Enhancing Review Criteria for Dissemination and Implementation Science Grant Proposals

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Background

- Existing grant review criteria do not consider unique methods and priorities of Dissemination and Implementation Science (DIS).

- The ImplemeNtation and Improvement Science Proposals Evaluation CriTeria (INSPECT) scoring system includes 10 criteria based on Proctor et al.'s "10 key ingredients" to assess DIS research proposals.

METHODOLOGY   **Open Access**

CrossMark

Standardizing an approach to the evaluation of implementation science proposals

Erika L. Crable[1,2*], Dea Biancarelli[1,2], Allan J. Walkey[1,2,3], Caitlin G. Allen[4], Enola K. Proctor[5] and Mari-Lynn Drainoni[1,2,6,7]

Original INSPECT

1. The care or quality gap.
2. The evidence-based treatment to be implemented.
3. Conceptual model and theoretical justification.
4. Stakeholder priorities, engagement in change.
5. Setting readiness to adopt new services/treatments/programs.
6. Implementation strategy/process.
7. Team experience with setting, treatment, and implementation process.
8. Feasibility of proposed research design and methods.
9. Measurement and analysis section.
10. Policy/funding environment; leverage of support for sustaining change.

Each scored from 0 (no evidence of criterion) to 3 (clear evidence of criterion)

Have you used INSPECT?

If so, what have been your experiences?

Objective

- To report how we adapted INSPECT and used it in combination with the NIH review criteria to evaluate pilot DIS proposals responsive to the UC San Diego ACTRI DISC request for applications (RFA)

- DISC pilot proposals:
  - $20,000 for 1 year of funding
  - RFA explained that multiple review systems would be used
  - Goal: increase dissemination, adoption, implementation, and sustainment of evidence-based interventions by local health care organizations, providers, and systems in San Diego and Imperial Counties

ACTRI DISC

DISC Consultation

The UCSD ACTRI DISC offers consultation on D&I mentorship, training, grant and manuscript development, and project design. Learn more about our consultation service here: https://bit.ly/DISCConsultService

DISC Education and Training

The UCSD ACTRI DISC is proud to be able to host multiple education and training events related to D&I. We hold monthly DISC Seminars, offer a graduate course, & develop D&I resources to build capacity for D&I research. Learn more about our education and training service here: https://bit.ly/DISCEducation

DISC Membership

The UC San Diego ACTRI DISC offers two membership categories: General Member & Investigator. Both categories represent the individual's preferred level of engagement in DISC services & activities based on their D&I research skills & interests. Both categories are free to join and receive the DISC's core benefits. Individuals from all disciplines and training backgrounds are welcome! Become a DISC Member here: https://bit.ly/DISCMember

SHORT REPORT   **Open Access**

Enhancing review criteria for dissemination and implementation science grants

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implementationsciencecomms.biomedcentral.com/articles/10.1186/s43058-023-00399-2

Methods

- We adapted the INSPECT criteria in the following ways:

  1. Removed reference to "safety net" settings
  2. De-emphasized "improvement science" and referred to D&I studies/methods
  3. Replaced broader "stakeholder" language to specify the types of partners who might be engaged in the DIS project.
  4. Aligned with DISC RFA (e.g., letters of support not required but optional review material for "setting's readiness to adopt new program" criterion).
  5. Focused "measurement and analysis section" criterion on psychometric quality and pragmatic characteristics of proposed measures rather than on data analytic plans.
  6. Replaced "conceptual model and theoretical justification" with "conceptual model, theory, or framework" to increase clarity that models, theories, and/or frameworks were acceptable.
  7. Replaced the term "treatment" with the broader term of "intervention" that better reflects the diversity of programs, practices, policies+ that a DIS project may address.
  8. Provided a space to offer optional written comments justifying numerical ratings.

Methods

- 5 PhD-level researchers (public health, psychiatry, medicine) with intermediate to advanced DIS knowledge were trained to review pilot grants using the adapted INSPECT and original NIH criteria.

