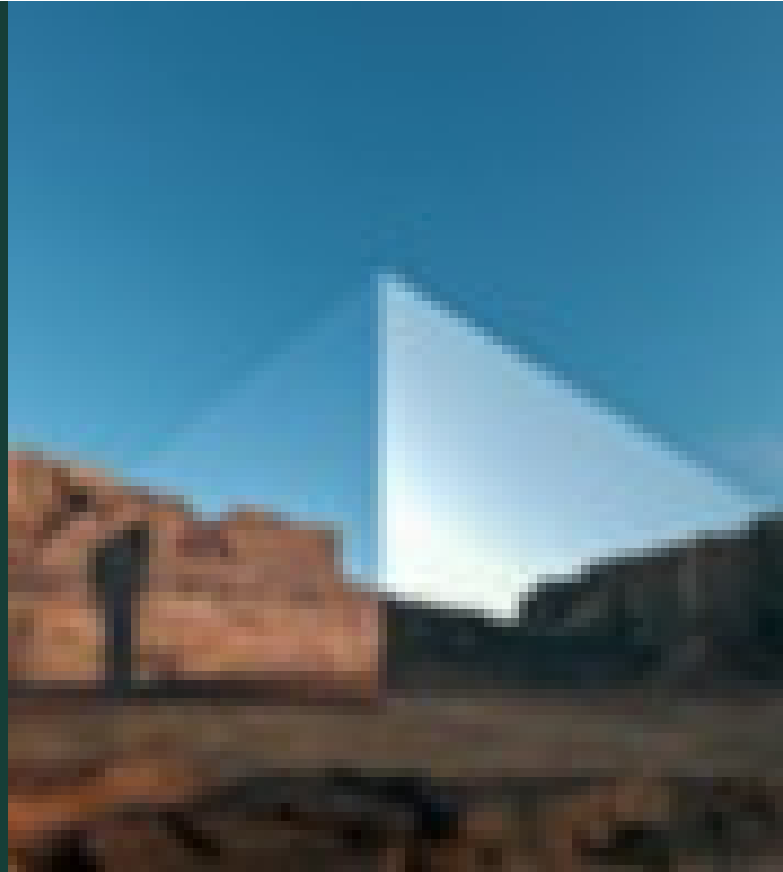


Implementation of AR-DRG reimbursement for public providers contracting in mandatory private health insurance scheme: the case of Saudi Arabia

