

# Personal Electronic Record Systems in Psychiatric Care; a Call for Integration

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**Abstract.** This paper proposes how research based developments are needed to use current computer technology to optimize the psychological/ psychiatric service. Research areas that can contribute to an optimized and integrated service within a personal electronic patient record are: intelligent assessment systems with feedback routines, matching and booking functionality, and evidence based intervention teaching for therapists. The proposed benefits of this research integration is a positive spiral of improved patient satisfaction, reduced cost of treatment, and a basis for better research. An integrative development program is proposed.

**Keywords:** psychotherapy outcome; matching; booking; psychotherapy research; cost efficiency; feedback; monitoring; quality improvement; information technology.

## 1 Introduction to the Problem

Patients in need of psychological care are faced with a challenging maze of how to find the best treatment for her/ his current problem. Knowledge about diagnostic assessment[1-4], treatment availability and the best treatment[5] for a given problem is distributed to various degrees in the population of primary care providers as well as in the patient population. When the patient does get assigned to a treatment, the matching with the patient and the treatment may be based on personally acquired network knowledge. The procedures to in depth assess the problem as well as the systems to document treatment response[6, 7] vary largely between providers. Details from the patients' previous treatment history is difficult to document in detail and often impossible. The lack of systematic assessment procedures can make it random whether the patient is offered the optimally empirically supported treatment ingredients for the specific problem. Only 8 to 10% of American psychologists uses computer supported assessment[6]. Finally, data for research on the efficacy and process on the patient is limited to the data collected from when treatment started at a treatment provider. Consequently, data from a naturalistic longitudinally study of the patient is only possible through a relationship to a research project set up for such

studies. With the recent scandals from researchers' manipulation of data in mind, the need for transparency and solid data storage can not be over emphasized.

In sum, the field of psychiatric care has large potentials for improved efficiency by implementing a personal electronic medical record (PEMR)[8-10] which includes 1) systems for assessment, 2) treatment matching, and 3) empirically based teaching systems for provider. These fields will be discussed in further details in the following.

### **1.1 Assessment and Monitoring**

The primary health provider does assess the patient by ICPC-2e International Classification of Primary Care into approximately 30 different possible psychiatric diagnoses (in the p and z domain) before referring to a specialist. Thus, the detailed assessment of the patient has to be done by the psychologist/ psychiatrist. The first sessions with the specialist will therefore be used to further diagnostic assessment. Once the problem is focused, it may be necessary to refer the patient to another therapist who specializes in treating the present problem. In the process time goes on before the patient gets the treatment and the patient have little control and responsibility during the process.

When the patient finally gets to the right treatment, there is seldom routinely monitoring of the treatment process. Consequently, there quality of treatment is seldom documented, and there will not be routinely actions when the patient does not respond to the treatment or when the patient has reached the goal of treatment. These decisions are fully left to the clinical judgment, which is of low reliability without objective decision support [11].

The missing possibility for the patient to fully or partly drive the assessment process online also makes it impossible to enjoy the benefits of new technology where treatment is computer assisted [12-15].

Most of patients' self reported information is used for research. This information is often collected by a researcher and used to analyze groups of patients. Researchers and their employers often consider data from assessment forms their property and will not easily let other have access to their data. Valuable individual longitudinal information will not be made available to the patient when going to a different site for later treatment. Further, data that can document the effect of a treatment may potentially be hidden or manipulated in the care of the treatment provider.

In all, there is a large potential for alleviating patients' suffering and improving efficiency by letting patients do their own assessment in a PEMRS.

### **1.2 Treatment Matching and Booking**

Patients are often referred by their primary physician to a local psychiatric clinic or a list of private practitioners. The list of private practitioners contains is not dynamic and will therefore not be updated on availability, or specialty accreditation. Therefore the patient is often randomly assigned to a therapist. Consequently, valuable time may

be used in searching and waiting for a good matching specialist. Current internet technology could make this process much faster and accurate.

### **1.3 Provider Supervision**

Therapists, especially in private practice are often not under supervision. No therapist has supervision based on routine reporting by the patient. They get counseling in the areas they request. Consequently, the patient has no control of this process unless letters of complaint are written; which is less likely when a patient is under much distress. A regular monitoring of patient response can alarm supervisors to cases where the therapist does not handle the situation [16].

