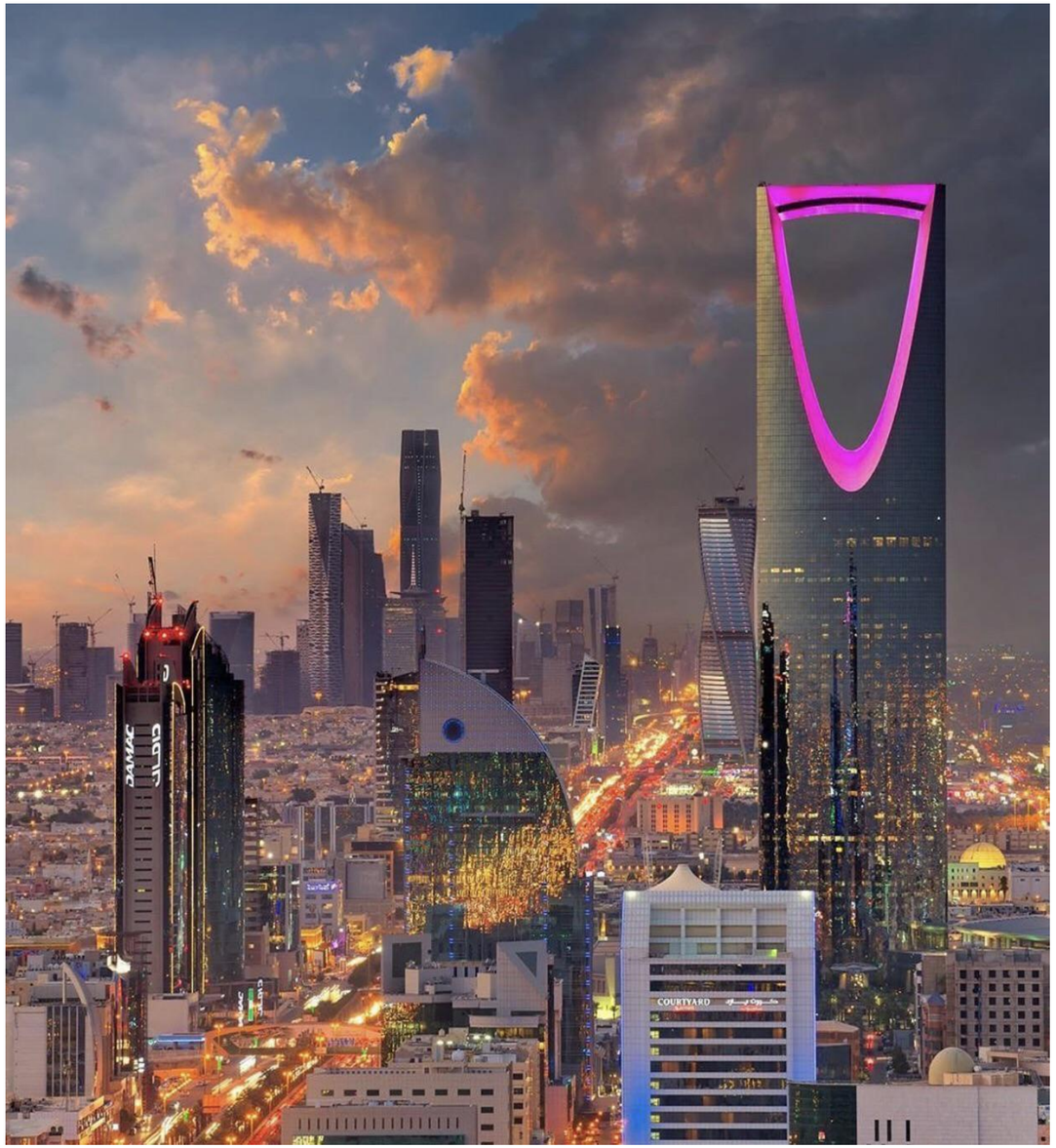

مركز التميز الوطني للترميز وحساب التكاليف
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Role of Actuaries in The KSA Public Health Sector

Ehab Alatassi
Executive Director, National Casemix Center of Excellence

Neha Taneja
Actuarial Governance Director, National Casemix Center of Excellence

Introduction

Saudi Arabia

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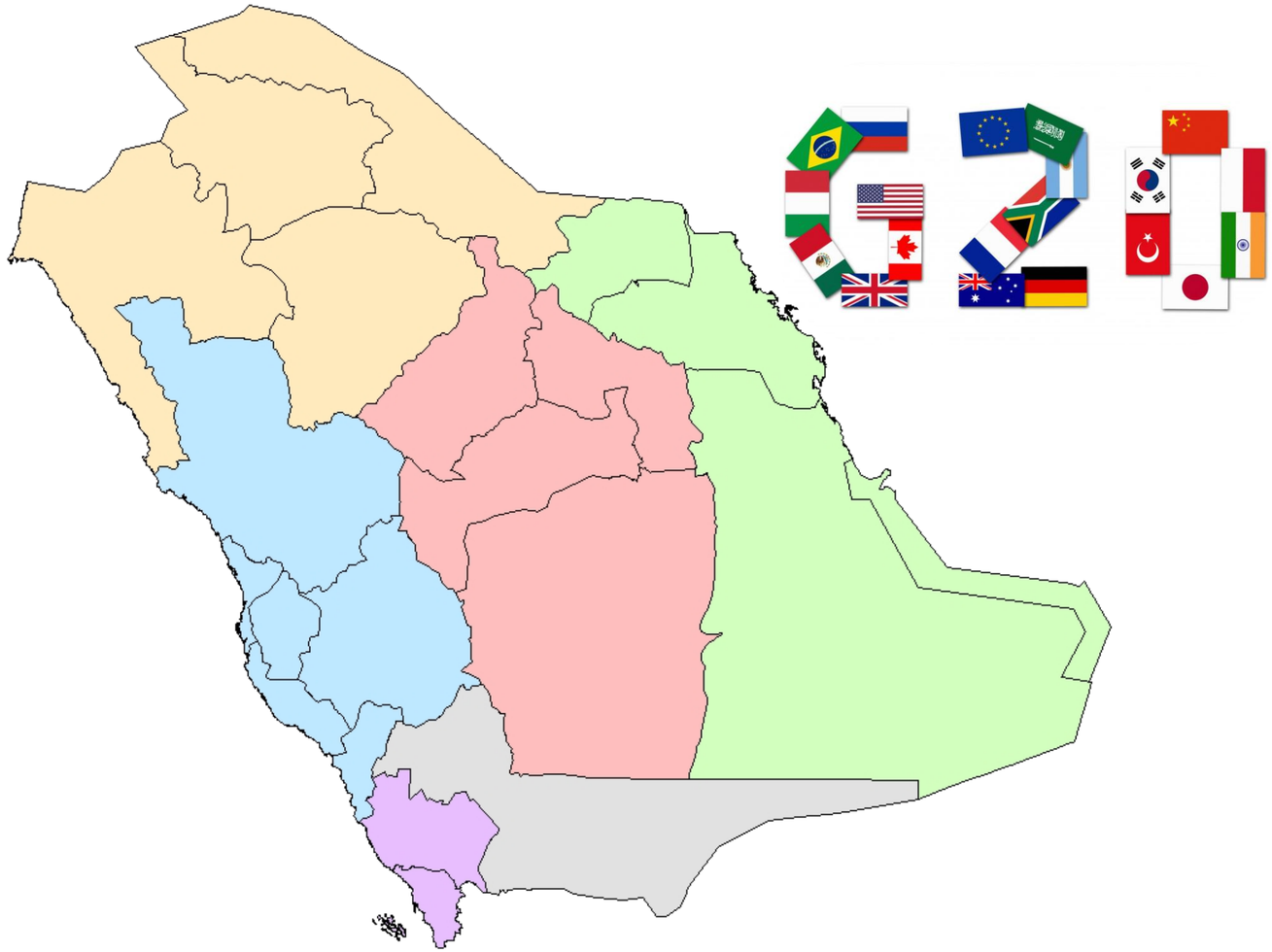
Part of G20 countries	
Location	Arabian Peninsula
Land Area	2,150,000 km^2
Population	~32.2 million
GDP	$1.068 trillion
GDP per capita	$ 33,168
THE	$ 68.4 billion
GHE	$50.4 billion



