Health Insurance
Review & Assessment Service
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Part I
Review & Assessment Activities

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- Review Service
- Post-Factum Management of Review Service
- Comprehensive Management for Appropriate Medical Services (CM) System
- Quality Assessment Service
- Quality Incentives Program

Review Service

Overview

The purpose of medical cost review is to maintain quality standards and adequate level of medical costs. This is achieved by determining whether the payment claimed by the medical care institutions is clinically valid, formulated in a cost-effective manner, and calculated according to the Benefit Coverage Standards stipulated in the National Health Insurance Act.

From its introduction, the Korean health insurance system has chosen "fee-for-service (FFS)" as the reimbursement system. While the FFS system can eusure that quality healthcare services are provided, there is a risk of overuse in that additional, unnecessary medical services may also be provided. The review process can minimize the risk.

Since January 1979, medical fee review services had been conducted by the insurer(s) until the establishment of Health Insurance Review & Assessment Service (HIRA) in July 2000. After its establishment, HIRA has been providing objective and expert medical cost review services and healthcare quality assessment services to Korean citizens.

The "National Health Insurance Act" mandated the review of healthcare benefits.
a. Article 43 : Claims and Reimbursement of Healthcare Benefit Costs
b. Article 56 : Affairs of the Health Insurance Review and Assessment Service

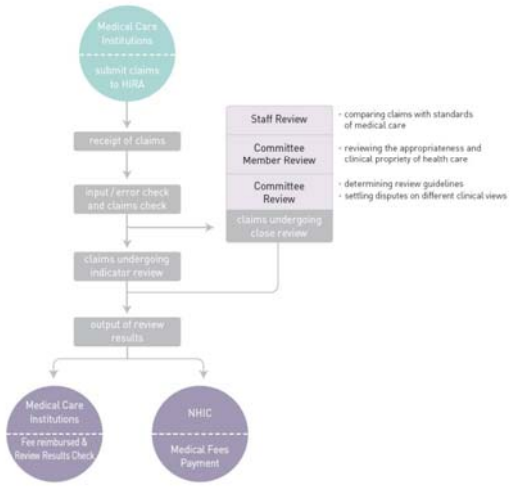
Major Activities

■ Procedure and Methods

The review processes are as follow :

① Receive and process healthcare service claims submitted by service providers
② Review and check whether the claim details have been duly submitted within the scope allowed under the relevant statutes
③ Determine the amount to be reimbursed to the provider after adjusting the claim if it exceeds the scope criteria or includes items with wrong criteria [Figure 1]

[Figure 1] Review Process



• Claim and Receipt

The healthcare institutions prepare their service claims under the following categories : weekly/monthly, in- and out-patient, clinic, (hospital) in-house preparation or prescription only, as stated in the "Methods for Claiming Healthcare Benefits and Instructions for Filling Review Request and Statement Forms." The provider may claim payment of their bills either by Electronic Data Interchange (EDI), electronic media (diskette and CD), or written documents. The Headquarters or branch offices of the HIRA receive and review the claims.

• Computer Program Check-Ups

All claim details received from the providers are screened-- using the computerized programs-- to check the essential description items for review and reimbursement, to identify the wrong unit pricing of drugs and clinical services, and for any possible errors in applying the review standards by item and disease group. After HIRA conducts an initial computerized screen by item, provider institutions that have joined a portal service may correct or supplement minor errors in their claim details, including typographical errors.

• Two Types of Main Review Process : Indicator and Close

▫ Indicator Review

The computerized check-up process includes basic indicators that review unit prices and usage/indications of the provided services by items and disease groups. When claim details show appropriate claim patterns, the entire claim review process for the cases is completed without additional review steps.

▫ Close Review

Close review refers to an additional review process after computerized program checks (Indicator Review). The close review only includes claims demonstrating problematic claim patterns, such as relatively high medical costs, longer inpatient days, and longer days of medication. The close review has three steps as follows:

- Review by Staff (done by nurses or pharmacists)

The claim details are reviewed to check whether they have been prepared properly according to the given claim methods and calculation guidelines. This review occurs after assessing the provider institution's claim tendencies. Cases that require a specialist doctor's clinical judgment or that involve highly expensive healthcare service fees are referred to the members of the review committee together along with primary review opinions.

