A Dynamic Method for Tracking Implementation Strategy Use and Modification:

The Longitudinal Implementation Strategy Tracking System (LISTS)

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Background

- There is a need for comprehensive tracking and reporting of the many implementation strategies being used within and across units in implementation studies and how they change over time.
- Systematic approaches for tracking and reporting implementation strategies have been relatively understudied to date. Some examples:
  - Bunger, Powell, et al. (2017) – use of activity logs to track strategy use
  - Boyd, Powell, Endicott, & Lewis (2018) – coding of meeting transcripts
  - Glasgow et al. (2020) – semi-structured interviews (2 meetings; 6-month intervals)
  - Haley, Powell, et al. (2021) – comparison of three types (levels of detail: brainstorming, activity logs, detailed tracking logs)
- Example of strategy synthesis (post hoc) within a consortium (Perry et al. 2019)

Objectives

- To create a system that will:
  - Allow for the capturing of dynamic changes, including planned/unplanned strategy modifications and addition/discontinuation of strategies;
  - Produce data that can be compared and synthesized; and
- This presentation will describe:
  - The Longitudinal Implementation Strategy Tracking System (**LISTS**)
    - Administration procedures
    - Electronic data capture interface in REDCap
  - Present data on usability and acceptability

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LISTS Elements

- Strategy reporting and specification standards (Proctor et al., 2013):
  - Name the strategy: Select strategy category from ERIC taxonomy (Powell et al. 2015)
  - Operationally define the strategy
  - Specify the strategy:
    - Actor
    - Action(s)
    - Action target(s)
    - Temporality
    - Dose
    - Primary and secondary implementation outcome(s) – using RE-AIM (Glasgow et al. 2018) and Proctor et al. (2011)
  - Barrier(s) being addressed by the strategy using CFIR (Damschroder at al. 2009)

LISTS Elements

- **Modifications/adaptations**, based on FRAME-IS (Miller et al. 2021): branching logic prompts questions concerning:
  - Reason (e.g., ineffective, infeasible)
  - Who was involved in the decision (e.g., leadership, research team, clinicians)
  - Planned/unplanned (per a priori protocol)
- **Addition** of strategies *
  - Reason (e.g., address emergent barrier, complement/supplement other strategies to increase effectiveness)
  - Planned (e.g., as part of an adaptive or optimization study design) or unplanned
  - When a strategy is added, reporting and specification elements are also prompted

*** Not part of FRAME-IS**

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LISTS REDCap Tool

*soon to be available

3. What implementation outcome are the secondary targets of this strategy? *(check all that apply)*

- [x] Increase acceptability of the EBP (the implementers' or patients' satisfaction with various aspects of the EBP (e.g. content, complexity, comfort, delivery, and credibility))
- [ ] Increase adoption of the EBP or one of its components (number of intervention agents who are willing to initiate the EBP)
- [ ] Increase appropriateness of the EBP for this service context (the perceived fit, relevance, or compatibility of the EBP for a given practice setting, provider, or consumer. NOTE: an EBP can be acceptable but inappropriate and vice versa)
- [ ] Address cost-related to the delivery of the EBP (cost to the organization in time, space, personnel, and materials)
- [x] Increase the feasibility of implementing the EBP (the actual fit, utility, practicability, and suitability for everyday use)
- [ ] Improve fidelity to the EBP (adherence, quality, consistency of delivery as intended)
- [ ] Increase the reach of the EBP (The absolute number, proportion, and representativeness of individuals who are willing to participate in a given initiative)
- [ ] Increase sustainability of the EBP (extent to which the EBP becomes institutionalized or part of the routine organizational practices and policies)

4. Was this strategy (or the change to the strategy) prospective? Meaning, was this a strategy that was planned to be used when the study was conceptualized or during preparation for the implementation but prior to starting the EBP (as opposed to adding a strategy as the implementation was ongoing).