GDP – Gross Domestic Product
THE – Total Health Expenditure
GHE – Government Health Expenditure
2023 Figures for population, GDP, THE, GHE
All Amounts in US Dollars

Current healthcare system landscape

مركـــز التميـــز الـــوطني
للترميز وحساب التكاليف
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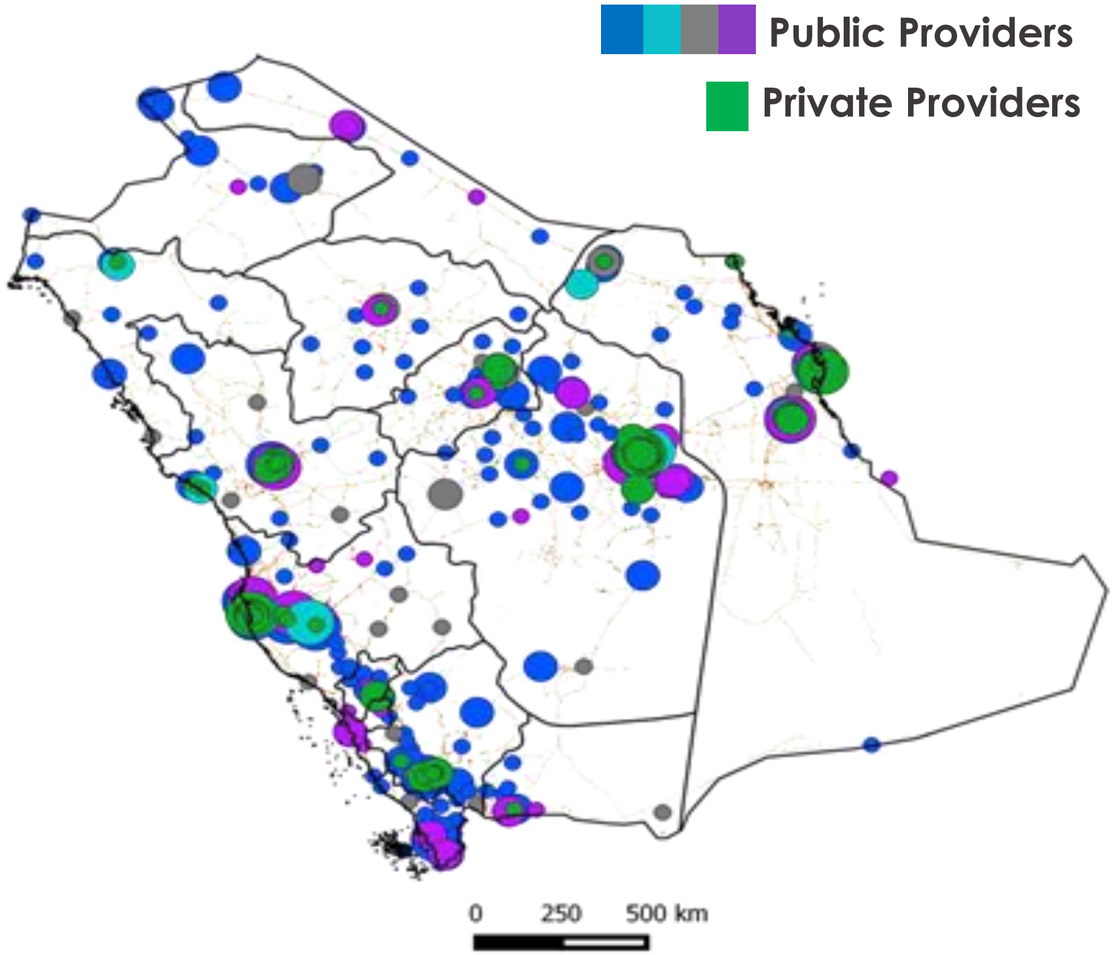
KSA
Popn: **32.2 million**[1]



1 CY 2022: https://portal.saudicensus.sa/static-assets/media/content/AR_20230523_Population%20Infosheet%20(3).pdf?crafterSite=gastat-portal
2 THE: Total Health Expenditure

Current healthcare system landscape

مركز التميز الوطني للترميز وحساب التكاليف
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KSA
Popn: **32.2 million**[1]

Public Sector:
67% of the population;

73% of THE[2]

Ministry of Health:
58% of the population;

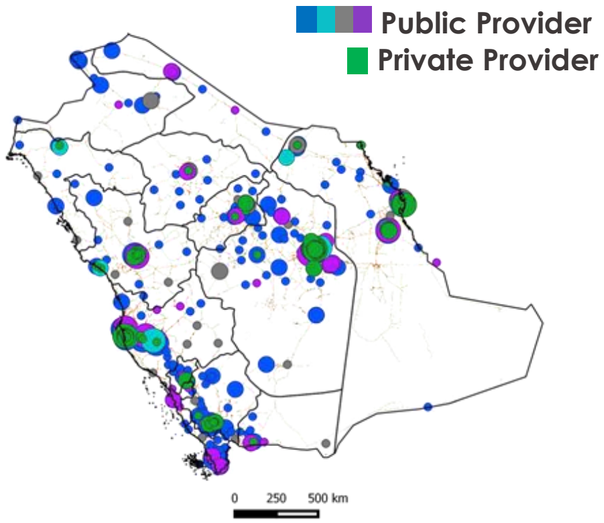
51% of THE;
Regulated by MoH

Other Government Facilities (Health)
9% of the population;

22% of THE

Private Sector:
33% of the population;

27% of THE,
Regulated by Insurance Authority



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Current healthcare system landscape

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Popn: **32.2 million**[1]

Public Sector:

67% of the population;

73% of THE[2]

Ministry of Health:

58% of the population;

51% of THE;
Regulated by MoH

Hospitals - **274**
PHCC – **2,282**

Other Government Facilities (Health)

9% of the population;

22% of THE

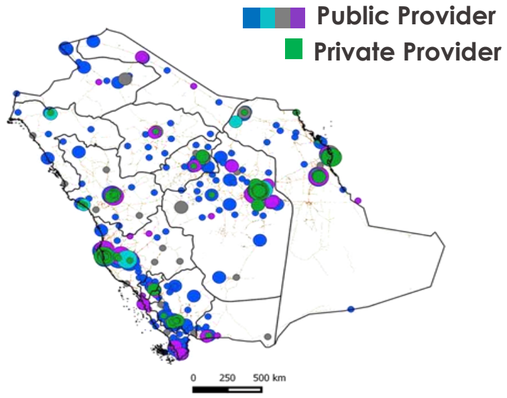
Hospitals - **43**
PHCC – **290**

Private Sector:

33% of the population;

27% of THE,
Regulated by Insurance Authority

Hospitals - **145**
PHCC – **2,670**



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2 THE: Total Health Expenditure

Current healthcare system landscape

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	Public Sector	Private Sector
Beneficiaries	~22 mn	~11 mn
Market size	$50.4[1] bn	$10[2] bn
Per capita	$2,300	$1,100

1. General Government Health Expenditure for CY 2023 from 2022/2023 National Health Accounts. In US Dollars.
2. 2023 Gross Written Premium for Health Insurance: The Saudi Insurance Market Report 2023. In US Dollars.
3. All Amounts in US Dollars

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Saudi Healthcare Transformation

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Key Challenges in the public health sector

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Non-exhaustive

6–8% p.a.

Escalating Healthcare Costs[1]

Annual spending growth, straining budgets.

