Insights into the Diagnosis Related Group (DRG) payment method in Abu Dhabi Healthcare System

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Summary

Abu Dhabi Health Authority legislates the Diagnosis Related Group (DRG) system as a payment method for inpatient hospital services in both public and private sectors. The purpose of this policy brief is to provide an insight into the DRG system in Abu Dhabi Healthcare system in developing an understanding of the process involved concerning DRG including the legislative arm, the healthcare providers and the payers. Besides, this brief evaluates the DRG system from the end user, which is then, compared public and private healthcare sector where policy recommendations and associated implications are highlighted.

Diagnosis Related Group: Synopsis

The Health Authority of Abu Dhabi (HAAD) legalized all characteristics of health insurance in late 2010, including all issues related to payment and compensation. Such mandates stipulated for the adoption of DRGs for reimbursement of inpatient services for the essential product. The Abu Dhabi government-subsidized insurance product for low-earning citizens including the claims from health sectors including all hospitals, public or private. Abu Dhabi Health Services commonly referred to as SEHA (phonetic rendering Arabic word for 'health'), the holding company for the public hospitals Abu Dhabi has already chosen DRGs on a voluntary basis for all of their inpatient cases and the providers. According to HAAD, the introduction of DRGs was to deliver on its commitment to improving efficiency incentives for providers to support for better comparability of both costs and quality as well as to appropriately reimburse public hospitals for their higher complexity of cases (Warner et al., 2011).

Diagnosis Related Groups (DRGs) are just one type of payment methods for the hospital where it gained its popularity after their adoption to be used in the national Medicare prospective payment system in late 1983 in the United State of America (Congress, Office of Technology Assessment, 1983). The fundamental conception of DRGs is based on the averages. The providers of healthcare are paid based on nature and

severity of illness not length of hospitalization or number of procedures for a lab test that has been ordered or medication has been dispensed or administered to the patients (Hamidi et al., 2015).

History of DRG

Medicare was established in 1965; Congress approved the private health insurance sector's "retrospective cost-based reimbursement" scheme as a payment method for hospital services. Where Medicare made periodic payments to hospitals during the hospital's fiscal year. The hospital expected to file a cost report by the end of fiscal year and the interim payments to be agreed with the allowable costs that were mentioned in the policy and regulation. Medicare's hospital costs under this payment system amplified dramatically; between 1967 and 1983, costs increased from $3 billion to $37 billion yearly (Mihailovic et al., 2016).

In 1982, Congress ordered the construction of a prospective payment system (PPS) to control costs. Congress studied the achievement of State rate regulation systems in costs controlling and mandated the application of a prospective payment system framework that had been fruitful in several States. This system is a per-case reimbursement technique under which inpatient admission cases are alienated into relatively similar categories named diagnosis-related groups (DRGs). In DRG prospective payment scheme, Medicare pays hospitals a flat amount per claim for inpatient hospital care so that effective and efficient hospitals have a real incentive of being efficient and inefficient hospitals are motivated to become better organized and to improve their efficiency (Mihailovic et al., 2016).

Although DRGs development started in the late 1960's the first version to be largely spread was consist of 383 categories after that in early 1982 second revised set of 467 categories was released. Both versions were designed to distinguish patients with comparable predicted resource utilized for management and to link it to the hospitalization

period or length of stay in the hospital during that admission. The former version was developed by New Jersey hospital using data of around 500,000 patients but the revised version based on the nationally representative sample of patients (United States Congress., Office of Technology Assessment, 1983).

Abu Dhabi Health and the DRGs system

Starting from January 2006, all populations of Abu Dhabi are covered by a new widespread health insurance program; costs will be shared between employers and employees. Earlier to 2007, government-owned the General Authority for Health Services (GAHS), managed healthcare services. In 2007, this authority was re-organized into HAAD, which is responsible for regulating the healthcare industry and developing Abu Dhabi's health policy. SEHA is in-charge of managing government-owned healthcare facilities in Abu Dhabi. Currently, SEHA operates thirteen Hospitals, fifty-six Primary Healthcare Centers, three Maternal and Child Health Centers, three Specialized Dental Centers, one Center for Autism, and five Specialized Facilities like rehab, blood bank and herbal center (SEHA, 2016). Thirty-nine hospitals (14 governmental, twenty-five private; twenty-six are JCI accredited), with 4,226 beds, or 2.7 beds for every 1500 of the population, servicing approximately 2.5 million people.