- ○ Yes
- ◉ No
- ○ This strategy was completed prior to the start of the project

reset

5. If No (not a prospective strategy), why was it introduced?

- ○ To address a new or unknown barrier
- ◉ To augment another strategy to increase effectiveness
- ○ To replace an ineffective strategy

reset

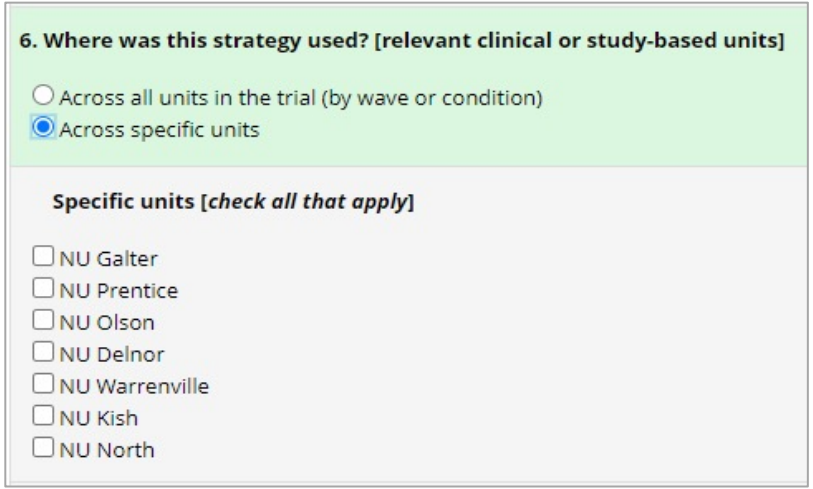
6. Where was this strategy used? [relevant clinical or study-based units]

- ○ Across all units in the trial (by wave or condition)
- ◉ Across specific units

reset

Project Customization

- **Study "units"**
  - Specify and name
    - Clusters
    - Clinics
    - Implementers
  - Guidance
    - Align with the study design (level of randomization), strategy level, and degree of granularity (research question)
    - For usability, each time a strategy is added or modified, the user has the option to specify whether it applies to "all units" or to specific ones (choose all that apply)



REDCap Tool

Data capture uses a “dashboard” of active/inactive strategies

Record ID	Strategy Specification	Status Tracker
1-2 **Conduct local needs assessment** - Assess PRO completion data prior to implementation): calls and getting local metrics; estab baseline; data and pathways Planned stoppage (duration was planned to be time limited)		
1-3 **Build a coalition** - partnership with cancer center and NM quality; bringing together coalition; process of determining who needs to be at table to be effective; getting buy-in; Planned stoppage (duration was planned to be time limited)		
1-4 **Conduct local consensus discussions** - Working with NM quality; lots of conversations; CCCEC meeting; decision to pursue This strategy is still in use		
1-5 **Involve executive boards** - Cancer center leadership (CCCEC); DC and SG presented; SK presented= 2 meetings This strategy is still in use		
1-6 **Inform local opinion leaders** - Sharing news; engage opinion leaders; Rebecca (Admin leadership). Central region only This strategy is still in use		
1-7 **Identify and prepare champions** - Working with regions and Quality to identify OL and PCs and develop educational materials for the trainings; Kick-off meetings; development of guide/slides: Planned stoppage (duration was planned to be time limited)		
1-8 **Prepare patients/consumers to be active participants** - Development of poster, pamphlets/flyers, web and newsletter text with Amber, PCR handout, nurse outreach to patients cPRO completion This strategy is still in use		
1-9 **Develop educational materials** - Video; slide deck; 1-page reference doc; training materials This strategy is still in use		
1-10 **Change record systems** - Original =HIT infrastructure build; updates= (in-basket messaging, changes in display, CAT update; EPIC upgrade check functioning; dot phrases) This strategy is still in use		
1-11 **Assess for readiness and identify barriers and facilitators** - NMPRO implementation in cancer in Central prior to study start date: January 2015 Planned stoppage (duration was planned to be time limited)		

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Methods for Using LISTS

- **Development**
  - Iterative process among implementation researchers and practitioners, including feedback on an initial set of questions, response options, frequency, and data capture method
- **LISTS Completion**
  - **Participants**
    - LISTS is **completed** by research team members and local implementers
    - 1 LISTS REDCap project per RC (n=3)
  - **Procedure**
    - Timeline Follow-Back (1-3 month intervals)
    - RCs provided with a procedures manual but explicitly given flexibility to determine the most efficient means of using LISTS while maintaining the goals of the method
    - 15 months of use starting in Year 2 of the project periods

Methods for Evaluating LISTS

- **Survey to each RC (n=3)**
  - Procedures Used
    - Dates of use (time, who was involved)
    - Data validation methods (review of notes/agendas, calendar entries, on-the-ground staff)
  - Usability
    - System Usability Scale (SUS) (10 items)
  - Difficulty reporting specific elements of LISTS
    - 1 (very easy) to 5 (very difficult) (11 items)
  - Feedback on Things Users Liked/Disliked
    - Open-ended responses

