

A Stakeholder Engagement Method Navigator Webtool for Clinical and Translational Science - Supplementary Material

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D2V DICE Core Team Composition, Consultants, Collaborators, and Additional Resources

D2V DICE core team composition:

The Data Science to Patient Value (D2V) Dissemination, Implementation, Communication, Ethics and Engagement (DICE) core includes leaders from our local CTSA, bioethicists, clinicians, health services researchers, D&I scientists, and communication, instructional design, and user-centered design experts.

Roles and expertise:

- Marilyn Coors, PhD: Bioethicist
- Matt DeCamp, MD, PhD: Bioethicist and clinician
- Doug Fernald, MA: Qualitative research methods expert
- Kaylee Gordon, MPH: Project manager; Provided connection to CCTSI engagement core
- Meleah Himber, M.Ed: Community outreach liaison, instructional design/curriculum development expert
- Bethany Kwan, PhD: Dissemination and implementation scientist
- Julie Maertens, PhD: Project manager
- Suzanne Millward, MPH: Project manager
- Brad Morse, PhD: User-centered design expert
- Jenna Reno, PhD: Dissemination and communication scientist
- Julie Resselam, MPH: Research coordinator
- Montelle Tamez: Deputy Director of Engagement, CCTSI
- Robyn Wearner, MA: Instructional design expert
- Matthew K. Wynia, MD, MPH: Bioethicist, clinician, patient and clinician engagement expertise
- Kate Ytell, MPH: Project manager

Consultants:

- Erika Blacksher, PhD: John B. Francis Chair in Bioethics, Center for Practical Bioethics, Kansas City, MO; Research Professor, Department of History and Philosophy of Medicine, University of Kansas Medical Center; Affiliate Associate Professor, Department of Bioethics and Humanities, University of Washington
 - Provided engagement methods expertise
- Seth Russell, MS: Research Analytic Instructor, Data Science to Patient Value, University of Colorado Anschutz Medical Campus
 - Consulted regarding recommender/filtering systems for webtool
- Andrey Soares, PhD: Assistant Professor, School of Medicine, University of Colorado Anschutz Medical Campus
 - Consulted regarding recommender/filtering systems for webtool
- Fuyong Xing, PhD: Assistant Professor, Department of Biostatistics and Informatics, Colorado School of Public Health, University of Colorado Anschutz Medical Campus
 - Consulted regarding recommender/filtering systems for webtool

Collaborations:

- CCTSI community engagement core: Educational workshop on principles of community engagement and prioritization survey at Community Engagement Forum

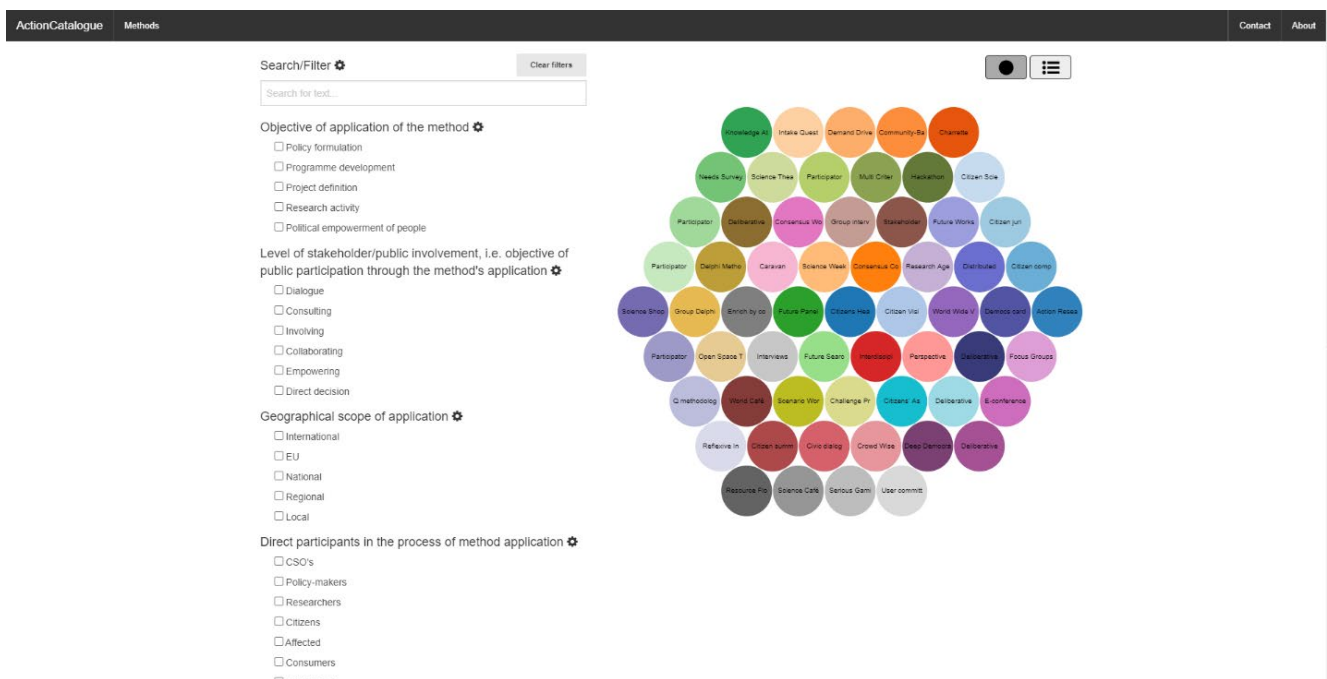
Additional resources:

- University of Colorado Office of Information Technology: Web development services

Environmental Scan/Analogous Research

Our team sought inspiration from outside of the health services industry, exploring the ways that other groups have sought to create selection webtools related to stakeholder engagement. This environmental scan, or “analogous research” as it is referred to in the design thinking world, revealed two examples: Engage2020’s Action Catalogue²⁸ and Participedia²⁹. While neither tool focuses on the specific needs of health researchers, both provided valuable design ideas for our webtool.

