DMP 2.0 for chronically ill patients

Between knowledge and action: new approaches in the care of multimorbid patients

Chronic diseases are the leading cause of disease burden and mortality in Germany (Porst et al., 2022). Within this patient group, the simultaneous occurrence of comorbidities is particularly prevalent. This multimorbidity has a considerable impact on the complexity of patient care, the need for coordinated treatment strategies and leads to a significant economic burden on the healthcare system (Jokela et al., 2014; Dias et al., 2018; Santos et al., 2022; Marassi and Fadini, 2023; Sebastian, Padda and Johal, 2024). A more recent survey shows that in 2023, 50.8% of adults in Germany already reported a chronic illness or long-term health problem (RKI, 2024). Among the over 65s, over 60% are already affected by multimorbidity; 62% suffer from at least three chronic diseases at the same time (BMBF, 2014), and health report data from the RKI also show a prevalence of 63% for chronic illness among 65 to 79-year-olds. Forecasts indicate that the importance of multimorbid care realities will increase with demographic ageing and the rise in chronic diseases (RKI, 2024). In Europe, patients with multiple chronic diseases already account for over two thirds of healthcare costs (OECD and Union, 2016; Price, 2017). In Germany, multimorbid patients are a significant cost driver. For example, the direct costs of diabetes mellitus are estimated at EUR 21 billion per year (DDG, 2021) and the total costs of obesity at EUR 63 billion (Effertz et al., 2016) - both diseases that are strongly associated with multimorbidity.

>> A central problem and the associated challenges in efficiently managing multimorbid care realities in the German healthcare system lie in its historically purely curative orientation (Stiftung, 2021). The current basic structure of the system, which is characterised by sectoral separation, specialist doctor-specific specialisation and flat-rate case-based financing, reflects the care of diseases in the 20th century. At that time, the focus was primarily on acute, clearly definable illnesses with the prospect of a full recovery (Wahlster, Teichman and Herr, 2018; Krankenversorgung, 2024).

The reality of the 21st century stands in contrast to the historically evolved structure: we are seeing an ageing population with a high proportion of patients suffering from several chronic illnesses at the same time. With these

multimorbid disease progressions, the focus is no longer on pure healing. Instead, the focus is on early detection of patient-specific risks, timely diagnosis and treatment according to medical guidelines and slowing the progression of the disease (Gesundheitswesen, 2018). Last but not least, the aim is to stabilise quality of life, maintain earning capacity and enable participation in social life into old age.

Preventive elements and components should therefore be added to the curative character of the healthcare system. In the area of chronic illnesses, this requires continuous, preventative and coordinated care and not just episodic acute interventions (AOK, 2011).

In particular, the care of patients in cardio-renal-metabolic (CRM) indication areas (type 2 diabetes mellitus, cardiovascular diseases, chronic renal insufficiency) presents our healthcare system with growing structural and financial challenges. There is an urgent need for action here, as comorbidities are particularly common in this patient group due to the interconnectivity of these diseases (Porst et al., 2022; Schüssel et al., 2022; Jaradat and Nashwan, 2023; Gesellschaft, 2024).

A recent scientific study commissioned by Boehringer Ingelheim based on the routine data set of the Leipzig Health Forums from 2022 analyses the distribution of CRM comorbidities in the German population and presents the average inpatient care costs for 2022.

The proportion of patients with at least one CRM disease in the total population is 14.1%. Of these, 38% are multimorbid and suffer from all three indications at the same time.

With each additional comorbidity, hospital care costs increase exponentially. The average hospital costs for a T2D patient are around 1,200 euros. These costs double, for example, with additional renal failure as a comorbidity and triple with additional heart failure. If two or three comorbidities are added, the hospital costs rise to 8,000 euros and more.

Comorbidities in the context of chronic CRM diseases cause a significantly increased morbidity burden (Ferdinand et al., 2023; Nichols et al., 2023; Xie et al., 2025) and are drivers of growing healthcare expenditure. The average hospital costs in Germany per patient with different comorbidity scenarios in the context of CRM indications are shown in Figure 2.