HUSEIN REKA¹, ABDULLAH ALMAGHRABI¹, OMAR ALSHANABAH¹, SHABAB ALGHAMD²

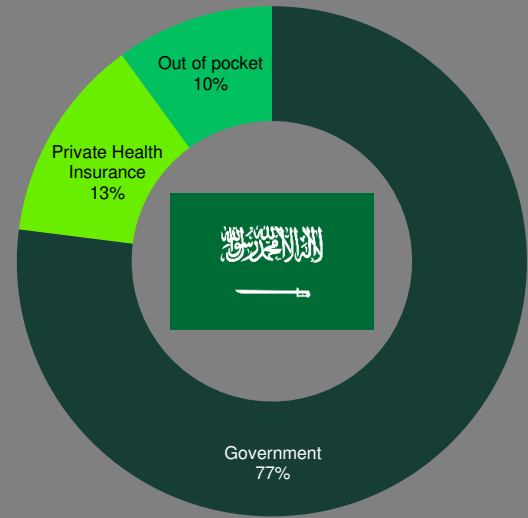
¹ INSURANCE AUTHORITY; ² COUNCIL OF HEALTH INSURANCE

PATIENT CLASSIFICATION SYSTEMS INTERNATIONAL 36TH CONFERENCE
Bled Slovenia 30 May 2024



1 CONTEXT

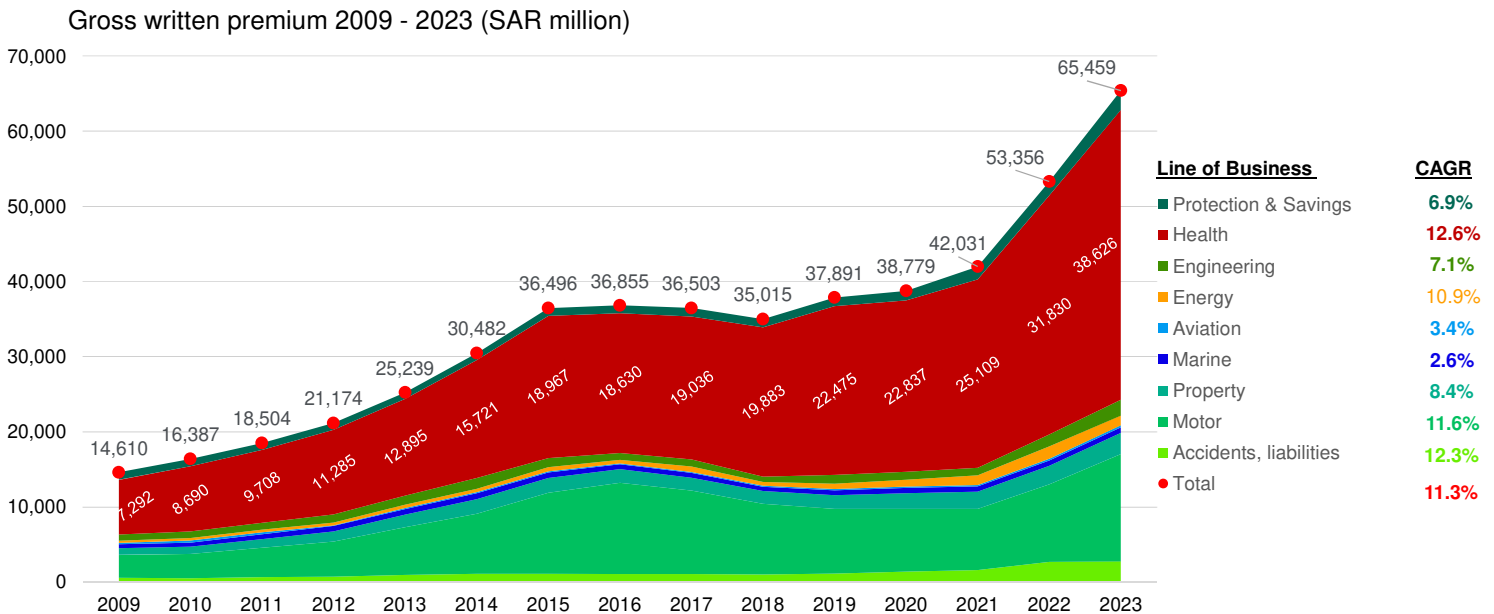
The Saudi health sector is a mix of public and private healthcare financing with total health expenditure of **USD 52 billions or 6.5% of GDP (2021)**



NATIONAL HEALTH ACCOUNTS

PHI is mandatory in Saudi Arabia and grew by CAGR 12.6% in the last 15 years

Overall insurance grew by CAGR 11.3% in last 15 years with health line of business having the highest growth