Several important payment reforms have been introduced to Emirate of Abu Dhabi started in 2007 with the implementation of obligatory health insurance system, which ensures the accessibility to medical care of almost all UAE nationals and residents working in Abu Dhabi (Hamidi et al., 2015). Abu Dhabi succeeded to separate the healthcare regulator Health Authority Abu-Dhabi (HAAD) to be responsible for policy development and to formulate regulatory requirements for the healthcare professional, providers and payers in addition to that HAAD monitor the compliance with requirements and to take the necessary

action to enforce compliance (Hamidi et al., 2015). In late 2010, HAAD replaced the fee for service payment framework with new prospective payment method called diagnosis-related groups to become mandatory for reimbursement of all inpatients visits in public and private hospitals (Hamidi, et al., 2015).

DRG and another type of provider payment schemes

According to WHO, there are several methods to pay for the healthcare providers used for Economic Co-operation and Development (OECD) members, but the most common approach is salaries, the fee for service payments (FFS), diagnosis-related groups (DRGs), per-diem payments or capitation and Budget (Park et al., 2007), 'What is the difference between these methods and what are their advantages and disadvantages?'

Salary-based System

Most OECD countries either pay salaries for doctors partially or complete payment methods. Under this payment method, the income of the physician is not linked to the output and quality of services or quantity of items that are associated with low motivation, low quality of service and low productivity. However, such method can be combined with other methods like capitation to increase motivation as well as to improve productivity and quality of service. The cost containment considered high in salaries framework method (Park et al., 2007)

The salary-based system used in many countries in Europe and elsewhere for a wage of healthcare employees. For example, Albania, Bulgaria, Croatia, Estonia, Finland, Greece, Lithuania, Poland, Portugal, Romania, Slovenia, Sweden and Turkey (Chawla et al., 1997). According to Chawla et al., salary based remuneration scheme almost has no financial incentives for physicians to work longer hours or looking after more patients also they do not provide an incentive to reduce operating costs. Physicians also have no incentive to build the

proper relationship with the patients (Chawla et al., 1997).

Fee-for-service (FFS)

The number of services provided is the main factor in determining the amount to be paid to the providers, which are considered strong incentive to provide more service especially the valuable items even more than it is required. FFS is considered the weak tool for cost containment also doctors who are using FFS framework try to undertake more efforts to deliver a higher quality of healthcare services so that they attract more patients (Park et al., 2007). Germany combined FFS with sectoral budgets as a cost containment policy (Park et al., 2007).

Some examples of countries follow a fee-for-service scheme for compensation of healthcare providers. Include: Germany (private physicians and dentists), Czech Republic, Belgium, France, Switzerland, Holland (private sector), Bulgaria (private sector), Ireland (private sector), Greece (private sector), Turkey (private sector) and Slovenia (private sector) (Chawla et al., 1997).

Such payment method gives the provider incentives to increase the volume of services, which result into overuse, an oversupply of services (Chawla et al., 1997). According to Averill et al., the fee for service does not incentivize primary care physicians to act as a financially prudent gatekeeper, that is, they will not be rewarded in case they spend more time with the patient to avoid unnecessary hospital admission (Averill et al., 2010).

Case-Based Reimbursement System

The (DRG)-system is a patient classification system established to categorize patients into clusters economically and medically comparable, expected to have similar hospital resource use and expenses. Based on the final diagnosis for the admitted patient the providers will be reimbursed at prospective fixed rate per discharged according to the diagnosis. DRG framework considered suitable instrument for cost control providers is inspired to deliver services as cost-effective as

possible with the minimum possible duration of stay in the hospital. On the other side, DRG system has a potential risk about premature discharges, in addition to; the provider may select the patients with low-cost (Park et al., 2007). Some examples of countries follow a case-based system for remuneration of a healthcare professional including the United States of America, Germany,

