, MPH | Data Science to Patient Value (D2V) Post-Doctoral Fellow

Why measure cost for your next health care intervention? Because the cost of delivering care is the ultimate driver of health care spending. A lack of understanding of the true costs (in distinction from charges) of health care delivery poses a challenge for demonstrating the project value or if the project is sustainable.

- In the news recently. The actual cost for a knee replacement was \$10,550 at Gunderson Health System in La Crosse WI: the list price was \$50,000 in 2016.

What can you do? Measure the actual cost of your intervention using a well-known method from industry called time-driven activity-based costing or TDABC. TDABC is a micro-costing tool designed by Kaplan and Anderson. It only requires two parameters: 1) time used related to the intervention; and 2) the cost per time unit (e.g. personnel, supplies, treatment).

When to use TDABC? To measure actual cost for a new procedure or process, identify cost variation, or improve value for patients.

How to apply TDABC. The key TDABC steps are as follows:

1. Design phase

- ✓ Determine the intervention level (patient, procedure, practice) and the cost perspective (system, insurer, society).
- ✓ Determine availability of cost data and level of analysis for your intended audience.
- ✓ Process map the current system or work flow (e.g. patient flow through clinic).

2. Study or implementation phase

- ✓ Measure and/or observe the activity (e.g. RN chart review time, call time).
- ✓ If direct observation is not possible, use reported average time for each step in the process map.

3. Analysis or summary phase

- ✓ Obtain and calculate cost (e.g. RN salary, benefits, exam room).
- ✓ Consider direct cost and indirect cost/allocated cost.

4. Report out phase

- ✓ Tailor your results to the audience (e.g. practice manager, CFO, community leader) and show the cost and saving associated with your intervention.
- ✓ Expand into additional analysis: cost-benefit analysis (CBA), cost-effectiveness analysis (CEA), or return on investment (ROI).

What are the alternative approaches to assess costs? There are two approaches to measure cost or the resources utilization: Macro-costing or gross costing is a broad top-down method and micro-costing (TDABC) is a specific bottom-up method. The micro-costing estimation provides the true costs to the healthcare system of the intervention. Whereas, Macro-costing approach to costing generally uses charges or reimbursement amounts to estimate the average cost of events or units.

When TDABC may not be the best option and possible alternatives:

- Limited study time and resources. Activity observation can be time and labor intensive. Alternative: use average reported time or work Relative Value Units (wRVU) for billable procedures.
- Unable to obtain direct cost (supplies, equipment). Alternative: list price from supplier.
- Unable to obtain indirect cost or allocated cost cannot be determined at the level of the intervention. Alternative: use an average and estimate to the intervention level.
- Intervention is at the system level. Alternative: use average cost available at CMS, the macro-costing method.

Resources and assistance available to help you.

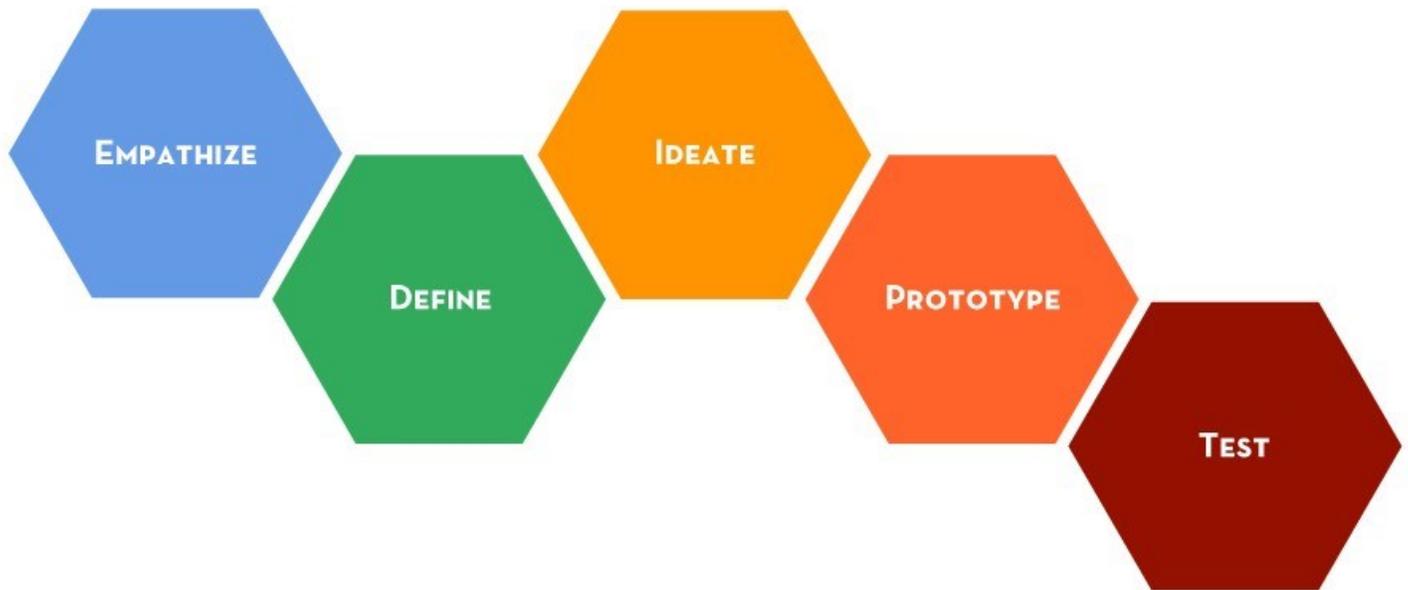
- Technical Assistance can be found on the D2V website under the [Tools & Resources](http://www.ucdenver.edu/academics/colleges/medicalschoo/programs/d2V/Pages/D2V.aspx) tab. <http://www.ucdenver.edu/academics/colleges/medicalschoo/programs/d2V/Pages/D2V.aspx>
- References and examples:
 - ◇ Kaplan, R. S., Witkowski, M., Abbott, M., Guzman, A. B., Higgins, L. D., Meara, J. G., & Wertheimer, S. (2014). Using Time-Driven Activity-Based Costing to Identify Value Improvement Opportunities in Healthcare. *Journal of Healthcare Management*, 59(6), 399-413.
 - ◇ Lee, V. S., Kawamoto, K., Hess, R., Park, C., Young, J., Hunter, C., & Graves, K. K. (2016). Implementation of a value-driven outcomes program to identify high variability in clinical costs and outcomes and association with reduced cost and improved quality. *Jama*, 316(10), 1061- 1072.
 - ◇ Keel, G., Savage, C., Rafiq, M., & Mazzocato, P. (2017). Time-driven activity-based costing in health care: A systematic review of the literature. *Health Policy*.
- Recommended readings on the TDABC method from Harvard Business Review: <https://www.isc.hbs.edu/health-care/vbhcd/Pages/TDABC-Recommended-Readings.aspx>

