

psychiatric services did not address patients' problems with violence.

### S11.02

From general to forensic psychiatry and back

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**Problem:** As in other European countries, in the German State of Hessen during the last two decades the number of forensic beds has dramatically increased. From General to Forensic Psychiatry: This increase is a response to violent behaviour by male patients with severe mental illness who previously had been treated in general psychiatry. In Hessen, during the period 1990 to 2005 the number of admissions to forensic hospitals of patients suffering from functional psychoses increased by 118% while the number of patients suffering from other disorders rose by only 18%. Forensic Psychiatric Treatment: Patients with functional psychoses who are admitted to forensic hospitals present antisocial personality traits, long standing mental health and substance misuse problems, and a history of both violent and non-violent criminal activities. In order to meet the complex treatment needs of these patients treatment components which address each of their multiple problems have been implemented. From Forensic Psychiatry back to the community: A forensic mental health service that uses state-of-the-art methods in assessing and managing their patients is able to cope with an increased burden: In Hessen, the average length of inpatient care for patients with functional psychoses has decreased by one year, while the number of discharges increased by 122%. In order to maintain treatment successes it is necessary to discharge these patients into pro-social environments. Furthermore, legal powers to ensure compliance with all aspects of treatment once the patient is discharged into the community have proven to be a key factor in reducing re-offending.

### S11.03

Re-institutionalisation of the severely mentally ill - who or what is to blame?

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The prejudice of the outstanding dangerousness of individuals with severe mental illness is one of the major reasons for the special position of psychiatry among the several medical disciplines. The mental health reforms initiated during the second half of the 20th century had the principal aim to move the locus of treatment and care from the big mental hospitals into the community and to strengthen the patients' civil rights - so reducing stigmatization and 'normalizing' the aforementioned special position of psychiatry. Despite all doubtless improvements for the majority of mental patients every European country is reporting on rapidly growing admission rates of mentally ill offenders to forensic hospitals. A possible association with the introduction of mental health reforms is under continuous discussion.

It will be shown that not single details of the reforms but, rather, the changed attitude towards a subgroup of severely mentally ill subjects being at higher risk of violence could be the crucial issue. These patients hamper the desired 'normalization' of the position of psychiatry, and, in fact, modern community care hardly offers sufficient treatment options for them.

The basis for this development may lie in the societal changes of the last decades. Today, we do dispose of the 'technical' (financial, pharmacological) preconditions for the treatment of severely mentally ill patients. However, the emotional preconditions of society and its representatives seem to be only insufficiently developed. Therefore, forensic hospitals are in danger to take over the role of the old psychiatric asylums.

## Symposium: Delirium in the elderly

### S58.01

Risk factors for delirium in the elderly after coronary artery bypass(CABG)

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Coronary artery bypass grafting (CABG) is a worldwide used myocardial revascularization procedure, which despite the modern advantages still has a spectrum of complications, especially in old age population.

The relatively old age of the patients who undergo CABG and their widespread atherosclerotic disease are possible reasons for vascular sequels leading to neurological and psychic dysfunctions. Delirium in the elderly after CABG surgery is common, according to some authors and our investigation, is detected in about 20- 34% causes and is often under-diagnosed. Its occurrence may be predisposed by a history a stroke and precipitated by a longer duration of cardiopulmonary bypass.

Increasing age, blood urea level, cardio-thoracic index, hypertension, smoking habits, blood replacement during bypass, atrial fibrillation(AF), pneumonia and blood balance in the post-operative period are the main risk factors for delirium. No specific factor associated with the CABG (eg. perfusion pressure, number of grafts) is correlated with increased risk for delirium post-operatively.

The number of studies (and our observations) have shown that patients in whom delirium develop have more complication rates, longer hospital stays, an increased rates of transfer to rehabilitation or long -term care facilities.

Finally, the identification and control of the risk factors for delirium should bring a decrease in delirium morbidity and mortality.

### S58.02

Delirium and suicidal behaviour in the elderly

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Suicide rates in elderly people have been high, worldwide. Suicide in elderly people is multifactorial. Mood disorders, physical illnesses, and previous suicide attempt, has been associated with increased risk of suicide in elderly people. Delirium or acute confusional state, also, has been proposed as a risk factor. Delirium is characterized by a disturbance in consciousness, change in cognition, perceptual disturbances, and often has multiple underlying causes. Delirium is often undetected or misdiagnosed, and is difficult to evaluate suicidal thoughts and intent in delirious patients. There is a debate in the medical literature concerning the role of delirium as a risk factor of suicidal behaviour. It has been proposed that, confusional state

contribute to impulsive suicide attempts, as could occur, in cancer or in AIDS patients. However, past work suggested that delirium was a protective factor for suicide.