Argentina, and Brazil. Healthcare providers have strong incentive to contain costs per case as the payment is based on the diagnosis of the case not according to the treatment offered. (Chawla et al., 1997). Figure 1 shows the risk of different payment methods on payer and provider according to Averill et al., 2010.
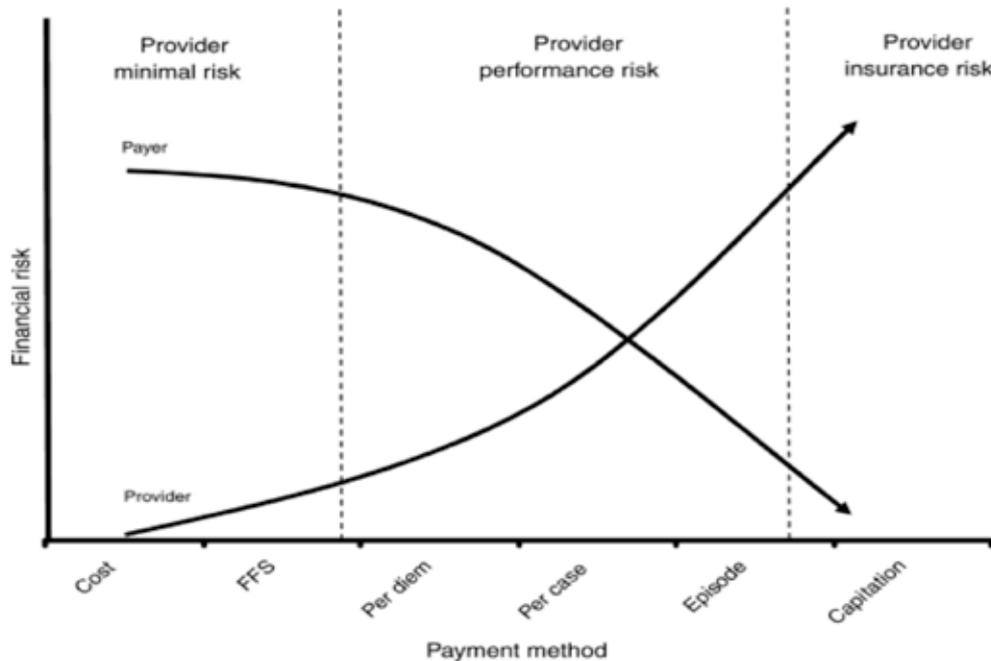

Figure 1: Payment bundling continuum (Source: Averill et al., 2010)

Capitation

A fixed amount of money is paid to the providers based on the number of patients to deliver a variety of services. Under this scheme, the providers get a fee for each enrollment to cover a defined package of services for a certain period (Chawla et al., 1997). Some countries in Europe and elsewhere apply a capitation-based scheme for the payoff of healthcare providers. Some example includes Hungary, Ireland, Italy, Holland, and Croatia (private sector). In capitation, physicians have a strong incentive to select healthy individuals who require less visit and less cost. Physicians have strong incentive to avoid expensive treatment and refer patients to higher level of care to save own operating costs (Chawla et al., 1997).

Per Diem

In this framework, the providers are paid per day of admission, which gives a strong incentive for the hospital to increase the length of admissions. The length of stay in hospital in Japan is the longest globally this could be attributed to this type of payment method (Muramatsu 1999). Germany introduced DRGs as payments method due to the excessively high length of stay under the per diem scheme (Park et al., 2007).

In summary, each of the above payment methods for the healthcare provider carries a risk for both provider and payer but with different degree. DRGs payment system has balance risk as illustrated in Table 1.

	Salary	Capitation	Fee-for-Service	Case-based reimbursement
Physicians have appropriate incentives to provide optimally the quantity of care quantity of service)	Limited	Limited	High	Limited
Physicians have appropriate incentives to provide high quality of care (Quality of service)	Limited	Limited	High	Limited
Physicians have appropriate incentives to keep costs down (Cost control)	Low	High	Low	High
Patients are not denied access	High	Limited	Limited	Limited
Patients can exercise choice	Low	Limited	High	Limited
The payment system is easy to administer	High	High	Limited	Limited
The payment system requires a sophisticated information and cost accounting system	Low	Low	High	High
Unit of payment	Monthly payment regardless of services rendered	Per patient	Per service item	Per case of different diagnosis
Financial risk	Low	Provider: High Payer: Low	Provider: Low Payer: High	Moderate

Table 1: summarized advantages and disadvantages associated with different payment methods. (Averill et al, 2010).

Summary of Insights of Abu Dhabi Healthcare System- DRG

The main three findings based on the in-depth interviews, User Experience Questionnaire and secondary data analysis collected from HAAD. The DRG system is efficient process, and the end-users have good knowledge about this system. Public healthcare sector outperformed private healthcare sector in Abu Dhabi.

In-depth interviews

The payment method before the introduction of DRG was Fee for Service Payment system was enforced either through a standard provider contract or individually customized contract basis for non-Abu Dhabi providers in Dubai and the North Emirates. Abu Dhabi Healthcare system introduced DRGs to stabilize the increasing healthcare costs across the sectors. In addition to that DRGs expected to increase transparency between hospitals as DRGs will simplify costs and quality comparisons between hospitals. The insurance companies will no longer review each service performed by the hospital rather they will pay as a total predetermined payment based on the average.

There are different modalities of DRG, but the one that was adopted by Abu Dhabi government International refined DRGS (IR-DGRs) as it is dynamic and can be modified and customized

based on the healthcare system and the local requirement. Emirate of Abu Dhabi selects to use the sixth digital code where the first two digits indicate major disease category (MDC) while the third digit indicates the DRG type whether surgical or medical the fourth and the fifth digits indicate DRG number the last digit indicates the severity level, which consists of three levels.

