



IR-DRG Guidelines

Parameter Calculation

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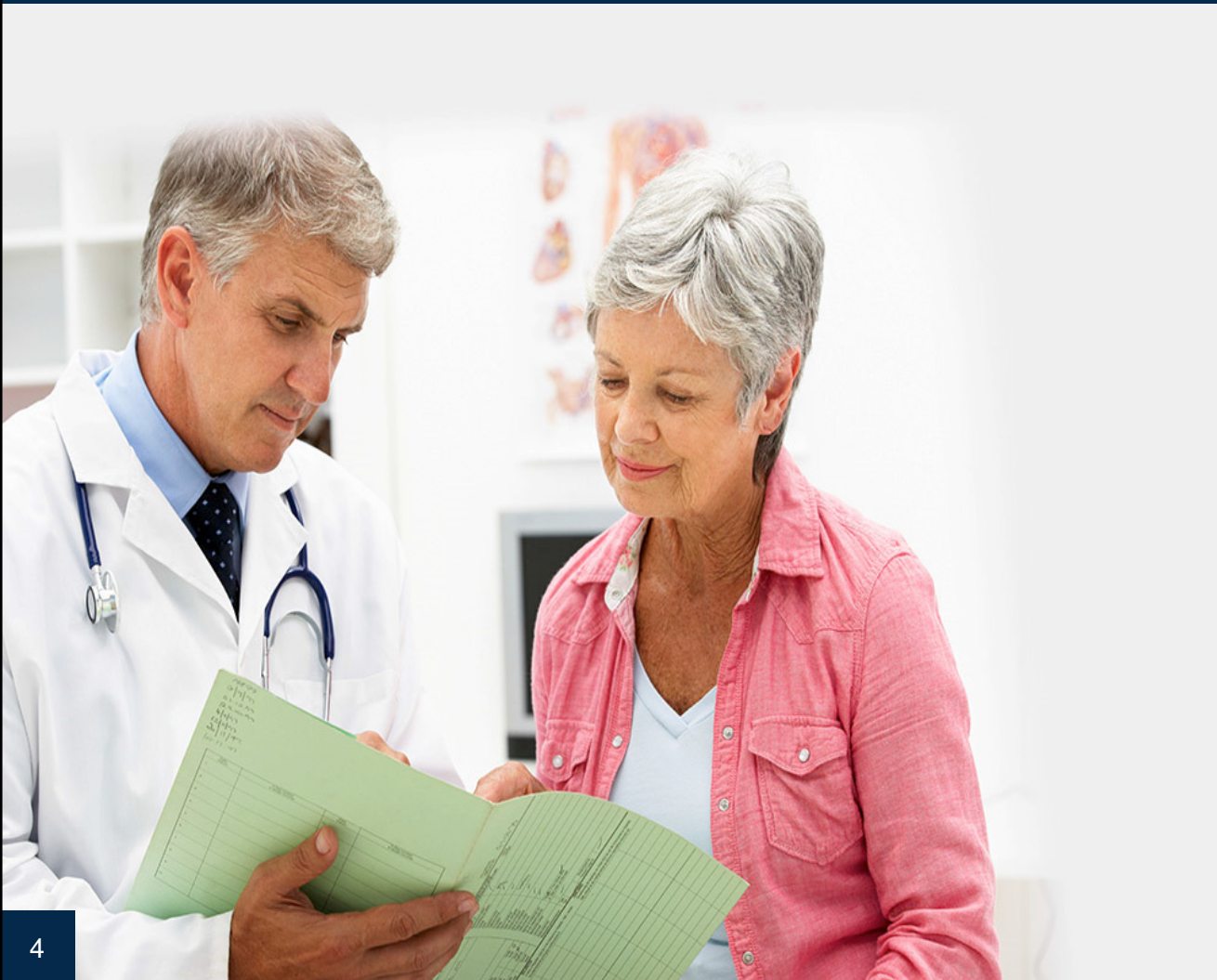
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Background

- The Dubai Health Authority (DHA) has adopted the International Refined Diagnosis Related Groups (IR-DRGs) for inpatient hospital payment.
- DHA's primary goal for health insurance payment models and regulations is to *ensure sustainability* of the Dubai health system by providing incentives for *improved efficiency and quality*

Overview of IR-DRGs

- IR-DRGs bundle or combine inpatient hospital services into a single group for each inpatient stay.
- The hospital services included in each IR-DRG bundle represents the typical services provided across all hospitals for inpatients with similar reasons for admission.
- Each inpatient hospital stay is assigned to one and only one IR-DRG based on the patient's age, sex, diagnoses, procedures provided to the patient, and sometimes other factors.