One particularly attractive feature of the Action Catalogue was the way in which results are presented in an intuitive and interactive display: each engagement method is a “bubble” that grows smaller or larger as the user inputs additional information about their engagement needs, with larger bubbles reflecting methods more likely to be useful. This feature evoked a sense of playfulness that we decided to incorporate into our webtool.



We also identified limitations to address as we developed our webtool. For example, while we felt the “bubble” display was visually appealing and fun to use, it could also be difficult to interpret since all methods remained in the display and made it difficult to differentiate between levels of applicability. In addition, the filtering questions used by the Action Catalogue include some that health services researchers might find difficult to answer. Participedia’s filtering mechanism is similarly complex, in part because both the Action Catalogue and Participedia were designed not only for researchers but for policy makers, industry, and community organizers, among others. This further confirmed the need for an engagement method selection tool designed with the specific needs of clinical and translational researchers in mind.

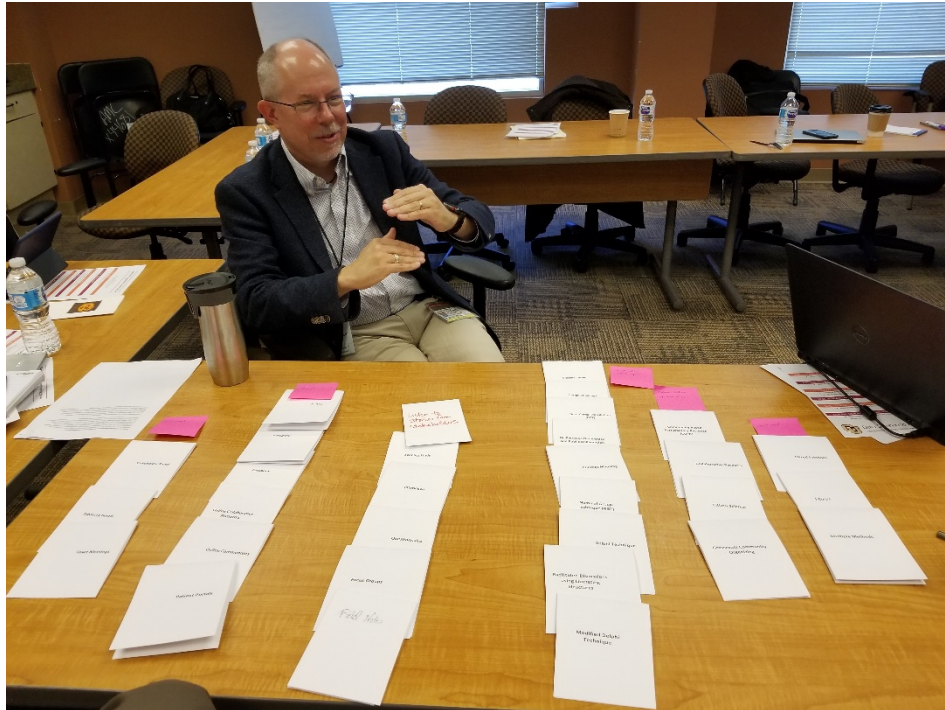
User Personas and Corresponding Use Cases

User Persona	Corresponding Use Case
As an experienced investigator writing a grant proposing to conduct stakeholder engagement...	...I want to identify effective methods for engagement that would fit within the grant budget and timeframe and allow me to achieve my engagement objectives
As a faculty member with expertise in stakeholder engagement who mentors junior investigators who want to learn about engagement...	...I want to prepare my mentees for more productive conversations by getting them a foundational knowledge in what engagement is
As a novice investigator who has never done stakeholder engagement...	...I want to learn about engagement methods that I could use for my pilot research
I provide consulting for investigators seeking to develop engagement plans, but they keep coming to me with very little understanding of what engagement means and what it entails...	...and I'd like to have them do some pre-work with the toolkit, so that our conversations can be more productive
As a Co-Investigator on a grant that is being developed...	...my collaborator has suggested I review the toolkit so I can think through how my portion of the research strategy aligns with the engagement methodology.

Card Sorting Activity

Process:

- Form teams of 3-5 people
- Each team is provided with a stack of cards, each with a different engagement strategy on the front and a definition on the back.
- Teams are to work together to sort the cards into groups that make sense to them. The teams are instructed to not take into consideration how other engagement entities currently organize the information. Instead, they should organize the cards should be organized in a way that makes the most sense to them.
- After the cards have been sorted into groups, each group should be given a name. Sub-groups can also be created if the team feels it is appropriate. If the team thinks that an engagement strategy is missing, they can add it to a blank card. In addition, if they find the definition of a strategy to be unclear, they can write these changes on the card. If the team thinks that there are certain engagement strategies that do not seem to belong, they can create an “outlier” pile.