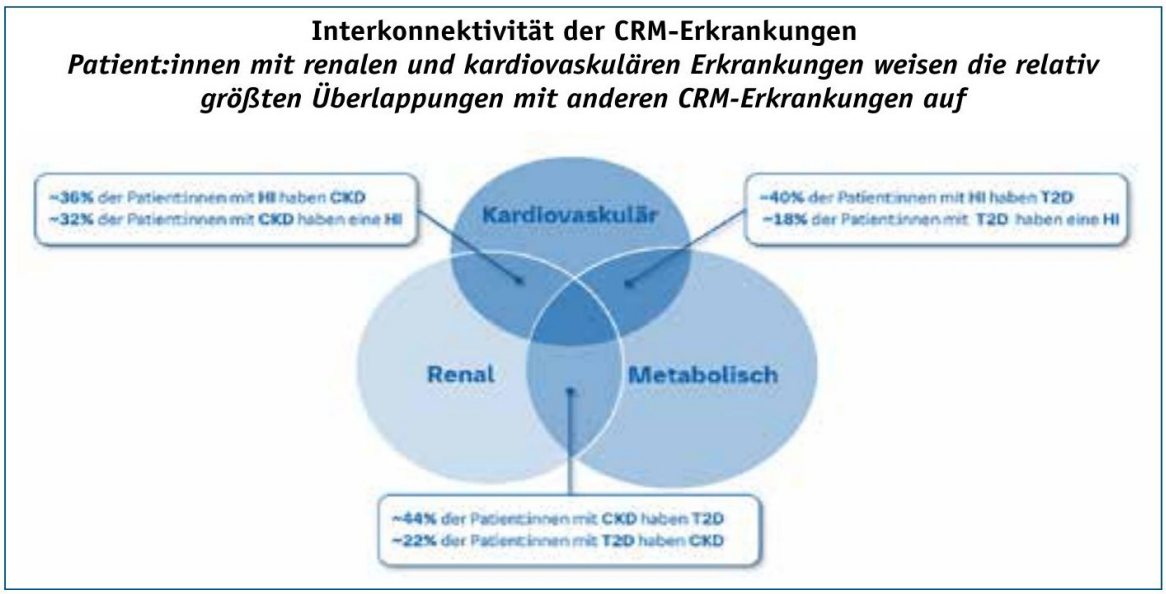


Fig. 1: **Interconnectivity of CRM diseases. Own illustration.**

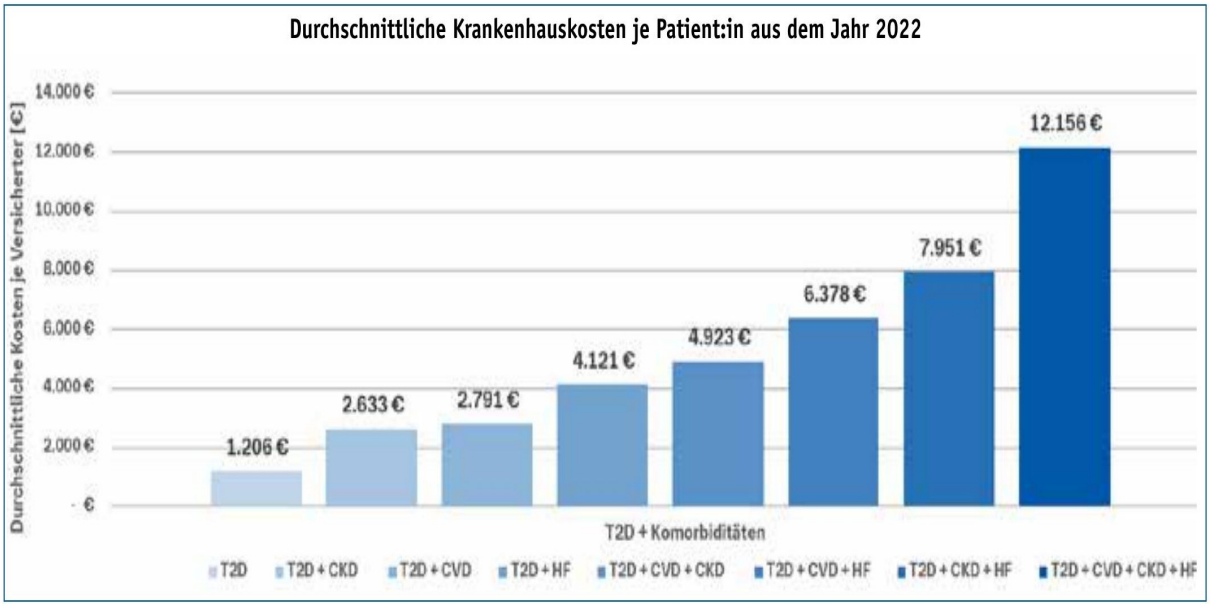


Fig. 2: **Average hospital costs per patient in 2022. Own illustration.**

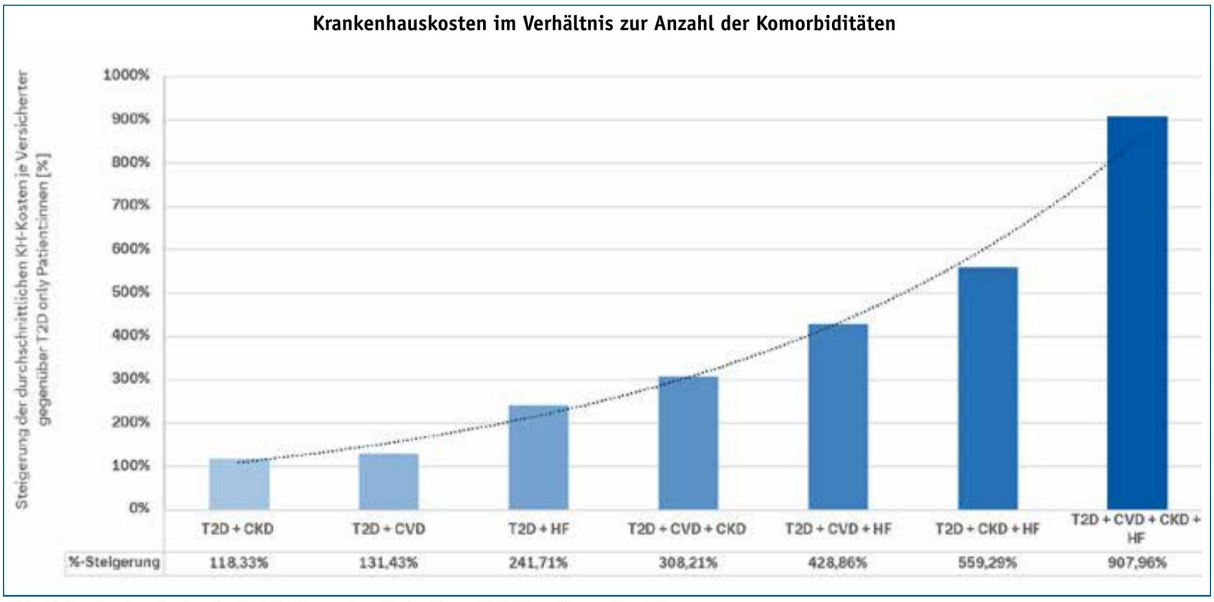


Fig. 3: **Hospital costs in relation to the number of comorbidities. Own illustration.**

Figure 3 shows the hospital costs in relation to patients with a single diagnosis of type 2 diabetes mellitus.

In the case of chronic CRM diseases, the indications can usually be treated very well on an outpatient basis in their stable phase. Inpatient admissions for chronically ill multimorbid patients often occur in the context of acute events, such as decompensations. These hospital stays are often the result of inadequate continuous outpatient treatment and the associated lack of stabilisation of patients - especially if care is highly indication-specific and interactions between comorbidities are not sufficiently taken into account.

In many cases, inpatient treatment could be avoided through interdisciplinary coordinated care aimed at guideline-compliant treatment and thus the prevention of initial and secondary diseases as well as the prevention of their progression (Wilke et al., 2022).

DMPs as a starting point - with room for improvement

Alongside GP-centred care, disease management programmes (DMPs) are central care models in the German healthcare system and an important component of coordinating care in the outpatient sector to stabilise CRM diseases. They ensure regular contact with doctors and structured treatment processes. For individual indications such as type 2 diabetes or coronary heart disease, studies show that DMPs have positive effects on morbidity, mortality and costs (Knöppler et al., 2023).

However, DMPs do not go far enough, as they have also been designed for individual indications to date. In order to limit the health and economic

consequences of comorbidities in the long term, a paradigm shift is therefore needed: away from episodic, diagnosis-specific (acute) intervention towards preventive, coordinated and digitally supported patient-centred chronic care as part of a DMP 2.0 for multimorbid patients, which contributes to reducing the health economic burden with the following strategies.

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1. prevention and risk reduction