#### **1.3.1 Teaching Systems for Treatment Providers**

The research based knowledge is not easily accessible for the clinical practitioner. Research articles are time consuming reading. The computer technology has availability to present audiovisual material simple and focused provided that systems are prepared for collaboration with objective information on the patient. To the best of my knowledge, there is no such system available. As a result, there is no way to ensure that the practitioner is updated on the empirically validated intervention for the present problem.

## **2 Proposed Solutions**

In this section I will propose some areas where already established knowledge could be integrated into a PEMRS to improve efficiency in the treatment of psychiatric care.

### **2.1 Assessment and Monitoring**

Since the 1860's, psychometric research has developed systems for assessing patient characteristics. The development of solid self report instruments is a long and laborious process, including measuring the normal variation of specific symptoms. These instruments provide invaluable clinical guidelines for the treatment provider. However, top level self report systems to guide the patient down to the bottom level electronic assessment form are yet to be ready for free use[1]. Future research should integrate current assessment knowledge into PEMR to deliver patients freedom to assess their problems in a reliable and valid way, fully in control of their own process.

Quality assurance [6, 7, 16-23] in measuring the treatment response should be a natural procedure in all clinical settings. Monitoring of treatment response provides the ability to present important clinical feedback[16, 21, 22, 24-27] to patients as well as the therapist. The benefits of incorporating such procedures in PEMR are therefore obvious. In a PEMRS, the patient is in control and drives the monitoring [6, 16, 28,

29] independent of provider. The monitoring may be an incentive from the provider. This solves the problem of transparency of therapist and treatment site efficiency, since the patient can submit her or his data to any data collection they may want to.

## **2.2 Treatment Matching and Booking**

Once a patient has focused the problems into a diagnosis, a major set of problematic symptoms or personally anchored problematic pattern; research based knowledge can be used to match the right treatment [30, 31]. The clinical psychiatric research have compiled lists of treatments that are evidence based or empirically supported [32] for specific psychiatric diagnoses. There are emerging systems for certification of therapists within specific treatment packages. A natural place to collect information about therapist's location, available sessions and accreditation status would be in a PEMR site. Consequently, the PEMR site can include booking systems for direct booking of a therapist.

## **2.3 Provider Supervision**

Recent research has developed algorithms for identifying patients at risk for treatment failures. Supervision of such cases can reduce the likelihood of failures. Studies of the treatment process have given necessary and detailed insight of the most effective change agent. Process data can be the patients own feedback at various intervals in the treatment, observer data, or therapists' judgments during the treatment[33]. A PEMRS should therefore include procedures for suggesting empirically supported methods to most efficiently alleviate the patients suffering.

### **2.3.1 Teaching Systems for Treatment Providers**

Process research centers in Trondheim and Bergen are collaborating with the American Psychological Association (APA) in developing an empirically based fundament for future teaching videos to be delivered over the internet. The crucial point for timing of learning intervention is just before the therapist sees his patient. If the patient can drive the assessment procedures, then the therapist can focus on being ready with the relevant tools for the current problem. A future incorporation of the Norwegian-APA system can base the delivery of therapist demonstrations on the current patient's PEMRS assessment.

## **3 Discussion**

A focus on PEMRS research has enormous potentials for improved efficiency in psychiatric treatments, thus potentials for large national savings. The potentials of the PEMRS to improve patients feeling of control of their own healing also have valuable benefits in itself.

However, the process of integrating the different fields of research within the psychiatric field into a PEMRS produces many challenges. Firstly, researchers will need to agree on a common goal. The principles of a PEMRS may challenge fundamental philosophy in existing research. Some assessment systems are commercially based on being paid by the treatment provider.

Secondly, state funding is essential for the development of the psychiatric part of a PEMRS. Without active participation of the funding part, short cuts into commercial shallow systems may undermine the integrated potential of a PEMRS. Further the participation of psychiatric professionals with research knowledge and insight into computer systematization is an essential ingredient in the process. Such personnel is limited and may hamper the development.

Further developments in PEMRS should include the psychiatric field and work on getting the necessary funding to get an optimal functioning.

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