- Training included:
  - 1-hour group orientation
  - written instructions
  - scorecards

Methods

- Each grant was:
  - screened for eligibility based on proposal aims and overall responsiveness to RFA priorities (e.g., California Health Needs Assessment)
  - randomly assigned and independently scored by 2 reviewers (after COI check)

- After independent grant scoring, reviewers participated in a group meeting to share their experiences using both criteria and to finalize decisions about the 5 awardees.

- A follow-up survey was sent to reviewers to expand on reflections using each scoring system.

INSPECT Scoring

Higher scores (out of 30) = better

40% weighting

#	Criterion	Score
1	The care, quality, community gap or need	0-3
2	The evidence-based treatment to be implemented	0-3
3	Conceptual model, theory or framework and theoretical justification	0-3
4	Stakeholder priorities, engagement in change	0-3
5	Settings readiness to adopt new services/treatment/programs	0-3
6	D&I strategy/process	0-3
7	Team experience with setting, treatment, and D&I process	0-3
8	Feasibility of proposed research design and methods	0-3
9	Measurement and analysis section	0-3
10	Policy/funding environment; leverage of support for sustaining change	0-3
	Total Score	**0-30**

EXAMPLE: INSPECT DOMAIN #3

Conceptual model and theoretical justification

Score: 0	1	2	3
No conceptual model, framework, or other theoretical grounding is discussed	A conceptual model, framework, or other theoretical grounding is mentioned, but not linked to the study objectives, hypotheses, and measures	A conceptual model, framework, or other theoretical grounding is linked in some capacity to the study objectives, hypotheses, and measures, but may need additional clarification	An implementation and/or improvement science-specific conceptual model or framework is clearly described, with theoretical constructions explicitly described within the proposed setting, population, and intervention contexts
Some conceptual model is cited but its basis and constructs are irrelevant to study objectives and/or the study setting	The chosen conceptual model, framework, or other theoretical grounding may be appropriate for the intervention, but the rationale is not clearly supported with citations from the literature	The chosen conceptual model, framework, or other theoretical grounding is appropriate for the intervention /implementation strategies as evidenced by a well-defined rationale with adequate citations from the literature, but would still benefit from further specificity	The implementation and/or improvement science-specific conceptual model or framework is used to frame the proposed study in all aspects including the study questions, aims/objectives, hypotheses, process, and outcome measures
			Some discussion may refer and describe how study findings would build upon or otherwise contribute to theory or the larger implementation and/or improvement science fields

NIH Scoring

Lower scores (closer to 1) = better

30% weighting

Overall Impact or Criterion Strength	Score	Descriptor
High	1	Exceptional
	2	Outstanding
	3	Excellent
Medium	4	Very Good
	5	Good
	6	Satisfactory
Low	7	Fair
	8	Marginal
	9	Poor

Findings

Table 1 Summary scores for NIH and INSPECT ratings in the current study and INSPECT scores from Crable et al. [5]

From: Enhancing review criteria for dissemination and implementation science grants

	NIH from the current study (n=10 proposals received in 2020, 2021)	INSPECT from the current study (n=10 proposals received in 2020, 2021)	INSPECT from Crable et al. [5] (n=30 proposals, received in 2016, 2017)
Mean	4.1	17.9	9.2
Median	3.8	19.8	7
Mode	3.8	–	6
Range	2.5–6.4	10.5–23.5	0–26
Standard deviation	1.2	4.5	7.5

NIH scores range from 1 to 9 with lower scores indicating more favorable ratings. INSPECT scores range from 0 to 30 with higher scores reflecting more favorable ratings

Findings

Table 2 Criterion-specific INSPECT rating frequencies for the DISC ACTRI pilot review of $n = 10$ proposals

From: Enhancing review criteria for dissemination and implementation science grants

