

During this symposium, results from a randomized controlled trial investigating the effect of smartphone based electronic self-monitoring on the severity of depressive and manic symptoms will be presented and discussed.

Further, we will present and discuss the use of automatically generated objective smartphone data on behavioral activities (e.g. social activities, mobility and physical activity) as electronic biomarkers of illness activity in bipolar disorder.

*Disclosure of interest* The authors have not supplied their declaration of competing interest.

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## S46

### Value-based healthcare delivery in the digital era

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*Introduction* Mental disorders are a major cause of disability in Europe [1]. However, organizational structures and information systems are focused on delivery of care, rather than providing value [2]. In the digital era, we have the capacity to change priorities through the analysis of heterogeneous databases that could support patients' and professionals' decisions.

*Objectives* to analyse the contradictions between the design and the theoretical structure of mental health services and the possibilities to evaluate the actual value of the delivered care.

*Aims* To reflect on changing the trend using a different conceptualization of objectives and evaluating methods.

*Methods* We used a tool provided to clinicians by the Madrid's Regional Health Service SERMAS ('ConsultaWeb') combining primary care, pharmacy and hospital data ( $n = 395,073$  patients for the catchment area), and a set of hospital-based data (patients attended by psychiatrists at the ER,  $n = 13,877$ , and patients admitted to the Psychiatric Inpatient unit  $n = 3318$ ), to explore some of the present professional information resources.

*Results* Currently used healthcare databases only describe the diagnostic or therapeutic categories of patients and might be used to detect abnormal behaviours. However, they are neither able to show the functional status of patients nor designed to predict their clinical course.

*Conclusions* A clearer definition of value in patient outcomes is needed. This might help to organize the healthcare delivery and to create a new information system that would allow to assess health outcomes.

*Disclosure of interest* The authors have not supplied their declaration of competing interest.

#### References

[1] WHO. <http://www.euro.who.int/en/health-topics/noncommunicable-diseases/mental-health/data-and-statistics>.

[2] Muir Gray JA. How to build healthcare systems. Oxford: Oxford Press; 2011.

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## S47

### New platform of data analytics for mental health

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*Introduction* Mental disorder is a key public health challenge and a leading cause of disability-adjusted life years (DALYs) due to its high level of disability and mortality. Therefore, a slight improve-

ment on mental care provision and management could generate solid benefits on relieving the social burden of mental diseases.

*Objectives* This paper presents a long-term vision of strategic collaboration between Fujitsu Laboratories, Fujitsu Spain, and Hospital Clínico San Carlos to generate value through predictive and preventive medicine improving healthcare outcomes for every clinical area, benefiting managers, clinicians, and patients.

*Aims* The aim is to enable a data analytic approach towards a value-based healthcare system via health informatics. The project generates knowledge from heterogeneous data sources to obtain patterns assisting clinical decision-making.

*Methods* This project leverages a data analytic platform named HIKARI ("light" in Japanese) to deliver the "right" information, to the "right" people, at the "right" time. HIKARI consists of a data-driven and evidence-based Decision Support and Recommendation System (DSRS), facilitating identification of patterns in large-scale hospital and open data sets and linking data from different sources and types.

*Results* Using multiple, heterogeneous data sets, HIKARI detects correlations from retrospective data and would facilitate early intervention when signs and symptoms prompt immediate actions. HIKARI also analyses resource consumption patterns and suggests better resource allocation, using real-world data.

*Conclusions* With the advance of ICT, especially data-intensive computing paradigm, approaches mixing individual risk assessment and environmental conditions become increasingly available. As a key tool, HIKARI DSRS can assist clinicians in the daily management of mental disorders.

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## Is schizophrenia a disorder of brain connectivity?

## S48

### Disintegration of sensorimotor brain networks in schizophrenia

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A large body of literature reported widespread structural and functional abnormalities throughout the brain in schizophrenia spectrum disorders (SZ). Corresponding with the typical symptomatology in SZ where sensory dysfunctions contribute to the core social and cognitive impairment, converging evidence suggests a disturbed interplay between higher-order (cognitive) and lower-order (sensory) regions. This talk will discuss the results of several recent studies, investigating brain connectivity in SZ using functional magnetic resonance imaging data from large samples. Within-network sensorimotor as well as sensorimotor-thalamic aberrations in SZ robustly appear among the core findings across studies, both during performance of cognitive tasks and during rest. We utilized machine learning to distinguish SZ from healthy controls based on connectivity profiles. When classifying on sensorimotor connections alone, not only can we reach accuracies largely above chance but also, these accuracies are as good as when incorporating whole brain connectivity in the classification. Whereas the overall accuracy levels in distinguishing SZ from controls are not useful in a clinical context, these results underline the robustness of the sensorimotor findings on the individual subject level. Targeting the sensory and perceptual domains may thus be key for