- Review by Committee Members

The committee members review the medical adequacy or appropriateness of the services referred to them by analyzing the claim tendency of the provider institution. The committee consists of medical specialists who are currently in practice and work part-time for HIRA. If deemed necessary, the members of the committee can request additional data for the verification of medical records such as interviews with the doctors who have seen the patient, a site survey or an investigation.

- Review by Review Committee

Cases that require new standards for each specialty area, settlement of disputes on different clinical views, or other matters that require determination through agreement are reviewed by the Healthcare Review and Assessment Committee at the Headquarters or regional branch offices.

On average 15 to 20 percent of the total claims (70% of inpatient claims, 20% of outpatient claims) are reviewed under the close review process and not every claim under the close review goes to the final step of Review Committee.

• Notice of Review Results

Upon completion of the review, a "Notice of the Review Results of a Healthcare Service Claim" is transmitted to the National Health Insurance Corporation (NHIC) and the provider institution. The notice indicates the details of the review, including the claimed amount payable by the insurer determined through the review and the amounts adjusted per patient along with the reasons for such adjustments. Based on the notice, the NHIC pays service fees to the provider institution and the review results are available through EDI files or HIRA's web portal.

When additional clarification or explanation is required of the review or the adjustment details indicated in a "Notice of the Review Results of a Healthcare Service Claim," a "Notice of the Review Details" is transmitted to the provider institution. The "Notice of the Review Details" explains the specific grounds for the adjustments so that the provider institution may use it as a reference for future healthcare services or claims.

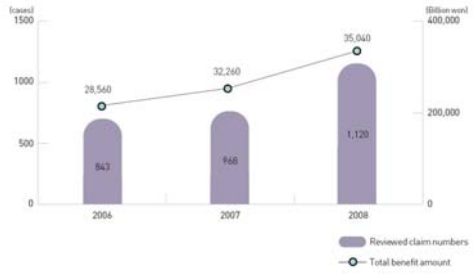
■ Health Insurance Review Status

[Table 1] Review status

(Unit : billion won, %)

Year	Finalized Claim Numbers	Total Amount of Insurance Benefits	Review Adjustment		Adjustment Rate	
			Adjusted case numbers	Adjusted amount	Adjusted case rate	Adjusted amount rate
2006	842,503	28,557,969	27,875	170,565	3.31	0.59
2007	967,735	32,258,975	36,707	238,406	3.79	0.73
2008	1,119,332	35,036,562	49,489	271,566	4.42	0.77

[Figure 2] Claim numbers and total benefit amount



Future Plans

HIRA plans to promote a fair and reliable review system with the following efforts listed below :

- Smooth exchange of review information between HIRA and healthcare institutions
- Introduction of "Six Sigma"* to improve quality and efficiency of review methodologies
- Strengthen the capabilities of the review staff

* Six Sigma is a business management strategy which seeks to identify and remove the causes of defects and errors in manufacturing and business processes. It uses a set of quality management methods--including statistical methods-- and creates a special infrastructure of people within the organization who are experts in these methods. Each Six Sigma project carried out within an organization follows a defined sequence of steps and has quantified financial targets (cost reduction or profit increase). (Source: Wikipedia)

※ Verification of Healthcare Benefit Coverage

The HIRA's verification of healthcare benefit coverage service is designed to provide confirmation to the recipients of medical services about whether the costs they have incurred are covered under the National Health Insurance Act.

When an applicant requests verification, the HIRA reviews the medical records and details of uncovered costs provided by the pertinent hospital. HIRA then notifies the results to the applicant, the pertinent hospital and the NHIC. The difference must be resettled when there is evidence that excessive charges have been made.