1. Evans, M. (2018) 'What Does Knee Surgery Cost? Few Know, and That's a Problem' *Wall Street Journal*, August 21, p.
2. Kaplan, R.S, Anderson, S.R. Time-Driven Activity-Based Costing. *Harvard Business Review*. (November 2004): 131-138

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¹University of Colorado Anschutz Medical Campus, ²Colorado School of Public Health - The mHealth Impact Lab, ³Inworks – University of Colorado Denver, ⁴Denver Health, ⁵Adult and Child Consortium for Health Outcomes Research and Delivery Science (ACCORDS)

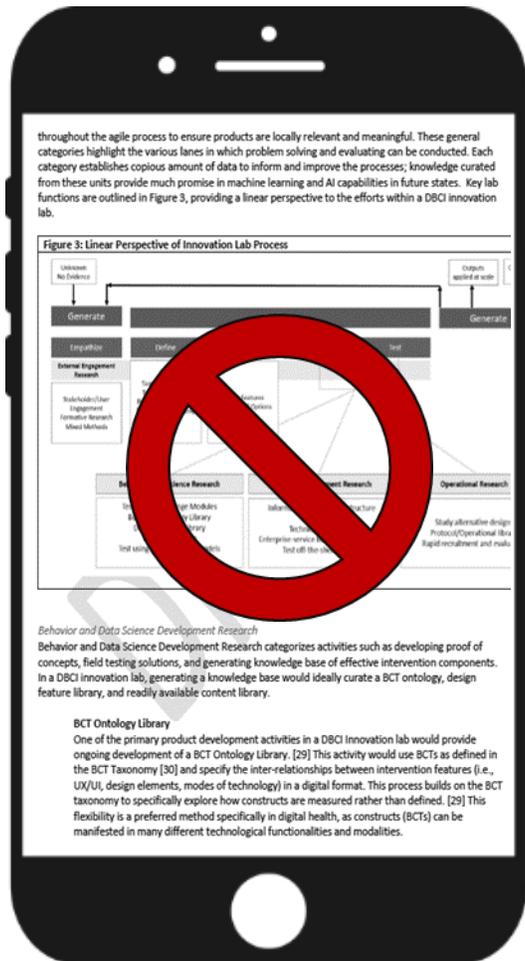
Juggling Jargon: Definition of Key Terms	
Term	Definition
Design Thinking	Method for the practical, creative resolution of problems using the strategies designers use during the process of designing
User-centered Design	Framework of processes in which usability goals, user characteristics, environment, tasks and workflow of a product, service or process are given extensive attention at each stage of the design process
Human-centered Design (HCD)	Design and management framework that develops solutions to problems by involving the human perspective in all steps of the problem-solving process
User Experience/User Interface (UX/UI)	User interface design or user interface engineering is the design of user interfaces for machines and software, such as computers, home appliances, mobile devices, and other electronic devices, with the focus on maximizing usability, navigability, and the user experience
Digital Behavior Change Interventions (DBCIs)	Digital health solutions using mobile apps, SMS (text) messages, wearable and ambient sensors, social media, and interactive websites to improve health by supporting behavior change
Behavior Change Techniques (BCTs)	“Active components” or constructs operationalized in an intervention to test and validate behavior change theories



Human-centered Design Principles & Descriptions	
	Description
Empathize	Uncovers pain points and problem space of target population.
Define	Develops a problem statement that addresses needs and understanding of problem
Ideate	Uses a process of converging and diverging problem space to understand multiple points to intervene. This includes idea creation, brainstorming, and scope articulation.
Prototype	Can include building low to high fidelity of idea or solution.
Test	Where prototype is critiqued by experts, end-users, other external feedback to be refined for next iteration

User-Centered Design: Designing Engaging Technology

User-experience – 101 Key Takeaways



- **Promote usability & navigability.**
 - ◊ Usability Models (PACMAD & Extended PACMAD)
 - ◊ “Don’t Make Me Think” – Steven Krug

- **Health communication matters.**
 - ◊ Message framing, literacy-level
 - ◊ Language diversity

- **Simple design.**
 - ◊ Too much text = gets ignored
 - ◊ Distill interfaces to main elements
 - ◊ Visual grammar