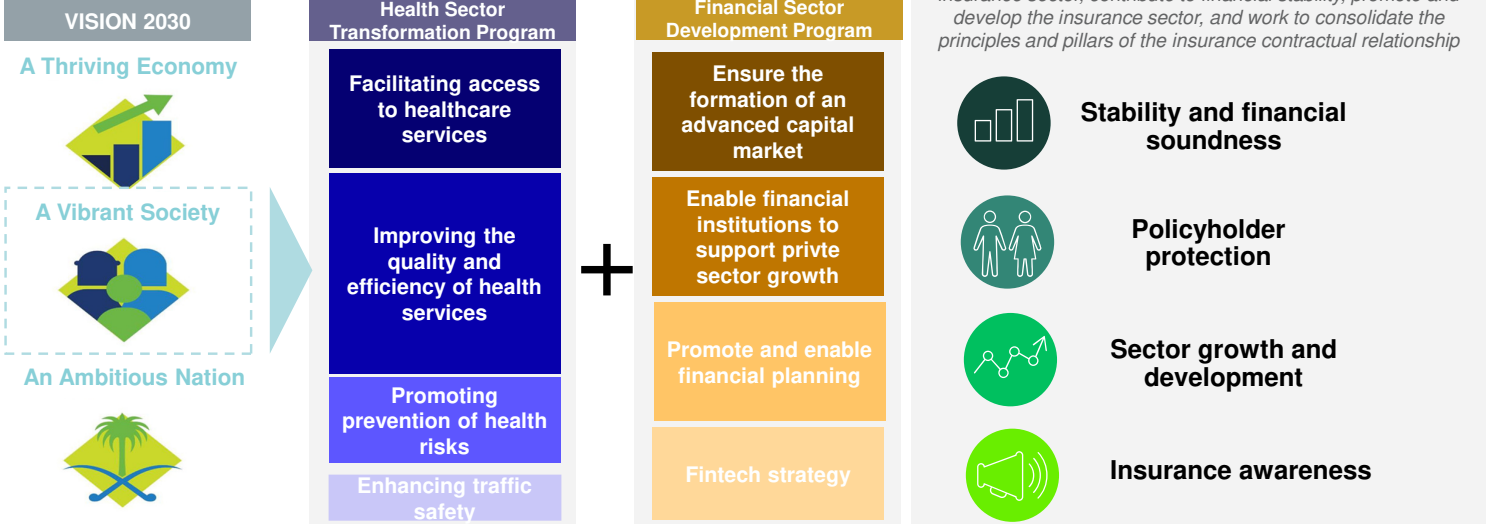
Source: Insurance Authority

VISION 2030 Programs and objectives



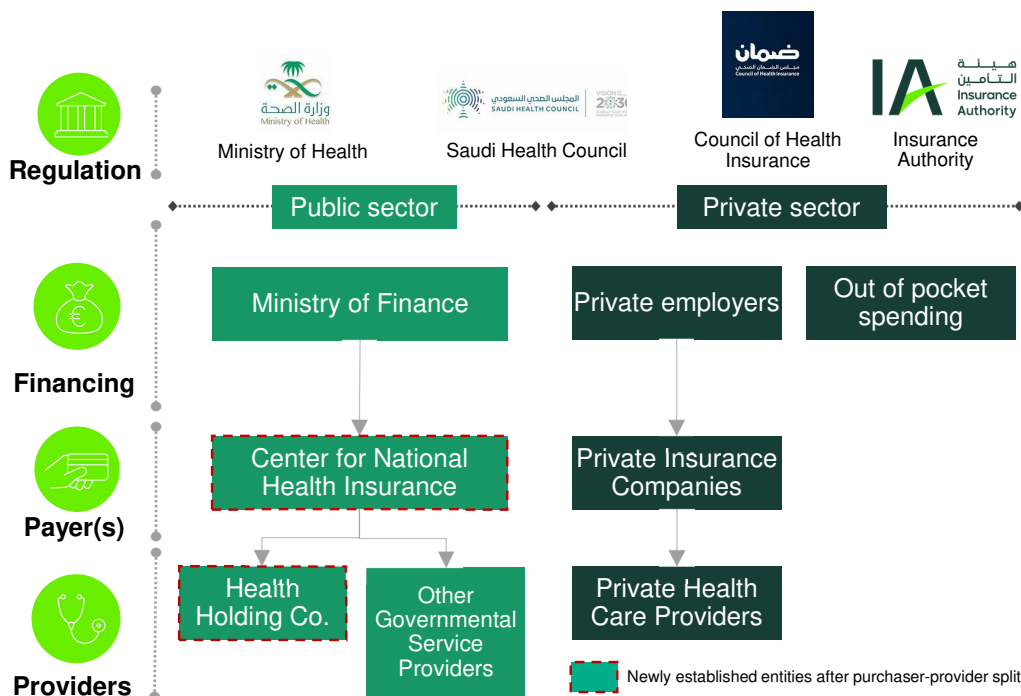
Kingdom of Saudi Arabia Vision 2030 (A Vibrant Society)

