Electrocardiogram Losses in the Evaluation of Patients Presenting with Chest Discomfort to the Emergency Department

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BACKGROUND
• EP initial ECG interpretation: A medi-legal event best recorded at time of performance with neither lost recollections nor retrospectoscope
• AHA Guideline: Suspected ACS presents to ED → Interpret ECG ≤ 10 mins
• Clinical policy enacted at study hospital:
  • ED Technician immediately finds EP and hand-delivers CP ECG
  • EP must time and initial the tracing
  • EP must note significant disagreements with computer interpretation

OBJECTIVE
Determine the retention rate to the permanent medical record of chest pain (CP) patient ECGs reviewed, interpreted, and signed immediately following performance by the emergency physician (EP).

METHODS
DESIGN: Retrospective record review
SETTING: Tertiary referral emergency department
SUBJECTS: Adult ED patients presenting with chest discomfort
STUDY PERIOD: Jan – Jun 2008
INTERVENTIONS/OBSERVATIONS:
• One EP subject to the above policy additionally contemporaneously dictated a stand-alone initial ECG note.
• CP ECG patients were thereby later identified for record review.
• Medical records were checked for presence of original hand-notated ECG.
• All reviews occurred ≥ 2 months after the ED encounter, allowing time for record incorporation of “transiently” misplaced ECGs.

RESULTS

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<tr>
<th>Description</th>
<th>Number</th>
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<tr>
<td>ECGs presented to and initialed by the emergency physician</td>
<td>37</td>
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<td>Initialed ECGs retained to the permanent medical record</td>
<td>3</td>
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<td>ECG Loss Rate</td>
<td>92%</td>
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For all instances of lost EP-notated ECGs, a subsequent Cardiology-interpreted version was present in the medical record.

CONCLUSIONS
• These emergently interpreted ECGs experienced an unacceptable loss rate.
• Numerous opportunities for loss exist within the process of ED ECG retention.
• One such potential loss point is the erroneous discarding of the original ECG upon “substitution” of a finalized Cardiology-interpreted version.
• Emergency physicians should not rely on the ECG paper copy to permanently document the timing or content of their initial ECG interpretation nor their compliance thereby with clinical policy.
• There is need to identify and rectify the individual loss points at greatest cause for the cumulative losses observed in this study.
• A “paperless” fully integrated electronic medical record and appropriate physician compliance therewith ought to reduce risk of such information loss.