- **Narrative design.**
 - ◊ Storytelling to structure content from:
 - ◆ Critical material →
 - ◆ Background & context →
 - ◆ Nice to have

- **Diversify your content.**
 - ◊ Videos, activities, images, icons
 - ◊ Create “call to actions” on every screen

- **Interoperability with other commonly used apps.**
 - ◊ Think beyond individual-focused, specific disease state
 - ◊ Use Application Programming Interfaces (API)
 - ◊ Think: Syncing to Google Maps, Outlook, MyFitnessPal

Notes:

2017 Key Recommendations and Methods for Building and Evaluating Digital Health Interventions

Achieving rapid and efficient development	
Description	Methods
<ul style="list-style-type: none"> ✓ Consider adopting methods from engineering and other data-intensive domains in the development cycle. ✓ Use Bayesian and related approaches to improve the predictive modeling capabilities of DBCIs. ✓ Leverage advances in data science such as machine learning, but ensure that human input is retained as needed 	<ul style="list-style-type: none"> • Agile Science • Bayesian and related approaches • Predictive modeling • Data Science & machine learning • Streamline research protocols • Rapid recruitment, online methods
Understanding and promoting engagement	
Description	Methods
<ul style="list-style-type: none"> ✓ Specify and establish empirically what constitutes “effective engagement” for each DBCIs, that is, sufficient engagement to achieve the intended outcomes. ✓ Identify and develop valid and efficient combinations of objective and subjective measures to build and test multidimensional models of engagement. ✓ Develop DBCIs with a person-centered and iterative approach, using mixed methods to progressively refine the DBCI to meet user requirements. 	<ul style="list-style-type: none"> • Theory-based not theory-informed • Measure macro-engagement (BCTs) • Differentiate from micro- engagement (swipes/clicks) • Build and test multidimensional models of engagement • Mixed methods, iterative user-testing
Advancing models and theories	
Description	Methods
<ul style="list-style-type: none"> ✓ Use the large amounts of real-time, ecologically valid data generated by DBCIs to test and advance models and theories of behavior change. ✓ Develop methods able to efficiently analyze large, complex data sets to test dynamic theoretical propositions and allow personalization of DBCIs ✓ Specify the circumstances in which a proposed mechanism of action of a DBCI will produce a targeted effect and build an ontology to organize knowledge resulting from this. ✓ Develop DBCIs using a modular approach. ✓ Support interdisciplinary research collaborations and transdisciplinary thinking. 	<ul style="list-style-type: none"> • Ecological Momentary Assessments (EMAs) • Just-in-time-adaptive interventions (JITAs) • Operationalize BCTs in modular approach to apply and validate theory • Behavioral Intervention Technology (BIT) model • Academic-industry partnerships
Evaluating effectiveness	
Description	Methods
<ul style="list-style-type: none"> ✓ Evaluate at all phases in the development cycle ✓ Design evaluations for generalizability. ✓ Use methods of DBCI evaluation that capitalize on their unique characteristics ✓ Use features of DBCIs to optimize control and access rich data streams ✓ Choose comparators that minimize contamination 	<ul style="list-style-type: none"> • Alternatives to RCT • Multiphase optimization strategy (MOST) framework • Micro randomized controlled trials (mRCTs) • Sequential multiple assignment randomized trial (SMART)
Evaluating cost-effectiveness	
Description	
<ul style="list-style-type: none"> ✓ At every stage, including concept development, identify all the relevant future costs and benefits ✓ Take account of projected uptake as well as reach ✓ Select a modeling framework appropriate for the complexity of the projection ✓ Separately evaluate societal, personal, and health care cost-effectiveness 	
Ensuring regulatory, ethical, and information governance	
Description	
<ul style="list-style-type: none"> ✓ Ensure compliance with appropriate ethics or institutional review board processes ✓ Identify and adhere to regulatory processes that may be required for digital medical devices ✓ Ensure compliance with national standards for data handling, sharing, and interoperability, where appropriate. ✓ Provide clear and transparent information on how data from the intervention will be used and shared 	

Resources

- **Human-centered Design**

- ◇ Workshops, courses, certificate programs offered at [Inworks](https://inworks.ucdenver.edu/w/) (<https://inworks.ucdenver.edu/w/>)
- ◇ Inworks is an initiative of the University of Colorado Denver | Anschutz Medical Campus that draws together faculty, staff and students from across the two campuses, as well as entrepreneurs and leaders from industry, government, education and the community, to address problems of importance to human society.
- ◇ Our mission is to impart skills and habits of mind that allow people to collaboratively create impactful solutions to human problems.

- **The mHealth Impact Lab**

- ◇ Our mission is to facilitate the rapid and rigorous development, implementation, and evaluation of mobile and digital technology for health promotion and disease prevention that address inequities in health outcomes <https://mhealthimpactlab.com/our-work/>

- **Designing Digital Health Interventions – special series**

1. Yardley, L., et al., *Current Issues and Future Directions for Research Into Digital Behavior Change Interventions*. Am J Prev Med, 2016. **51**(5): p. 814-815.
2. Masters, K.S., Introduction to the Special Section on Behavior Change Intervention Development: Theories, Methods, and Mechanisms. *Annals of Behavioral Medicine*, 2018. 52(6): p. 443-445.
3. Michie, S., Yardley, L., West, R., Patrick, K., & Greaves, F. (2017). Developing and Evaluating Digital Interventions to Promote Behavior Change in Health and Health Care: Recommendations Resulting From an International Workshop. *Journal of Medical Internet Research*, 19(6), e232. <http://doi.org/10.2196/jmir.7126>

- **Creative Methods for Idea Generation in Communities**

- ◇ Google Design Sprint Kit – free online toolkit outlining design thinking phases (e.g., Understand, Sketch, Decide, Prototype, Validate) and resources/activities to innovate around a problem space.
- ◇ <https://designsprintkit.withgoogle.com/>

- **Agile Manifesto**

- ◇ Rooted in computer science principles, the Manifesto highlights the need for incremental, deliberate, and iterative process to designing software for users. <http://agilemanifesto.org/>

Participatory Research: Designing for Translation to Public Health

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What is Brainwriting?