A vibrant society is vital to achieving the Vision and establishing a strong foundation for economic prosperity. The goal is to create a society in which every citizen enjoys a happy fulfilling lifestyle complemented by a standard of living which provides a safe and secure environment for families, and access to world class health care and education. At the same time, the vision encourages its citizens to cherish their national identity and their ancient cultural heritage and live by the Islamic principle of moderation.



We aim to regulate, supervise and control the insurance sector in the Kingdom in a way that supports and enhances its effectiveness, works to develop insurance awareness, protect the rights of the insured and beneficiaries, stabilize the insurance sector, contribute to financial stability, promote and develop the insurance sector, and work to consolidate the principles and pillars of the insurance contractual relationship

Saudi Health System overview



2 METHODOLOGY



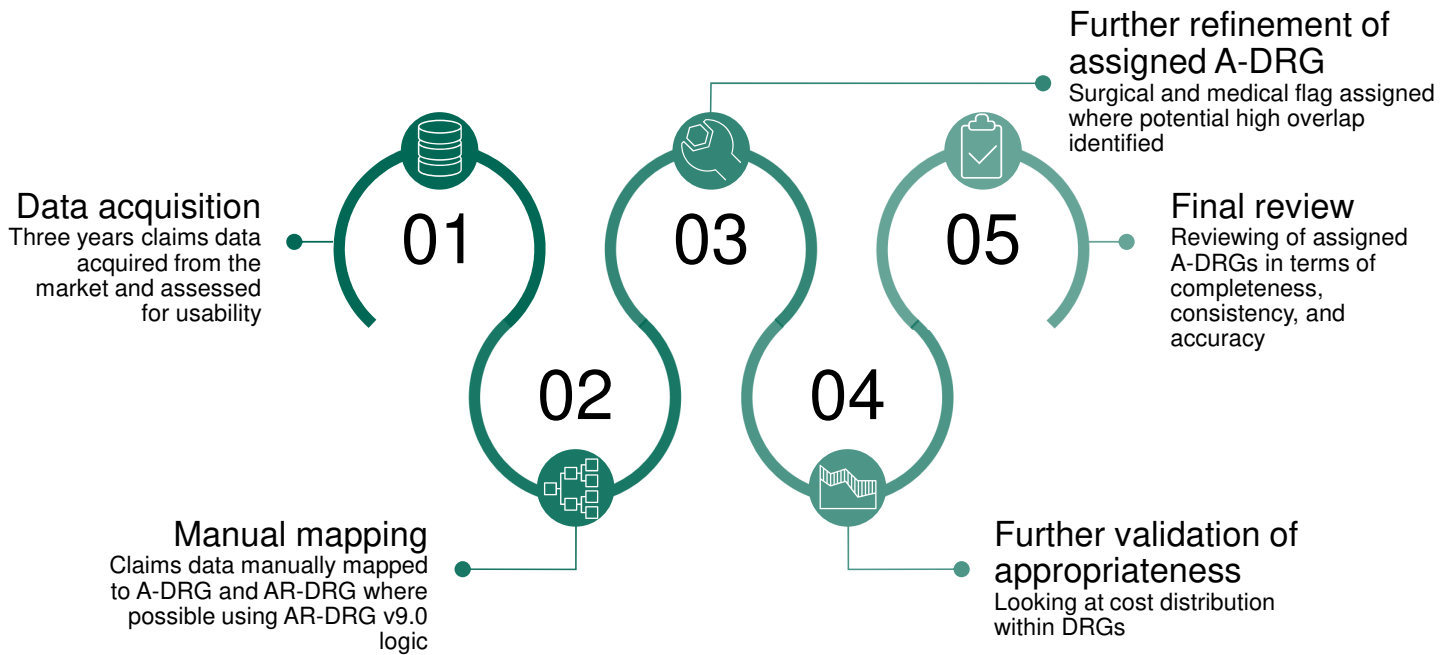
What was our approach?

