Designing for Dissemination and Sustainability: Opportunities for Enhancing the Impact of the Implementation Science Centers in Cancer Control (ISC$^3$)

Bethany M. Kwan, PhD, MPSH
Associate Professor and Associate Vice Chair for Research
Department of Emergency Medicine, University of Colorado School of Medicine
Adult & Child Center for Outcomes Research & Delivery Science (ACCORDS)
Director of Dissemination and Implementation Research, Colorado Clinical & Translational Sciences Institute
Making Sustained, Equitable Impacts on Health through D&I

Effective interventions

Implementation strategies

Implementation

Reach

Sustained and equitable impacts on health

Sustainability Plans

Dissemination strategies

Adoption

Health Equity Orientation
Dissemination

• An active approach of spreading evidence-based interventions to the target audience via determined channels using planned strategies

Barriers to Dissemination and Sustainability

- Poor fit between health innovations and intended context for use
- Research paradigms used to develop and test programs
- Cultures and systems that fail to incentivize and support active dissemination and translation of evidence into practice
Ensuring Fit to Context

• “Designing for Dissemination and Sustainability”
  • Enhancing the fit between a health program, policy, or practice and the context in which it is intended to be adopted
  • Early and active planning for dissemination and sustainability

• Designing for dissemination
  • the process of ensuring that the products of research are developed to match the contextual characteristics of the target audience and setting for intended use

• Designing for sustainability
  • early planning and design processes designed to increase the likelihood of sustainment of an evidence-based program or practice after initial implementation

Designing for Dissemination and Sustainability to Promote Equitable Impacts on Health
Annual Review of Public Health 2022 43:1, 331-353
Planning for Active Dissemination: Six-Step Dissemination Framework

- **Describe**
  - Describe the innovation, rationale, and evidence base

- **Identify**
  - Identify the target audience and the sequence, timing, and format for dissemination

- **Select**
  - Select the communication channels

- **Determine**
  - Determine the role of key policymakers and partnerships

- **Identify**
  - Identify the barriers and facilitators for dissemination

- **Research and evaluate**
  - Research and evaluate the dissemination process.

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D4DS Design Processes

The methods, frameworks or approaches used to develop and test the research product; product messages, packaging, and distribution plans; and sustainability plans

Co-design

Using Design Thinking Methods to Create a Stakeholder Engagement Method Navigator Webtool for Clinical and Translational Science

**Purpose:** The Stakeholder Engagement Navigator is an interactive webtool designed for use by researchers. It was created to help researchers choose engagement strategies while considering budget, timeline, stakeholder availability, and team expertise.

### EMPATHIZE
- Review literature
- Conduct environmental scan
- Coordinate consults
- Host workshops
- Conduct ethnography

### DEFINE
- Clarify core needs and problems
- Conduct method review and classification
- Determine user perspectives on classification

### IDEATE
- Develop educational content
- Prioritize webtool features
- Storyboard website

### PROTOTYPE & TEST
- Develop prototype
- Start user testing
- Begin web development
- Conduct Think Aloud testing
- Incorporate feedback

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[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8596067/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8596067/)
Application of Dissemination and Implementation Science Process Frameworks

Systematic review of the Exploration, Preparation, Implementation, Sustainment (EPIS) framework

Joanna C. Moulin*1, Kyley S. Dickson1,2, Nicole A. Stodnick1,2, Borsla Robin2 and Gregory A. Aarons1,2*
Application of D&I Context, Determinants, and Evaluation Frameworks
Context and Situation Analysis

A formal assessment of the audience, needs, setting, workflows, processes, policies, resources, and systems in which a health innovation is intended to be used.
Marketing and Business Approaches

Multi-stage development process: (1) problem-solution fit; (2) product-market fit; and (3) business model fit
Systems and Complexity Science

- Systems thinking: The process of understanding how things influence one another within a whole (Rabin & Brownson, 2017)
- Complex adaptive systems with system dynamics models

Communication and the Arts

• Social marketing
  • “a social influence technology involving the design, implementation and control of programs aimed at increasing the acceptability of a social idea or practice in one or more groups of target adopters” (Kotler and Roberto, 1989).

