TITLE: Restructuring the DRG system in rehabilitation and psychiatry: Cost assessment made easy with an analysis tool

Introduction

In the intricate landscape of the Swiss healthcare system, SwissDRG Inc. stands as a collaborative beacon, bringing together service providers, insurers, and cantons to meticulously craft and refine inpatient tariff structures. To achieve this, providers from acute care, psychiatry, and rehabilitation sectors annually submit patient and cost data at the case level. Patient data, including diagnoses, treatments, and other pertinent information, forms the bedrock of this endeavor. A key aspect of SwissDRG Inc.'s continuous work on tariff development involves carefully assessing and improving the current medical DRG logic. These adjustments, influenced by medical and statistical factors, respond to new data and user requests. To support this detailed process, SwissDRG Inc. utilizes RiDE, its proprietary software platform, to evaluate modifications to the grouper, commonly referred to as Grouper modifications. In the course of developing the more recent day-based versions of the tariff structures for psychiatry and rehabilitation, heavy emphasis has been placed on addressing fundamental statistical questions. These include inquiries such as: How can modifications be comprehensively evaluated? What metric serves as an indicator of the overall benefit of a modification? To address these issues, SwissDRG Inc. has developed a new application designed to explore and quickly evaluate potential modifications: The Correlation Analysis and Split Exploration (CASE) Dashboard. This innovative tool empowers SwissDRG Inc. to swiftly explore and evaluate potential modifications, propelling the development of robust and equitable tariff structures.

Methods

The CASE Dashboard, a web-based R Shiny Dashboard, serves as an invaluable internal resource for employees actively engaged in tariff structure development.

Results

Access to patient and cost data empowers SwissDRG Inc. to measure and compare medical and cost homogeneity between two groups. Traditionally, R2 has been the cornerstone metric for evaluating the benefit of a modification. This metric assesses the goodness of fit of the modelled daily flat-rate in relation to the actual costs of a case within DRGs. However, in the context of tariff structures characterized by a daily flat-rate remuneration scheme, as prevalent in psychiatry and rehabilitation, R2 alone proves insufficient for determining the effectiveness of a model. Additional metrics, including mean daily cost comparisons, homogeneity coefficients, and statistical R2, must be considered to gain a comprehensive understanding of a modification's impact. The CASE Dashboard meticulously incorporates a diverse range of these metrics, providing a holistic perspective on the potential consequences of any proposed changes. Beyond metrics, SwissDRG Inc. has developed a set of criteria to gain a comprehensive understanding of a modification's impact. These criteria, such as one that focuses on potential clinic effects, serve as decision-making aids in determining whether a proposed system modification should be implemented.

Discussion

Implementing the CASE Dashboard has significantly accelerated the process of the tariff system development, by allowing real-time simulation of system modifications and by

providing instant cost comparisons. For example, in situations of uncertainty regarding which diagnosis lists should be considered for upgrading to a higher-rated DRG, all combinations can be examined with just a few clicks. A multitude of metrics and criteria can be compared to obtain a data-driven and balanced decision-making foundation.