DRG was implemented to the Sheikh Khalifa Medical City (SKMC) in 2011 after DRG Assurance training conducted by 3M in this system providers share some of the financial risks with the payers. DRG system is efficient, but there is a high incentive for the vendor for early discharge of patient quicker and sicker which may lead to readmission, but in SKMC they noticed neither increase in mortality nor the readmission rate after applying this payment method. DRGs appears to help in enhancing the quality of inpatient care by discouraging unnecessary and potentially harmful systems, and by encouraging the concentration of complex procedures in facilities in which the high frequency of these procedures promotes efficiency.

According to HAAD officials, the implementation of the comprehensive insurance system in Emirate of Abu Dhabi helped to facilitate the DRG introduction, but the price applied in USA not suitable for UAE market for this reason HAAD evaluated the cost of DRG based on the data collected from the claim of all hospitals in Abu Dhabi. Either the most important factor that pushes HAAD to adopt DRG system is the high rejection rate entirely or partially in addition to overuse of Fee for Service Payment method which results in unnecessary procedures. DRG is also helpful for planning as it shows which area need to add hospital or which specialty has a shortage in addition to that DRGs allow to compare between hospital performance based on severity level.

The HAAD has signed an agreement with Emirates Classification Society (TASNEEF) to Certify Healthcare Providers in the Emirate of Abu Dhabi for JAWDA Data Certification. If DRGs is not monitored, it may lead to early discharged which result in readmission within the same month for this reason HAAD may introduce a quality program

called JAWDA (Tasneef, 2016) for example, if the same patient readmitted within one month the first provider will be questioned.

User Experience Questionnaire

The authors measured the DRGs system end user evaluation experience-using questionnaire validated to be used to measure the experience of new product or technology called User Experience Questionnaire (UEQ). UEQ contains six scales with 26 items:

1. Attractiveness: Overall impression of the product. Do users like or dislike the product?

2. Perspicuity: Is it obvious to get familiar with the product? Is it easy to learn how to use the product?

3. Efficiency: Can users solve their tasks without unnecessary effort?

4. Dependability: Does the user feel in control of the interaction?

5. Stimulation: Is it inspiring and motivating to use the product?

6. Novelty: Is the product innovative and creative? Does the product catch the interest of users?

UEQ have been used in different studies to evaluate user experience, but this is the first time to use UEQ to evaluate DRGs user experience using 3M system (Schrepp et al., 2014).

Table 2 shows the mean of the 26 items of UEQ values above 0.8 represent positive evaluation, Values between -0.8 and 0.8 represent a neutral assessment of the corresponding scale and < -0,8 represent a negative evaluation. We can notice that most of the means above 0.8 that reflect positive evaluation for 3M system used by the coder for DRGs coding the exceptions are item 4 and 13, which represent neutral evaluation.

Item	Mean	Variance	Std. Dev.	No.	Left	Right	Scale	
1	⬆ 2.0	1.1	1.0	25	annoying	enjoyable	Attractiveness	
2	⬆ 2.1	1.1	1.1	25	not understandable	understandable	Perspicuity	
3	⬆ 1.6	2.1	1.4	25	creative	dull	Novelty	
4	➡ 0.6	2.8	1.7	25	easy to learn	difficult to learn	Perspicuity	
5	⬆ 1.8	2.2	1.5	25	valuable	inferior	Stimulation	
6	⬆ 1.6	2.2	1.5	25	boring	exciting	Stimulation	
7	⬆ 2.0	1.2	1.1	25	not interesting	interesting	Stimulation	
8	⬆ 1.1	2.5	1.6	25	unpredictable	predictable	Dependability	
9	⬆ 1.3	2.1	1.5	25	fast	slow	Efficiency	
10	⬆ 1.3	2.5	1.6	25	inventive	conventional	Novelty	
11	⬆ 2.0	1.1	1.1	25	obstructive	supportive	Dependability	
12	⬆ 1.8	1.9	1.4	25	good	bad	Attractiveness	
13	➡ 0.6	3.8	1.9	25	complicated	easy	Perspicuity	
14	⬆ 1.6	1.7	1.3	25	unlikable	pleasing	Attractiveness	
15	⬆ 1.0	3.1	1.8	25	usual	leading edge	Novelty	
16	⬆ 1.7	1.5	1.2	25	unpleasant	pleasant	Attractiveness	
17	⬆ 1.4	2.7	1.6	25	secure	not secure	Dependability	
18	⬆ 1.9	1.2	1.1	25	motivating	demotivating	Stimulation	
19	⬆ 1.8	2.0	1.4	25	meets expectations	does not meet expectations	Dependability	
20	⬆ 1.8	1.8	1.3	25	inefficient	efficient	Efficiency	
21	⬆ 1.5	2.0	1.4	25	clear	confusing	Perspicuity	
22	⬆ 1.8	1.3	1.2	25	impractical	practical	Efficiency	
23	⬆ 1.7	2.1	1.5	25	organized	cluttered	Efficiency	
24	⬆ 1.8	1.9	1.4	25	attractive	unattractive	Attractiveness	
25	⬆ 1.8	1.4	1.2	25	friendly	unfriendly	Attractiveness	
26	⬆ 1.5	2.0	1.4	25	conservative	innovative	Novelty	