Methods Review Process – Review Form

**DICE CORE METHODS REVIEW
SCORING SUMMARY**

Engagement Method: _____

Reviewer: _____

General Directions for Review:

The Data Science to Patient Value (D2V) Engagement Core’s mission is to become the most trusted resource at CU on how best to engage diverse stakeholders in the work of research, implementation and dissemination in health care.

One way through which we can achieve our mission is to develop an Engagement Methods Toolkit which will help healthcare researchers identify and select methods of engagement based on the constraints and/or criteria of their studies and their identified stakeholders. In order to build our toolkit, we must first review methods of engagement and determine whether or not various methods belong on our toolkit.

The methods sheet includes a description of the method under review. If you would like to make any changes to the method description, please indicate them here:

Method Description:

Please comment on the **strengths and weaknesses** the method has with regard to the following criteria:

1. To what extent is this consistent with our definition of stakeholder engagement?

- **Stakeholder:** *An individual or group who is responsible for or affected by health- and healthcare-related decisions that can be informed by research evidence.*
- **Engagement:** *A bi- or multi-directional relationship between the researcher and stakeholders that results in informed decision-making about the selection, conduct, and use of research.*
- **Longitudinal:** *At least some of the same stakeholders are engaged more than once during the study/engagement period*

Indicate numeric score 1 to 9 for the following elements: A. _____, B. _____

A. To what extent is this method longitudinal?

Rating Scale

1. Method is inherently longitudinal
- 2.
- 3.
- 4.
5. Method can be used longitudinally, but also can be used for one-time engagements
- 6.
- 7.
- 8.
9. Method is inherently for one-time use

B. To what extent is this method bi-directional or multi-directional?

Rating Scale

1. Completely bi-directional or multi-directional
- 2.
- 3.
- 4.
5. Can be bi-directional/multi-directional, but can also be used for unidirectional data collection
- 6.
- 7.
- 8.
9. Not at all bi-directional/multi-directional; used for unidirectional data collection

Strengths

Weaknesses

2. Is method specifically designed for one or more of the following purposes of engagement?

- A. Identify and explore new perspectives or understanding
- B. Identify which topics are most important to stakeholders
- C. Develop research questions relevant to stakeholders
- D. Select outcomes and measures that matter to stakeholders
- E. Refine and help implement effective recruitment strategies
- F. Expand and diversify stakeholder outreach
- G. Investigate best ways to successfully implement a study, based on stakeholder insights
- H. Describe findings in ways stakeholders can understand and use
- I. Disseminate findings to relevant audiences
- J. Design strategies for translating research into practice
- K. Other (please specify):

Indicate numeric score 1 to 9 here: _____

Rating Scale

1. Method is a tailored intervention designed to achieve one or more purposes of engagement
- 2.
- 3.
- 4.
5. Method may support multiple purposes of engagement, but is particularly useful for certain purposes
- 6.
- 7.
- 8.
9. Method is entirely generic and not particularly designed for any specific purpose

Strengths (LIST PURPOSES OF ENGAGEMENT METHOD IS TAILORED TO, plus other suitable purposes not provided above)

Weaknesses

3. What is the resource intensity of using this method?

- Does this method require substantial cost (e.g. personnel, space, equipment)?
- Does this method typically require a large time commitment?
- Does this method require additional training/experience?

Indicate numeric score 1 to 9 for the following elements: A. _____, B. _____, C. _____

A. To what extent does this method require substantial cost (e.g. personnel, space, equipment)?

Rating Scale

1. Method does not require substantial costs
- 2.
- 3.
- 4.
5. Costs could be high or low depending on your project
- 6.
- 7.
- 8.
9. Method requires substantial costs to be conducted effectively

B. What is the general duration of engagement using this method? How long does it take to conduct this method?

Rating Scale

1. Not a substantial duration
- 2.
- 3.
- 4.
5. Duration could be high or low depending on your project
- 6.
- 7.
- 8.
9. Method requires a substantial duration

C. How much training/experience is needed to conduct this method appropriately?

Rating Scale

1. Method does not require additional training/experience
- 2.
- 3.
- 4.
5. Some training/experience is necessary to use this method effectively
- 6.
- 7.
- 8.
9. Method requires specific and extensive training/experience to be used effectively

Strengths

Weaknesses

4. How strong is the evidence base supporting the use of this method? (Reviewers should not spend more than 20-30 minutes researching the evidence base of each method)

- Is there evidence to support the use of this method?
- Based on your preliminary review, does it appear that this method has been rigorously evaluated?
- Based on your preliminary review, does it appear that this method has been shown to be useful/effective?

Indicate numeric score 1 to 9 here: _____

Rating Scale

1. Extremely strong
- 2.
- 3.
- 4.
5. There is evidence to support the use of this method, but method could benefit from more evaluation
- 6.
- 7.
- 8.
9. Unable to find any evidence

Strengths

Weaknesses

Please indicate any search terms used when investigating the evidence base of this method:

Feature Prioritization Survey and Results

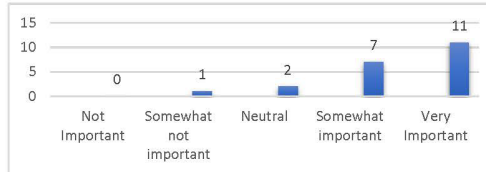
DICE Core Survey Evaluation

Imagine you are an investigator who would like to learn more about engagement methods so you can select a method to use for your research.