$32.4 bn

Chronic Disease Burden[1]

Cost of managing priority NCDs to increase by 40% from 2023 - 2030

x2

Ageing population

Saudis over 60 years projected to grow from 3% in 2023 to 6%[3] in 2030

Financial | **Population**

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1. https://www.moh.gov.sa/en/Ministry/About/Pages/Budget.aspx
2. https://pmc.ncbi.nlm.nih.gov/articles/PMC10709902/
3. NPP

Transformation objectives

- Improve population health
- Ensure long term financial sustainability

Increase “value” for every dollar spent

Transformation objectives

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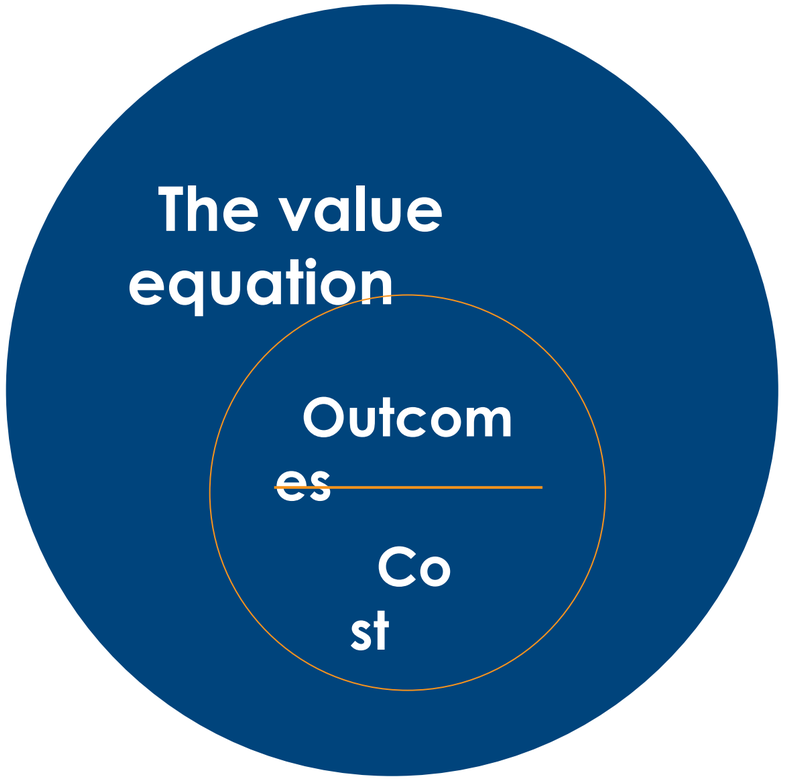
- Improve population health
- Long Term Financial Sustainability

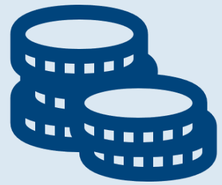
Increase “value” for every dollar spent



Dual reform strategy to achieve “value”

Restructure system

Separation of healthcare tasks with separate entities established for provision, payment and governance



Reform funding

Shift from historical budgeting to strategic purchasing based on beneficiary risk and incentives for population health improvements

How?

Separation of healthcare tasks

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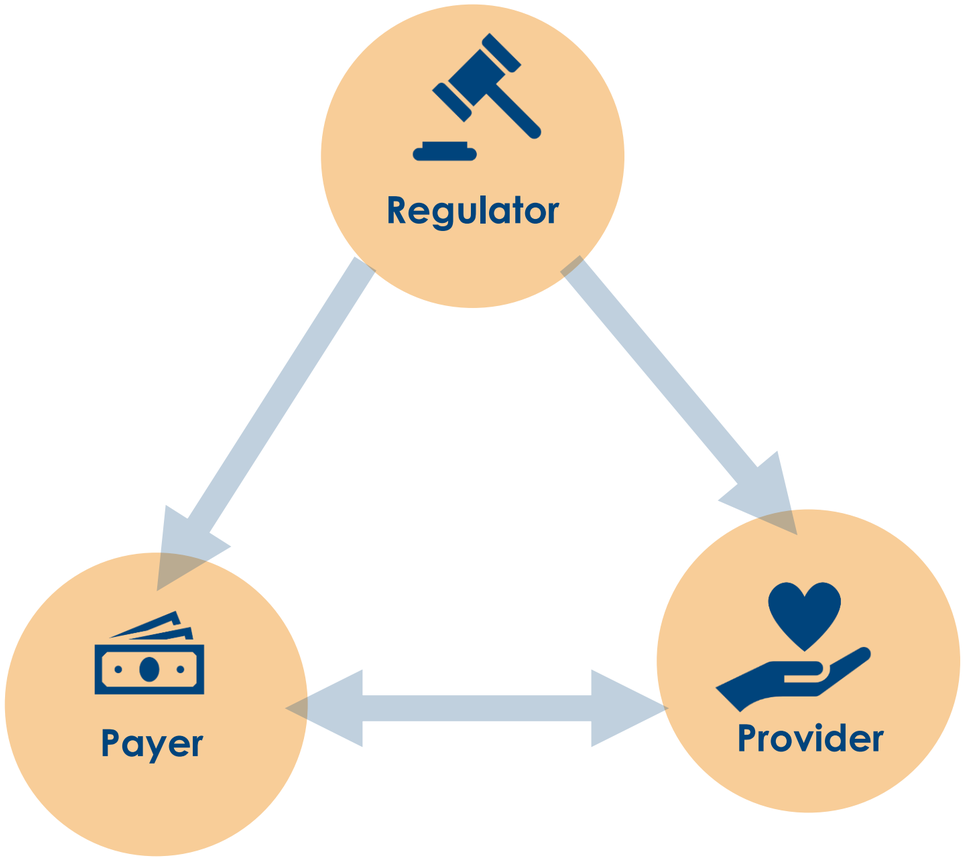
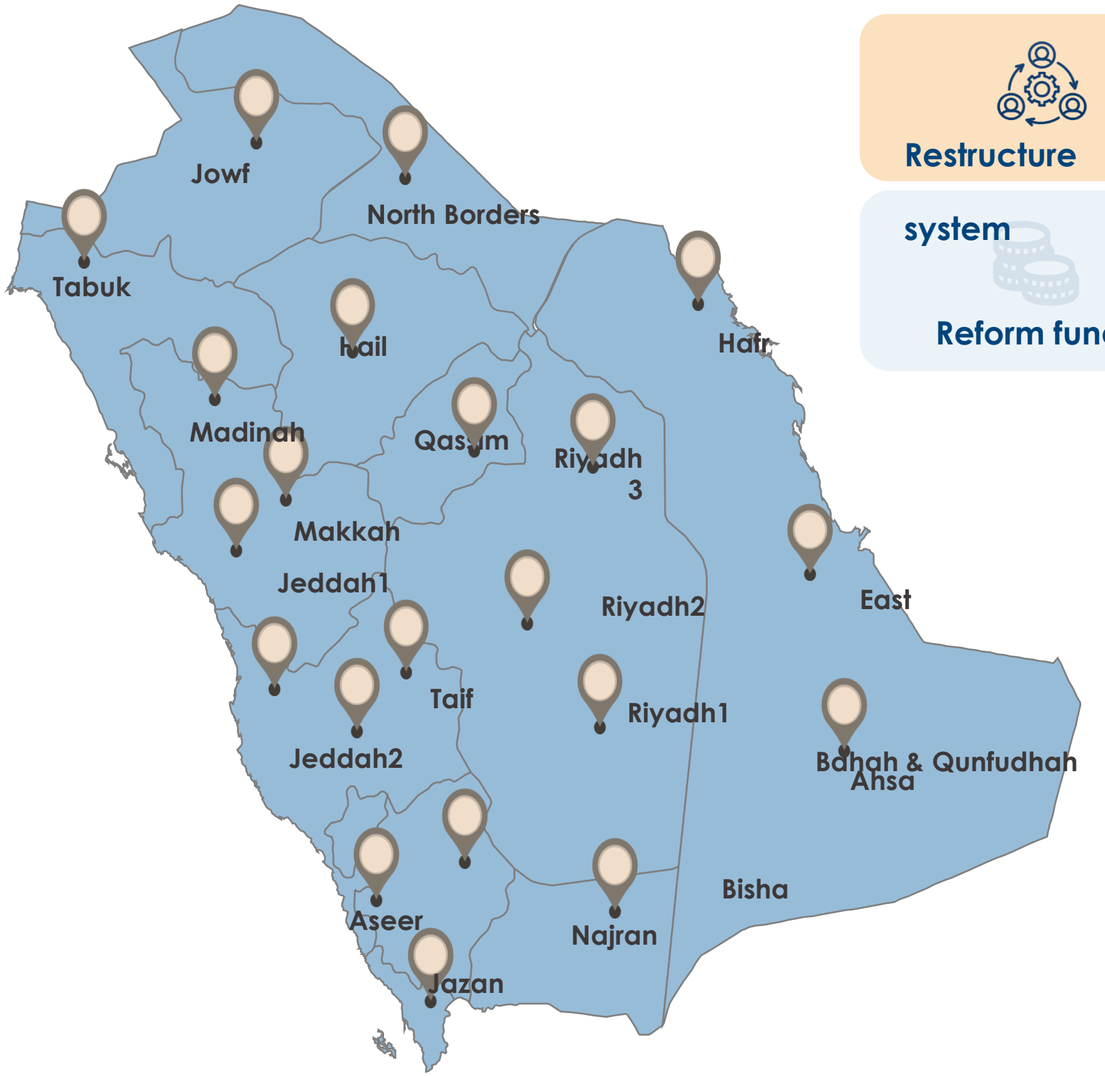