• Audience Tailoring and Targeting
Fit to Context Framework

Four-phase process framework

Considers design of a research product and dissemination and sustainability plans from the perspective of ensuring fit to context

Products being designed are:
- Culturally appropriate
- Feasible for use in resource-limited settings
- Align with the strengths and assets of the intended audience and setting
- Impact outcomes that matter to communities and partners

Fit to Context (F2C) Framework for D4DS

Designing for Dissemination and Scale-Up of Equitable Access to Treatment for COVID-19

case example
Implementation and Real-world Effectiveness of Monoclonal Antibodies for High-Risk Outpatients with COVID-19
Dissemination, Implementation, and Real-World Effectiveness of Neutralizing Monoclonal Antibody Therapy for COVID-19

Using a type 2 hybrid implementation-effectiveness design:

• Aim 1: Assess barriers and facilitators to use of mAbs statewide, based on diffusion of innovations theory
• Aim 2: Develop, implement, and evaluate innovative strategies statewide to optimize equitable mAb access
• Aim 3: Determine the real-world effectiveness and safety of mAb treatment in high-risk COVID-19 outpatients

Goals

• Develop scalable infrastructure for real-time, implementation and real-world effectiveness data for mAb treatment
• Help policymakers, clinicians, and patients manage issues of uncertainty, risk, urgency, equity, and resource limitation
• Create a model for rapidly generating high quality real-world evidence in infectious disease pandemics and other future public health emergencies

NCATS 3UL1TR002535-03S3; 3UL1TR002535-04S2 (03/15/2021-04/30/2023)
Lilly announces proof of concept data for neutralizing antibody LY-CoV555 in the COVID-19 outpatient setting

Regeneron’s COVID-19 Outpatient Trial Prospectively Demonstrates that REGN-COV2 Antibody Cocktail Significantly Reduced Virus Levels and Need for Further Medical Attention


REGN-COV2, a Neutralizing Antibody Cocktail, in Outpatients with Covid-19
July 14, 2021

Bamlanivimab plus Etesevimab in Mild or Moderate Covid-19

M. Dougan, A. Nirula, M. Azizad, B. Mocherla, R.L. Gottlieb, P. Chen, C. Hebert,

September 29, 2021

REGEN-COV Antibody Combination and Outcomes in Outpatients with Covid-19

D.M. Weinreich, S. Sivapalasingam, T. Norton, S. Ali, H. Gao, R. Bhore, J. Xiao,

October 27, 2021

Early Treatment for Covid-19 with SARS-CoV-2 Neutralizing Antibody Sotrovimab

Anil Gupta, M.D., Yaneicy Gonzalez-Rojas, M.D., Erick Juarez, M.D.,
Proposed factors related to low utilization of COVID-19 mAbs

- Lack of awareness, interest, confidence in therapies among patients and providers
- Lack of interest/ability/resources to travel to treatment sites
- Requirement to defer vaccination
- Lack of access to health care
- Out of pocket costs
- Seeking treatment too late
D4DS: Fit to Context Phases

**Conceptualization:**
- Assessing context & barriers and facilitators to equitable mAb access
  - Establish partnerships
  - Diffusion of innovations
  - Surveys and interviews with clinicians
  - Surveys and focus groups with community members

**Design:**
- Co-design activities
  - Stakeholder advisory panel
  - Community engagement studios
  - Community messaging and materials
  - Implementation blueprint & provider referral checklist

**Dissemination:**
- Leveraging Existing Capacity and Distribution Channels
  - Regional Health Connectors: distribution of messages and materials to regional contacts
  - Practice-Based Research Networks: distribution to rural practices
  - mAb Colorado project website and social media
  - Echo Colorado
  - Paid media campaign

**Impact:**
- Use of Real-World Data to Evaluate Adoption and Reach
  - State health department’s mAb connector tool
mAb Colorado Partners

- Project Team, CU Anschutz/CCTS
- NCATS
- UCHealth
- Tri-county Health Department
- CDPHE
- Denver Health/DPH
- El Paso County Health Department
- Colorado Clinical and Translational Sciences Institute (CCTS)

Health organization partners
- Patient survey firm
- Regional Health Connectors
- Media partner
- GIS Mapping collaborator
- Creative design partners
- Community engagement partners
Systems and Processes for Outreach and Access to Care

- Describe the range of systems and processes for outreach and accessing treatment
- Focus on equity
- Coordination with Colorado Department of Public Health & Environment:
  - Messaging
  - Tracking mAb utilization
- UCHealth Virtual Health Center (VHC):
  - Centralization benefits
  - Acceptance of orders from VHC providers
Barriers and Facilitators to Use of mAbs for COVID-19