INSPECT criterion	Rating scale				Total average, M (SD)
	0	**1**	**2**	**3**	
The care, quality, community gap, or need	0 (0%)	1 (6%)	9 (50%)	8 (44%)	2.39 (0.61)
The evidence-based treatment to be implemented	0 (0%)	4 (22%)	9 (50%)	5 (28%)	2.06 (0.73)
Conceptual model, theory or framework, and theoretical justification	0 (0%)	7 (39%)	7 (39%)	4 (22%)	1.83 (0.79)
Stakeholder priorities and engagement in change	1 (6%)	4 (22%)	9 (50%)	4 (22%)	1.89 (0.83)
Settings readiness to adopt new services/treatment/programs	2 (11%)	10 (56%)	5 (28%)	1 (6%)	1.28 (0.75)
D&I strategy/process	3 (17%)	3 (17%)	9 (50%)	3 (17%)	1.67 (0.97)
Team experience with setting, treatment, and D&I process	0 (0%)	3 (17%)	12 (67%)	3 (17%)	2.00 (0.59)
Feasibility of proposed research design and methods	3 (17%)	6 (33%)	9 (50%)	0 (0%)	1.33 (0.77)
Measurement and analysis	2 (11%)	8 (44%)	3 (17%)	5 (28%)	1.61 (1.04)
Policy/funding environment and leverage or support for sustaining change	3 (17%)	7 (39%)	5 (28%)	3 (17%)	1.44 (0.98)

Findings

- There was a statistically significant inverse correlation ($r = -0.78$, $p < 0.01$) between the average NIH ratings and the average INSPECT ratings.

- This is consistent with the original INSPECT study that also observed a moderate inverse correlation ($r = -0.62$, $p < 0.01$).

Findings

Reflections from reviewers highlighted unique value and utility for each scoring system:

- NIH criteria had a broad scientific purview and were better suited to evaluate effectiveness-focused and pre-implementation proposals with less formed implementation strategies
- INSPECT criteria were better suited to rate the quality of integrating DIS considerations and to assess potential for generalizability, real world feasibility and impact
- INSPECT was perceived as a more objective rating system

Overall, reviewers noted that INSPECT was a helpful tool to guide DIS proposal writing

Reviewer Reflections

"Because NIH criteria are broader, there was more subjectivity to the review."

"INSPECT worked more like a specific checklist to ensure the necessary components for a strong D&I proposal are included. It was easier to think objectively about the proposal and rate it."

"I really like the descriptiveness of the INSPECT criteria because I think it gives reviewers more direction and makes the criteria a bit more reliable to apply overall."

"…research proposing novel D&I methods may be better suited for NIH criteria, while INSPECT criteria may be better suited for applied D&I research."

Implications for D&I Research

We confirmed complementarity in using both scoring criteria in our pilot grant proposal reviews

We highlighted the utility of INSPECT as a potential DIS resource for training and capacity building

Implications for D&I Research

Possible refinements to INSPECT include:

- more explicit reviewer guidance on assessing pre-implementation proposals
- inviting reviewer commentary on specific ratings
- greater clarity on rating criteria with overlapping descriptions

Potential opportunities to further refine in training and review activities for NIH Clinical and Translational Science Award programs that newly require DIS focus

THANK YOU!

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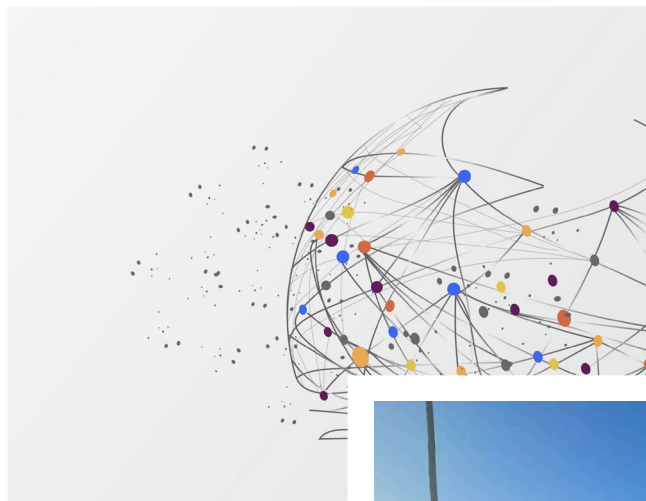
Questions?

A few for you:

1. As a grant reviewer, what challenges/observations have you noted in using existing review criteria for D&I grants?

2. As a grant applicant, what challenges/observations have you noted in reviews from your D&I grants?

3. How might you use INSPECT in your setting (VA, CTSA, non-US)?