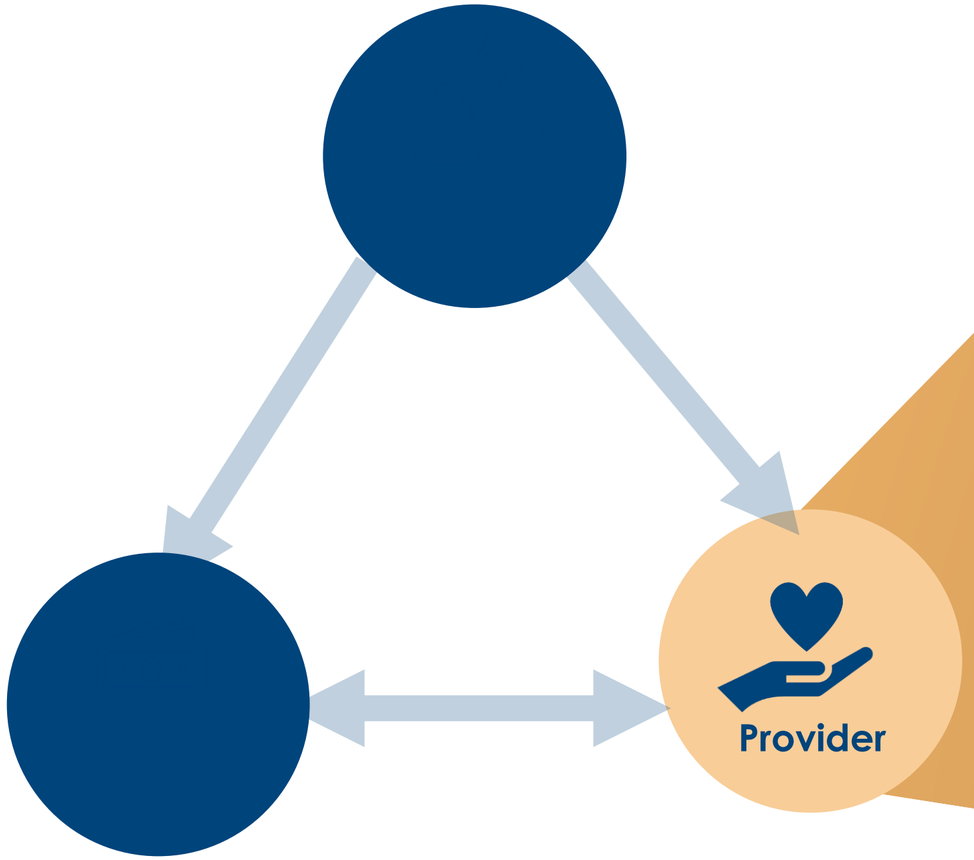


Restructure

system

Reform funding

Separation of healthcare tasks

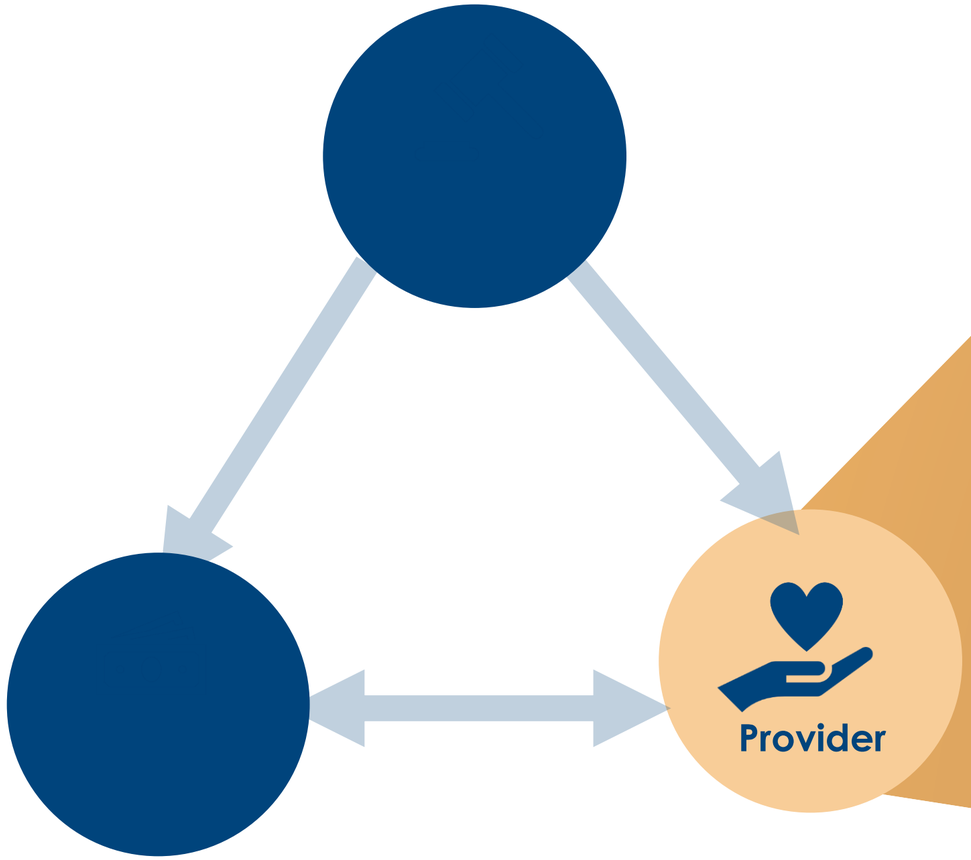


Restructure

system

Reform funding

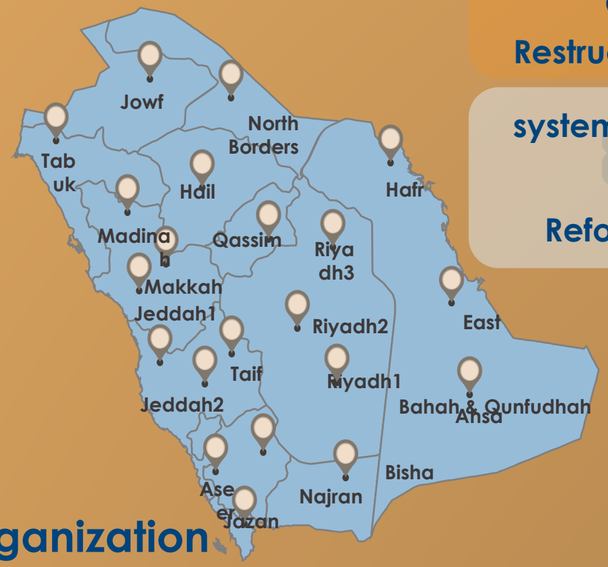
Separation of healthcare tasks



Restructure

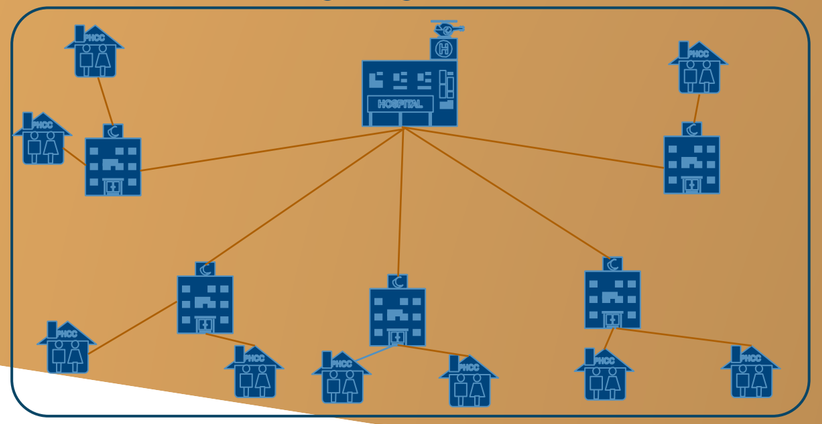
