

Title Prospective payment for inpatient psychiatric care. A system to be developed for Switzerland.

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Objectives: Inpatient psychiatric care in Switzerland is currently reimbursed by uniform per-diem rates. The new Health Insurance Act mandates the introduction of a national tariff system which reflects differences in resource use across patients based on observable patient characteristics. In this study we develop a prospective payment system (PPS).

Data: Primary data on patient characteristics, cost per episode and daily time spent by medical staff were collected in a survey of 18'385 patients from 20 inpatient psychiatric facilities in 2014, representing roughly one third of the annual total. Patient characteristics include the main psychiatric diagnosis (ICD-10) and a weekly assessment of the severity of illness using the Health of Nations Outcome Scales questionnaire (HoNOS).

Methods: Predictors of per-diem cost are examined with a multivariate linear regression model. Explanatory variables include the main psychiatric diagnosis, HoNOS scores, socio-demographic characteristics, type of insurance plan, compulsory hospitalization, emergency hospitalization, and hospital fixed effects. Furthermore, a staggered progression of per-diem cost over time is modeled. Different variants of the tariff structure are evaluated, some of which include intentional deviation of the tariff from the true distribution of costs in order to set incentives. Goodness-of-fit is evaluated by an out-of-sample evaluation of several statistical measures of the deviation of hypothetical revenues and observed costs, such as the mean absolute percentage error (MAPE).

Results: Compared to the uniform per-diem tariff presently in operation in Switzerland, the PPS are capable of improving the accuracy of the tariff from a MAPE value of 25.2% to approximately 21.0%. The analysis yields several variants of PPS which are equivalent in terms of goodness-of-fit, but differ in terms of the patient characteristics used and with respect to financial incentives for hospitals. The main model constitutes a per-diem payment which is differentiated over three phases of treatment; the first week, days 8 to 60, and from the 61-st day onward. The payment is further determined by 11 diagnostic groups, scores in three out of the 12 dimensions of the HoNOS questionnaire (aggression, non-accidental self-injury, somatic comorbidity), and three age-related groups.

Discussion: The proposed PPS combines incentives for an appropriate provision of care with incentives for a reduction of length of stay. Policy makers should take into account the different incentives implied by the alternative variants. While the PPS yields a set of adjusting factors for the payment, the Swiss system requires hospital-specific per-diem base rates to be negotiated between the mental health facilities and the insurers.

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Key terms: prospective payment system, psychiatric care, tariff structure