Table 2: The means of the scales per Item (26)

Table 3 and Figure 1 represent the means of the six scales: attractiveness which represented by items (1,12, 14, 16, 24, 25.) with mean of 1.793, perspicuity which represented by items (2,4, 13, 21) with mean of 1.2, efficiency which represented by items (9,20, 22, 23.) with mean of 1.64 , dependability which represented by items (8,11,17, 19.) with mean of 1.56 , stimulation which represented by items (5,6,7, 18.) with mean of 1.84 and novelty which represented by items novelty (3,10, 15, 26) with mean of 1.35, whereof the means above 0.8 which represent positive evaluation of the DRG system.

Table 4 and Figure 2 represent the means of pragmatic quality which include (perspicuity, efficiency, dependability) with an overall mean of 1.47, the hedonic quality which includes (stimulation and novelty) with an overall mean of 1.60 and attractive with the mean of 1.79. Which again represent positive evaluation, which is above 0.8.

3A UEQ Scales	
Attractiveness (1, 12, 14, 16, 24, 25)	1.793
Perspicuity (2,4, 13, 21)	1.200
Efficiency (9, 20, 22, 23)	1.640
Dependability (8, 11, 17, 19)	1.560
Stimulation (5,6,7, 18.)	1.840
Novelty (3,10, 15, 26)	1.350

Pragmatic and Hedonic Quality	
Attractiveness	1.79
Pragmatic Quality (Perspicuity, Efficiency, Dependability)	1.47
Hedonic Quality (Stimulation, Novelty	1.60

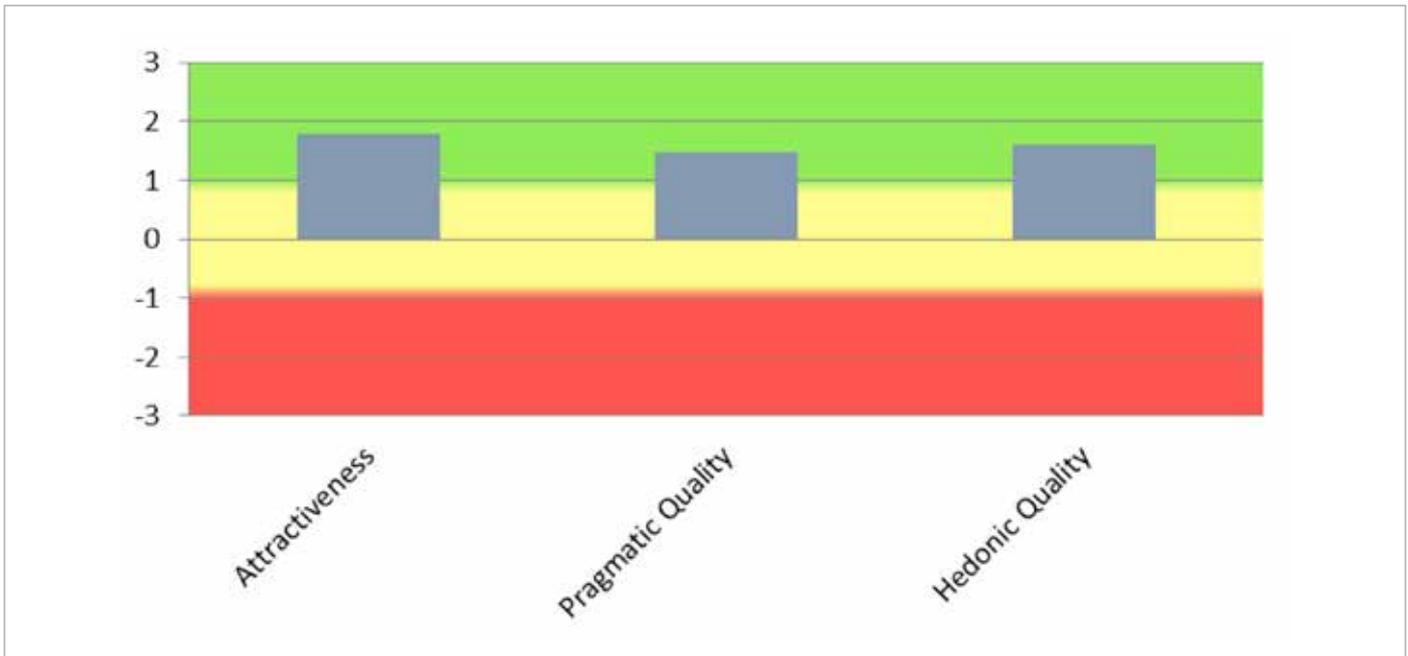Table 4: The means of attractive vs Pragmatic quality vs Hedonic quality