1. How important are each of following website features?

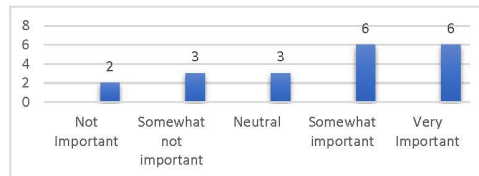
a. Quick and efficient method selection

Not Important	0	0%
Somewhat not important	1	5%
Neutral	2	10%
Somewhat important	7	33%
Very Important	11	52%



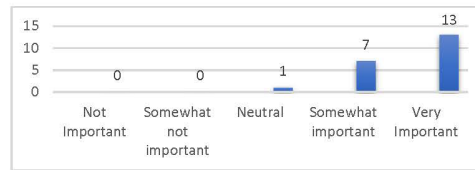
b. A mobile-friendly site

Not Important	2	10%
Somewhat not important	3	14%
Neutral	3	14%
Somewhat important	6	29%
Very Important	6	29%



c. The education content available on each method

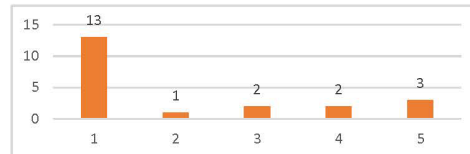
Not Important	0	0%
Somewhat not important	0	0%
Neutral	1	5%
Somewhat important	7	33%
Very Important	13	62%



2. If you were determining what method to use for stakeholder engagement in your research, what would help you decide which method is best for you? Please rank the following Criteria from important to least.

a. How well the methods achieves the specific goal

1	13
2	1
3	2
4	2
5	3



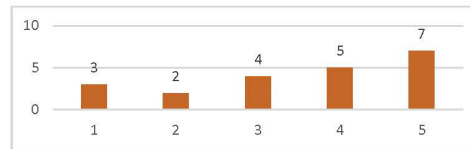
b. Time required to conduct the engagement method

1	1
2	4
3	3
4	7
5	6



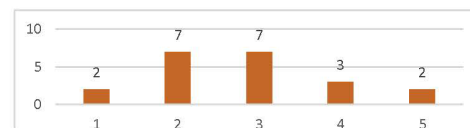
c. Cost required to conduct the engagement method

1	3
2	2
3	4
4	5
5	7



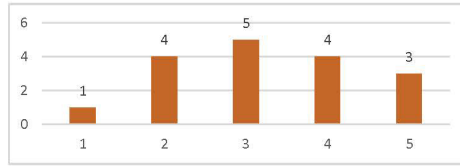
d. Skills/Personnel required to conduct the engagement method

1	2
2	7
3	7
4	3
5	2



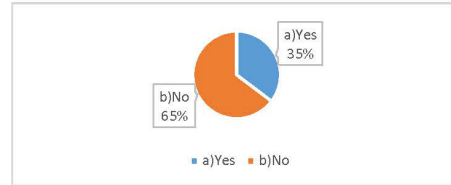
e. Strengths or evidence base suppoting the method

1	1
2	4
3	5
4	4
5	3



3. Other than those criteria listed in que. 2, are there any other criteria that would help you select a method?

a)Yes	b)No
6	11



if Yes what Criteria?

Pros and cons of each approach

resources available when using method

No

How to modify strength to fit healthcare environment

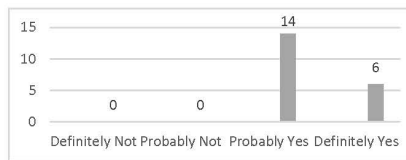
Support provided for the method by my institution connection to professionals who have used it.

will be anxious to learn more

level of complexities

4. Would you want to use a website like the one we are developing to help you select an engagement method for your research?

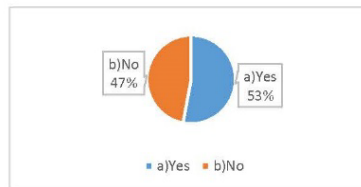
Definitely Not	0
Probably Not	0
Probably Yes	14
Definitely Yes	6



5. Would you be willing to participate in user testing for the development of this website ?

(Testers may receive nominal compensation for the involvement.)

