

Characterizing Major Issues in ClinicalTrials.gov Results Submissions

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Background

- ClinicalTrials.gov provides public access to summary results for 27,000+ clinical studies.
- Before posting, results submissions are reviewed by ClinicalTrials.gov staff using standard review criteria to assess for apparent errors, deficiencies, or inconsistencies and to ensure complete, sensible entries that can be understood by readers of the medical literature.

Objective

- To characterize the type and frequency of major issues identified in results submissions by ClinicalTrials.gov staff

Study Design / Method

Initial results submissions 7/19/15 to 8/15/15 were reviewed per standard review procedures.

Second reviewer examined a convenience sub-sample of submissions with major issues to assess agreement with the reviewer and characterize the major issues identified.

Findings

- 67% (240/358) results submissions from July 19, 2015 to August 15, 2015 had major issues.
- In convenience sub-sample of 215 submissions with major issues (47% = 101 industry, 53% = 114 non-industry):
 - 471 occurrences of 37 unique major issues
 - Mean (SD) = 2.2 (1.3) unique major issues per submission
 - 1.9 (1.2) for industry submissions
 - 2.5 (1.4) for non-industry submissions

Major Issue Outcome Measure Examples

1. Invalid Unit of Measure

Title:	Systolic Blood Pressure	
Description:		
Time Frame:	6 months	
Arm/Group Title	Remuverol Low Dose	Remuverol High Dose
Number Analyzed	2420	2364
Mean (Standard Deviation)	140 (5)	128 (10)
Unit of Measure: 142		

Suggested edit: "mmHg"

2. Insufficient information about a scale

Title:	PASI at 3 months	
Description:	[NO descriptive text provided]	
Time Frame:	3 months	
Arm/Group Title	Hypertena	Placebo
Number Analyzed	150	148
Mean (Standard Deviation)	2.5 (5.2)	7.6 (4.5)
Unit of Measure: scores on a scale		

Suggested edit: "The Psoriasis Area and Severity Index (PASI) measures the severity of psoriasis, and ranges from 0 (no disease) to 72 (maximal disease)."

5. Unclear Outcome Measure

Title:	Safety and Tolerability		
Description:	[NO descriptive text provided]		
Time Frame:	1 year		
Arm/Group Title	EnderG 25 mg	EnderG 50 mg	EnderG 100 mg
Number Analyzed	6	6	7
Measure Type: Count of Participants	2	4	5
Unit of Measure: participants			

Suggested edits:

- Report as 2 separate outcome measures:
 - Safety: "Number of participants with any treatment-related adverse event"
 - Tolerability: "Number of participants with a dose-limiting toxicity"

8. Data with multiple Units of Measure

Title:	Pharmacokinetics (Cmax, Tmax, AUC0-24)	
Description:		
Time Frame:	Baseline to 90 days	
Arm/Group Title	Vuxcluglyn	
Geometric Mean (Standard Deviation)	Unit of Measure: mg/dL, min, mg*h/dL	
Number Analyzed	12	
Cmax	350 (23)	
Tmax	93 (8)	
AUC0-24	32550 (230)	

Suggested edits: Report as 3 separate outcome measures

Disclosure

Disclosure & Conflict of Interest:
All authors report working for ClinicalTrials.gov.

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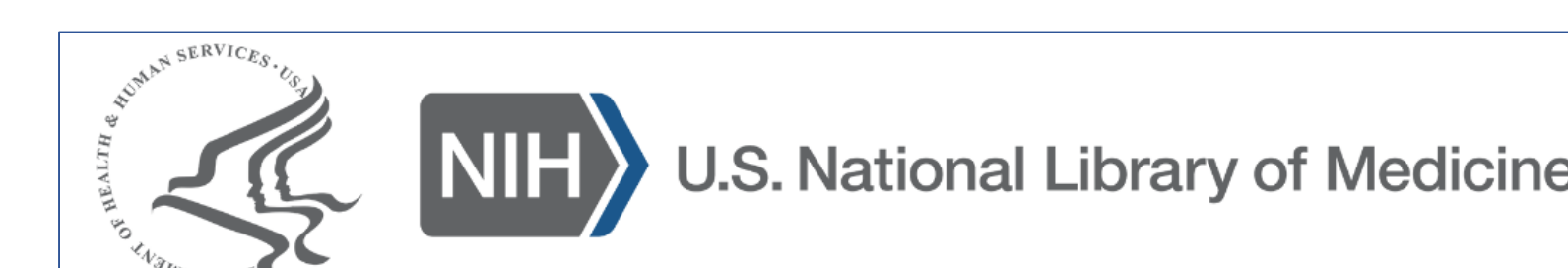


Table 1: Categories of Major Issues in Results Submissions

Major Issue	Number (%) n=471
1. Invalid/inconsistent Unit of Measure	86 (40%)
2. Insufficient information about a scale used for assessment	55 (26%)
3. Internal inconsistency—inconsistency between information in different parts of the record	52 (24%)
4. Written results or conclusions	47 (22%)
5. Unclear Baseline or Outcome Measure	44 (20%)
6. Incorrect Measure Type	23 (11%)
7. "0" Participants at Risk for Adverse Events without explanation	19 (9%)
8. Data with multiple Units of Measure	19 (9%)
9. Multiple time points without an explanation	15 (7%)
10. Results not reported per arm	14 (7%)
11. Non-meaningful values included as "placeholder" data	12 (6%)
12. Adverse Events at Risk population inconsistent with other information in record	12 (6%)

Conclusions

- 85% (398/471) occurrences of major issues could be described using only 12 categories.
- Further research is needed to confirm the generalizability of these findings.
- Aim to use findings to improve the validation process, develop targeted support materials, and improve results reporting on the platform.