Brainwriting is when a group of people get together and write out ideas on a specific topic. The process involves people writing ideas onto a sheet of paper, then passing the paper to other members of the group. Participants are given time to read, reflect and expand on each other's ideas. The goal of passing papers is to share ideas, trigger new ideas, and prompt innovative and out-of-the box thinking.

Why use the Brainwriting Approach in Participatory Research?

The brainwriting process is similar to brainstorming in that ideas are being generated and shared in a group. However, the brainwriting process allows for all voices to be heard for no one has to wait their turn or worry that their idea might not be good enough to share. It also minimizes the risk of certain people dominating the conversation or taking the group off topic. A brainwriting session can be hosted by one person and data collection is easy. The participants do all the documentation, so there is no need for recording devices or notetaking.¹⁻⁴ A limitation of the method is the requirement for competency in using written language.

What is a Premortem?

A premortem is the hypothetical opposite of a postmortem. In public health, a postmortem allows a team to learn what caused a patient's death. Everyone benefits, except the patient. The same idea can be translated to research. A premortem in research planning comes at the beginning rather than the end, so that the research plan can be adapted and improved rather than autopsied.⁵ Unlike a typical problem identification session in which participants are asked what *might* go wrong, the premortem pretends/assumes that the research program has been implemented and failed and so asks what *did* go wrong. The stakeholder's task is to generate plausible reasons for the failure.

When should you use the Brainwriting Premortem Approach?

A brainwriting premortem approach is perfect when designing for translation, such as with a recent transitions of care program that was expanded to 11 VA medical centers.⁶ The method engages participants to learn what real or potential barriers exist with a project. Many people are reluctant to speak up about concerns during the planning stages because they think it's already a done deal and don't want to rock the boat. By making it safe for dissenters who are knowledgeable about processes and practices to share their concerns, you can improve a projects chances of success. After these barriers are identified, the research team can review the written information and look for ways to strengthen or adapt the program. This may lead to another brainwriting session that targets specific issues.

Materials and Set-up

Materials:

1. Multiple pens of the same color
2. Multiple sheets of blank paper (write on top of each page, "Why did the program fail?")
3. Sign-in sheet (name, role in the organization or community), if desired

Set-up:

1. Schedule approximately 1 hour for the session:
 - a. Program briefing (30 minutes)
 - b. Brainwriting premortem exercise (10 minutes)
 - c. Debriefing (20 minutes)
2. 4-10 participants per table
3. Place 4-10 chairs around a single table
4. Put plain white paper in the center, equivalent amount to two times the number of participants
5. Place a pack of pens in the center of the table

Brainwriting Premortem Steps

Step 1: Introduce the program being implemented. Allow time for questions before beginning the activity.

Step 2: Introduce brainwriting premortem activity using the script guide:

- We want to get your thoughts on the program we've been discussing. To do this, we are going to start an activity called a brainwriting premortem. This process is going to be different than a traditional group brainstorming activity where everyone shouts out ideas and I write them on a board. We are using a silent, written brainstorming activity. You will be writing out your ideas and then pass the papers to others, so people can agree or expand on them. This is about getting your insights, so we can strengthen or adapt this program.
- To set the stage, I want you to imagine that the program has been running in your organization for about a year, and it's been a huge failure. It's not been producing the promised results. People are not happy about any part of it. We want you to imagine that the program failed so we can identify how to address these failure points proactively.
- I want you to write out specific reasons why the program failed. What aspects of your organization/community made it fail? What aspects of the population made it impossible to be successful? Who dropped the ball? Where were the issues in the system that made this program crash and burn?
- Each of you will start off with a piece of paper. You will have 10 minutes to work. Begin with writing as many reasons why the program failed that pop into your head. When you run out of ideas, put your paper in the center of the table and select a page that someone else has been working on. Read everything on the paper and add to someone else's idea or start a new one. This is a group effort, so you can and should build off each other's ideas.
- As you are reading other ideas, if you see an idea that you agree is important, but you can't expand on it, put a check next to it. If you see an idea you disagree with – write out why. You can then start a new idea, or you can continue writing about the failure point -- go deeper.
- After the 10 minutes is up, I'll collect the papers. The group can discuss or debrief as time allows. Our goal is to use this information to strengthen or adapt the program. I may be reaching out to you again to identify solutions to some of these issues. However, if you have anything particular to share, please contact me directly.
- To give you space to be fully honest and open, we will only be reporting the data from the group, not from individuals. We hope you will dig deep into your daily experiences of working in this organization/community. Be creative, there is no such thing as a bad idea. Though you may be the first to think of something, it may be real to everyone else in the room.

Step 3: Start brainwriting premortem activity. The facilitator's role is to keep people writing!

