Management Summary

Introduced on a voluntary basis from 2013, the prospective per diem payment system known as PEPP ("pauschalierendes Entgeltsystem Psychiatrie und Psychosomatik") for psychiatric and psychosomatic inpatient facilities in Germany represents a shift from hospital- or ward-specific per diem payments (abbreviated "TGPS" in German) to a system that is aligned more closely with the resource intensity of treatment. Similar to the diagnosis-related groups (DRGs) used to pay for somatic care, the PEPP system aims to classify patients into hospital-, day-based and cost-homogeneous groups, known themselves as PEPPs.

Through § 17d (8) of the Hospital Financing Act (KHG), the legislature entrusted the Federal Association of Statutory Health Insurers, the Association of Private Health Insurers and the German Hospital Federation – all part of the system of joint self-government in Germany's statutory health insurance (SHI) scheme – with commissioning an evaluation of the impact of the new payment system. The chief aim was to examine changes in the structure of services and quality of care, as well as effects on other areas of service provision, including the nature and extent of any shifts in activity.

The research brief specified three reporting periods for the evaluation: the data years 2011 to 2012, 2013 to 2015, and 2016 to 2018. These were based on the new payment system's original implementation schedule, which was changed by the Act for Further Developing the Care and Payment of Psychiatric and Psychosomatic Services (PsychVVG). The call for evaluation proposals took place before this act came into force. Because the date by which providers were to be required to implement the PEPP payment system was postponed by the legislature, no data were available for the periods specified in the research brief. Because any possible effects of the payment system after its mandatory implementation are not to be expected for two to three years, an evaluation of these would be possible no earlier than 2022.

The following report, which presents data and results from the second research cycle, is based on data from the years 2011 to 2018. It is an extension of the final reports on baseline measurements and on the first research cycle, and as such it aims to measure changes in the indicators specified by the commissioning agencies using descriptive and inferential statistical methods, and to discuss these changes in connection with the (voluntary) implementation of the PEPP payment system. The results section of this report is divided into topics that cover various aspects of psychiatric and psychosomatic care.

The analyses in this report are based on indicators from different areas of service provision and draw, in accordance with the research brief, on both primary and

secondary data. Primary data were collected chiefly by means of questionnaire-based surveys of psychiatric and psychosomatic inpatient facilities, statutory health insurers, private insurance companies and the SHI Medical Review Board. Our secondary data analyses draw upon hospital activity data in accordance with § 21 of the Hospital Payment Act (KHEntgG), data from the Federal Statistical Office (for example, "Grunddaten der Krankenhäuser" and "Kostennachweis der Krankenhäuser"), claims data from the statutory health insurers in accordance with § 295 and § 301 of Fifth Book of the Code of Social Law, the KJ1 statistics of the Federal Ministry of Health (BMG), and data from other sources, including the state authorities responsible for matters related to regional health care planning and provision. Using these, descriptive statistics and inferential statistical models were calculated and discussed for individual years or subgroups. When reading the narrative interpretation of the results in this final report, it is important to bear in mind any limitations of the data, particularly related to the intertemporal comparability of the results based on the surveys. Because the respondents to the voluntary surveys differed between the research cycles, intertemporal changes in the results may also be attributable to any structural differences between the participating organisations (for details see Chapter 3.1.1).

An important component of the evaluation is a database for exploratory data access, which has been made available to the public through the website of the Institute for the Payment System in Hospitals (InEK) and where all of the publishable data upon which this final report is based can be viewed. A flexible filter function allows readers to restrict their analyses to specific characteristics of indicators (for example, to one of Germany's 16 states). Various display options are available.

The following paragraphs briefly summarise the results of the final report.

Changes in access to care (Chapter 4): The results of our analysis of secondary data for the periods before and after the voluntary introduction of the PEPP payment system present a mixed picture with regard to changes in access to psychiatric/psychosomatic care in Germany. During the observation period, the number of psychiatric hospitals increased at the same time as there was a decrease in the proportion of overnight inpatient cases being treated in psychiatric/psychosomatic hospitals outside the regions legally responsible for these patients' care. This suggests that access to care close to home may have improved. However, the distance of the shortest route between a patient's homes and their place of treatment can also give us information in this regard. The results of our analysis show that this distance increased by 12.5% during the observation period. Attributing this finding to direct reductions in access to care would be incorrect, however, given that it could

also be due to the disproportionate growth in the number of cases in psychosomatic medicine. In summary, at the end of the second research cycle, there was no strong evidence of changes in access to psychiatric and psychosomatic care related to the introduction of the PEPP payment system.

