

## Italian mental hospitals closer to closing

*Addio manicomio, ultimo atto* (Goodbye mental hospital, final act). This is how Italians are describing a recent government decree, approved by the Parliament, ordering the closing of all remaining psychiatric hospitals in the country. The decree may be the final step towards meeting the challenge Italy accepted nineteen years ago with the issuing of Law 180, although it is not clear that the necessary pieces are in place to allow this to happen.

The 1978 Law rejected the then-widely held belief that the mentally ill — even the most desperate cases that do not respond to treatment — are socially unrecoverable. By calling into doubt public fears about the unpredictability and possible dangerousness of people with mental illness, the law gave them the right to be admitted to a general hospital instead of being forced into a mental institution. The law called instead for comprehensive integrated community services, saying that mental hospitals are an intolerable life sentence. Proponents of this so-called “psychiatric revolution” were confident of success, although at that time no other country had gone so far.

Law 180 basically introduced psychiatric care into the national health-care system, causing the creation of special operative units and community services, including emergency services, inpatient and outpatient services, day care, and rehabilitation programs. Nevertheless, the ambitious project has, in a certain sense, remained on paper. For example, until the end of last year, 76 of the country's ninety mental hospitals hadn't closed yet, and an estimated 17,000 patients were still permanently hospitalized behind the walls of often-decayed buildings. The reluctance of local governments to implement the changes demanded by Law 180 has stirred up health care workers and family associations, who protest the insufficiency of community based residences of mental health care (the indispensable prerequisite to abolishing the old mental hospitals.)

The recent decree may force the local governments to act. It has rung loud alarm bells among Italy's Regions (Regioni), which will

find their resources from the National Health Fund cut by two percent if they do not provide for immediate closure of the remaining mental hospitals or — in case this is not possible in the short term because of the lack of alternative assistance services — fail to present a concrete reorganization project by June. This is the first time in modern Italian history that the central government has decided to apply sanctions against the Regions that do not observe a law.



Harvesting roses, a traditional cure for “brain fever.”

“Italy spends yearly L1500-2000 billion [US\$1 to 1.3 billion] on psychiatric care,” says Rosy Bindi, Italy's Minister of Health. “It is true that during the last years some Regions haven't

done too much to overcome the old institutionalization model, but their reluctance was also due to certain disparaging campaigns directed in the past by some visitors from abroad against the Italian experience.”

Many psychiatrists feel that the new decree alone won't solve all the problems with compliance. “It may sound like a paradox, but the implementation of all assistance services alternative to mental hospitals is much more important than the construction of new residences itself,” says PierLuigi Scapicchio, President of the Italian Society of Psychiatry. He says that, in fact, the number of assistance services is steadily growing, even while the organizational standards required to meet the patients' and their family's needs are suffering. Scapicchio argues that neither the Ministry of Health nor the Regions have worked out ways to monitor the quality of services and to quantify further needs.

In response to the scientific community's concern, Bindi claims that universities and research centers should do their part by defining adequate training programs for all mental health care workers, and determine proper evaluation criteria of assistance and treatment models. To this end, the Italian Society of Psychiatry has prepared a plan that will be presented at the general conference of Italy's Regions in June.

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## Cells in space

How does one treat a seriously injured astronaut in outer space or even another planet? To answer such a question, the US National Aeronautical Space Administration (NASA) has embarked on a program of growing tissues — and possibly whole organs — in space. NASA has developed a unique rotating bioreactor that allow cells to be grown in a microgravity environment that eliminates almost all shear forces placed upon a cell culture system while entering space. Back on earth, this novel bioreactor has led to exciting discoveries and applications by scientists trying to get cells to differentiate and form their natural three-dimensional tissue matrices — the holy grail of tissue engineers. NASA's bioreactor has allowed various labs to culture cells and even viruses previously impossible to grow using traditional methods.

These successes are attributed to the bioreactor's ability to provide an unique environment that closely resembles tissue differentiation during embryogenesis, and thus allowing cellular expression of surface epitopes similar to that of intact tissues. It also appears that cells grown in a microgravity, low-shear environment allows for greater chemical signaling, probably as a result of more surface contact between cells.

Realizing the bioreactor's commercial potential, Santa Monica, California-based VivoRx licensed exclusive rights from NASA for both therapeutic and diagnostic commercial applications. VivoRx has, in the past, successfully transplanted encapsulated islet cells from cadavers and porcine pancreas into insulin-dependent diabetics, perhaps a major breakthrough in the treatment of diabetes. However, pancreas from cadavers are in very short supply. The bioreactor may be the answer; VivoRx hopes the bioreactor will allow them to propagate enough human islet cells to use their cell-based approach to treat a large diabetic population. The company has already successfully grown islet cells generated from the bioreactors, and is beginning FDA-approved Phase I/II clinical trials.

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