Step 4: Collect papers and allow group to debrief with each other as needed. You can present the results back to the group at the next meeting and ask them to brainwrite ideas on how to address the barriers identified

References and Resources:

1. Paulus PB, Yang H-C. Idea generation in groups: A basis for creativity in organizations. *Organizational Behavior and Human Decision Processes*. 2000;82(1):76-87.
2. Thompson L. Improving the creativity of organizational work groups. *The Academy of Management Executive*. 2003;17(1):96-109.
3. Heslin PA. Better than brainstorming? Potential contextual boundary conditions to brainwriting for idea generation in organizations. *Journal of Occupational and Organizational Psychology*. 2009;82(1):129-145.
4. Paulus PB, Korde RM, Dickson JJ, Carmeli A, Cohen-Meitar R. Asynchronous brainstorming in an industrial setting: Exploratory studies. *Human Factors*. 2015;57(6):1076-1094.
5. Klein G. Performing a project premortem. *Harvard Business Review*. 2007;85(9):18-19.
6. Gilmartin H, Lawrence E, Leonard C, et al. Brainwriting Premortem: A Novel Focus Group Method to Engage Stakeholders and Identify Preimplementation Barriers. *Journal of Nursing Care Quality*. 2018. https://journals.lww.com/jncqjournal/Abstract/publishahead/Brainwriting_Premortem__A_Novel_Focus_Group_Method.99497.aspx (open access – includes links to toolkit and infographic guide)

BRAINWRITING PREMORTEM GUIDE



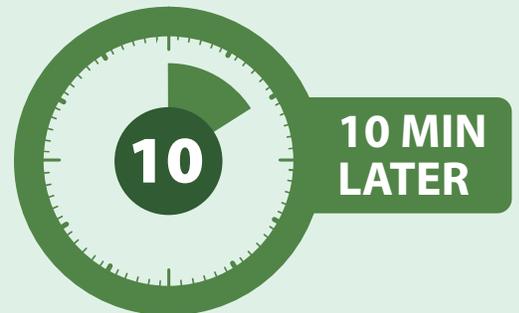
We have a new program we are going to roll-out. We would like your input.



To set the stage, I want you to imagine that the program has been running for about a year, and it's been a huge failure.

I want you to write out specific reasons why the program failed.

Begin with writing out as many ideas that pop into your head.



When you run out of ideas, put your paper in the center of the table. Grab a page that someone else has been working on and read through it. If it prompts more ideas – keep writing!



Thank you. We will use this information to help us adapt and strengthen our program.

Notes:

What is Boot Camp Translation?

A process by which academic researchers and staff and community members partner to translate evidence-based medical information and jargon, and clinical guidelines into concepts, messages, and testable interventions that are locally relevant, meaningful, and engaging to community members.

Why do Boot Camp Translation?

- Medical jargon and concepts may not be meaningful to community members and patients.
- Strategies are needed to improve the lack of meaningful conversations between patients and providers about health and treatment options – and *lack of action* on recommendation.
- Patients and community members who better understand the relevance of a health condition are better prepared to discuss the issue and more motivated to take action.
- Change the local conversation about the health issue.



Boot Camp Translation and the Patient-Centered Care

Boot Camp Translation (BCT) was developed by the High Plains Research Network Community Advisory Council in rural eastern Colorado. BCT addresses the core concepts of patient-centered care by addressing one of the barriers to advancing the quality of care in the United State. Specifically, the process maintains the scientific integrity of the robust evidence base in healthcare while honoring the local and cultural aspects of community and health.

BCT is not a rhetorical process that simply takes guidelines and changes a few medical terms. BCT is not a series of focus groups. BCT is not to be rushed. BCT alters the conceptual framework that patients and community members hold for certain medical conditions.

How has Boot Camp Translation already been used?

BCT has translated evidence-based medical care, guidelines, and recommendations into reliable clinical opportunities for communities on topics such as colon cancer testing, asthma diagnosis and management, high blood pressure care, medication assisted treatment for opioid use disorder, prevention of mental and emotional health problems, and diabetes. Partnerships of community members, health providers, and academicians can successfully determine the message content, tools, and ways to disseminate the messages and tools in ways that maintain scientific integrity and assure they are locally relevant and culturally appropriate.

What's the process?

Boot Camp Translation includes an iterative, flexible schedule combining face-to-face meetings, short focused teleconferences, and emails. Boot Camp Translation requires flexibility and modification. Boot Camp Translation requires about 20-25 hours of participant time over a 8-12 month time span, depending on the scope of the project.

Example Boot Camp Translation Schedule (*this is flexible and tailored to project needs*)

Date	Event	Duration
January 7	In-person Kick Off Meeting: Extended meeting with intense education session, Q&A, reactions	6.5 hours (includes lunch and 2 15-min breaks)
Jan 24	Conference call	30 minutes
Feb 12	Conference call	30 minutes
Feb 22	Conference call (if needed)	30 minutes
March 21	In-person meeting	2-3 hours
April 12	Conference call	30 minutes
April 30	Conference call	30 minutes
May 16	Conference call (if needed)	30 minutes
June 14	In person meeting	2-3 hours
July 2	Conference call	30 minutes
2-3 weeks	Schedule more conference calls as needed	30 minutes
Sept 12	In-person meeting: Review final product or outcome, bring process to close, discuss next steps, celebrate	2 hours

Kick-Off Meetings (6 hours)

Scientific presentation:

- Robust, evidence-based, scientific presentation on the health topic.
- Given by local and state medical experts.
- Provides a common understanding and language for all project team members.

Brainstorming:

- Facilitated conversation to elicit initial reactions from the group.
- No wrong answers or ideas.
- Transitions into initial discussion on key ideas or concepts about the issue (what is the message?) and ways to engage patients/community (how to get the message out?).
- Captures all ideas; often demands a focused facilitator and patience from the group.