system

Reform funding



Accountable Care Organization

delivering integrated care



Tertiary Care

Secondary Care

Primary Care

Separation of healthcare tasks

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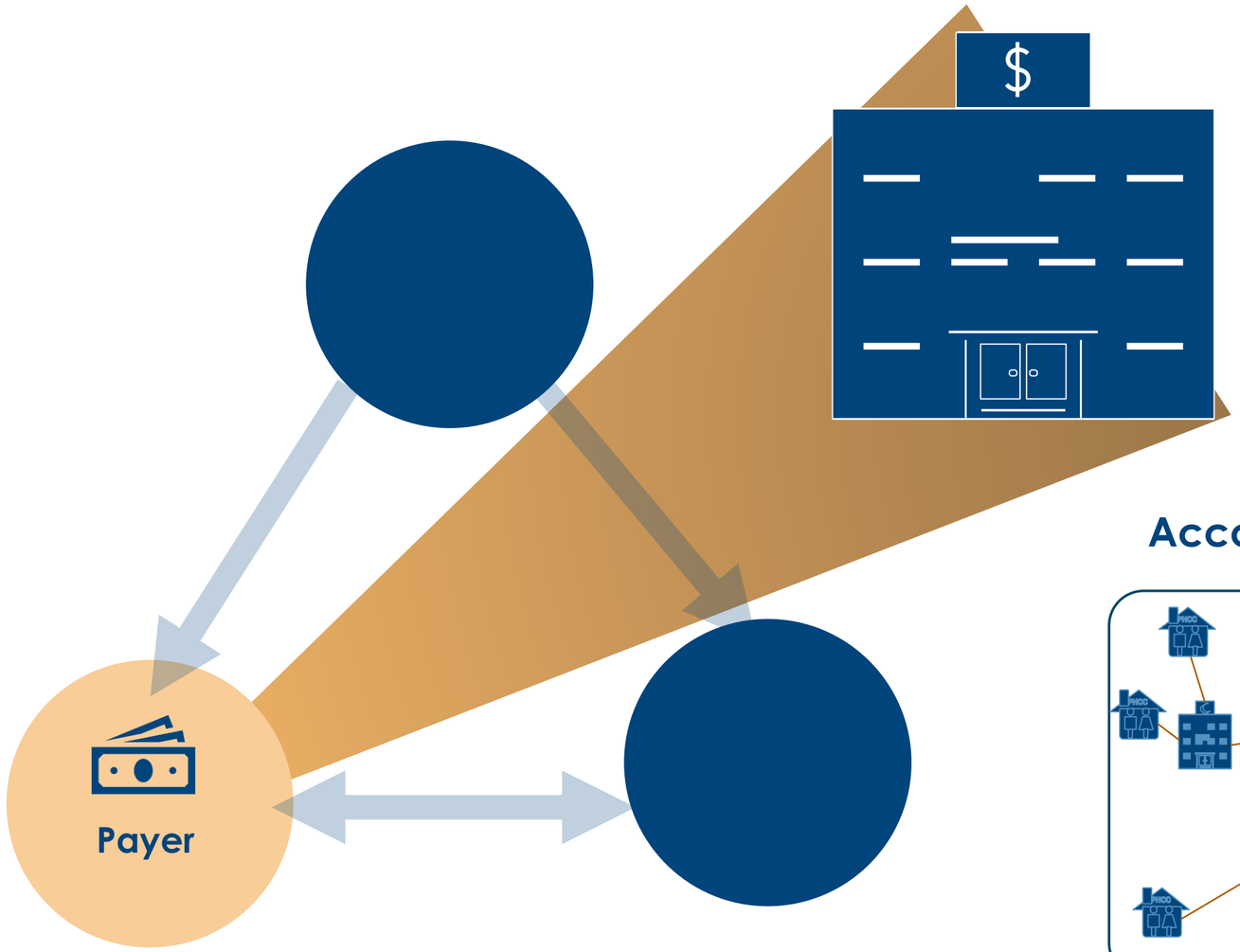
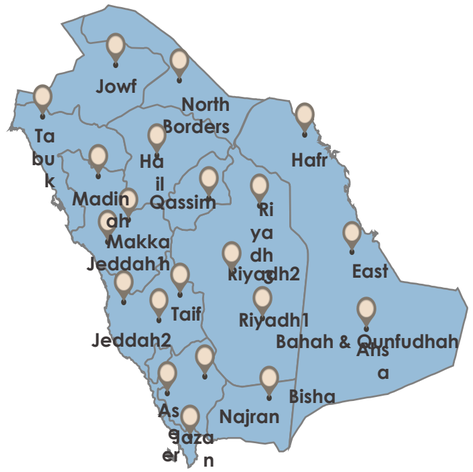