Overview of IR-DRGs: What do IR-DRGs Cover?

Types of services covered by an IR-DRG payment include:

- Physician care
- Nursing care
- Technician services
- Therapies
- Radiology
- Laboratory
- Pharmaceuticals
- Room
- Meals
- Etc.

Overview of IR-DRGs: Payment Parameters

- The IR-DRG payment system uses a series of parameters for calculating the specific payments to be made to hospitals for each inpatient stay.

Base Rate

Relative
Weights

Outlier
Payment
Components

Negotiation
Band

Transfer
Payments

Analysis Data for IR-DRG Payment Parameter Calculation

- Dubai claims data, from January 2015 to June 2017, from the eClaimLink system.
 - Encounter Type 3 (Inpatient Bed + No emergency room)
 - Encounter Type 4 (Inpatient Bed + Emergency room)

where the length of stay (LOS) is greater than 0 or where LOS is 0 and the patient is discharged deceased.

Analysis Data for IR-DRG Payment Parameter Calculation

- Physician claims billed separately from the inpatient claim were linked to the inpatient claim by MemberID and service dates.
- Payments and claimed amounts (charges) for packages were set as the largest line payment (claimed amount) on packages with more than one line with payments greater than 0.
- Payments and claimed amounts were capped at the 1st percentile

How is IR-DRG Payment Determined?

- At the most basic level the IR-DRG payment is a multiplication of two factors:
 - Base Rate
 - Relative Weight

$$\text{IR-DRG Payment} = \text{Base Rate} * \text{Relative Weight}$$

Payment Parameter: Base Rate

The base rate represents the IR-DRG payment for the overall “average” hospital inpatient admission.

- The base rate is set equal to the total payments for inpatient cases divided by the total case-mix adjusted number of inpatient cases for all hospitals*.

$$\text{BaseRate} = \frac{\text{Total Payments for all Inpatient Cases}}{\text{CaseMix Adjusted Number of Cases}}$$

**The final base rate in Dubai is normalized to allow for negotiation*

Payment Parameter: Relative Weights

Relative weights adjust the base rate for changes in the resources required to provide different hospital services as measured by the IR-DRGs.

- Each IR-DRG is assigned its own relative weight
 - Identifies its relative costliness
- The relative weights for Dubai were calculated by 3M using the claimed amounts in the Dubai claims data and supplemental information from Abu Dhabi.

Payment Parameter: Relative Weights

- 3M trims the data to control for observations that might unduly affect the weight calculation using length of stay
- 3M uses the Dubai data to calculate DHA relative weights as the IR-DRG severity of illness (SOI) average claimed amount divided by the average claimed amount for all claims.
- These weights are then blended with the weights from Abu Dhabi using 3M's standard procedures to account for
 - Missing and low count IR-DRGs in Dubai
 - Non-monotonicity of relative weights within base IR-DRGs
 - Potential upcoding

Payment Parameter: Outlier Payments

- The purpose of outlier payments in the IR-DRG payment system is to provide risk sharing for very costly cases.
- This enables the hospitals to be paid an extra amount, in addition to the regular IR-DRG payment, for treating patients who have very high costs during their inpatient stays in the hospital.
- An outlier payment for an inpatient case is made to a hospital if and only if the cost of the case exceeds a predetermined threshold amount
 - Added to the regular IR-DRG payment to identify the very high cost cases that qualify for the extra outlier payment.