Conference Calls (30 minutes)

- Address one specific task.
- Alternate call times so that all members have an opportunity to participate.

Subsequent in-person meetings (2-4 hours)

- Narrow program/intervention focus.
- Refine the conceptual framework and language of the main messages.
- Extended conversations about how to move the intervention messages into the community or practice – strategies that vary depending on target community.
- Finalize materials and distribution plans.

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Don Nease, MD (Training Faculty) donald.nease@ucdenver.edu | 303-724-7283

Mary Fisher, MPH (Training Faculty) mary.fisher@ucdenver.edu | 303-724-9953

Website: www.bootcamprtranslation.org

STAKEHOLDER ENGAGEMENT FOR D4D

Panel Discussion

Learning Objectives:

- Describe the role of stakeholder engagement in Designing for Dissemination
- Identify stakeholder groups relevant to the design, implementation, dissemination, and sustainability of your research products
- Identify appropriate processes for engaging diverse stakeholder partners

Panel Participants:

Matt Kreuter, PhD, Matt Wynia, MD, Shale Wong, MD, MSPH, Don Nease, MD

Notes:

Thought questions related to the panel discussion:

What types of stakeholders have you or do you plan to engage? Who else might be important to engage? How can you begin or enhance your work with stakeholders? What new or different methods of engagement would you like to explore? On the next page, use the 7Ps stakeholder matrix to brainstorm different stakeholder types and specific individuals or organizations you will approach for engagement.

Resources for Stakeholder Engagement

The Engage2020 Action Catalogue: <http://engage2020.eu/news/action-catalogue-an-online-method-tool-that-lets-you-find-the-exact-method-you-are-searching-for/>

Deliberative Democracy Institute Wiki: http://www.delib.org/wiki/index.php?title=Main_Page

CSU Center on Public Deliberation: <https://cpd.colostate.edu/what-is-deliberation/>

Participedia: <https://participedia.net/en/methods/deliberation>

National Coalition for Dialogue and Deliberation: <http://ncdd.org/>

Liberating structures: <http://www.liberatingstructures.com/>

7 P'S STAKEHOLDER MATRIX

Adapted from: Concannon TW, Meissner P, Grunbaum JA, et al. A New Taxonomy for Stakeholder Engagement in Patient-Centered Outcomes Research. J Gen Intern Med. 2012;27(8):985-991.

Stakeholder Category	Definition	Possible Stakeholder Roles	Project Specific	
			What specific groups or individuals will you engage?	What needs, contextual factors, and preferences must be considered?
Patients and the public	Current and potential consumers of patient-centered health care and population-focused public health, their caregivers, families, and patient and consumer advocacy organizations	Decision to become involved in the program? Identify decisions, questions, benchmarks for success, input agent for QI/evaluation, interpret findings, offer solutions		How are these stakeholder types engaged in the project?
Providers	Individuals (e.g., nurses, physicians, mental health counselors, pharmacists, and other providers of care and support services) and organizations (e.g., hospitals, clinics, community health centers, community-based organizations, pharmacies, EMS agencies, skilled nursing facilities, schools) that provide care to patients and populations			
Purchasers	Employers, the self-insured, government and other entities responsible for underwriting the costs of health care			
Payers	Insurers, Medicare and Medicaid, state insurance exchanges, individuals with deductibles, and others responsible for reimbursement for interventions and episodes of care	Decision about paying for program, how to select patients for inclusion in the program, whether to incorporate program into SOP as part of the health plan, how consistent with existing structures and services vs duplicative/overlapping?		

		Project Specific			
Stakeholder Category	Stakeholder Definition	Possible Stakeholder Roles	What specific groups or individuals will you engage?	What needs, contextual factors, and preferences must be considered?	How are these stakeholder types engaged in the project?
Policy makers	The White House, Department of Health and Human Services, Congress, states, professional associations, intermediaries, and other policy-making entities; public policy makers and policy advocates working in the non-governmental sector.				
Product makers	Drug and device manufacturers; industry partners				
Principal investigators	Other researchers and their funders	Funders and investigators can begin immediately to identify appropriate intermediate and long-term benchmarks for evaluating the effectiveness of engagement, keeping in mind that the optimal organization			

DESIGNING FOR YOUR MARKET

Plenary Address with Dr. Matt Kreuter

Title: Enhancing Dissemination for Health Equity: A Marketing and Distribution Perspective

Learning Objectives:

- Describe the difference between expert and user review, and how to get more of the latter
- Describe the importance of demand and how to detect its presence or absence
- Describe how to apply a marketing approach to maximize acceptance and spread

Notes:

Thought questions for marketing strategies for your own work:

What industries might you need to engage for getting your product to market? What team expertise is needed to prepare marketing materials? What resources are available on campus or in the community for promotion & marketing?

DESIGNING FOR OPERATIONAL PARTNERS

Panel Discussion

Learning Objectives:

- Describe the unique needs and perspectives of different operational partners
- Identify successful strategies for working with operational partners to design interventions or design implementation and dissemination strategies

Panel Participants:

Amy Friedman, MA, Cari Levy, MD, PhD, Romana Hasnain-Wynia, PhD, Judy Shlay, MD

Notes:

Thoughts questions related to the operational panel discussion:

Who are your key operational partners? What does your operational partner need from a researcher to design interventions and implementation strategies? What Products (Implementation or Dissemination Tools) are needed for implementation to meet operational partner's needs? You may want to return to the stakeholder matrix, the methods matrix, and the adaptations brainstorming page to add to your list of who to engage, what D4D methods may be used, and what adaptations may be needed to fit the needs of operational partners.

