HIRA
HEALTH INSURANCE REVIEW & ASSESSMENT SERVICE

HIRA

A PEOPLE-CENTERED APPROACH

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CONTENTS

HIRA: A people centered approach

HIRA puts the highest priority on people. HIRA is committed to improving access to care and promoting healthier and happier lives for people.

What HIRA does

Health Insurance Review & Assessment Service (HIRA) ensures to build a sustainable and high-performing healthcare system in Korea. HIRA collects and connects the health data across the country and then utilizes data for further use to create values in health. HIRA shares its knowledge and experiences with international communities to bring Universal Health Coverage to the world.

1

Sustainable Health Financing

- We design and implement the healthcare provider payment systems
- We design the health benefits package
- We conduct the claims review to evaluate healthcare costs
- We re-review claims and providers via a follow-up review and on-site investigation

2

Excellence in Quality Healthcare

- We use Quality Assessment to improve quality of care
- We encourage providers to take more steps toward quality improvement
- We designate tertiary hospitals with quality assessment results

3

Maximizing the Value of Health Data

- We collect, connect, and utilize nationwide data in healthcare
- We play a key role in creating added value
  - Drug Management (KPIS / DUR)
  - Health Resources Management
  - Healthcare Utilization Monitoring Dashboard

4

Bringing Sustainable Universal Health Coverage to the World

- We collaborate with various international organizations
- We provide consultation and capacity-building programs
  - Expert Consulting
  - Capacity Building Program

HIRA strives toward the achievement of Universal Health Coverage and the betterment of healthcare services worldwide.

Sun Min Kim, M.D., Ph.D.
President, Health Insurance Review and
Assessment Service (HIRA)
Republic of Korea

A message from our President

The COVID-19 pandemic has disrupted every aspect of our lives in 2020. This crisis has exposed systematic weaknesses in global health systems, highlighting the importance of strong health systems. The pandemic has made the need for Universal Health Coverage (UHC) now more than ever, to accelerate efforts to build strong and resilient health systems.

HIRA stands at the center of robust healthcare system and responsive e-government system in Korea.

In late February, Republic of Korea was the country with the second-highest COVID-19 infections. But Korea managed to flatten the curve with the robust National Health Insurance system. Korea first introduced its health insurance in 1977. Then in 1989-only 12 years later-Korea achieved Universal Health Coverage for all citizens. In 2000, the Health Insurance Review & Assessment Service (HIRA) was founded to conduct expert claims review and quality assessment of the national health insurance system.

HIRA has always played an important part in the ongoing development of Korea's healthcare systems. HIRA employs an integrated ICT system to ensure that the vast and various work we do is conducted effectively and efficiently. HIRA sets the scope and standards of services covered by National Health Insurance, efficiently manages health resources, and evaluates the cost and quality of healthcare services. We collect and connect the health data across the country and then utilize data for further use to create values in healthcare.

On top of that, HIRA has put this system to use in its response to the COVID-19 pandemic. With the nationwide data aggregated from all healthcare providers and patients, HIRA is dedicated to detecting early, preventing the spread and responding quickly to surge capacity of healthcare.

HIRA will continue to accelerate the digital innovations and transformation of national health insurance to prepare for the New Normal. Also, to deal with future pandemic crisis, HIRA plans to integrate all data in healthcare from a wide variety of sources on a single platform to allow for more swift and efficient response.

HIRA would like to now actively contribute to the greater international community by sharing the experience that we have built upon throughout our long history. In doing so, we hope to contribute to achieve sustainable Universal Health Coverage across the world so that all people might enjoy a healthier life. HIRA is always here for you, and we look forward to your continuous interest and support.

Best Wishes

Organizational History
HIRA for the past

20 YEARS

1963
Enactment of the Health Insurance Act

1976
Revision of the Health Insurance Act to include mandatory health insurance enrolment of the population

1977
Introduction of mandatory social health insurance (National Health Insurance) for workers in large corporations with 500+ employees

1989
Expansion of National Health Insurance coverage to all citizens

1999
Legislation of the National Health Insurance Act

Expansion of EDI claim submission to the whole nation

2000
Establishment of the Health Insurance Review & Assessment Service (HIRA), responsible for claims review and quality assessment of the National Health Insurance

