

# Telepsychiatry: A New Paradigm for Mental Health Care Delivery

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**Background:** Though mental disorders are common and disabling, there is a gross shortage of qualified psychiatrists in India. There are 0.2 psychiatrists per 1 lakh of population in India. Also, the specialists in this field are concentrated mainly in urban areas creating a huge gap in delivering mental health care to people residing in remote and geographically isolated areas. Information and communication technology can be optimally applied to fulfill such unmet needs through telepsychiatry.

A project titled, ‘development and implementation of model telepsychiatry application for delivering mental health care in remote areas (using a medical knowledge-based decision support system)’, funded by the Department of Science and Technology, Government of India, is underway at the Department of Psychiatry, Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, India.

The aim of the project is to develop and implement a model telepsychiatry application to deliver mental health care to the underserved population of remote areas. The telepsychiatry application is envisaged to educate and empower the physicians in remote areas to identify and treat mental disorders through knowledge-based clinical decision support system and to support these physicians through specialist consultation *via* telepsychiatry.

**Participating centers:** Three sites, one each in the hill states of Himachal Pradesh (Regional Hospital, Bilaspur), Uttarakhand (Base Hospital Srinagar) and Jammu and Kashmir (Institute of Mental Health and Neurosciences, Srinagar) have been identified to start telepsychiatry and will serve as the peripheral regions for the project. The telepsychiatry center at the PGIMER, Chandigarh, is the nodal center responsible for the development of the decision support system and providing specialist consultation through telecommunication system, providing exchange of patient data and videoconferencing. Tata Consultancy Services has prepared the application software based on the diagnostic and treatment algorithms provided by the team of specialists at PGIMER, Chandigarh.

**Telepsychiatry application software:** This is a step-by-step clinical decision support system that covers diagnosis and management of the psychiatric disorders in both adults and children separately. The decision support system is developed based on specialist knowledge, standard diagnostic and management guidelines and clinical expertise of the project investigators.

**Diagnostic protocols:** The decision support system contains a semistructured interview with in-built automated rules (software driven) that guide the diagnostic process. These rules are based on standard diagnostic and classificatory systems. Inclusion of disorders, framing of questions in the interview and setting of diagnostic thresholds are based on the knowledge and clinical experience of experts in the field of mental health.

**Management protocols:** Decision support systems have also been developed for the pharmacological and nonpharmacological management of the mental disorders separately for adults and children. The management protocols are made again based on standard guidelines and clinical expertise, and importantly taking into account the characteristics and needs of the Indian population. The software application includes information and general guidelines to assist the physicians to undertake pharmacological management of the mentally ill in their own setting under the guidance and supervision of psychiatrist but without requiring the patient to be sent to the psychiatrist. The management protocols also include provision for investigations and framework for follow-up schedules. Simple and brief nonpharmacological interventions that can be delivered by nonspecialists have been developed based on knowledge and clinical experience of the specialists.

Thus, the project attempts consolidation of the intangible knowledge of the doctors and the knowledge spread over a large number of books to build a computerized knowledge system that can be continually updated.

**Specialist consultation:** The model telepsychiatry application provides for supervision and specialist consultation by psychiatrists through store forward data transfer and videoconferencing both synchronous as well as asynchronous. The data generated by the decision support system shall represent electronic medical record (EMR) with unique

identification number for each patient. The EMR would enable data storage and retrieval for routine clinical practice, consultation, education and research.

As of now, the telepsychiatry application is fully functional for adult modules (child modules are under preparation and will be ready soon), where even the nonpsychiatrist physicians at the peripheral sites are registering and treating patients with mental disorders.

Initial reliability and validity studies of diagnostic process are satisfactory. However, more extensive studies are currently going on.

**Implications:** Through this project, an attempt is being made at empowering the available human resources to provide care at primary level and thus bring down the disparity between the demand and availability/accessibility of services by means of information technology. Overall, the model telepsychiatry application is a promising solution to overcome the existing gross mental health gap. It represents a paradigm shift in the way health care is delivered in the country.