Figure 2: The means of Attractive vs Pragmatic quality vs Hedonic quality

Tables 5 and 6 show the 5% confidence intervals for the scale means and the means of the single items the lesser the confidence interval, the higher is the precision of the estimation and the more the results can be trusted. The smaller confidence interval also reflects the more consistency of the person's opinion.

Confidence intervals (p=0.05) per scale						
Scale	Mean	.Std. Dev	N	Confidence	Confidence interval	
Attractiveness	1.793	1.125	25	0.441	1.353	2.234
Perspicuity	1.200	1.056	25	0.414	0.786	1.614
Efficiency	1.640	1.141	25	0.447	1.193	2.087
Dependability	1.560	0.990	25	0.388	1.172	1.948
Stimulation	1.840	1.175	25	0.460	1.380	2.300
Novelty	1.350	1.262	25	0.495	0.855	1.845

Table 5: Confidence interval per scale (6)

Confidence interval (p=0.05) per item					Confidence interval	
Item	Mean	.Std. Dev	N	Confidence		
1	2.000	1.041	25	0.408	1.592	2.408
2	2.120	1.054	25	0.413	1.707	2.533
3	1.560	1.446	25	0.567	0.993	2.127
4	0.600	1.658	25	0.650	-0.050	1.250
5	1.800	1.472	25	0.577	1.223	2.377
6	1.640	1.497	25	0.587	1.053	2.227
7	2.000	1.080	25	0.423	1.577	2.423
8	1.080	1.579	25	0.619	0.461	1.699
9	1.280	1.458	25	0.572	0.708	1.852
10	1.280	1.595	25	0.625	0.655	1.905
11	1.960	1.060	25	0.415	1.545	2.375
12	1.800	1.384	25	0.543	1.257	2.343
13	0.560	1.938	25	0.760	-0.200	1.320
14	1.640	1.319	25	0.517	1.123	2.157
15	1.040	1.767	25	0.693	0.347	1.733
16	1.720	1.208	25	0.474	1.246	2.194
17	1.360	1.630	25	0.639	0.721	1.999
18	1.920	1.115	25	0.437	1.483	2.357
19	1.840	1.405	25	0.551	1.289	2.391
20	1.760	1.332	25	0.522	1.238	2.282
21	1.520	1.418	25	0.556	0.964	2.076
22	1.800	1.155	25	0.453	1.347	2.253
23	1.720	1.458	25	0.572	1.148	2.292
24	1.840	1.375	25	0.539	1.301	2.379
25	1.760	1.165	25	0.457	1.303	2.217
26	1.520	1.418	25	0.556	0.964	2.076

Table 6: Confidence interval per item (26)

Table 7 shows the correlations of the items per scale and Cronbach's Alpha-Coefficient which is a measure of the consistency of a scale. In general value above 0.6 reflect excepted consistency of the scale all the six scale Cronbach's4 Alpha-Coefficient above 0.6.

Attractiveness	
Items	Correlation
1, 12	0.72
1, 14	0.91
1, 16	0.83
1, 24	0.73
1, 25	0.76
12, 14	0.76
12, 16	0.84
12, 24	0.70
12, 25	0.80
14, 16	0.88
14, 24	0.70
14, 25	0.81
16, 24	0.62
16, 25	0.69
24, 25	0.89
Average	0.78
Alpha	0.95

Perspicuity	
Items	Correlation
2, 4	0.00
2, 13	0.11
2, 21	0.46
4, 13	0.46
4 , 21	0.34
13, 21	0.33
Average	0.28
Alpha	0.61

Efficiency	
Items	Correlation
9, 20	0.53
9, 22	0.43
9, 23	0.37
20, 22	0.86
20, 23	0.76
22, 23	0.83
Average	0.63
Alpha	0.87

Dependability	
Items	Correlation
8, 11	0.00
8, 17	-0.08
8, 19	0.08
11, 17	0.64
11, 19	0.78
17, 19	0.64
Average	0.34
Alpha	0.68

Stimulation	
Items	Correlation
5, 6	0.80
5, 7	0.63
5, 18	0.80
6, 7	0.77
6, 18	0.86
7, 18	0.73
Average	0.76
Alpha	0.93

Novelty	
Items	Correlation
3, 10	0.51
3, 15	0.59
3, 26	0.62
10, 15	0.47
10, 26	0.52
15, 26	0.56
Average	0.55
Alpha	0.83

Table 7: Correlations of the items per scale and Cronbach's Alpha-Coefficient

Table 8 and figure 3 shows the scale comparison to the benchmark where three of the scale were excellent and two were good and only one was above the average which again represents positive evaluation of the coders to the DRGs system.