a)Yes	b)No
9	8

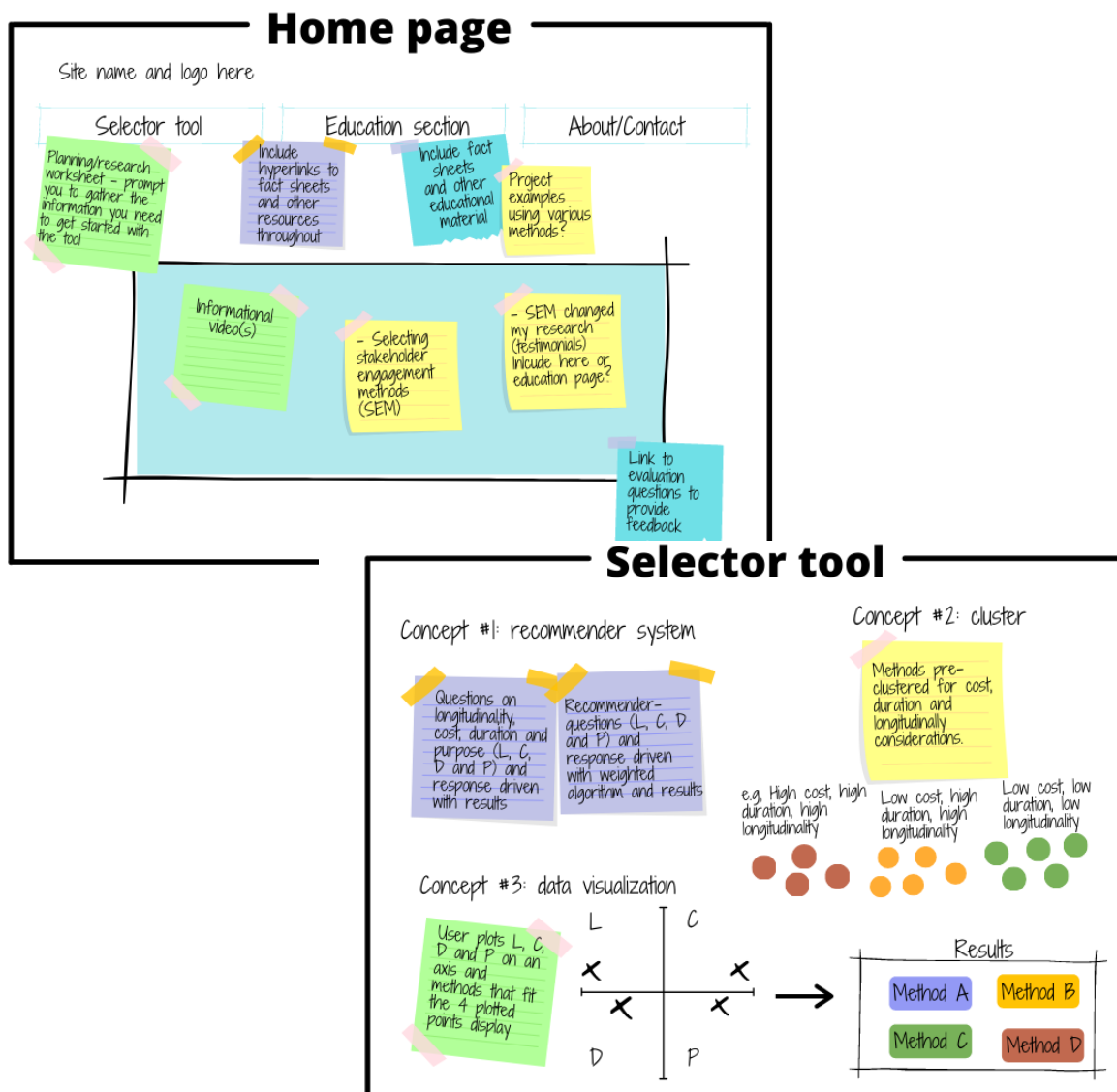


If Yes: Please provide your email

[Click the Link to go to the Email Sheet](#)

Storyboarding Session

A storyboarding session was conducted to visually depict the web-based tool and included team members with a range of expertise to ensure a wide perspective of feedback and ideas. We used a series of large tear-off sheets that were drawn to mirror simulate the web-interface and sticky notes were used to affix design ideas, functionality, and features. In this way, elements that were deemed necessary and/or desired were discussed, ideas were generated and solutions were determined for the homepage and all subsequent pages, and; the user experience (UX) was considered for each page the tool. This process generated the initial informational and navigational architecture, which was further tested and refined by reference to the use cases and how each would progress, step-by-step, to achieve a single goal, e.g., how the user interacts with the software to find a method. Ultimately, the storyboards set forth a template for prototyping the user scenarios and served as a cross-check to guarantee the plan could adequately satisfy the purpose. A recreation depicting selected tear-off sheets from the storyboarding session is shown below.



Contextual Inquiry User Testing Protocol

Goal: Learn about the user while engage with the Stakeholder Engagement Toolkit (SET). What we are looking for is new insights and unexpected user needs.

What the user can expect: The user will receive an invitation to participate. We will send a Zoom invitation at an agreed upon time for a 30-minute interaction. The user will be asked to tell us about how they will engage with the Stakeholder Engagement Navigator (SEN) in the context of their personal work area. The SEN prototype will be made available and the link emailed at the time of the interaction not beforehand (an explanation of the current fidelity will be provided to set the expectation that the SEN is not a fully functioning website). This interaction should be the first interaction with the tool and we want to avoid the user using the tool and becoming familiar with it before “the interaction.”

The set-up: Ask the user to imagine that they are working on a new proposal in their primary discipline and field of inquiry. However, the latest round of founding seems to have a common theme of Stakeholder Engagement as a requirement. Therefore, the junior- to mid-level investigator who wants to learn about engagement methods for a project and is not familiar with engagement methods (we are calling this our "core user") is provided the link to the SEN.