Top-down approach

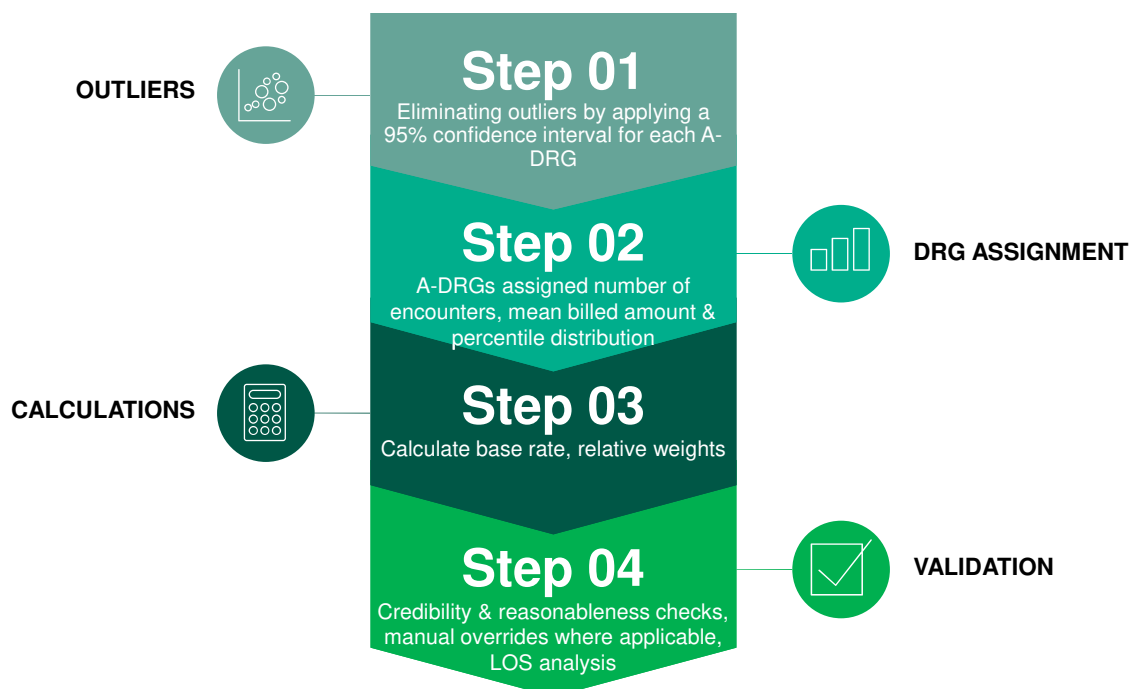
Market claims data

Iterative process

Clinical mapping process steps



Calculating base rate and relative weights steps



Some examples

Encounter_ID: 106479245

Diagnosis	Description	Medical/Surgical	Service descriptions
Z41.2	Routine and ritual circumcision	Surgical	Circumcision 3 - 12 Years G.A

Encounter_ID: 109445927

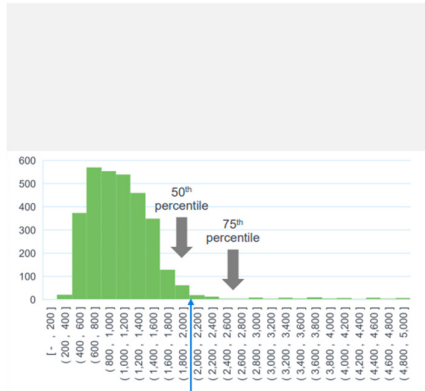
Diagnosis	Description	Medical/Surgical	Service descriptions
P36	Bacterial sepsis of newborn	Medical	NEW BORN METABOLIC SCREENING