• **Community awareness** of the need for timely testing and effective treatment available for all (not just the wealthy and connected)

• **Clinician education** about monoclonal antibody treatment for COVID-19 including strength of evidence, eligibility criteria, and how to access treatment

• Clear guidance on implementation and use of referral processes

• Addressing **inefficiencies** in relying upon individual providers to identify eligible patients, discuss treatment, find a treatment location, and complete a referral

• Assurances regarding **costs of care** especially for the uninsured
Clinician Experience with Referral Systems and Processes

- **mAb referral process**
- **Step 1.** Assess eligibility
- **Step 2.** Discuss treatment with patient
- **Step 3.** Determine treatment location
- **Step 4.** Issue referral and order for treatment

Community Member Survey and Focus Group Insights

- Little baseline knowledge about monoclonal antibody treatment
  - Especially among Spanish-language participants
- Overall positive impression of monoclonal antibody treatment
- Key questions to be answered in information about mAb
  - Who can get it?
  - How can you get it?
  - How much does it cost?
  - What are the side effects?
- Priorities
  - Spread the Word—information about mAb should be shared across all available media
  - Make it easy—reduce barriers to obtaining mAb treatment when needed
  - Don’t make it political—right now mAb treatment is not politicized, keep it that way
  - Equitable access
Community and Partner Priorities

• Equitable access to care
  • Rural areas
  • Racial and ethnic minorities
    • Hispanic/Latino
      • Spanish-speaking communities
    • Native American communities
  • People who were:
    • Uninsured/underinsured
    • Undocumented
    • Unhoused
mAb Stakeholder Advisory Panel
Community Engagement Studios

COVID testing site
- flyers/ handouts
- run provider hotlines
- RISA help
- PHLA to distribute

Regional Health Directors
- need a tool
- help communities connect to mAbS info
- what works best for CLINICS

Elena
- Mesa County Partnership
- need clear direction for the ‘ask’
- testing what works
- Great Connections in rural communities
- Chip: Chip testing 21st patient today
- also direct mailer to zip codes

(SAP)

Paid Media
- Social Media
- Radio
- Summer Jam

EQUITABLE ACCESS

Pilot w/ Tri County Health
Community Messaging Materials

See below for materials you can share with members of your organization or community about monoclonal antibody (mAb) treatments for COVID-19.

We are able to provide a limited number of printed materials mailed to you free-of-charge. If you would like to distribute printed materials to members of your organization or community, complete this order form.

Did You Test Positive for COVID-19? ACT FAST!

Positive for COVID-19? MONOCLONAL ANTIBODY TREATMENT Can Keep a Mild Case From Becoming Worse

Download flyer versions in English and Spanish with basic information about mAb treatments. Can be printed front-to-back.

Pay the Full Cost of Treatment

Antibody Treatment Works Against the COVID-19 Virus

Download document versions in English and Spanish with answers to common questions about mAb treatments.

WHO CAN GET MONOCLONAL ANTIBODIES?

Download images to be shared as social media posts.

Stop COVID-19 Symptoms Fast With Antibody Treatment

Download flyer versions in English and Spanish with information about mAb treatments.

Fighting COVID-19 with monoclonal antibodies (mAbs) one patient at a time!

¿Dio positivo para COVID-19? Actua Rapido


Para obtener mas información acerca del tratamiento de anticuerpos siga estos pasos:

- **Llame a un proveedor médico de inmediato**
  - Llame a su proveedor de atención primaria o de atención urgente.
  - Déjales cuándo tuvo los primeros síntomas de COVID-19.
  - Déjales si tiene algún otro problema de salud.
  - Pregúntenles si pueden ayudarle a obtener tratamiento con anticuerpos monoclonales.

- **Obtenga una referencia a una clínica**
  - Si el tratamiento con anticuerpos se adecuado para usted, el proveedor hará una referencia a una clínica cercana a usted donde usted pueda obtener el tratamiento. Le darán la dirección y el número de teléfono de la clínica.

Muchos planes de salud pueden pagar el costo total del tratamiento

El tratamiento con anticuerpos funciona contra la variante delta COVID-19
Health Care Provider Messages & Materials

MONOCLONAL ANTIBODY TREATMENT TO PREVENT SEVERE COVID-19

GUIDE FOR HEALTH CARE PROVIDERS

1. Is my patient eligible?
   - YES
   - NO

2. Is my patient interested?
   - YES
   - NO

3. Options to find an infusion center with your patient:
   - Choose an infusion center on the CO-OPs website and complete the online form.
   - Use the Colorado Infusion Center Map.