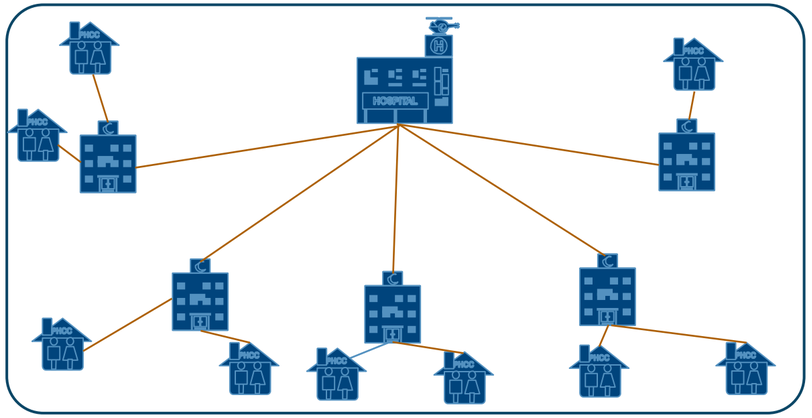
Restructure

system

Reform funding

Accountable Care Organization

delivering integrated care



Tertiary Care

Secondary Care

Primary Care

Reform funding

Reform funding

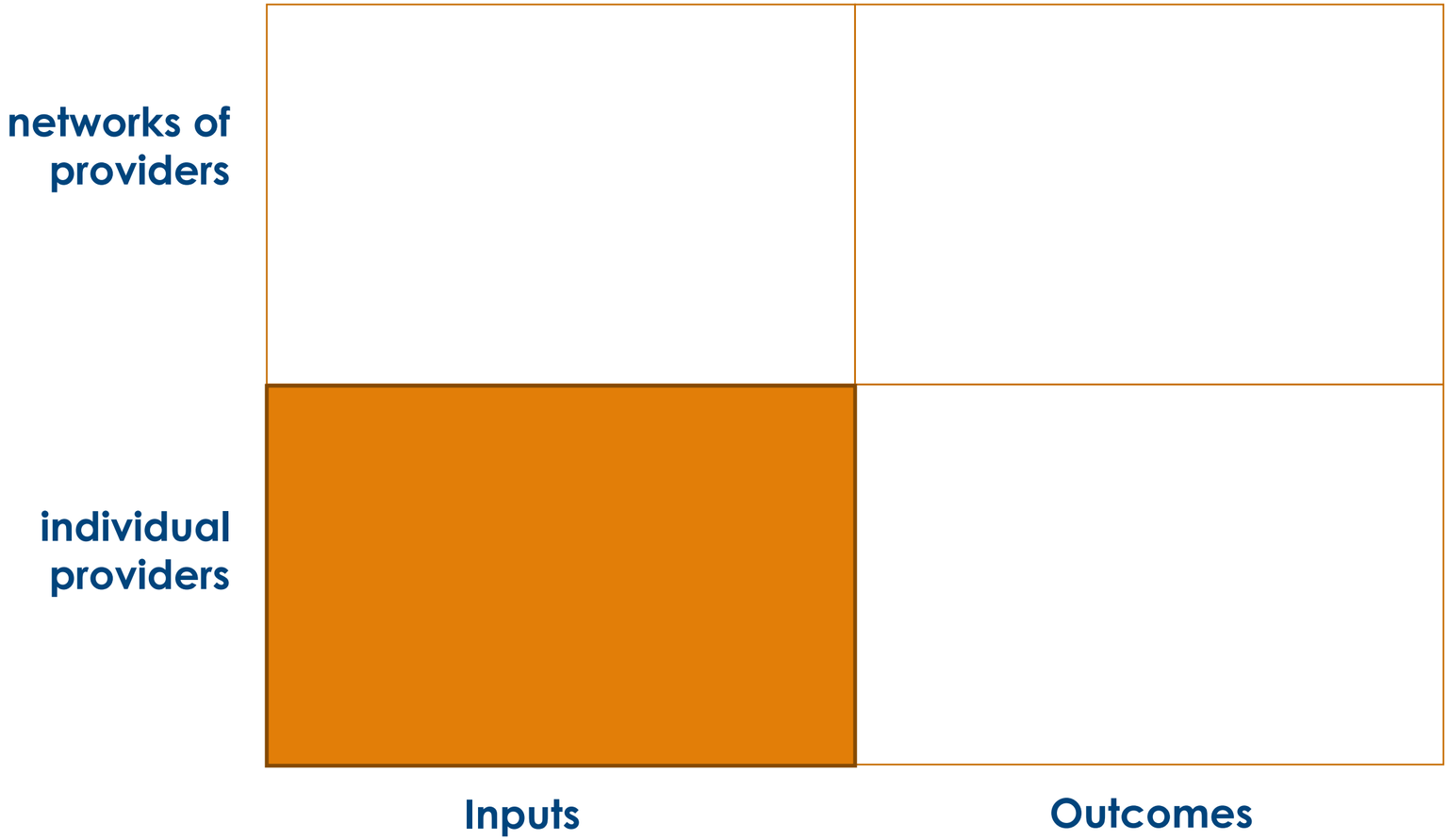
Restructure system

	From	To
Budgeting	• No linkage between healthcare supply, need and population health	• **Budgets linked to needs, demands** and **target outcomes of the Accountable Care Organizations**
Incentives	• **No incentive to control costs or improve population health**	• **Financial incentive** for achieving **performance** targets
Accountability	• **No defined benefit package** • **Limited visibility** on cost, quality or outcomes • **Limited ability to innovate** • **Lack of financial bailouts governance**	• **Guaranteed access** to defined benefits package • **Data-driven** health system performance • **Outcomes-based budgeting** promoting ACO autonomy • **Clear consequence management through financial failure regime**

Move away from reimbursing individual providers for inputs

Reform funding

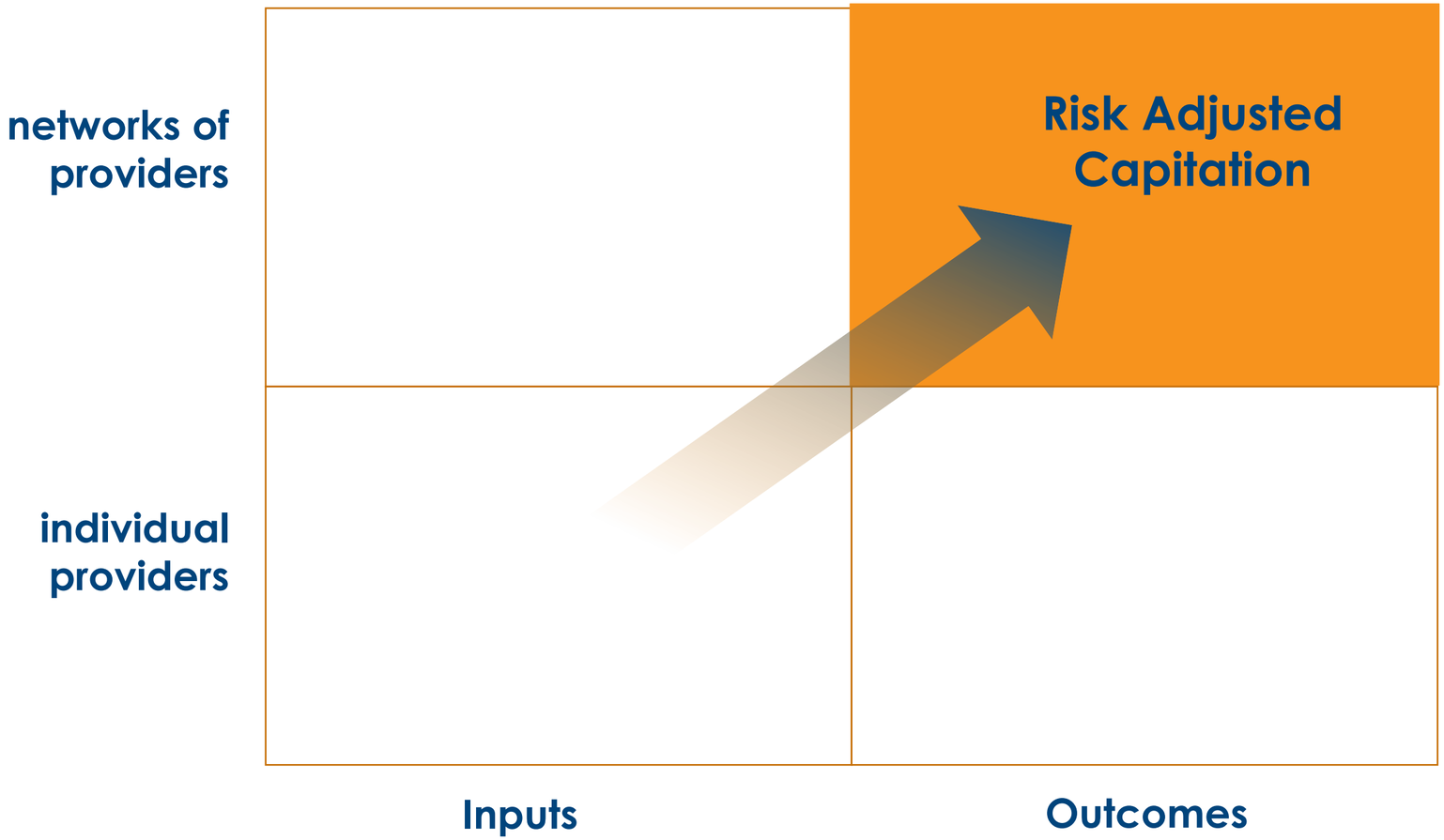
Restructure system



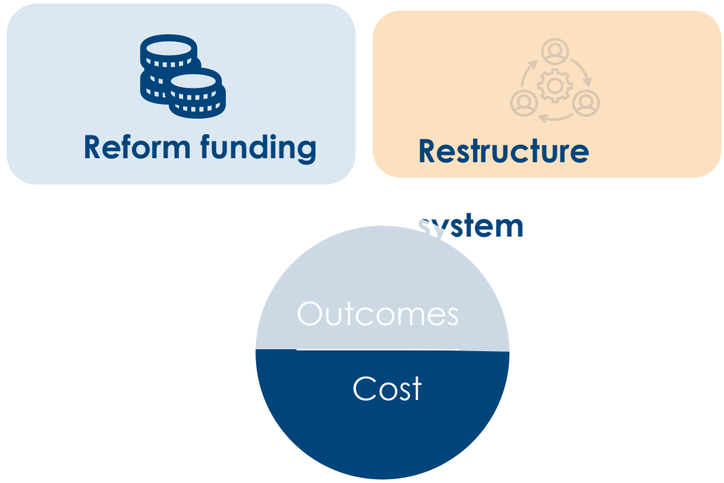
…to paying networks of providers for outcomes