Scale	Mean	Comparisson to benchmark	Interpretation
Attractiveness	1.793333333	Excellent	In the range of the 10% best results
Perspicuity	1.2	Above Average	25% of results better, 50% of results worse
Efficiency	1.64	Good	10% of results better, 75% of results worse
Dependability	1.56	Good	10% of results better, 75% of results worse
Stimulation	1.84	Excellent	In the range of the 10% best results
Novelty	1.35	Excellent	In the range of the 10% best results

Table 8: Scale comparison benchmark
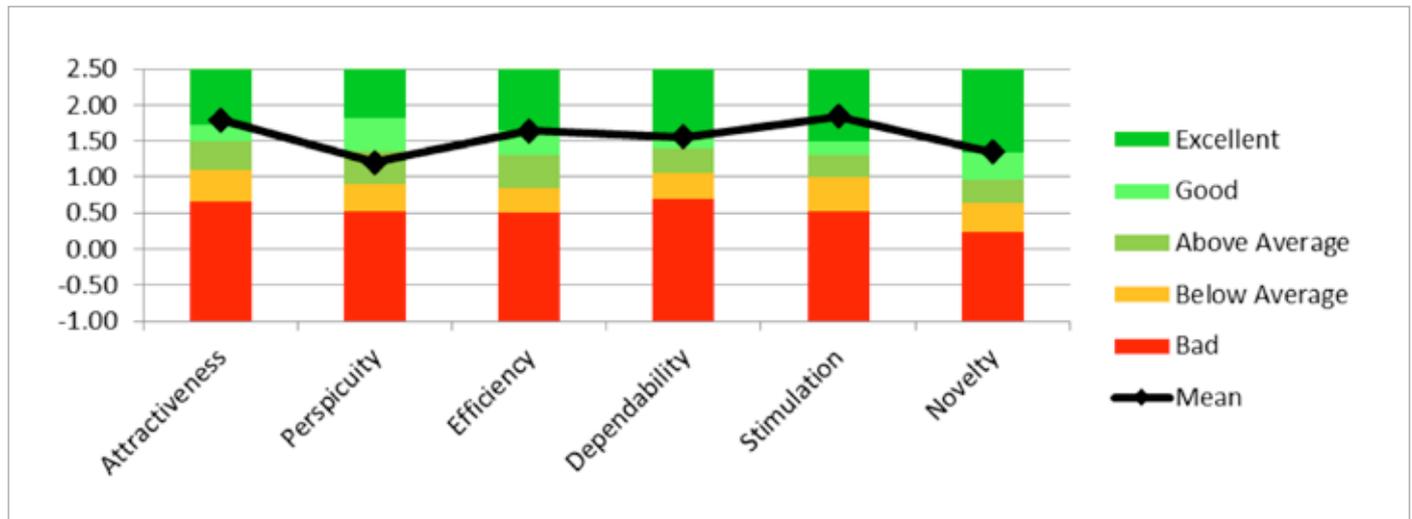
Figure 3: Scale comparison benchmark

Secondary Analysis: DRGs comparison SEHA vs. Non-SEHA

Out of total 174093 DRGs, 71 % was medical cases, and 29 % was surgical cases. Figure 4 shows all DRGs claims in 2013 were 61% (n=106,957) came from SEHA hospitals while 39% (n=67,136) from Non-SEHA hospitals. Figure 5 shows that SEHA and non-SEHA hospital share the surgical DRGs market by around 50% for each, but in a case of medical DRGs SEHA hospital got more than 70% of the medical related DRGs 2013 compared with less than 30% for non-SEHA hospitals. The most common surgical DRGs was childbirth followed by appendix procedures, on the other hand, most common medical DRGs are those related to a digestive system and female reproductive system.