Service Descriptions

DEXTROSE 5% WATER 100 ML
 Baby Care
 CIRCUMCISION
 ECHO DOPPLER (PAEDIA)
 AMPICILLIN (EPICOCILLIN) 500MG INJ ***PENICILLIN***
 NEW BORN METABOLIC SCREENING (16 PARAMETERS)
 GENTAMICIN (GENTAM) 20MG / 2ML INJ 2ML
 I.V. PREPARATION SERVICE

Assigning flag (surgical/medical)

Encounters where circumcision as a primary procedure is not appropriate for given diagnosis therefore it was flagged as medical management and encounter with single service description with circumcision procedure flagged as surgical



Using financial limits where no LOS information

Renal dialysis as same day procedure applying financial limit



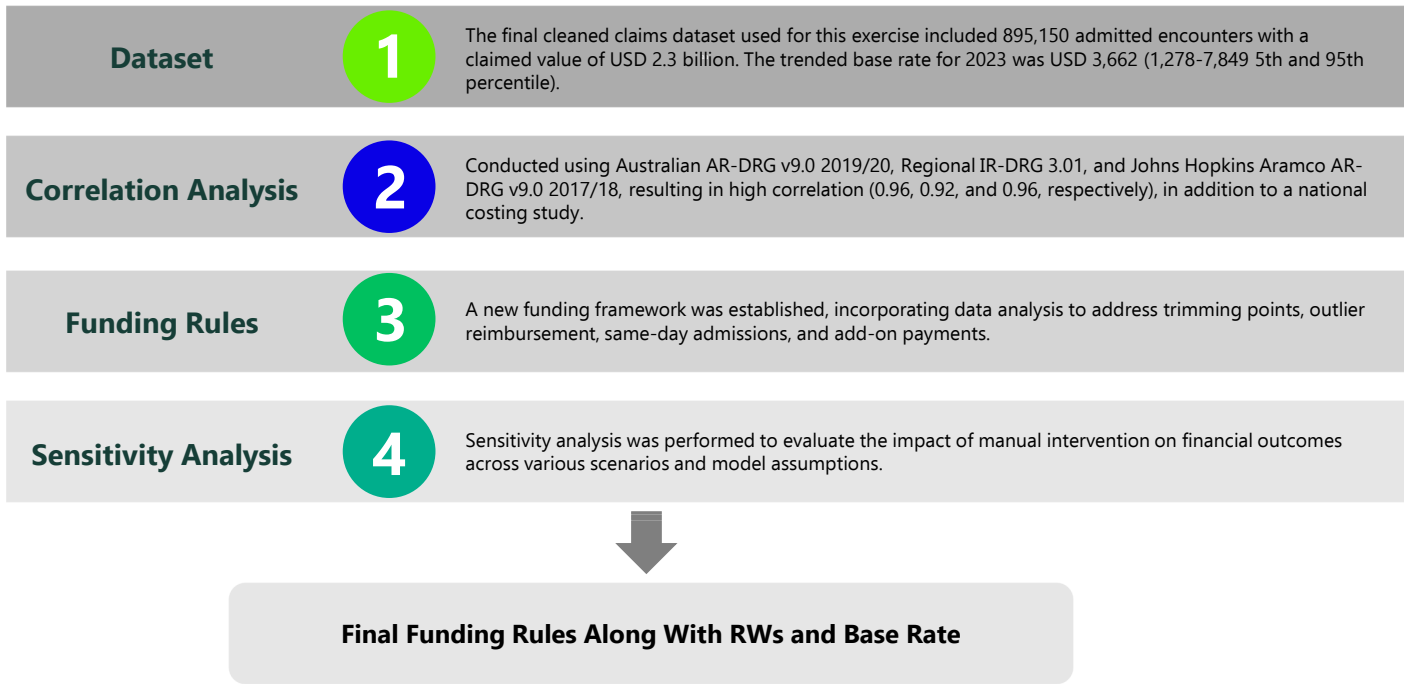
Manual overrides

Limited and only to address monotonicity within each ADRG

3 RESULTS

Main outputs

Involvement of all stakeholders



Reasonability check: correlation analysis

Data Source	Correlation Coefficient
Australian AR-DRG v9 2019/2020	0.96
Johns Hopkins Aramco (Australian AR-DRG v9 2017/2018)	0.96
Regional IR-DRG v3.01	0.92 (125 mapped AR-DRGs only)