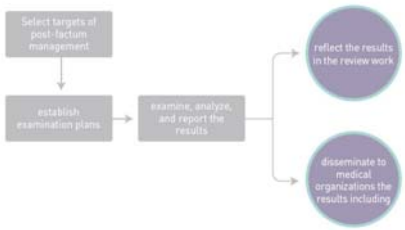
Post-Factum Management of Review Service

Overview

Post-factum management of review services is a procedure designed to re-inspect those claims for covered medical costs which have been paid, but needs further verification in accordance with the established review criteria. This is intended to precisely reexamine filed claims whose details were difficult to confirm at the initial review stage.

The results of review are reflected in the settlement [1] and review of covered medical costs. These efforts are aimed at rationalizing the expenditure of the national health insurance finance and at enhancing the reliability of the review results.

[Figure3] Work flow of post factum management of review activitie



Major Activities

1) Select the targets of post-factum management

Claims for covered medical costs are filed weekly/monthly. Because treatment for a particular diagnosis can extend beyond the initial claim submission and the review period, claims are re-inspected for additional cost that may have occured after the initial claim.
Also, claims for covered medical costs of diagnostic items that have a high probability to be erroneous or have the potential to be fraudulent are selected as the targets of post-factum management.

2) Re-inspection of erroneous claims for covered medical costs

HIRA re-inspects medical institutions' claims for covered medical costs costs that have a high probability to be erroneous, in accordance with the selection criteria [2].

3) Re-inspection of dispensing and prescription details

Cases are selected and re-inspected when costs based on pharmacies' dispensing details are greater by a certain amount than costs based on healthcare institutions' outpatient prescription details .

4) Ex post reflection of outpatient prescription costs

Claims for outpatient prescription with readjusted costs are electronically checked against their corresponding pharmacies' dispensing details.

[1] A procedure by which the claim amount is recalculated and resettled according to the results of post facto re-inspection

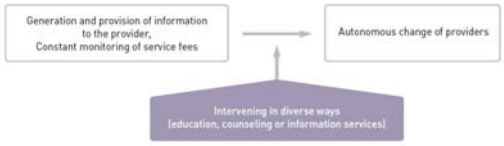
[2] Selection criteria : Claims involving high costs above certain levels, and excessive claims for pharmaceutical and medical service fee costs are selected.

Comprehensive Management for Appropriate Medical Services (CM) System

Overview

The voluntary improvement system for appropriate medical costs aims to provide consulting to encourage the healthcare institutions to produce appropriate medical costs and accurately file claims for covered medical costs. The system provides total customized information including information on medical service, assessment, resources, and fact-finding. The review criteria to healthcare institutions encourage them to voluntarily improve any improper practices within their medical services. This guarantees the safe provision of necessary medical activities while preventing unnecessary medical activities, thereby improving the quality of national healthcare services and rationalizing the costs.

[Figure 4] Overview of the CM system



Major Activities

■ Classification of Healthcare Institutions

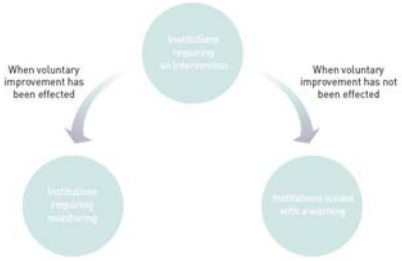
Based on a range of medical indicators and review and assessment results, healthcare institutions are classified into three types for the purpose of management.

① **I (Institutions requiring an intervention)**
- Institutions with a high risk indicator or other problems based on the review results.

② **W (Institutions issued with a warning)**
- Institutions that need to undergo an expert review.

③ **M (Institutions requiring monitoring)**
- Institutions other than those under categories I and W.
- Institutions that need to be continuously monitored with regard to the pertinent indicators.

[Figure 5] Operation of the CM system



Major Indices Used for Selecting Targets

1) Absolute Indicators: Average charge per case (per patient) and number of inpatient duration days
2) Relative Indicators : Relative value given to a medical institution with the average
- Episodes-Costliness Index (CI): Expected charges per case (per patient) when the patient composition of a given medical institution is taken into consideration (including prescription drug bills for outpatients)
- Days-Costliness Index (DCI): Expected daily charges of inpatient medical care when the patient composition of a given medical institution is taken into consideration
- Per Case Inpatient Treatment Lengthiness Index (LI): Expected average number of inpatient treatment days when the patient composition of a given medical institution is taken into consideration
- Visiting Index (VI): Institute CI calculated based on the number of inpatient treatment days per patient for a given medical institution
- Case-Mix Index (CMI): Index for monitoring the patient composition of a given medical institution
- Clinical Items (CI - Items No.1 - No.10, CT, MRI, PET) Prescription drug charges for outpatients