Results: Procedures Used

- **Processes for Populating LISTS (entering strategies already in use/ended)**
  - Review full list of ERIC discrete strategies to identify those used
  - Enter strategies into an Excel spreadsheet
  - Routinely confirm LISTS elements (other team members, calendars, meeting notes)
  - Team/unit/study leads sign off
  - Point person for compiling/entering strategies into REDCap
- **Processes for Updating LISTS (modifications/additions/discontinuations)**
  - Routine check-ins with implementers re: changes/new strategies (3 RCs)
  - Routine review of entered strategies to assess for changes (2 RCs)
  - Periodic emails from implementers re: changes/new strategies (1 RC)
  - When new study units roll-in (1 RC)

Results

	Initial Population of Strategies	Updating
• **RC1**	6 hours (8 total meetings)	12 hours (7 total meetings)
• **RC2**	10 hours (7 total meetings)	1 hour (3 total meetings)
• **RC3***	21 hours (across 6 sites)	42 hours (30-60 min per month/per site for 9 months)

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Other Interesting Findings

- **Was the strategy prospective**
  - For RC1and RC2, majority of the strategies were prospective (80% and 88%, respectively)
  - For RC3, most strategies (66%) were not prospective
- **Location**
  - RC1 more likely to report the strategy use across all units (78%)
  - R2 and RC3 more likely to report strategy use across specific units (82% and 96%, respectively)
- **Who used the strategy**
  - RC1 – QI leaders (28)
  - R2 – study research staff (32)
  - RC3 – study research staff (73)
- **Frequency of strategy use**
  - RC1 – One time (15)
  - R2 – Select patient encounters (28)
  - RC3 – One time (31)

LISTS Results – Strategy Categories and Stoppage Data by Project

	RC1	RC2	RC3	Total
Total Strategies (N)	36	32	73	141
Strategy Category (N, %)				
• **Use Evaluative and Iterative Strategies**	**9**	**6**	**19**	**34**
• Provide Interactive Assistance	1	0	5	6
• Adapt and Tailor to the Context	3	0	**10**	13
• **Develop Stakeholder Interrelationships**	**15**	4	5	**24**
• **Train and Educate Stakeholders**	4	**13**	**14**	**31**
• Support Clinicians	0	2	7	9
• Engage Consumers	1	6	**12**	**19**
• Utilize Financial Strategies	1	0	0	1
• Change Infrastructure	2	0	1	3
Strategy Discontinuation/Stoppage (N, %)				
• **Planned Stoppage**	**11 (30.6)**	**8 (25)**	**2 (2.7)**	**21 (14.9)**
• Wasn't working/ineffective	0 (0)	1 (3.1)	0 (0)	1 (0.7)
• Clinicians or leadership didn't like it	0 (0)	0 (0)	0 (0)	
• Too time intensive	0 (0)	0 (0)	4 (5.5)	4 (2.8)
• Required too many resources	0 (0)	1 (3.1)	1 (1.4)	2 (1.4)

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Results: LISTS Usability and Acceptability

- **Usability (System Usability Scale)**
  - M=67.5
  - “68 or thereabouts gets you a C grade. You are doing OK but could improve.”

- **Most difficult elements**
  - “Frequency of strategy use” (number of times/interval)
  - “How long does it take to do the strategy each time” (dose)

User Feedback

- **Aspects Users Liked**
  - Tracking strategies is very compelling/could advance the field
  - The REDCap form (structure/format/functionalities)
  - Forced us to articulate all of our strategies
- **Aspects Users Found Difficult/Didn't Like**
  - Requires knowledge of IS terminology (ERIC, CFIR) and conceptual models
  - Tool updates for multi-site/multi-center projects (centralization)
  - Unclear the value of the level of granularity requested

Conclusions and Next Steps

- The LISTS tool and process represents an advancement in characterizing dynamic features of strategies over time, and enables precise specification of the addition, modification, adaptation, or discontinuation of strategies within and between studies
- Knowledge and familiarity with implementation science theory and terminology seems necessary
- Future research is needed to evaluate validity of this tool and its generalizability across diverse implementation contexts/innovations

IMPACT

Improving the Management of symPtoms during And following Cancer Treatment

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Improving the Management of symPtoms during And following Cancer Treatment

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We gratefully acknowledge our study participants and patient representatives

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