

Concordance of Chart Audit and Billing Data with Direct Observation
Objective:
 To determine the optimal non-observational method of measuring the delivery of dental procedures.

Methods: As part of the Direct Observation study research hygienists directly observed consecutive patient visits in 120 dental practices. This preliminary report includes 73 practices and 2275 patient visits. . This report utilized instruments designed to provide the same information about dental procedures accumulated by direct observation, chart audit and billing data collection. For each dentist provided dental service the sensitivity, specificity, and Kappa statistic were calculated for chart audit and billing data compared with direct observation. Inter-rater reliability among 4 research hygienists was calculated using the Kappa statistic for a separate sample of videotaped visits and dental records.

Results: Research hygienist inter-rater reliabilities were generally high. The specificity of the chart audit and billing data was high for most services. The sensitivity of the dental record was low for preventive service (e.g. oral cancer screening), high for tooth restorative procedures and moderate for prosthetic procedures. Chart audit data showed higher levels of sensitivity than billing data. Selected procedures are shown in the table.

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(n = 73 practices)

CA= Chart Audit BD= Billing Data

Procedure# Performed Sensitivity % Specificity % Kappa Picked up by CA & BD

Oral Exam 482 CA 62.4

BD 44.4 93.6

95.90.59669.2

Oral Cancer Screen 90 CA 31.1

BD 098.9

1000.39641.0

Amalgam Restoration 96 CA 84.4

BD 55.299.3

99.10.862

0.63888.2

Composite Restoration 329 CA 86.3

BD 78.795.8

96.80.821

0.78575.2

Full Denture 82 CA 65.9

BD 26.899.7

99.80.760

0.39971.6

Prophylaxis104CA 84.6

BD 77.994.8

96.10.648

0.66193.7

Conclusions: The validity of chart audits and billing data for recording dental procedures varied with the procedure. This report can be utilized to choose optimal non observation methods for specific dental procedures and to interpret existing data using these common measures.

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