■ Management of Medical Institutions Requiring Intervention

① Selection of institutions requiring an intervention

Medical institutions are classified into either "targets of comprehensive management" or "targets of management by subject" based on the analysis of monthly or quarterly indicators, the results of assessment and any problems disclosed during the review. [Figure 6]

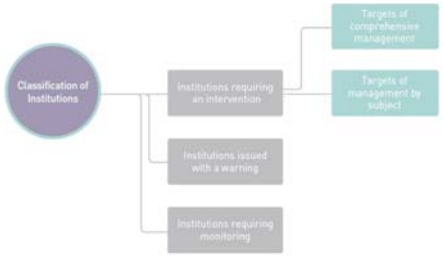
• **Targets of comprehensive management**

Institutions showing high medical fees--including high costliness index or problematic results from review, assessment and on-site investigation--are targeted for customized management.

• **Targets of management by subject**[3]

Management items by subject are divided into items accompanied by enhanced benefit coverage, possibility of overuse and seriousness of problems; the target institutions under these categories need to be managed.

[Figure 6] Classification of medical institutions



② Management methods

Targeted institutions requiring an intervention are advised to improve their medical costs via phone, official letters, visitation, group sessions, and education. Improvements are monitored via post-factum management indicators[4]. These, the targeted institutions are classified into the improved group, the deferred group, and the unimproved group to facilitate systematic management of them.

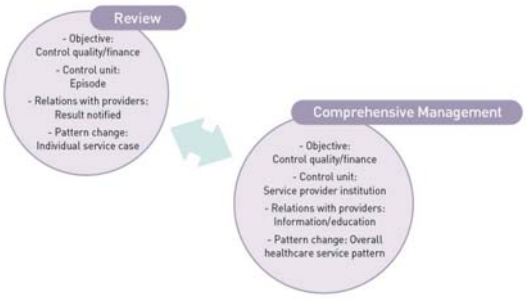
* 2008 management items by subject: the ratio of antibiotic prescription for acute upper respiratory infection, the ratio of injection prescription, and the number of drug items upon prescription.

** The post-factum management indicators are the medical cost per patient per case and the estimated medical cost per case (CMA: Case-Mix Adjusted); with the comparison of the two indicators, the targets are classified into the improved group, the unimproved group, etc. The estimated medical cost per case is calculated by comparing the patient-composition-corrected medical cost with a change in the medical cost in the identical departments of institutions in identical regions in which intervention is not required.

Relationship between Claim Review and CM

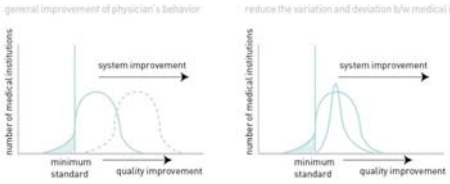
The CM system has the function of managing individual providers, while the claim review system has the function of controlling individual episodes. The two systems are complementary to each other.

[Figure 7] Relationship between claim review and CM



The purpose of the CM system is to help the physicians of low-quality groups to make improvements in behavior through consulting and education. The focus of physician behavior improvement is to enhance service quality and reduce the variation or deviation from accepted treatment practices. [Figure 8]

[Figure 8] Directions of the CM system



Future Plans

- Guarantee necessary medical services but encourage healthcare institutions to eliminate unnecessary medical services.
- Switch its service mode from regulation and direct intervention to information provision (a total consulting concept)
- Shift from medical costs management to comprehensive medical quality management
- Shift from one-way communication to interactive communication

Quality Assessment Service

Overview

The quality assessment service is a systematic method of assessing the clinical validity and cost efficiency of medical and pharmaceutical services. The assessment also includes the examination of diagnosis, treatments and drugs covered by the healthcare benefits. Given that the reimbursement system is 'fee-for-service' in Korea, there is a risk of providing more healthcare services than needed. Therefore, the purpose of the assessment service is to minimize the variance of treatment between medical institutions and surgeons while improving the quality of healthcare services.

