

Ethical Issues for Biostatisticians

ASA Ethical Guidelines for Statistical Practice



Shared Values

Statisticians have social obligations to perform their work in a responsible, competent, and ethical manner. This includes responsible attention to:

1. The social value of the work and the consequences of its quality
2. Avoidance of the tendency to slant results to predetermined outcomes
3. Statistics as a science – this implies the body of knowledge evolves
4. Maintenance and upgrading of competence
5. Adherence to laws and regulations
6. Preservation of data archives



Shared Values

In addition, good professional citizenship encourages

7. Collegiality
8. Support for improved understanding
9. Support for sound statistical practice
10. Exposure of dishonest or incompetent uses of statistics
11. Professional service



Topic Areas of the Ethical Guidelines for Statistical Practice

- Professionalism
- Responsibilities in publications and testimony
- Responsibilities to
 - Funders, clients, and employers
 - Research subjects
 - Research team colleagues
 - Other statisticians or statistical practitioners
- Responsibilities regarding allegations of misconduct
- Responsibilities of employers



Professionalism



1. Strive for relevance – includes competent understanding of subject matter issues, clearly defined statistical protocols, technical criteria to justify the study and methods
2. Guard against approaches that might predetermine the analytic result
3. Remain current in methodological understanding
4. Assure adequate statistical and subject-matter expertise are applied in research
5. Use only statistical methods suitable to the data and to obtaining valid results

Professionalism



6. Don't join a project unless you expect to achieve valid results and you are confident your name will not be used without your explicit consent
7. Automated statistical procedures are not necessarily appropriate or correct; Understand the theory, data, and methods used; The best study results involve a statistician from the beginning
8. Recognize the pitfalls of multiple testing and cherry-picking results; Failure to disclose multiple testing is misleading
9. Respect and acknowledge the contributions and intellectual property of others
10. Disclose conflicts of interest
11. [Testimony]

Responsibilities in Publications (and Testimony)



1. Maintain personal responsibility for all work bearing your name; insist upon appropriate authorship
2. Report statistical and substantive assumptions
3. Identify who is responsible for the statistical work
4. Make clear the basis for authorship order
5. Account for all data considered and explain the sample(s) actually used
6. Report the sources and assessed adequacy of the data
7. Report data cleaning and screening procedures used
8. Clearly and fully report the steps taken to guard validity

Responsibilities in Publications (and Testimony)



9. Address omitted confounding variables (if appropriate)
10. Identify the ultimate financial sponsor, the stated purpose, and the intended use of the study results
11. Include appropriate disclaimers when reporting data that may not represent a defined population
12. Report the limits of statistical inference, deviations from the design plan, and possible sources of error
13. Share data to the degree possible, with appropriate confidentiality safeguards
14. Promptly and publicly correct any errors discovered after publication
15. Write with consideration of the intended audience