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## Symposium: Treatment of cocaine dependence : The state of the science

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### S10.01

Neurobiology and treatment of cocaine dependence

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Cocaine produces its psychoactive effects primarily by blocking pre-synaptic transporters for biogenic amine neurotransmitters, especially dopamine and serotonin. This has the effect of increasing activity in the brain's mesocorticolimbic dopaminergic reward circuit. There is no proven medication to treat cocaine dependence. The difficulty in developing an effective medication may derive from cocaine's direct activation of the reward circuit, its ability to generate sensitization with repeated use, and its rapid access to the brain when smoked or injected. Attempts to directly affect the reward circuit, e.g., by blocking the dopamine transporter or dopamine receptors, have not been successful. Attempts to indirectly influence the reward circuit by affecting other neurotransmitters that modulate it have been more promising. These include increasing activity of GABA (an inhibitory neurotransmitter) with baclofen, vigabatrin, or topiramate (which also decreases glutamate activity); and increasing the activity of glutamate (an excitatory neurotransmitter) with N-acetylcysteine. Also somewhat promising are agonist substitution approaches using long-acting amphetamine preparations. Medications that are promising in animal studies, but not yet tested in humans, include dopamine D3 receptor partial agonists and cannabinoid CB1 receptor antagonists. In addition to these pharmacodynamic approaches, pharmacokinetic approaches, which reduce cocaine's access to the brain or enhance its metabolism, are being studied. An anti-cocaine vaccine, which binds cocaine and keeps it from crossing the blood-brain barrier, has been safe and effective in early clinical trials. Administration of cocaine-metabolizing enzymes, e.g., butyrylcholinesterase, has been effective in animal studies, but not yet studied in humans.

### S10.02

A Pet imaging study of the effects of modafinil and topiramate on brain mechanisms underlying cue-induced cocaine craving and dependence in cocaine-dependent and methadone maintained cocaine-dependent patients

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Although no pharmacological treatment has proved to be highly effective for reducing cocaine dependence, several medications have been tested over the last decade and have shown promising efficacy. Modafinil (Provigil), known as a treatment for day time sleepiness, and Topiramate (Topamax), an anti-epileptic medication also prescribed for migraine, have been shown to be effective in controlled clinical trials. We have recently started a major study utilizing Positron Emission Tomography (PET) brain imaging to monitor the progress of pharmacotherapy with modafinil or topiramate in cocaine-dependent and methadone-maintained cocaine-dependent patients. Patients will be assessed before treatment, and again after 4 weeks of pharmacotherapy. The aims of the project are to study effects of the two medications on cocaine dependence and craving, and on dopamine binding in the brain. At each assessment session, patients will undergo PET with [11C] raclopride to image the dopamine receptor DRD2. To trigger craving, patients will then be exposed to a videotape showing cocaine use; a questionnaire will be used to record their subjective responses, and a second PET scan will be performed with [18F] fluorodeoxyglucose (FDG) to image cerebral glucose metabolism during craving. This protocol was designed to enable us to study changes resulting from pharmacotherapy on dopamine binding in the brain, and on craving as reflected both in subjective measures and regional cerebral glucose metabolism. In addition, we will investigate the association between subjective measures of craving for cocaine and the level of dopamine DRD2 receptor occupancy in the brain before and after treatment. Notwithstanding the complexity of the clinical and therapeutic reality characterizing cocaine dependence, we hope to present preliminary evidence for the relative efficacy of these two promising medications in treatment for cocaine dependence. This evidence could also elucidate the brain mechanisms underlying cocaine craving and dependence in cocaine-dependent patients.

### S10.03

Cocaine rapid evaluation screening trials: Design, results, and lessons learned

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The development of medications for the treatment of cocaine dependence has been a high priority of the U.S. National Institute on Drug Abuse, National Institutes of Health. One of the main strategies has been to test available, marketed medications that affect CNS function and have a rationale for testing in a cocaine dependent population. The Cocaine Rapid Evaluation Screening Trials (CREST) utilized a randomized, controlled, parallel group, blinded methodology for comparing one or more medications against a placebo. Subjects were evaluated for a 2-4 week baseline and then randomized to a treatment group for 8 weeks. Standardized measures of outcome were used: urinary benzoylecgonine, retention, craving, depression, clinical global impressions, HIV risk behaviors. Counseling and procedures were also standardized across studies to facilitate data comparisons across drug classes. A total of 19 drugs were evaluated in 5 research clinics. Results from the studies suggested that cabergoline and reserpine should be further evaluated. Less robust effects were seen with sertraline and tiagabine although the sample size in each group was small (n= 15/group). Trials were analyzed separately and then a pooled analysis was performed. For example, an analysis of characteristics leading to at least 2 weeks of abstinence was performed. Being female with at most 5 years of prior use and being over 40, being a non-African-American male with at least four baseline uses and more than 4 years of prior use, and males with at most