



A Partnership Approach for Developing National Safety, Quality, and Population Health Insights from Coded Data: CNHI, Beamtree, and Lean

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Introduction

As part of the Kingdom of Saudi Arabia's national healthcare reform programme, the Centre for National Health Insurance (CNHI) has undertaken initiatives to enhance healthcare safety, quality, and efficiency through improved coding quality and data insights. This presentation will detail a collaborative effort between CNHI, Beamtree (an Australian provider of coding quality and AI solutions), and Lean (a Saudi healthcare digital transformation company) to implement the Performance Improvement and Coding Quality (PICQ) tool, enabling CNHI to systematically measure and enhance coding quality across the public healthcare sector.

From this foundational national coding assurance and reporting solution, a number of new Business Intelligence (BI) dashboards are being developed to utilize national coding data to provide insights into safety and quality and population health to drive quality improvement.

Methods

The initiative leverages international best practices, adapting Australian indicators from the Independent Health and Aged Care Pricing Authority (IHACPA) and Australian Institute of Health and Welfare (AIHW) to the KSA healthcare environment. These indicators encompass Hospital Acquired Complications (HACs) and Potentially Preventable Hospitalisations (PPHs) to derive safety, quality, and population health metrics that underpin datadriven decision-making in healthcare.

The project adopts a co-design approach for developing national BI dashboards, enabling CNHI to compare and benchmark performance in real-time. By building a foundation of high-quality coded data, these dashboards provide actionable insights to drive value-based healthcare.

Results

Key learnings will be shared on how automated coding assurance tools support national payor functions, prioritise audits, and foster the evolution of patient-centred, data-driven policy decisions. The discussion will highlight how Australian metrics and indicators are being adapted for the KSA context, and how coding data can be utilized for advanced data analytics to provide continuous, real-time performance monitoring to strengthen coding practices and improve national healthcare standards.

Discussion/Conclusions

This partnership exemplifies how technology-driven solutions and robust data governance can enhance patient outcomes, strengthen financial sustainability, and drive quality improvement across healthcare systems.

Topics:

- * Innovations in case-mix, data and technology.
- * Advancements in coding, classification systems, and data quality.
- * Case-mix and costing beyond funding.
- * Connecting funding with patient outcomes and quality of care

Key Words: Clinical Coding, Data Quality, Benchmarking, Data Analytics, Safety and Quality, Population Health

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