Payment Parameter: Outlier Payments

- Outlier Payment Components
 - Target percentage of payments that are outlier payments
 - Claim cost
 - Marginal
 - Threshold

Payment Parameter: Outlier Payments

- The IR-DRG inlier payment rates (Base Rate * Relative Weight) are adjusted downwards by the target percentage of total payments that are outlier payments (TPOP) in the market to account for the outlier payments.
 - Creates a pool of money for insurers for paying for outlier cases
 - Helps to ensure budget neutrality

$$\begin{aligned}\text{IR-DRG Payment} &= (\text{Base Rate} * [1 - \text{TPOP}]) * \text{Relative Weight} \\ &= \text{Base Rate}_1 * \text{Relative Weight}\end{aligned}$$

Payment Parameter: Outlier Payments – Calculating Cost

- In the absence of detailed hospital cost reporting allowing the determination of claim level costs, the costs for a claim must be imputed.
- The imputation is based on two components:

A predetermined
cost for each
activity code

The total number of
activities billed on
the claim

- In Abu Dhabi, the cost list is set at the basic price for each activity code.

Payment Parameter: Outlier Payments – Calculating Cost

In Dubai the cost list has been established based on the inpatient claims data from January 2015 to June 2017.

Activity codes billed more than ten times during the period have cost set at the 25th percentile of payments*

Remaining activity codes have cost set at 2.04 times the Abu Dhabi basic price.

Codes not billed in Dubai more than 10 times and not on the HAAD price list are assigned a cost of 0 AED

The cost for drugs is set at the value on Ministry of Health Price List.

**On average 2.04 times larger than the basic price in Abu Dhabi.*

Payment Parameter: Outlier Payments – Components

- DHA has set a target of 3% for outlier payments
- DHA has set a marginal of 60%
- The threshold amount was determined, iteratively, using claim payments, the target of 3%, and the marginal of 60% → 36,877AED
- Including an outlier payment in the system further changes the IR-DRG payment formula to:

$$\text{IR- DRG Payment} = \text{Base Rate}_1 * \text{Relative Weight} + \text{Outlier Payment}$$

(if applicable)

Payment Parameter: Negotiation Band

This is the range (band) within which health insurance companies and individual hospitals are permitted to negotiate the base rate.

- Using the Dubai IR-DRG parameters established for the base rate, relative weights, and outlier parameters several negotiation band upper and lower limits were tested.

Payment Parameter: Negotiation Band

- A band of 1 to 3.5 was selected and allows
 - Most Dubai health insurance companies to have at least the possibility of negotiating lower payments than what they would have prior to IR-DRGs (99.9% of claims).
 - All Dubai hospitals to have at least the possibility of negotiating higher payments than they would have had prior to IR-DRGs
- Including negotiation in the system further changes the IR-DRG payment formula to:

$$\text{IR- DRG Payment} = (\text{Base Rate}_2 * \text{Relative Weight} * \text{Negotiation Factor}) \\ + \text{Outlier Payment (if applicable)}$$

Payment Parameter: Transfer Payments

- Hospitals sometimes transfer patients to other hospitals
- Payment to hospitals transferring patients to other hospitals will be a graduated per diem payment
 - The first hospital day will be paid the full per diem rate
 - Subsequent hospital days will be paid 50% of the per diem rate.
- The per diem rate = IR-DRG inlier payment calculated using the median base rate divided by average length of stay.

Payment Parameter: Transfer Payments

- The maximum payment for any case for a patient transferred to another hospital will be the regular IR-DRG inlier payment calculated with the median base rate for the IR-DRG for that hospital case.
- The receiving hospital will be paid the regular IR-DRG payment
- Transfers of inpatients within a hospital system, where both the transferring hospital and the receiving hospital are owned by the same company, will not receive a transfer payment; only the IR-DRG payment will be made.

Dubai IR-DRG Parameters for Shadow Billing

Base Rate
AED 7,501

Relative Weights
Blended Dubai &
Abu Dhabi

**Negotiation
Band**
1 to 3.5

**Minimum Base
Rate**
AED 7,501

**Median Base
Rate**
AED 16,877

**Maximum Base
Rate**
AED 26,254

**Target Percentage
Outlier Payments**
3%

Marginal
60%

Cost Percentile
25th

**Outlier Cost
Threshold**
AED 36,877

Transfer Payment
Graduated
Per Diem*

**The graduated per diem rate is paid to the transferring hospital. The receiving hospital is paid the regular IR-DRG payment.*