4. How can I arrange treatment?
   - There is no cost for the medication; the federal government pays for the medication.
   - The infusion facility is covered by Medicare, Medicaid, and commercial insurance. Patients may be billed co-pays and co-insurance. Self-pay patients may be charged a facility fee for the infusion.
   - If a patient is self-pay, all of the infusion center will charge the patient for insurance. Patients without insurance who have a federally-qualified health center for care, like Denver Health or Urgent Care, would likely receive no bill.

5. Is there a cost for insurance?
   - NO

For more information or to find an infusion center near you:
Call 1-877-332-6585 (English) or 1-877-366-0310 (Spanish), or visit combatcovid.hhs.gov.

www.mAbColorado.org

ANTIBODY TREATMENT TO PREVENT SEVERE COVID-19

ARE YOU ELIGIBLE?

- HAVE YOU TESTED POSITIVE FOR COVID-19?
- ARE YOU HOSPITALIZED OR ON OXYGEN?
- DO YOU HAVE COVID-19 SYMPTOMS?
- DID YOUR SYMPTOMS START IN THE PAST 10 DAYS?
- ARE YOU AT LEAST 65 YEARS OF AGE OR OLDER?
- ARE YOU AT LEAST 80 YEARS OF AGE?

YOU ARE NOT ELIGIBLE

YOU MAY BE ELIGIBLE

- Older age - 65 years of age or older
- Obesity or being overweight - adults with body mass index of 25 or more. Children in the 95th percentile
- Arthritis or joint pain
- Hypertension
- Chronic kidney disease
- Diabetes

ANY RISK CONDITIONS

- Immunocompromising disease/condition requiring immunosuppressive treatment
- Congenital disorder or hypotension
- Chronic respiratory disease
- Neurodevelopmental disorders
- Any other medical condition or factor - including race or ethnicity - associated with increased risk

For more information or to find an infusion center near you:
Call 1-877-332-6585 (English) or 1-877-366-0310 (Spanish), or visit combatcovid.hhs.gov.
COVID-19 Monoclonal Antibody (mAb) Implementation Blueprint

How to Use This Document
This implementation blueprint includes common resources and specific modules. Modules can be reviewed individually.

Modules:
- Referral to mAb Treatment Sites
- Intravenous Treatment
- Subcutaneous Treatment (only REGEN-Cov)
- Local Public Health Processes

Appendix:
Educational Resources
Sample Discharge Instructions
Sample Standing Orders

OVERALL PURPOSE
Increasing Access to COVID-19 mAbs

This guide aims to provide practical guidance to help clinicians and other key stakeholders increase awareness and access to COVID-19 mAbs for outpatients with mild to moderate SARS-CoV-2 infection. In different Modules, we provide resources and examples of clinical workflows to increase:

- Referral to health care settings offering mAbs
- Intravenous treatment with mAb cocktails
- Subcutaneous treatment (e.g. REGEN-Cov)
- Local public health agency processes for increasing referrals to mAbs

This guide also includes patient and clinician handouts.

This implementation blueprint, including its component patient and clinician handouts, were developed between June 2021-December 2021. Information provided reflects information gathered prior to the rapid spread of the Omicron variant of the SARS-CoV-2 virus.
Models for mAb Referrals and Clinical Delivery

- CDPHE mAb Connector Tool and Infusion Center Map
- UCHealth Virtual Health Center (VHC)
- Tri-County Health Department case investigator referrals to the VHC
- Denver Health Urgent Care
- Mobile mAb buses
- Call center
Paid Media Campaign

- Website – www.mAbColorado.org
- Facebook and Instagram ads
- Web banner ads
- Google Search ads
- Direct mail postcards (Adams, Pueblo, Weld Counties)
- Radio partnerships

*Denver Metro*  
- KBNO
- KQKS

*Western Colorado*  
- KEKB
- KNZZ
- KKNN

If You Have COVID-19 Symptoms

If you have COVID-19 symptoms, do **TEST**, **TREAT**, and **ISOLATE**. Treat COVID-19 with MONOCLONAL ANTIBODIES. Find out more at www.mAbColorado.org.
Paid Media Campaign

Persons Reached by Digital Ads
- Banner Ads: 752,785
- Facebook: 101,587

Facebook Engagement
- Reactions: 2,836
- Comments: 644
- Saves: 567
- Shares: 1296
  - Expands reach exponentially

