

U.S. Policy in Support of Information Quality

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 - Biased: x is drawn from a known or suspected distribution, plus an embedded error that usually is correlated with a policy objective
 - Wrong: x is a one-time realization of a random variable

QUESTIONS?

How information quality error affects everyone personally

- Inclusion of biased or wrong information about you
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 - Failure to record correct information about you
 - **Inclusion of incorrect information about you**
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QUESTIONS?

Inclusion of biased or wrong information: Coronary artery bypass graft surgery (“CABG”)

- A decision to undergo CABG is risky
 - Radiological risk
 - Surgical risk
 - Infection risk
 - Rehabilitation risk
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- A decision to undergo CABG is risky
 - Radiological risk
 - Surgical risk
 - Infection risk
 - Rehabilitation risk
 - Alternatives to surgery also are risky
 - percutaneous coronary intervention (“PCI”)
 - delay
-

QUESTIONS?

Failure to record correct information: Drug allergies

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Failure to record correct information: Drug allergies

- Certain antibiotics cause profound hearing loss
 - These drugs can and should be avoided, especially in patients who already have hearing loss, unless there is no effective alternative
 - Drug allergies should be recorded and made known to physicians and nurses
 - **Failure to record drug allergies leads to preventable harm**
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QUESTIONS?

Inclusion of incorrect information: False diagnosis

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Inclusion of incorrect information: False diagnosis

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 - Few people have access to their own medical records, so most people cannot identify errors
 - **The elderly are especially susceptible because their declining cognitive capacity leads them to rely even more on physicians and nurses**
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QUESTIONS?

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- Errors lead decision makers to make avoidable mistakes
 - Errors in electronic databases are amplified, leading decision makers to make larger mistakes
 - **Errors caused by biased or false lead decision makers to make different decisions than they would make if they had unbiased or true information**
-

QUESTIONS?

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- Where data are uncertain or variable, propagate the uncertainty through all calculations
 - Where data are biased, highlight it, estimate its impact on the outcome, and search for ways to reduce it
 - Where data are wrong, don't use them
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QUESTIONS?

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What the U.S. government does to improve information quality

- Congress directed the Office of Management and Budget to issue government-wide guidelines
 - Office of Management and Budget directed every agency to issue agency-specific guidelines based on the government-wide guidelines and provide administrative procedures for avoiding and correcting error
 - **Administrative procedures allow agencies to find and take advantage of expertise they don't have**
-

QUESTIONS?

What principles underlie the U.S. government's information quality policy?

- Transparency
 - Utility
 - Integrity
 - Objectivity
 - Substantive
 - Presentational
-

Transparency

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- Transparency is achieved when outside parties can reproduce the government's results using the same information the government used
 - This requires agencies to:
 - fully disclose assumptions, data, methods, and computer code
 - practice humility with respect to their knowledge and expertise
 - display an attitude that welcomes error correction
-

QUESTIONS?

Utility

- Utility means useful to both the government and the public, even when the public may disagree
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Utility

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 - This requires agencies to respect differences of opinion
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QUESTIONS?

Integrity

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Integrity

- Integrity means free from external manipulation or alteration, and unauthorized internal change
 - This requires agencies to:
 - Maintain and disclose a clear chain of custody so that external manipulation or alternation can be detected if it occurs
 - Fully document and make public all authorized changes
-

QUESTIONS?

Objectivity

- Information is substantively objective if it is “accurate, reliable, and unbiased”
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Objectivity

- Information is substantively objective if it is “accurate, reliable, and unbiased”
 - Information is presentationally objective if it is “presented in an accurate, clear, complete, and unbiased manner”
-

QUESTIONS?

Administrative procedures for preventing the dissemination of error

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 - External to the agency that wants to disseminate the data
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Administrative procedures for preventing the dissemination of error

- Any tool is acceptable if it is effective
 - Peer review provides a “safe harbor,” but to be effective it must be:
 - Independent of those who produced the data
 - External to the agency that wants to disseminate the data
 - Rigorous in searching for and identifying errors in the data
-

QUESTIONS?

Administrative procedures for correcting errors that have been disseminated

- Published procedures, open to everyone, for requesting the correction of error
 - Deadlines for agencies to correct the error or explain why it won't do so
 - An independent appeal process
 - A deadline for agencies to respond to appeals
 - Possible review by a court
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QUESTIONS?

Questions you think of later (in English)?

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