Funding Rules

The funding rules following an assessment of global funding rules and engagement with stakeholders on the local system:

Trim points

- ⑩ For each AR-DRG, the low trim point is equal to the average length of stay divided by 1.5.
- ⑩ The high trim point is equal to the average length of stay multiplied by 1.5.
- ⑩ Both low and high trim points are set to 1 for AR-DRGs that are eligible for same day reimbursement only.

Outlier reimbursement

- ⑩ For each AR-DRG, a per diem relative weight is calculated by dividing the inlier relative weight by the average length of stay.
- ⑩ For AR-DRGs with average length of stay greater than 1, the first day per diem is equal to twice the standard per diem relative weight.
- ⑩ For AR-DRGs that are eligible for same day reimbursement only, no per diem relative weights are calculated.

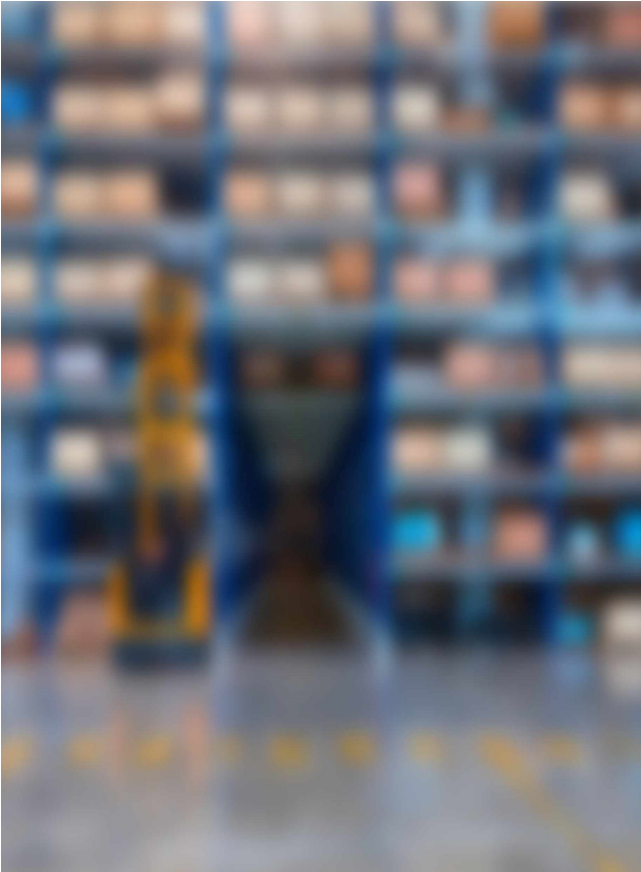
Same day admissions

- ⑩ The following seven AR-DRGs are specified as same day encounters and so are not eligible for any outlier reimbursement: B40Z, L41Z, M40Z, R63Z, U40A, U40B, U60Z.

Add-on payments

- ⑩ Add-on payments for:
 - Oncology drugs at SFDA prices for R63
 - Additional stents at cost price for F05, F06, F10 and F24.

4 CONCLUSIONS



Top-down approach using claims data is a feasible approach on developing base rate and relative weights in situations when no meaningful costing infrastructure and data is available, and when rapid assessment is required



Claims data quality was relatively good and better than expected



Stakeholder engagement, transparency and refinement of outputs was very sensitive but critical



There is an urgent need for tougher compliance with the Minimum Data Set and improving clinical coding through CDI and Coding Audit

**THANK
YOU**

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