Reform funding

Restructure system



Risk-adjusted capitation budget based on two sets of calculations



1

Population characteristics and local context, including:

- Number of beneficiaries
- Age, gender, and health risk status
- Socio-economic status
- Market and geographic factors

2

Efficient total cost of care for delivering the health benefits package and model of care:

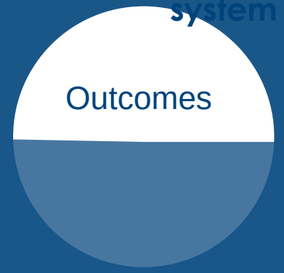
- Total utilization
- Distribution of activity by care setting
- Unit costs

Outcome domains

Reform funding

Restructure

system



Clinical domains:

1. Access
2. Care Quality
3. Patient Safety
4. User experience
5. Equity
6. Effectiveness

Financial domains:

7. Financial sustainability
8. Efficiency

This new payment mechanism makes ACOs “bearers of financial risk”

A financial regime is required to manage ACOs as they become the **“bearers of financial risk”**

Objectives of the regime are to:

1. Maintain continued provision of services set out in the HBP
2. Ensure financial sustainability
3. Disincentivize organizations from seeing the regime as an additional funding source

Financial regime

Three lines of defense

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Business as usual

Financial management

- Defined amount of reserves
- Ongoing surveillance of financial position

1st line

ACO reserves

If an ACO loses money, it would be expected to fund initial losses from reserves

2nd line

Re-insurance

CNHI supports ACOs once losses exceed a certain amount

3rd line

MoF bridge financing

If ACO reserves and CNHI reinsurance are no longer sufficient to continue operations, then MoF support is required while underlying challenges are addressed

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From Design to Implementation

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Actuarial models under development

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Our focus today

Pricing

Individual Risk Assessment Tool

Risk scoring tool for budget allocation and population health management

Risk Adjusted Capitation Model

Model for ACO budget allocation based on risk adjustments indexed to the Health Benefit Package

Reserving

Incurred but not paid

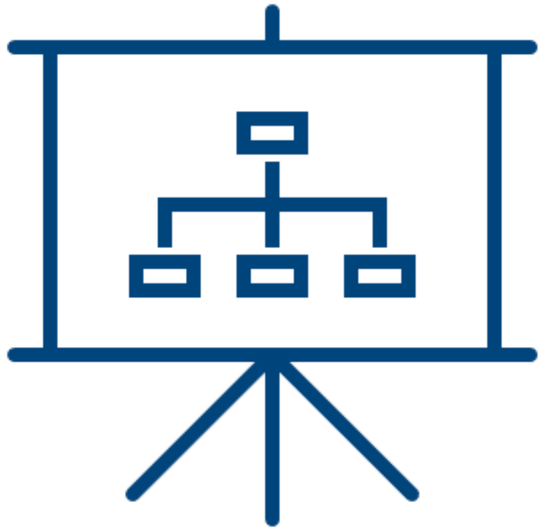
Model for estimating IBNR and outstanding claims.

Reinsurance modelling

Model to assess reinsurance reserves considering national payer's risk appetite and risk profile of the ACOs

Individual Risk Assessment Tool

Key features



- Predictive model that assigns a **risk score** for **each member**.
- Risk score is the **expected relative resource use** based on **member characteristics** and **health status**
- This risk score is "**prospective**" (forward looking) – what is expected to happen in future.
- Uses **member characteristics** and **encounter data** as an input to arrive at individual risk scores
- Each member characteristic is given a **numerical weight**. The **risk score** for a given individual is a **sum of all the weights**.
- Used as an **input** to **ACO budgeting model** (RAC estimation) and measuring provider performance
- Assigns health segment and risk strata to each member to assist with population health analytics.

Individual Risk Assessment Tool

Model inputs

Member Demographics

- Age
- Gender
- ACO
- Occupation/Profession

HBP eligibility

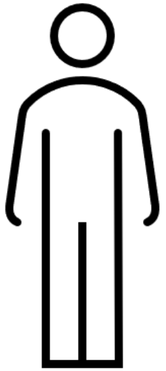
- Level of coverage
- Other forms of coverage *(e.g. Private Health Insurance)*