Protocol:

- Begin meeting by opening the zoom room at the agreed upon time.
- Thank the user for agreeing to be a participant in the contextual inquiry
- Build some rapport!
- Initial traditional questions: (10 min)
 - What is your position at the university?
 - What is your discipline and field of inquiry?
 - Describe your existing level of knowledge on Stakeholder Engagement.
 - Have you ever implemented Stakeholder Engagement in previous research? If so, please describe what that looked like.
- Notes about observations: (10 min)
 - Ask the user to show us their workspace if they can, and if they can't have the user describe in detail the work environment.
 - Be inquisitive about items on the desk or table that seem “unique” or “different.”
 - Ask if anything on the desk/table will assist them in their exploration of the SET.
 - Be naïve; Naïve questions only sound that way in your head. We are looking to (in)validate our assumptions about the use of this tool in the real world.
 - The SEN does not exist in a vacuum. We want to know how real-world context can support the virtual use of the SEN. The goal of this exercise is to understand what tools outside of the website the user accesses during the session. E.g., Are they

using a notepad to take notes, or using their phone to google definitions? This will help us understand what features may be missing from the toolkit.

- Ask the user to share their screen via Zoom
 - Remind the user that we are working with a low-level fidelity version of the SEN. Therefore, we are interested in functionality of the prototype only to a small degree – **we are more interested in what supports use of the tool in the user’s context and how the “idea” of the toolkit interacts with the setting.**
 - Provide the user with the URL
 - Become the apprentice: ask for a demonstration on how the user will use the SEN
 - Take notes on the demonstration of how the user interacts with the prototype. It may seem that we are asking someone to simply use a “website,” but this is a specific use case and we want to know how a researcher will learn using our tool.
 - Sum up your impressions of the demonstration to make sure your understanding is valid.
 - The difference in what you observed/heard and how the user interprets the contextual inquiry will be additional valuable insight.
 - Ask: “Are there any other domains or factors not currently on the website that would help you with the process of determining what method to use for a stakeholder engagement component in a research project?”
- Thank the user for their time and the lessons learned – end Zoom session.

Think Aloud User Testing Protocol

What is THINK ALOUD? During the course of this usability test, test users will be asked to verbalize their thoughts, feelings, and opinions while interacting with the Stakeholder Engagement Navigator (SEN). This methodology is very useful in capturing a wide range of cognitive activities. Our data collection will be based on the critical response concept, described below:

- Critical response - This method requires the user to be vocal during the execution of certain predetermined tasks. The user's word and actions are the data set (please see data capture form in Appendix A).

Why use it? THINK ALOUD methodology allows us to understand how the user approaches the interface and what considerations the user keeps in mind when using the interface. If the user expresses that the sequence of steps dictated by the product to accomplish their task goal is different from what they expected, perhaps the interface is convoluted or confusing. We want to learn, and potentially modify the SEN based on, the user/user-interface interaction.

Sometimes, the terminology the user uses to express an idea, or a desired function, can be incorporated into the product design or at least its documentation.

Participants needed:

- Usability moderator
 - One usability moderator is required for each subgroup during the testing time. This role can be filled by a professional research assistant.
- Users
 - A minimum of 1 user, and a maximum of 4, should be observed in each of the usability sessions - the more users that can be observed, the better the results. Different users will have different problems.

In-session moderator responsibilities:

- Describe THINK ALOUD methodology
- Describe at a high level the interface being tested – Stakeholder Engagement Navigator
- Give users the background of why documented consent is not needed in this context
- Explain goals of the session – the user will be asked to complete several tasks
- Explicitly mention recording and ask for permission (via Zoom or platform supplied by conference organizers)
- Explain that you are testing the Stakeholder Engagement Navigator, not the individual user
- Ask group who would like to “drive”
- Reassure users about what will happen if they encounter difficulties, i.e., the moderator will not tell them how to complete the task, but instead ask the user to explain out loud their difficulty in completing the task, but the user will not be forced to continue if the task is incomplete

- Explain that the design will evolve from the current version based on their feedback, insights, and identification of pain points
- Explain that we will document their suggestions but don't promise to implement them
- Confirm end time

Usability testing conditions required of moderator:

- **Stay for the entire test** - The goal is to make the users forget that anyone else is in the room. While you are observing the Think Aloud you are not available for any interruptions.
- **Remain silent while the users are working** - You may notice a problem so surprising that you are tempted to laugh or exclaim out loud. This is not unusual. Unfortunately, the users will think you are laughing at them. Please do your best to keep revelations to yourself. There will be opportunities to ask questions after each task and at the end of the test.
- **Be conscious of your body language (even on Zoom)** - Sit quietly without fidgeting. Keep busy taking notes.
- **Don't reveal how many tasks you have** - It is often more useful to explore an area of difficulty, rather than trying to get through all the tasks. Users may rush one task if they feel they are spending too much time on others.
- **No helping** - Instead try to understand why the user got stuck or went down the wrong path.
- **Avoid 'design' questions** - These can take up a lot of time and provide limited results. Focus on trying to understand the problem. We will come up with a solution later within our design team.
- **Respect participants and the confidentiality of their data** - Use the assigned participant number when referring to a particular user. Don't include names on reports or emails. Do not make negative comments on people. There is always a chance that a derogatory comment may be overheard or otherwise make its way back to the user.
- **Remind and encourage participants to continue thinking aloud if they stop doing so.** It is ok to ask for further clarification if you want the user to expand on something they said.

Tasks for completion:

Copy and paste SEN URL in the chat.

Copy and paste tasks in the chat after describing them aloud.

