

EVALUATION OF A REMOTE TELEMEDICINE ULTRASOUND, ELECTROCARDIOGRAPHIC AND PULMONARY FUNCTION TEST SYSTEM *

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AIM: to evaluate the quality of the ultrasound images, electrocardiographic tracings and pulmonary function readings obtained and transmitted electronically with the CyberMDx Integrated Telehealth System

DESIGN: control clinical trial comparing the test system with standard ultrasound electrocardiographic and pulmonary function machines in approved routine use as controls.

SETTING: Medical Clinics at Golden Gate Fields and Bay Meadows Racecourses.

METHOD: Two abdominal ultrasound examinations and electrocardiographic tests were conducted on each subject with the test and the control machines in sequence. The ultrasound images were read by a radiologist, and the pulmonary function tests and ECG tracings were assessed by a physician. Readers were blinded as to the identity of the subject and the machines.

RESULTS: Ultrasound and electrocardiographic examination were done on 43 apparently healthy jockeys and staff and pulmonary function tests were performed on **28** subjects. Despite the small sample size, the findings are reliable because many significant abnormalities were observed. Fifteen subjects showed evidence of renal pathology including diminished kidney size, multiple micro and macro renal calculi and **5** had significant cholethiasis. Electrocardiographic abnormalities due to hypo and hyperkalemia were evident in 7 subjects and 7 subjects had obstructive lung disease. The readers could not distinguish qualitatively between the images and tracings from the test and control machines. There were also no differences between the findings from the two systems.

CONCLUSION: The quality of the ultrasound, electrocardiographic and pulmonary function assessment system in the test machine is equivalent to the standard machines in routine use.