Changes in the structure of care provision (Chapter 5): The results of our analyses point to continuity in the structural aspects of inpatient psychiatric care provision – for example, there has been hardly any change in the number and relative frequency of hospitals with a psychiatric primary care clinic. Additionally, our empirical analysis of ancillary and ambulatory services shows an increase in treatment activity in the area of psychiatric care. A rise in the number of day-case admissions and of contacts to psychiatric primary care clinics shows that the quantity of outpatient and day care has increased. However, changes in the number of overnight psychiatric/psychosomatic admissions (see Chapter 6) or in the average length of stay (see Chapter 7) cannot explain such a clear development. It can therefore be assumed that we are seeing an expansion in the range of ambulatory services being provided without there having been a shift in activity from the inpatient to the ambulatory care sector. Based on the results of our empirical analyses at the end of the second research cycle, there is no evidence that the introduction of the PEPP payment system has had an impact on structural aspects of psychiatric and psychosomatic care provision.

Changes in the number of admissions (Chapter 6): The results of our empirical analysis suggest that the changes observed in the number of admissions and the number of treated patients are probably not related to the introduction of the PEPP payment system. Indeed, although these two indicators were significantly higher in the period after the introduction of the PEPP payment system than they were in the time before it, this could be observed both in hospitals that had voluntarily adopted the new system and in those that had chosen to continue with hospital-specific per diem payments (TGPS). It would therefore seem that the rise in the number of admissions and patients is more likely attributable to changes in demand for inpatient services or in medical treatment methods, unrelated to the introduction of the PEPP payment system.

Changes in treatment patterns (Chapter 7): Up to and including 2018, the number of treatment days in psychiatric/psychosomatic hospitals and wards increased both before and after the introduction of the PEPP payment system. This was accompanied by a rise in the number of admissions and a moderate increase in the

average length of stay. The increase initially observed in the proportions of standard and intensive care treatment days in the period from 2011 to 2018 could not be attributed to the voluntary introduction of the PEPP payment system when examined using inferential statistics. Based on this analysis, no relationship could be identified between the introduction of the PEPP system and changes in treatment patterns. With inferential statistical methods, it was possible to show that the length of stay in PEPP hospitals was 0.8 days longer on average than in the TGPS comparison group after 2013. However, since there was already a clear difference in length of stay between the PEPP hospitals and the TGPS comparison group in our baseline data, a self-selection effect in opting for PEPP payments can be assumed. Thus, it is highly unlikely that the introduction of the PEPP payment system led during the observation period to changes in patient treatment that could be measured in a statistically valid manner. This applies both to the treatment patterns and the treatment processes examined in our analysis.

Changes in coding (Chapter 8): The changes observed in coding behaviour are probably related to the introduction of the PEPP payment system. For instance, the ratio of cases with unspecific coding to cases with specific coding decreased during the observation period, as did the number of cases with parallel coding of mutually exclusive diagnoses. Additionally, the proportion of cases with frequent somatic co-morbidities increased by approximately 12 percentage points between 2011 and 2017. As this rise in the number of diagnosed co-morbidities is probably not due to an increase in their actual prevalence, it seems likely that the cause is a change in coding behaviour – i.e., more detailed coding. A large majority of studies identified in our structured search of the literature show that introducing case-based or other forms of prospective payment systems has led to such changes. Even though the PEPP payment system has been voluntary and currently has no implications for providers' budgets, it is reasonable to assume that they will have continually improved their coding before implementing the PEPP system becomes mandatory and budget-effective.

Changes in quality (Chapter 9): Differences could be identified in the process- and structure-related quality characteristics between facilities that had chosen to adopt the PEPP payment system between 2013 and 2017 (PEPP hospitals and wards) and those that had not (TGPS hospitals and wards). Examples include whether facilities satisfied and were able to finance fully the staffing levels set out in the Psych-PV, as well as various clinical processes (e.g., patient admissions and clinical pathways). There were also differences between PEPP and TGPS hospitals and wards when it came to discharges: Discharge management in accordance with § 39 of the Fifth Book

of the Code of Social Law was much more common in the PEPP facilities than in their TGPS counterparts. Whereas facilities using the PEPP payment system gave a more positive rating overall of treatment success, it was possible using inferential statistical methods to demonstrate an increase in the proportion of cases that had been discharged against physician advice. When considered globally, the evidence of a connection between changes in treatment quality and the introduction of the PEPP payment system is not fully conclusive.

Other changes (Chapter 10): Overall this chapter shows various changes in the structures of statutory health insurers and private health insurance companies. The introduction of the PEPP payment system has led to changes in claims procedures, which have an impact on areas such as IT, staffing and training. It has also led to increased costs for hospitals, as reflected in developments such as an increase in the number of spot audits and related corrections and litigation. The extent to which these additional costs are permanent or one-off, however, remains to be seen.