[Figure 9] Purpose of quality assessment

Major Activities

Scope

All providers are subject to assessment. Assessment may be limited to specific providers as required and may be performed at different times. The objects of assessment are classified by institution type, specialty, disease or injury type, and are selected through diagnosis, examination, medicine, curative materials, treatment, operation and other service items. Items are selected for assessment on the basis of expected impact, social interest (awareness), medical and pharmaceutical importance, cost, frequency of use, and feasibility of assessment.

Procedure

Assessment is implemented with the approval of the Ministry for Health, Welfare and Family Affairs in accordance with a plan drawn up each year after collecting the opinions of medical or pharmaceutical societies, consumer organizations, the National Health Insurance Corporation (NHIC), and academia. The assessment plan is made available to the providers through the web portal and HIRA bulletin. The medical and pharmaceutical societies are notified in writing. Assessment is performed as shown in Figure 10. Critical issues are determined during the assessment process through a review by the Healthcare Review and Assessment Committee, which is organized under the HIRA.

Assessment

① **Yearly assessment history**

As shown in [Figure 10], assessment has been performed on 17 service items including the preventive use of antibiotics in surgeries and pharmaceutical benefits in 2008. Pharmaceutical benefits were assessed annually, subsequently adding assessment items and indices.

[Figure 10] Assessment status by year

Before 2003 : Drugs, (antibiotics, injection, medication price per day, number of high-priced medicines, number of drugs), social welfare corporations, providers transplanting cord blood, hemo-dialysis, Caesarean section, CT, blood transfusions, intensive care, knee joint replacement, and mental health care.

② **Assessment of drug benefit appropriateness**

The goals of pharmaceutical assessment are to encourage proper drug prescription, control improper drug prescription, and monitor pharmaceutical expenditures that have a negative impact on the national health care. Assessment results are provided to individual providers in writing, published in book form, or uploaded onto the web portal. Providers that exhibit an undesirable prescription pattern are encouraged to prescribe properly through intervention activities. The intervention may involve a HIRA staff visiting the institutions to investigate the facts and interviewing the responsible personnel. As a result, the drug assessment index has improved more steadily than earlier years.

[Table 2] Assessment of key drug benefits

Classification	2002	2003	2004	2005	2006	2007	2008
Prescription rate of antibiotics (%)	39.61	31.79	30.27	28.44	25.14	24.26	24.48
Prescription rate of injections (%)	39.11	31.58	28.39	25.96	23.23	23.14	22.82

③ **Assessment of Caesarean section delivery**

The ratio of delivery by Caesarean section in Korea was 40.5 percent in 2001, a rate twice that of other advanced countries and 5 to 15 percent higher than the rate recommended by the World Health Organization. It has been indicated that the rate of Caesarean sections performed has increased the healthcare service burden and wasted healthcare resources while increasing the morbidity rate. Assessment was carried out in 2002 by analyzing the causes of such a high rate and made plans to control Caesarean section delivery to an optimum rate in the long term to enhance the health of mothers and their babies. This effort has been effective, with the evidence showing that the trend of Korea's Caesarean section delivery rate that has increased steadily in the 1990s to slowly decline since late 2002 when the providers were first notified of the assessment results.

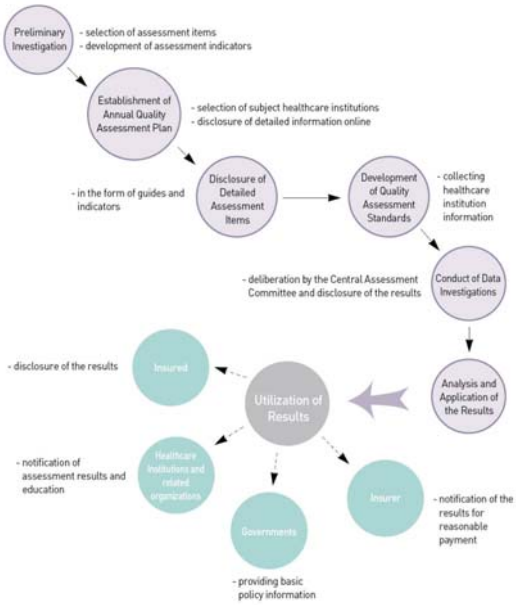
[Table 3] Trend in Caesarean section delivery indexes

