

Data Quality Improvement

Unit 11d: Common Causes of Insufficient Data Quality & Design Recommendation

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Objectives

At the end of this segment, the student will be able to:

- Discuss common causes of data insufficiency
- Describe how health information technology (HIT) design can enhance quality

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Causes of Insufficient Data Quality

Systematic

- Unclear or ambiguous definitions
- Incomplete or unsuitable data
- Violations of data collection or processing protocols
- Poor screen/interface design
- Programming errors
- Lack of data quality checks

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Causes of Insufficient Data Quality

Random

- Inaccurate transcription or typing errors
- Data overload
- Motivational or turnover

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Data Quality Enhancement Opportunities

Prevention

Create best possible quality through design

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Detection

Inspect for potential or real quality issues

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Improvement

Take action for ongoing quality improvement

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Best Practices: Prevention

Identify required data elements

Develop a data dictionary

Optimize data capture

Establish collection guidelines

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More Best Practices: Prevention

Control user access

Develop user-friendly screens

Create a data monitoring plan

Educate users

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Best Practices: Detection

Automatic data checks

Conduct audits/data quality checks

Review collection protocols & report logic

Assess variability in data

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Best Practices: Improvement Actions

Provide regular reports to users

Correct inaccuracies & complete missing/incomplete data

Document & correct detected errors

Implement identified system changes

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Summary

- Clinical data drive health care decisions
- Poor data quality have a significant negative impact on healthcare outcomes
- Data quality is multi-dimensional
- Insufficient data are linked to a number of systematic and random causes
- HIT professionals can use best practices enhance data quality

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References

- Arts D, De Keizer NF, Bosman R, De Jonge E, Joore J. Training in data definitions improves quality of intensive care data. *Critical Care*. 7:129-184. 2002.
- Arts D, De Keizer NF, Scheffer GT. Defining and improving data quality in medical registries: a literature review, case study, and generic framework. *J Am Med Inform Assoc* 9;6: P600-11. 2002.
- Chappell K, Newman C. Potential tenfold drug overdoses on a neonatal unit. *Arch Dis Child Fetal Neonatal Ed* 89. 483-484. 2004.

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