- Session 1
 - **Group A & B:**
 - Task 1: Engagement purpose: planning; Budget: mid-range; Engagement duration: half a day; Longitudinality: 10+ times (it's possible they will choose ~5 times based on description below)
 - You are developing a proposal for a new study on ___ topic and want to get input on that topic from ___ (group relevant to that topic). You plan to engage these stakeholders over a period of several months. You know you will need more than

- an hour each time you meet with them, but don't want to take up their whole day. You have a mid-range budget for the stakeholder engagement portion of this project. Find an engagement strategy that would be appropriated for this scenario.
 - Begin Task 2 where they end Task 1. Write down time stamp before continuing.
 - Task 2: 'Find additional resources' task: (Fact sheet task)
 - Scenario: The user comes to site with strategy in mind. They want to find resources on this strategy for further reading.
 - **Moderators: Pay close attention to what they call the fact sheets
 - Begin Task 3 where they end Task 2. Write down time stamp before continuing.
 - Task 3: 'Foundational principles' task: (Educational component task)
 - Navigate to area of the website where you would find information about the foundational principles of engagement.
 - **Moderators: Make a note of the number of clicks it takes the user to complete this task.
 - Write down final time stamp.
 - **Group C & D:**
 - Task 1: Engagement purpose: planning Budget: low; Engagement duration: an hour or less; Longitudinality: 1-2 times
 - You are developing a proposal for a new study on __ topic and want to get input on that topic from __ (group relevant to that topic). Your proposal is due in a couple of weeks, so you only plan to engage these stakeholders once or twice and have very limited time slots during your day to meet with them. You have a small budget available for the stakeholder engagement portion of this project. Find an engagement strategy that would be appropriated for this scenario.
 - Task 2: Expertise needed task (Fact sheet task)
 - Select a strategy from the left-hand menu on the home page and determine what personnel are needed to conduct this strategy.
 - Task 3: Approach vs Method vs Tool (Educational component task)
 - Navigate to the web page that describes the difference between an approach, method, and tool
 - **Moderators: Make a note of the number of clicks it takes the user to complete this task.
 - IF TIME: Discussion question - how do users react to this terminology?
- Session 2 – replicate tasks from session 1
 - Group A & B

- Group C & D

Appendix A – Data collection form

- **Overview**

- **Task number & name** – List the task name and number.
- **Time** – record the beginning and ending time, i.e., 3:02-3:15
- **Notes** – Take notes on interesting things said or actions that happen during the usability test. RESIST INTERPRETING during the test.
 - **User comments/statements:**
 - **User actions/behaviors:**
- **Pain Points** – note particular points in the task that are especially difficult in terms of the interface and not being able execute particular functions
- **Open up to discussion/mingling at end**

- **Form**

- **Task number & name:**
- **Time:** __:__ - __:__
 - **Have you started the recording?**
- **Notes:**
 - **User comments/statements:**
 -
 - **User actions/behaviors:**
 -
- **Pain Points**
 -

Intake Form for Principal Investigators

Stakeholder Engagement & Dissemination Intake Form for Principal Investigators

Congratulations on receipt of Data Science to Patient Value (D2V) Pilot Project funding. We are looking forward to working with you over the next year. **Please fill out the following form to help D2V's Stakeholder Engagement and Dissemination Cores determine how best to serve you throughout your research project.**

The Stakeholder Engagement and Dissemination Cores at the Data Science to Patient Value (D2V) Initiative define stakeholders and engagement based on the definitions provided by Concannon et al. in their paper [A New Taxonomy for Stakeholder Engagement in Patient-Centered Outcomes Research](#). The definitions are provided below, and we recommend you refer to these definitions while filling out this form.

- **Stakeholder:** "An individual or group who is responsible for or affected by health- and healthcare-related decisions that can be informed by research evidence."
- **Engagement:** "A bi-directional relationship between the stakeholder and researcher that results in informed decision-making about the selection, conduct, and use of research."

If you have questions while completing the form, you can direct them to Suzanne Millward, at Suzanne.Millward@ucdenver.edu or (303) 724-5511.

1. What type of research project is this? Check all that apply.

- T 1 Research:** translation to humans, including proof of concept studies, Phase 1 clinical trials, and focus on new methods of diagnosis, treatment, and prevention in highly-controlled settings
- T 2 Research:** translation to patients, including Phase 2 and 3 clinical trials, and controlled studies leading to clinical application and evidence-based guidelines
- T 3 Research:** translation to practice, including comparative effectiveness research, post-marketing studies, clinical outcomes research, as well as health services, and dissemination and implementation research
- T 4 Research:** translation to communities, including population level outcomes research, monitoring of morbidity, mortality, benefits, and risks, and impacts of policy and change
- Other** (please specify)

2. Please summarize your research project in a way that would be understandable to a lay audience.

3. Here is a set of potential stakeholders in research. Please check any or all stakeholders that might be relevant to your work.

Stakeholders	Have you spoken to these stakeholders?	If yes, have stakeholders helped with study planning and design?
<input type="checkbox"/> Patients	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Community representatives	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Community members	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Payers	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Industry	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Hospital and health systems	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Policy makers	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Training institutions	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Other (please specify) <div style="border: 1px solid black; height: 40px; width: 230px; margin-top: 5px;"></div>	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes

4. There are many reasons for which a researcher might engage stakeholders. **Which of the following might be relevant purposes for engaging the above stakeholders in your research?** Check all that apply.

