



ABSTRACT OF PAPER

PROGRAM COPY SHEET

Please use this form and follow typing directions. Edit copy carefully for spelling.
We print and read proof from this copy.

Title of Paper	Technician Reading of Electrocardiograms for Population Studies
Name of Author (or Authors) as you wish it to appear in the alphabetical list. Give degrees; use "F.A.C.C." if applicable.	Henry Blackburn, M. D., F. A. C. C. and Geoffrey Rose, M. D.
Institution City and State	Laboratory of Physiological Hygiene, University of Minnesota Minneapolis, Minnesota, and Department of Epidemiology, London School of Hygiene, London, England
Body of Descriptive Copy, limited to 250 words; no cuts. All caps will be so printed. Underline italics. Show ® for registered product names.	<p>Efficient exploitation of technician and machine aids to the physician is a logical trend and practical necessity in medical services and research. Medical processes are amenable to technician-machine performance when measurement, unambiguous criteria, and routine procedure can be developed.</p> <p>Results of ECG test readings were analyzed among twenty-five specially trained nurses and technicians. The initial two week training program consists of lectures and laboratory including basic electrophysiology, practical experience in ECG recording, recognition of ECG waves, measurement of amplitudes, intervals and axes, and detailed classification by Minnesota Code criteria of important Q waves, high R waves, S-T depression, T wave negativity, A-V and ventricular conduction defects, and arrhythmias.</p> <p>A 100 test tracings were given at intervals of one day to six months and scores computed for agreement within and between observers, for agreement with a cardiologist's "standard" interpretation, and for reading speed. Scores for technicians were compared with those for cardiologists not thus formally trained but experienced in systematic classification of large numbers of ECGs.</p> <p>Initial differences in technician competence evened out over time and the majority attained acceptable performance. Their scores were generally the same or superior to those attained by clinical electrocardiographers.</p> <p>Duplicate ECG reading by specially trained technicians, with adjudication of their differences, is a satisfactorily repeatable and valid method for systematic processing of conventional ECGs in population studies, when automated tape-computer facilities are uneconomical or unavailable.</p>