TITLE**:** Saudi Billing System: designing a standardized health insurance billing system in Saudi Arabia based on ICD-10 AM/ACHI classification

Introduction

The Council of Health Insurance (CHI) in its efforts for more transparency and standardization, mandated a standardized billing system, in 2020, that replaced a variety of in-house non-standardized billing codes. The Saudi Billing System (SBS) is a modification of the Australian Classification of Health Interventions (ACHI) classification system, modified and enhanced to serve the Saudi health insurance market for patient classification and billing purposes.

Methods

CHI conducted an assessment of available classification systems having in mind the current mandate in Saudi Arabia of using ICD10 AM/ACHI/ACS classification. Several systems were appraised such as ACHI, CPT, and MBS with the aim of selecting the best foundation to build a new comprehensive billing system for the Saudi health insurance market based on certain criteria (specificity, familiarity, existing license with modification rights, and ability to build fee schedule).

As part of this process, data was collected from 80 healthcare providers and the three largest health insurance companies (covering more than half of the market) totalling 2,231,017 health service encounters, out of which 105,165 (5.5%) outpatient visits and 3,054 (1%) of dental visits were re-coded respectively.

Since ACHI 10th Edition in the existing format could not produce complete itemized clinical and billing data, CHI developed and tested SBS covering all current health care services in Saudi Arabia, followed by an implementation guide and technical support for stakeholders.

Results

We analysed 1.4 million claims data from 4.9 million encounters. Sample size for coding and mapping to charge description master was 165,742 claims representing 447,503 encounters.

Out of this sample 48% of actual market services codes were mapped to the existing ACHI code set, leaving 52% of the services requiring new codes and descriptions. As part of this process original ACHI chapters were modified, additional chapters were added ensuring full compatibility with billing practice whether in the admitted care, outpatient or ambulance care setting. As a result of this work, we adopted 6,224 ACHI codes and created 3,219 new codes bringing SBS to a total of 9,443 codes.

This modification achieved a 100% fully integrated and coherent billing system for health care services in the Saudi Health Insurance Market. In parallel, CHI is currently l working on improving SBS through an established maintenance process.

Conclusions

Patient classification systems are powerful tools that standardize data and bring more transparency to health care provision. ACHI as a classification system presented the best foundations to build a new comprehensive billing system for the Saudi health insurance market (specificity, familiarity, existing license with modification rights and ability to build fee schedule) to address the requirements of a reformed and more value-based health insurance market.

Modifying ACHI and standardizing billing systems in the health insurance market is a building block toward more transparency and improving health care delivery.

Lastly, existing proven classifications are a good basis for modification and adaptation when faced with country and market-specific contexts for patient classification.