DESIGNING FOR THE POLICYMAKER

Plenary Address with Dr. Shale Wong

Title: Designing for Your Policy Maker

Learning Objectives:

- Identify processes for engaging policymakers
- Identify outcomes that matter to policymakers
- Identify packaging and distribution channels for communicating to policy makers

Notes:

Thought questions keeping policy in mind:

What aspects of your work rely upon health policy and/or national funding priorities? How might you engage policymakers to support dissemination and sustainability of your research products?

YOUR DESIGNING FOR DISSEMINATION PLAN

Throughout this workshop, you have drafted various components of a Designing for Dissemination (D4D) Plan. Recall that the definition of D4D is *the process of ensuring that the products of research (interventions, materials, and findings) are developed in ways that match well with the needs, resources, workflows, and contextual characteristics of the target audience and setting*. Your D4D plan includes:

- Identification of key stakeholders that should be engaged to ensure products are designed for the needs and characteristics of the target audience and setting (See Stakeholder Matrix; reflect upon operational partners panel, stakeholder panel, and Wong plenary)
- Consideration of design features, core elements, and adaptations of your research products to promote feasibility and sustainability in the target context (See Adaptations Brainstorming, reflect upon notes from Rabin and Chambers plenaries and Context Roundtable Discussions)
- Identification of D4D Methods (processes) used to create and disseminate products (interventions, materials, knowledge) (See Methods Brainstorming Matrix, reflect upon notes for Kreuter plenary)

D4D Plan Elements

Stakeholders, Context, and Setting	<u>Who are the stakeholders? What context and settings are relevant?</u>	<u>What needs, resources, workflows, and contextual characteristics must be considered?</u>
Processes	<u>What approaches, frameworks, and methods will I use for design, engagement, and marketing?</u>	<u>What resources and expertise do I need on my team?</u>
Outcomes	<u>What outcomes matter to the stakeholders? How will I measure these outcomes?</u>	<u>What methods and platforms will I use to communicate outcomes to the target audience?</u>
Products	<u>What is the research product?</u>	<u>What are the core elements and adaptations needed to ensure feasibility and sustainability?</u>

D4D REFERENCES AND RESOURCES

Suggested readings, interactive tools, education, and templates

BOOKS:

Brownson R. C., Colditz, G. A. & Proctor, E. K. (Eds.) (2018). *Dissemination and Implementation Research in Health: Translating Science to Practice* (Second edition). Oxford; New York: Oxford University Press.

Authoritative edited reference book in the D&I science field. Recently updated and contains several chapters on theories, approaches, user centered design and the research literature related to designing for dissemination (D4D). Best single source on D&I science.

Green, L. W., Kreuter, M. W. (2005). *Health Program Planning: An Educational and Ecological Approach* (Fourth edition). New York: McGraw-Hill.

Classic book on the PRECEDE-PROCEED model for public health planning and evaluation. Contains research, practice and policy applications of this widely used model.

Kotler P, Keller KL. *Marketing Management*. (2016). Harlow, England. Pearson Education Limited.

An introduction to health and social marketing.

Rogers, EM. *Diffusion of Innovations*. 5th edit. New York: Free Press 2003.

The classic text on how opinions, ideas and products diffuse over time through communication channels and networks. The 'DOI' model and its variants are still among the most widely used models of designing for dissemination. The DOI model's concepts such as early vs. late adopters and diffusion curves have had a seminal influence on D4D.

WEBSITES:

Designing for Dissemination Tool - <http://design4dissemination.com/home>

Free, on-line tool to guide users on how a project can be designed with greater dissemination potential. Provides a series of questions and produces a tailored printout on suggestions for producing products more likely to disseminate successfully

Dissemination & Implementation (D&I) Models - <https://www.dissemination-implementation.org>

Website developed by Dr. Rabin and colleagues summarizing and providing guidance on selection and use of over 90 D&I theories and frameworks and their application.

National Cancer Institute Implementation Science - <https://cancercontrol.cancer.gov/IS/>

Website of Dr. Chambers implementation science program at NCI; has information and resources on a variety of D&I topics, resources, coming events and research funding.

ACCORDS D&I Program <http://www.ucdenver.edu/accords/implementation>

Our D&I program website that provides information on D&I related events, publications and presentations, and a variety of D4D resources

KT planning tool - https://www.melaniebarwick.com/KTTemplateFillable_dl.php

Melanie Barwick. (2016). Building Scientist Capacity in Knowledge Translation: Development of the Knowledge Translation Planning Template. *Technology Innovation Management Review*, 6(9), 9-15. This fillable pdf walks users through various aspects of their intervention design process to support planning for knowledge translation.

RESEARCH AND PRACTICE ARTICLES ON D4D:

Article titles linked to full text article (in PDF online—<https://goo.gl/S6Kn46>)

Brownson, R., Eyler, A., Harris, J., Moore, J., & Tabak, R. (2018). Getting the Word Out: New Approaches for Disseminating Public Health Science. *Journal of Public Health Management and Practice* 24(2), 102-111.

Summarizes lessons learned and concludes that dissemination efforts need to take into account the message, source, audience, and channel. Practitioners and policy makers can be more effectively reached via news media, social media, issue or policy briefs, one-on-one meetings, and workshops and seminars.

Chambers, D. A., Glasgow, R., & Stange, K. C. (2013). The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. *Implementation Science*, 8, 117.