Encounter Data

- Diagnoses
- DRGs
- Length of stay
- Triage category
- Mental health phase

Individual Risk Assessment Tool

Illustration of the output



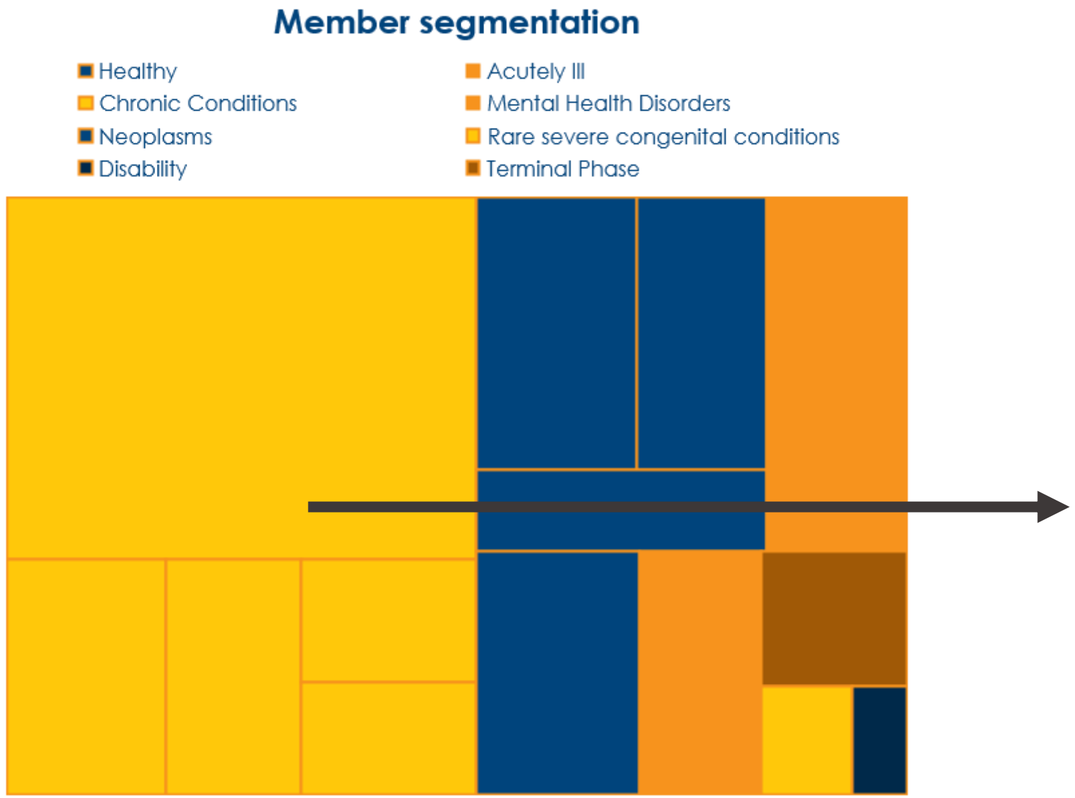
Individual risk characteristics

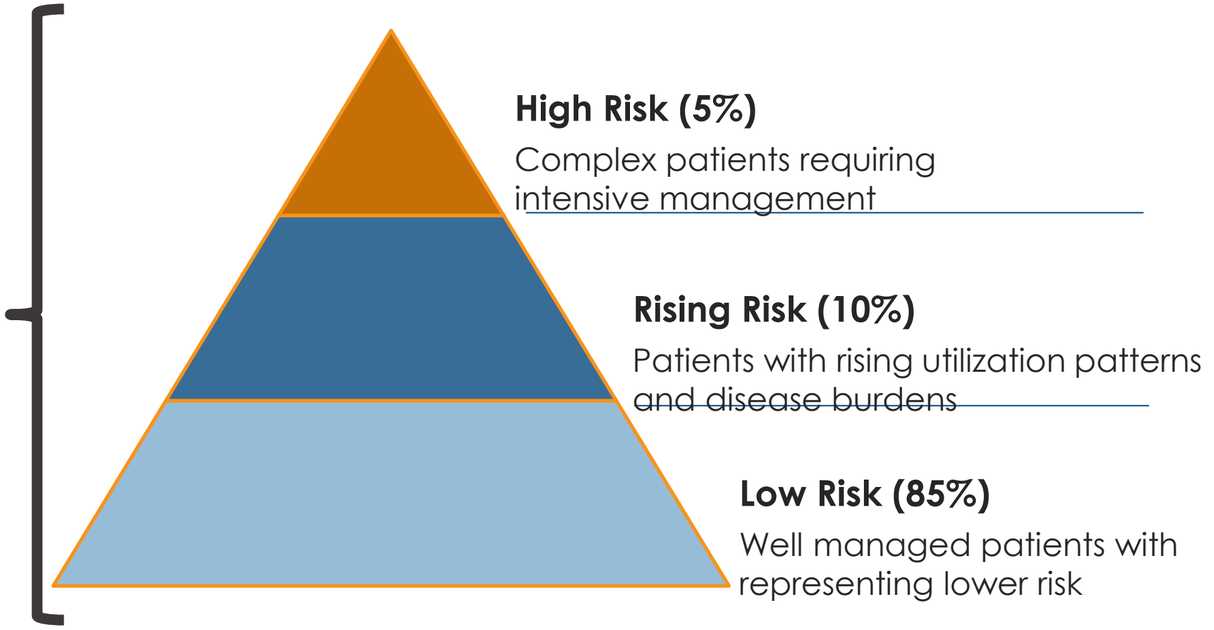
Age 50 male	Risk associated with age and gender only.
Occupation	Risk associated with profession
Type 1 diabetes mellitus	Risk association with chronic condition
IP visit with DRG for Diabetes, Major Complexity	Increased risk of inpatient hospitalization for diabetes
Emergency visit triage category Urgent	Increased risk for indication of past emergency department use.

= **Total individual risk score**

Individual Risk Assessment Tool

Illustration of the output



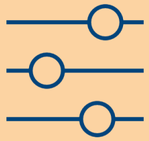


Risk Adjusted Capitation Model

Model framework

Inputs

- Health Benefit Package
- Beneficiary projections
- Baseline cost model: National baseline utilization per 1,000 members and efficient unit cost by benefit category



Key Adjustments

- ACO risk score
- Demographic mix changes
- Market forces factor
- Smallness & remoteness adjustment
- Benefit change adjustments
- Trends

Output

- Projection of utilization, average costs and per capita by HBP benefit categories for the projection period
- Key cost drivers
- Scenario and sensitivity analysis

Where are we today

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- ✓ **Estimated member level risk score** for the **3** most advanced **clusters**
- ✓ **Estimated risk adjusted capitated budget** for these clusters
- ✓ **Meeting Ministry of Finance** next month to walk them through **budget estimates based on new payment mechanism**

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Role of National Casemix Center of Excellence

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National Casemix Center of Excellence

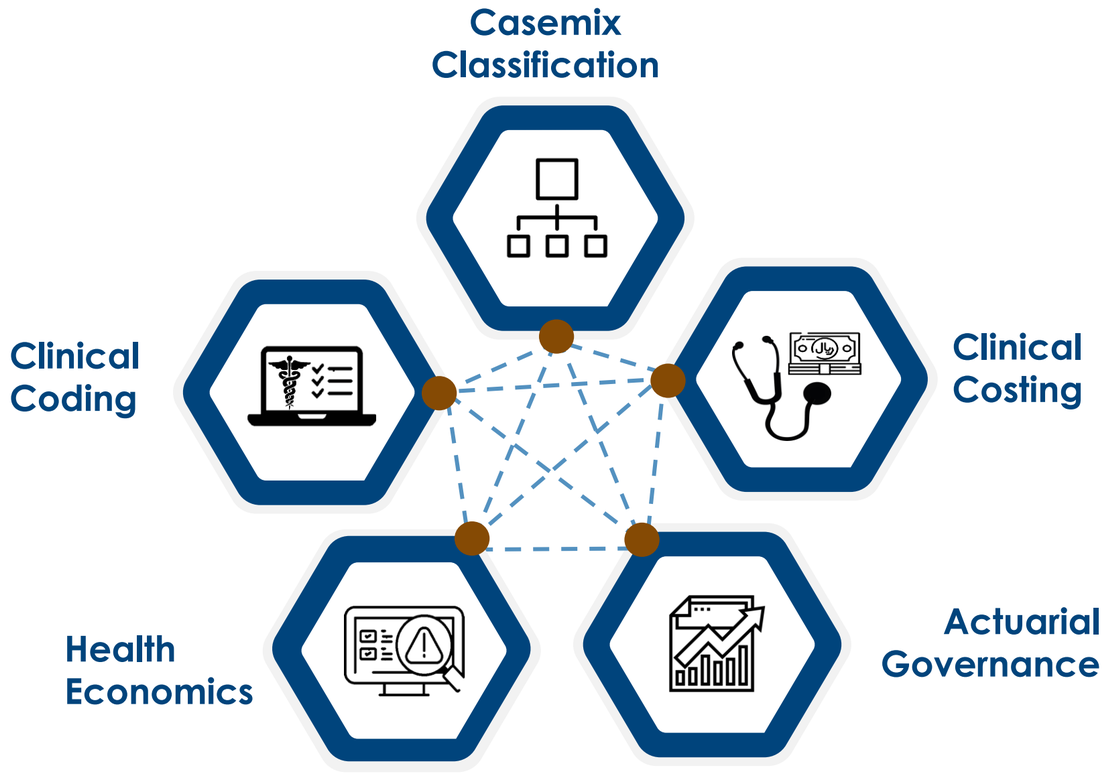
مركز التميز الوطني للترميز وحساب التكاليف
NATIONAL CASEMIX CENTER OF EXCELLENCE

Mission

Optimise **efficiencies in healthcare systems** by ensuring standard language and currencies, by **governing clinical coding, patient classification, clinical costing and healthcare funding.**

Vision

Become the **single trusted point** of reference for the **health funding process and efficiencies**



Our Value Matrix (Functions)

Actuarial Governance

Key products

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Actuarial Governance Framework

Embed actuarial skillset within the public health sector

Provider Payment Strategy

Strategy and design for the new payment mechanism

Budgeting Standards

Guidelines and standards for the development of budgeting models

Financial Regime

Governance for ensuring financial sustainability of the public healthcare system

Efficient Price Framework

Standards for developing price reflecting efficient healthcare delivery

Efficient Pricelist

Pricelist reflecting efficient care delivery to form the basis of new payment mechanism

Questions?

Contact us

LinkedIn:

national-casemix-center-of-excellence

Email:

The Center's Email is: **Casemix@cnhi.sa**

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Thank You!
Obrigado!