Digital Ads Impressions Total: 8,733,962

Direct Mail Households: 47,679

Website Sessions Total: 23,540
Average Time Spent on Landing Page: 50 seconds

Top Website Sessions by City
- Denver: 3,091
- Grand Junction: 1,256
- Colorado Springs: 1,173
- Aurora: 795
- Greeley: 590
- Montrose: 566
- Pueblo: 451
- Lakewood: 402
- Fort Collins: 380
### Clinical Audiences

<table>
<thead>
<tr>
<th>Organization</th>
<th>Event Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado Department of Public Health and Environment</td>
<td>Dept of Emergency Medicine Town Hall</td>
</tr>
<tr>
<td>Colorado Association of Local Public Health Officials</td>
<td>Urgent Care Association Members</td>
</tr>
<tr>
<td>MHHA (Mile High Health Alliance)</td>
<td>UCHealth Seniors Clinic</td>
</tr>
<tr>
<td>TCHD (Tri-county Health Department)</td>
<td>Berkeley Home Health</td>
</tr>
<tr>
<td>ECHO Webinars</td>
<td>CAFP (Colorado Academy of Family Physicians)</td>
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<tr>
<td>Practice Learning Collaborative group</td>
<td>CCTSI CU-CSU Summit</td>
</tr>
<tr>
<td>El Paso County Public Health</td>
<td>Geriatric Ground Rounds</td>
</tr>
<tr>
<td>El Paso Board of Commissioners</td>
<td>Quality Health Network (QHN)</td>
</tr>
<tr>
<td>COVID Check Colorado</td>
<td>Colorado Community Health Network (CCHN)</td>
</tr>
<tr>
<td>Pueblo County Provider Roundtable</td>
<td>Centennial LabX</td>
</tr>
</tbody>
</table>

**Number reached through mAb Colorado presentations:**

**2,000+ people**
Ask your doctor about TREATMENTS FOR COVID-19

If you or a loved one test positive for COVID-19, treatments are available that can help prevent severe illness.

✓ Test early to see if you have COVID-19.
✓ Treatments are often only available if you take them within five days of when you first felt symptoms.
✓ Some treatments help reduce the risk of hospitalization from COVID-19 by 90%.
✓ Have questions about COVID-19 treatments? Visit covid19.colorado.gov/treatments or call 877-CO-VAX-CO.
✓ Treatments are available at nearly 600 locations across Colorado. Find the nearest location by scanning the QR below.

COLORADO Department of Public Health & Environment
Unique Providers Referring Monoclonal Antibody Treatment, Colorado, February to July 2021

Total number of unique providers referring patients for monoclonal antibody treatment across all sites (light blue line) and the total number of referrals from these providers (dark blue line).

Delta surge
mAb Colorado D&I campaigns launch
Data as of 12/31/21
Unique Providers Referring Monoclonal Antibody Treatment, Colorado, February to December 2021

Total number of unique providers referring patients for monoclonal antibody treatment across all sites (light blue line) and the total number of referrals from these providers (dark blue line).
Colorado Clinical and Translational Sciences Institute (CCTSI)

UNIVERSITY OF COLORADO DENVER | ANSCHUTZ MEDICAL CAMPUS

mAb Colorado team

- Principal Investigators
  - Adit Ginde, MD, MPH
  - Ron Sokol, MD (CCTSI PI)
- Dissemination and Implementation Lead
  - Bethany Kwan, PhD, MSPH
- Clinical Lead
  - Matt Wynia, MD, MPH
- Informatics Lead
  - Tellen Bennett, MD, MS
- Biostatistics Lead
  - Nichole Carlson, PhD
- Administrative Lead
  - Tim Lockie, MS, MBA
Adopt a D4DS mindset

Consider who will use your product, under what circumstances, and to address what urgent need – design studies to test your product IN and FOR THAT CONTEXT

Expect the need to pivot and adapt over time

Enhance skills and capacity in the team

Team science
Communication
Graphic design
Systems and engineering
Data science

Build and leverage systems and infrastructure for distribution and marketing

Practice-based research networks
Cooperative Extension Services
Public Health Agencies
Health System Communications

Incentivize dissemination beyond academic journals and conference presentations

Promotion criteria includes equity and impact
Questions?

Thank you!

Bethany.kwan@cuanschutz.edu