To address changes in context over time, this article proposes a Dynamic Sustainability Framework that involves: continued learning and problem solving, ongoing adaptation of interventions with a primary focus on fit between interventions and multi-level contexts, and expectations for ongoing improvement as opposed to diminishing outcomes over time.

Chambers, & Norton. (2016). The Adaptome: Advancing the Science of Intervention Adaptation: Advancing the Science of Intervention Adaptation. *American Journal of Preventive Medicine*, 51(4), S124-S131.

This paper argues for the development of strategies to advance the science of adaptation in the context of implementation. Efforts to build the resulting adaptome will include the construction of a common data platform to house systematically captured information about variations in delivery of evidence-based interventions across multiple populations and contexts, and provide feedback to intervention developers, as well as the implementation research and practice communities.

Cohen, E. L., Head, K. J., McGladrey, M. J., Hoover, A. G., Vanderpool, R. C., Bridger, C., ... Winterbauer, N. (2015). Designing for Dissemination: Lessons in Message Design From "1-2-3 Pap." *Health Commun* 30(2), 196–207.

An illustrative case study that describes how careful planning and partnership development early in the intervention development process can improve the success of enhancing the reach and effectiveness of an intervention to other audiences beyond the audience for whom the intervention messages were originally designed.

Dearing, & Kreuter. (2010). Designing for diffusion: How can we increase uptake of cancer communication innovations? *Patient Education and Counseling*, 81(1), S100-S110.

This paper describes design activities that can be applied and combined for the purpose of spreading effective cancer communication innovations including lessons learned from diverse literature on dissemination and design principles and social systems to support the design of evidence-based intervention with high dissemination potential.

Dearing JW, Smith DK, Larson RS, Estabrooks CA. (2013). Designing for diffusion of a biomedical intervention. *Amer J of Prev Med* 44: (1S2): 70-76.

Discusses how DOI concepts can be applied during planning for roll-out of an evidence based intervention for HIV prevention. Discusses the importance of formative evaluation and knowing one's target audience.

Green LW, Ottoson JM, Garcia C, Hiatt RA. (2009). Diffusion theory and knowledge dissemination, utilization and integration in public health. *Ann Review Public Health* 30: 151-174.

A strategic review of the literature and public health impact and implications of dissemination/diffusion interventions. Discusses how DOI can be combined with other theories and D&I models and methods to produce population impact.

Finlayson, M., Cattaneo, D., Cameron, M., Coote, S., Matsuda, P., Peterson, E., & Sosnoff, J. (2014). Applying the RE-AIM Framework to Inform the Development of a Multiple Sclerosis Falls-Prevention Intervention. *International Journal of MS Care*, 16(4), 192-7.

Illustrates how RE-AIM can be used to help design a program to prevent falls among people with multiple sclerosis (MS). Used RE-AIM questions to structure initial discussions with clinicians, people with MS, and representatives of professional societies, and addressed factors important to consider in the development of a broadly applicable program.

Johnson KJ, Tuzzio L, Anne Renz A, Baldwin L, Parchman M. Decision-to-Implement Worksheet for Evidence based Interventions: From the WWAMI Region Practice and Research Network. *J Am Board Fam Med* 2016;29:553–562.

Provides a resource for primary care practices to assess whether evidence-based interventions are suitable to adopt or adapt to meet their needs.

Kreuter MW, Bernhart J. (2009). Reframing the dissemination challenge: A marketing and distribution perspective. *Amer J Public Health* 99: 2123-2127.

Critiques standard approaches to disseminating evidence based programs and explains how and why a marketing and distribution system would enhance dissemination.

Moore, JE, Uka S, Vogel JP, Timmings C, Rashid S, Gülmezoglu AM, Straus, SE. (2016). Navigating barriers: Two-year follow up on recommendations to improve the use of maternal health guidelines in Kosovo. *BMC Public Health*, 16(1), 1-14.

Provides a qualitative process evaluation of progress, barriers, facilitators, and proposed solutions to operationalize nine recommendations to prepare Kosovo to implement World Health Organization (WHO) prevention and treatment of postpartum hemorrhage guideline.

Purtle, J., Peters, R., & Brownson, R. (2016). A review of policy dissemination and implementation research funded by the National Institutes of Health, 2007–2014. *Implementation Science* : 15,11(2), 1.

Summarizes all policy related dissemination projects funded by the NIH during the years noted.

Timmings, C., Khan, S., Moore, J., Marquez, C., Pyka, K., & Straus, S. (2016). Ready, Set, Change! Development and usability testing of an online readiness for change decision support tool for healthcare organizations. *BMC Medical Informatics and Decision Making*, 16(24), 24.

Discusses the development of and user centered design for an implementation support tool to facilitate the routine incorporation of a readiness assessment as an early step in implementation. Designed to help practices to save time and resources for implementation.

LOCAL TRAINING OPPORTUNITIES & FUNDING OPPORTUNITIES:

Colorado School of Public Health Courses

- T4 Introduction to Implementation Science in Health
Instructor: Borsika Rabin, PhD, MPH
- T4 Designs and Mixed Methods in Implementation Research
Instructor: Jodi Summers Holtrop, PhD, MCHES
- Designing for Dissemination and Sustainability
Instructor: Elaine Morrato, DrPH, MPH, CPH

Colorado Clinical and Translational Sciences Institute (CCTSI)

- Colorado Immersion Training
- Pilot Grant Program
- Boot Camp Translation

Data to Patient Value (D2V)

- Pilot Grant Program
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