Classification	2001	2002	2003	2004	2005	2006	2007
Caesarean section delivery rate (%)	40.5	39.3	38.2	37.7	37.1	36.0	36.3
VBAC rate (%)	2.9	2.9	3.1	3.7	4.3	4.6	4.2

■ Utilization of the Results

The providers are notified of the assessment results to help them improve the quality of their services. The medical or pharmaceutical organizations, the NHIC, and the Ministry for Health, Welfare and Family Affairs are also notified about important matters to be used as policy reference data. In addition, assessment results are published to help the general public to guide them about health choices. Healthcare service fees reimbursed by the NHIC may be adjusted based on the assessment results. Healthcare service fees may be reduced or increased within 1 percent of the total amount by notifying the NHIC after obtaining a review result by the Central Assessment Committee and the approval of the Ministry for Health, Welfare and Family Affairs. At present, Payment for Performance (P4P) is conducted in pilot trial cases for the tertiary hospitals. (unty 2010)

[Figure 11] Assessment action plan & application of results



Future Plans

- Expand assessment area to improve healthcare service quality as well as reduce the cost
- Enhance efficiency of the assessment system utilizing advanced IT technologies of HIRA
- Disclose assessment results by individual institutions
- Ensure the quality and cost effectiveness of healthcare through a well-designed quality incentive program

Quality Incentives Program

Overview

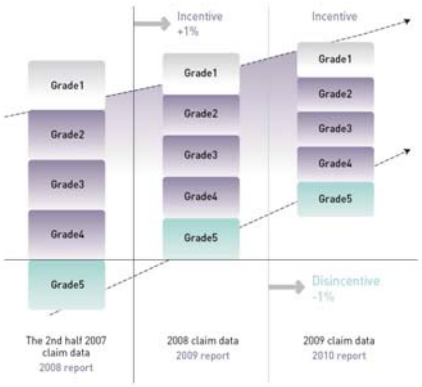
As part of the quality assessment service, financial incentives are granted to providers who have superior ratings. However, reimbursed amounts can be reassessed and lowered for providers who receive low ratings. Such penalty can expedite the improvement of healthcare service quality as provided under the National Health Insurance. Presently, this project is only applied to the tertiary hospitals.

[Table 4] Criteria of the Quality Incentive Program

Criteria	Contents
Subjects	43 tertiary hospitals
Assessment Categories	Acute Myocardial Infection (AMI) and Caesarean Section Delivery
Trial Period	July of 2007 – December 2010
Assessing Rating	5 grade level (1st level - incentive applied, 5th level - payment reduction)
Amount of Incentives/Disincentives	1% of the total reimbursed amount by the insurer

The project was initiated by organizing an efficient assessment structure and developing incentive models that fit Korean standards. A pilot project examines the incentives for service fee adjustment. [Figure 12]

[Figure 12] Quality Incentives Pilot Project Scenario



Assessment Categories

AMI and Caesarean section delivery cases were selected as priority items of assessment as the providers are required to correct their service patterns. HIRA selected AMI because cardiovascular patients increase rapidly with diet changes in the population. Assessment results revealed that there are great differences among providers and relatively reliable assessment indices have been developed. Benchmarking is easy for developing a financial (service fee) incentive program given that there are many reference cases in the United States and other countries.

HIRA also selected Caesarean section delivery because the rate is very high in Korea and there is a great disparity in the rates between providers and regions. HIRA selected to use financial incentives to reduce the rate of Caesarean section deliveries. The assessment procedure was divided into five grades. It was designed to grant incentives to providers with a higher quality rating while providing disincentives to lower rated providers. The goal is to improve the service quality of all the provider institutions to an optimal level.