- Identify and explore new perspectives or understandings of the topic
- Identify which topics are most important to stakeholders
- Develop research questions relevant to stakeholders
- Select outcomes and measures that matter to stakeholders
- Refine and help implement effective recruitment strategies
- Expand and diversify stakeholder outreach
- Investigate best ways to successfully implement a study, based on stakeholder insights
- Describe findings in ways stakeholders can understand and use
- Disseminate findings to relevant audiences
- Design strategies for translating research into practice
- Other (please specify)

5. There are numerous approaches to engagement for research, including those that build relationships, those that gather expert input, those that seek to inform policy, and those that are conducted with product development in mind. **Do you have an approach or methodology to engage stakeholders?** Yes No

a. If yes, please describe it here.

b. If no, may the Stakeholder Engagement Core help with methods and professional connections? In what ways?

6. Stakeholders bring expertise that can be important to your project, and engaging stakeholders in a meaningful way requires some resource commitment (not just for paying stakeholders, but also for rooms, food, staff FTE, stipends, transportation, childcare, etc.). **Do you have funds in the grant to support engaging stakeholders?** Yes No
- a. If yes, how much?

7. When you engage stakeholder groups, they might propose some of the following: modified research questions, different outcomes or measures, revised recruitment/retention strategies, increased outreach efforts, or new audiences for dissemination. **How flexible is your research at this moment if stakeholders identify and request important changes? Please rate on a scale of 1-7 with 7 being very flexible and 1 being not at all flexible.**

Not at all flexible - 1 2 3 4 5 6 7 - Very flexible

Final List of Approaches, Methods, and Tools

Engagement Approaches: <i>An organizing framework used to establish and understand stakeholders' roles in decision-making, as well as their roles in the conceptualization, conduct, and dissemination of research.</i>
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Community-Based Participatory Research
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Community Engaged Research

Deliberative Processes-Public Deliberation
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Deverka's Conceptual Model for Stakeholder Engagement in Comparative Effectiveness Research

Experienced-Based Co-Design

PCORI Dissemination and Implementation Framework
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Engagement Methods: <i>A set of specific tools, techniques, and processes used to enact the 'high-level' purposes of engagement: Identify and convene stakeholders, create reciprocal relationships (level the playing field), engage in bi-directional communication, elicit perspectives, and make decisions over time and in partnership.</i>

Appreciative Inquiry

Bootcamp Translation

Citizen Juries

Community Engagement Studio

Concept Mapping

Deliberative Polling

Delphi Technique

Human-Centered Design

I-Corps

Online Collaborative Platforms

Online Communities

Stakeholder Panel/Advisory Committee

Engagement Tools: <i>A specific activity for gathering information, facilitating group discussion, brainstorming, etc. Different tools are often used in combination, and specific methods sometimes prescribe the use of specific tools alone or in combination.</i>
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25/10 Crowdsourcing

Conversation Café

Discovery and Action Dialogues

Ecocycle Planning

Focus Groups

Key Informant Interviews

Nominal Group Technique

Purpose to Practice

Simple Ethnography

Social Network Webbing

Survey/Questionnaire

Town Hall Meeting

User Experience Fishbowl

Contextual Inquiry User Testing Results

Contextual inquiry scoring matrix of four end-users													
User:	1			2			3			4			
Familiarity with stakeholder engagement:	Above average			Average			Above average			Low			
Degree of Usability changes needed by feature	Cosmetic	Serious	Critical	Cosmetic	Serious	Critical	Cosmetic	Serious	Critical	Cosmetic	Serious	Critical	Aggregate for users 1-4
Selector tool													Cosmetic
Results													Critical
Strategy fact sheets													Serious

The table above describes the changes identified by users, grouped by feature, with an aggregate score on the severity and number of changes needed to improve usability. The result pages needed the most changes to improve the communication of stakeholder engagement relevancy to the selector tool search values. This was important to users because the goal was to quickly understand the results returned by the tool filtering system. Because this feature needed the most changes, it was identified as a critical area for further design work. Redesign efforts included incorporating fewer visual cues and to associate relevancy to one variable (size) instead of two (size and color). The strategy fact sheets feature required fewer design changes but were still determined to be serious design issues that needed modification. Changes were primarily focused on visual organization and pithy language that accurately labeled the content of the strategy descriptions on resources needed to implement the strategy. Finally, the selector required the fewest changes that were cosmetic in nature. Importantly, the functionality of the selector was not heavily critiqued, indicating that the primary function of the tool was understood by the users.

Think Aloud User Testing Results

Home Page	Navigation Menu	Strategy Fact Sheets	Selection Tool	Glossary
<ul style="list-style-type: none"> - Rebrand the navigation icons at top. Fewer words and not all caps. - Use the word "Find" instead of "Discover". - Relabel green button "Education hub" and blue button "Find engagement strategies" 	<ul style="list-style-type: none"> - Add hover definitions to approaches, methods, tools on the left-hand menu. Definitions disappear when you click on the drop downs. - Change title to a verb or add a subheading describing a strategy fact sheet. 	<ul style="list-style-type: none"> - No status change so time does not appear clickable. - Change "~" to "appx." - Workload rings: show all three categories; the one designated is colored and the others are gray. 	<ul style="list-style-type: none"> - Rephrase as "Your chosen research stage:" and "Your chosen purpose of engagement." - Issue with sliders: not apparent a single option vs a range can be selected. Two endpoints should be different colors. 	<ul style="list-style-type: none"> - Question mark icon next to certain keywords that are clickable; upon clicking, the user sees the word in the glossary. Users should also be able to get to the glossary through a Navigation Menu.