It can be noticed that the market share of the DRGs claim differs based on the system but most of the claim belong to SEHA hospital in case of the Myeloproliferative System & Poorly Differentiated Neoplasms 2013 claims 99 % from SEHA hospitals which indicate the shortage in this area in private

sector but we notice 2015 the private sector started to access to oncology specialty via Burjeel Hospital who attracted good number physicians specialized in oncology (Burjeel, 2016) . 88% of DRGs claims related to the Eye 2013 in Abu Dhabi came from SEHA hospitals, which indicate that private sector has a role to grow in eye specialty. 86% of DRGs claims related to Injuries, Poisonings & Toxic Effects of Drugs 2013 came from SEHA facilities, 77% of DRGs claims related to the Female Reproductive System 2013 in Abu Dhabi claimed by SEHA hospital , 76% of DRGs claims related to Nervous System 2013 in Abu Dhabi belong to SEHA hospitals, while 74% of DRGs claims related to the Skin, Subcutaneous Tissue & Breast 2013 in Abu Dhabi health system applied by SEHA hospitals, 67% of DRGs claims related to the Urinary Tract 2013 in Abu Dhabi came from SEHA hospitals , 66% of DRGs claims related to the Endocrine, Nutritional & Metabolic Systems 2013 in Abu Dhabi came from SEHA hospitals and 65 % of DRGs claims related to Respiratory System 2013 claims from different healthcare providers in Abu Dhabi.

On the hand private sector outperformed public

sector at least in 4 DRGs group for example 62% of DRGs claims related to Mental Diseases & Disorders 2013 in Abu Dhabi health system came from non-SEHA Hospital, 59% of DRGs claims related to the Male Reproductive System 2013 in Abu Dhabi applied by private sector hospitals, 57% of DRGs claims related to The Digestive System 2013 in Abu Dhabi came from non-SEHA hospitals. SEHA and non-SEHA hospital share equally the DRGs claims related to the Hepatobiliary System & Pancreas and the Ear, Nose, Mouth & Throat 2013 with about 50% for each sector.

Interpretation of Insights

In Abu Dhabi health system, private sector has significant role to expand and improve as most of DRGs claims came from SEHA hospital especially in medical cases. Do SEHA hospitals have more cases than non-SEHA hospitals? SEHA hospitals have more cases primarily medical cases. The exception for that are cases related to Mental Diseases & Disorders and Male Reproductive System.

Are medical cases more than surgical cases in Abu Dhabi Healthcare system? Medical cases more than surgical cases around 71% of all DRGs in 2013 were medical cases. Are the medical and surgical cases equally distributed between public and private hospitals? Public sector outperformed private sector in medical cases, but in a case of surgical cases, it was evenly distributed for both sectors.

Is DRG system attractiveness? DRGs system is attractive to the end user (coders) with the mean above 0.8 (1.793). Is the design of DRG with good quality in terms of stimulation and novelty? DRGs have good quality in terms of stimulation and novelty with a mean of 1.84 and 1.35 which above 0.8. Is the DRG efficient system? DRGs considered an efficient system as it has the incentive to use only required interventions, which help to avoid overuse of resources and push the provider for a minimum hospital stay.

Policy Implications & Recommendations

DRGs adaptation by hospitals can increase their profit margins by getting the maximum appropriate reimbursement, which may be reflected indirectly on the physicians and other staff by improving staffing level, increasing capital expenditures, introducing additional programs, new service, and overall growth. DRGs adaptation may lead to increase transparency and improve the efficiency of the healthcare system of the country. The system also helps to make a comparison between hospitals and differentiate whether one hospital treats more complicated and severe cases than another which may be reflected in the future by creating classification and rating system for hospital according to their performance. DRGs may lead to a reduction in the length of stay in the hospitals, which could reduce the risk associated with extended admission period like the infection with resistant organisms.

DRGs system may lead to early discharged of the patient, which increase the readmission rate for the same indication within thirty days of discharge. The regulatory body should monitor the rate of readmission within 30 days and make it as a key performance indicator and a quality measure. DRGs system has the incentive for the hospitals to reject the complicated and more severe cases and to transfer unprofitable cases to public hospitals. HAAD may introduce new regulations that give incentive to the private sector to deal with more medical DRGs for example to consider 5% extra payment for challenging cases. DHA and the Northern Emirates may adopt a policy to implement DRGs system in as it is an efficient system, which will help to use the available resources in the best way.

The Health Authority of Abu Dhabi HAAD recommended to monitor hospital quality of service as DRGs carry the risk for early discharge which will be associated with early readmission for the same diagnosis based this quality monitoring program the hospital could be classified based on performance, and those with high performance get special incentive to help them to maintain such quality. Private sector hospitals can adopt automated DRGs system, which will be able to collect demographic data from patient profile automatically instead of the manual entry with a high risk of wrong entry. Private sector hospitals may play a bigger role in different specialty it takes more market share will help to increase the competition between private and public healthcare sectors. The authors imply that this the right time for various health authorities in the country to adopt DRGs system as a payment method to replace fee for service.

Conclusion

In conclusion, DRGs system is an efficient system, which helped Abu Dhabi healthcare system to determine its priorities and compare hospitals and physician's performance. The coders are happy with their experience with DRGs system as it is attractive with good pragmatic and hedonic quality. Public sector outperforms private sector in healthcare service, as the private sector is less risk taker with a concentration on related surgical cases.

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