explicit diagnostic criteria and algorithms for making a diagnosis. Structured or semi-structured diagnostic interviews attempt to operationalize the assessment process in that they propose questions for eliciting the individual signs and symptoms that enter into the definition of each criterion. Diagnoses are derived using computer programs that build upon algorithms as defined in the diagnostic systems. The current use of computers in this field as well as the potential for further developments will be illustrated, using examples from three WHO structured diagnostic interviews: the Composite International Diagnostic Interview or CIDI, the Schedules for Clinical Assessment in Psychiatry or SCAN and the International Personality Disorder Examination or IPDE.

S13-4

3D VIRTUAL REALITY (VR) SYSTEMS, COGNITION AND CREATIVITY

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We will present our present approaches for enhancing cognitive processes as well as creative thinking by using a 3D VR-System.

The first study was designed in order to investigate the effect of VR-Systems within cognitive research. Therefore we formed two investigation groups: The VR group performed various standardized cognitive tests using a 3D VR-Simulation as testing environment, while the control group performed the tests in the "usual" way.

In another study the effect of changes in textures, colors, in- & output devices and the effect of unexpected irrational changes of the applied 3D VR-Simulation on cognitive patterns and creative thinking were investigated.

In both studies special attention was given to the participants tolerance of the immersion in the virtual worlds.

S13-5

ITALIAN PSYCHIATRY AND COMPUTER AIDED INTEGRATION BETWEEN AGENCIES AND DEPARTMENT FACILITIES FOR IMPROVEMENT OF PATIENT MANAGEMENT AND QUALITY CONTROL

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The focus of Italian psychiatry is community care, which is based on Mental Health Departments.

The services which belong directly to the Department are emergency room, emergency ward, community services, half way houses and community rehabilitation centers.

For any single therapeutic project the Department activity can be integrated with other independent agencies, such as social services, non profit associations, local administrations, courts, drug addiction services and child psychiatry services.

The integration of activities among several agencies requires an efficient methodology of data recording which can allow easy and reliable data transmission. The standardization of the this process has constantly brought up problems, both technical and ethical (e.g. the question of privacy). From a technical point of view the organization of these interactions has been developed together with the development of informatics.

Problems faced in a complex way in the past, have been simplified in the last few years with technical solutions. Such as the development of WEB platform (such as the Internet).

This paper describes the historical development of the Department of Informative Systems, with a specific consideration of the most recent models based on common software which allow the local flexibility required in a departmental organization.

These models of informative systems can also offer excellent opportunities to do research about psychiatric care effectiveness, because they allow monitoring of therapeutic course within the specific social and health care context.

S13-6

PREDICTION OF SUICIDE IN PSYCHIATRIC PATIENTS BY NEURAL NETWORKS

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Background: Convergence of neural networks in psychiatric parameters has been proven. The significant parameters in the detection of response to treatment have been identified by neural networks. The system proved to be as efficient as expert physicians in suggesting treatment plans for schizophrenic and depressive patients. We tested neural networks and their ability to predict suicide in psychiatric patients.

Methods: Our multicenter investigation included four psychiatric hospitals in four different demographic regions in Israel, in 2 stages. During the first stage, a total of 161 patient's records were fed into the Neural Network Backpropagation system in order to teach the system. Of those files, 77 belonged to patients with no previous suicide ideation or attempt, and 84 belonged to patients with Medically Serious Suicide Attempts (MSSA). The intelligent Neural Network Backpropagation system was tested on 150 patient records belonging to patients with no previous suicide ideation or attempt and 54 records of patients with MSSA.

Results: Sensitivity was 65%, and specificity was 72%. Positive predictive value was 53.5% and negative predictive value was 91%. As expected, the system was more accurate in the hospital whose data was used to train the computers. In the first stage of the study, backpropagation was more accurate for predicting no risk than for predicting risk of suicide. The results at this point were disappointing. During stage two we trained the system with 100 new files; (50 MSSA and 50 with no previous suicide ideation or attempt), and entered additional psychiatric parameters. The system was tested on 100 patient files; 50 MSSA and 50 with no previous suicide ideation or attempt. Detection of MSSA was 94% and detection of no risk was 90%, for a total of 92% accuracy, which is most promising. We now plan to test the predictive value of the system in our emergency ward.

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