Regular early detection of primary and secondary diseases as part of check-up examinations, continuous lifestyle interventions and the consistent use of guideline-compliant drug therapy that is effective for several indications at the same time. One example of this is SGLT2 inhibitors, which contribute to simplified drug therapy and therapy adherence as well as cost efficiency in interconnected CRM diseases (Wilke et al., 2022). SGLT2 inhibitors have established themselves as a class of drugs that, beyond their primary effect of glucose lowering in type 2 diabetes mellitus, show significant pleiotropic effects on cardiovascular and renal endpoints (Abdul-Ghani et al., 2016). Their efficacy in heart failure with reduced and preserved ejection fraction and in chronic kidney disease, regardless of diabetic status, leads to simplified drug therapy and increased treatment adherence (McGuire et al., 2021; Hasan et al., 2024).

Due to its multi-indicative applicability and the reduction of events, this class of drugs contributes to a reduction in polypharmacy in patients and is also associated with improved cost efficiency, as the parallel use of several specialised preparations can be reduced (Wilke et al., 2022; Cohen et al., 2023). The integration of SGLT2 inhibitors into the treatment strategy of CRM diseases thus represents an advance in the optimisation of patient care and efficiency in the healthcare system.

2 Integrated and coordinated care

Care models that combine GP-centred care with interdisciplinary and cross-sector coordination and ensure continuous patient care show better outcomes and lower costs in studies (Gesundheitswesen, 2018; Knöppler et al., 2023). DMPs offer an established basis for this, but should be tailored more closely to multimorbidity, digitally expanded and brought together in one programme for all CRM patients.

3 Hybrid care models and data integration

Effective adherence to guideline-based lifestyle interventions requires care models that provide support between physician contacts to increase health literacy and change behaviour (Bai et al., 2024). Hybrid care approaches consisting of personalised care and digital support enable the necessary close-meshed support while at the same time relieving the burden on doctors' resources. Oska Health, for example, shows how behavioural science-based health coaching via video call and chat can be used to provide patients with data-supported and targeted help in implementing treatment guidelines and establishing new routines in everyday life - with proven effectiveness, especially for complex and multimorbid CRM diseases. <<

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