2008
Entrusted with claims review for Veterans Hospitals

2005
Entrusted with claims review for government-assisted medical program for the disadvantaged (Medical Aid)

2003
Establishment of DW system (healthcare data analysis system)

2010
Expansion of DUR to the whole nation

2011
Web-based Benefit Claim Portal

2013
Entrusted with claims review for auto insurance

2015
Relocation of HIRA headquarters from Seoul to Wonju

2017
Kingdom of Bahrain's SEHATI-IT Reform Project (Implementation of National Social Health Insurance Scheme)

2020
Advancement of the Review and Assessment system COVID-19 countermeasure support
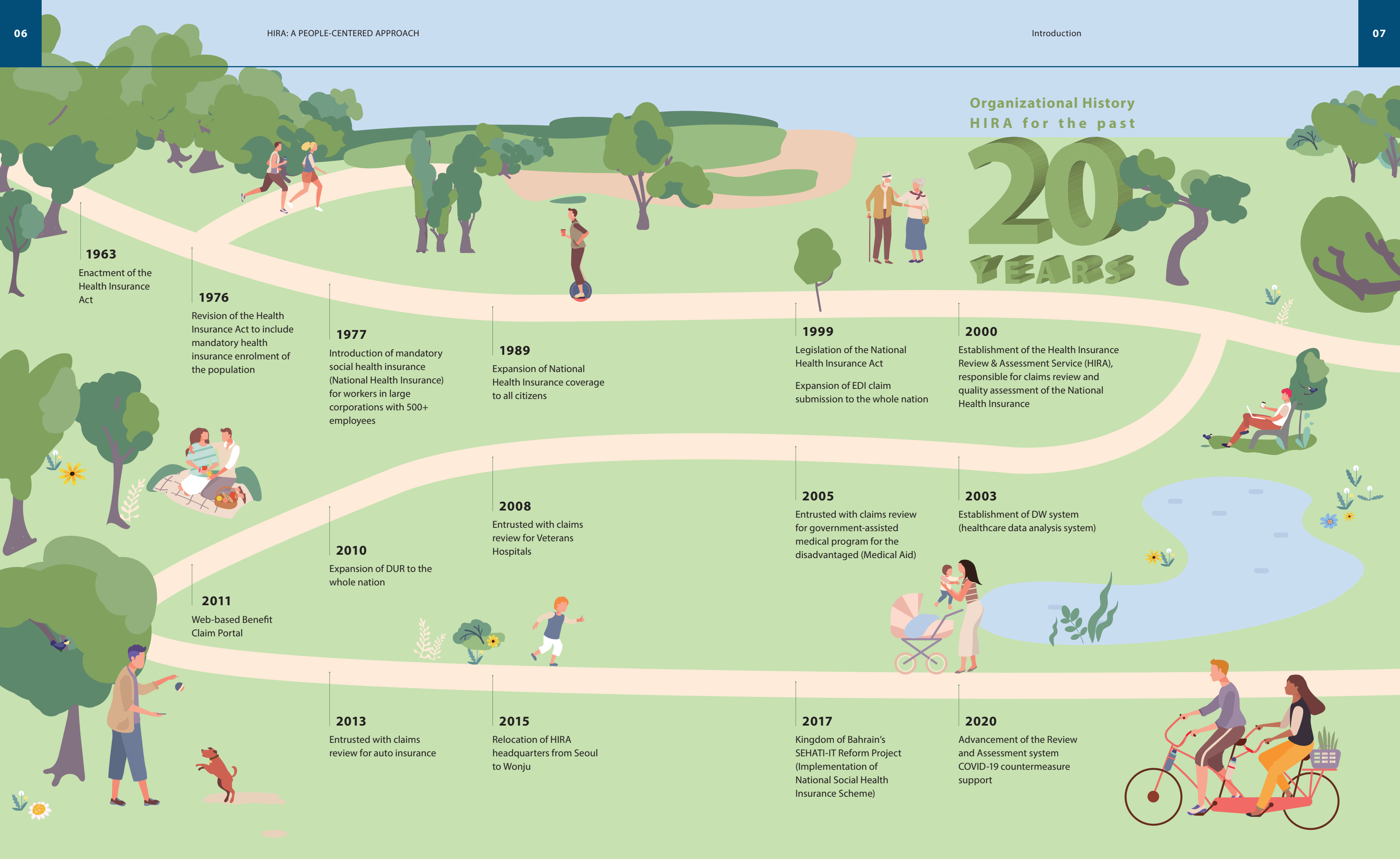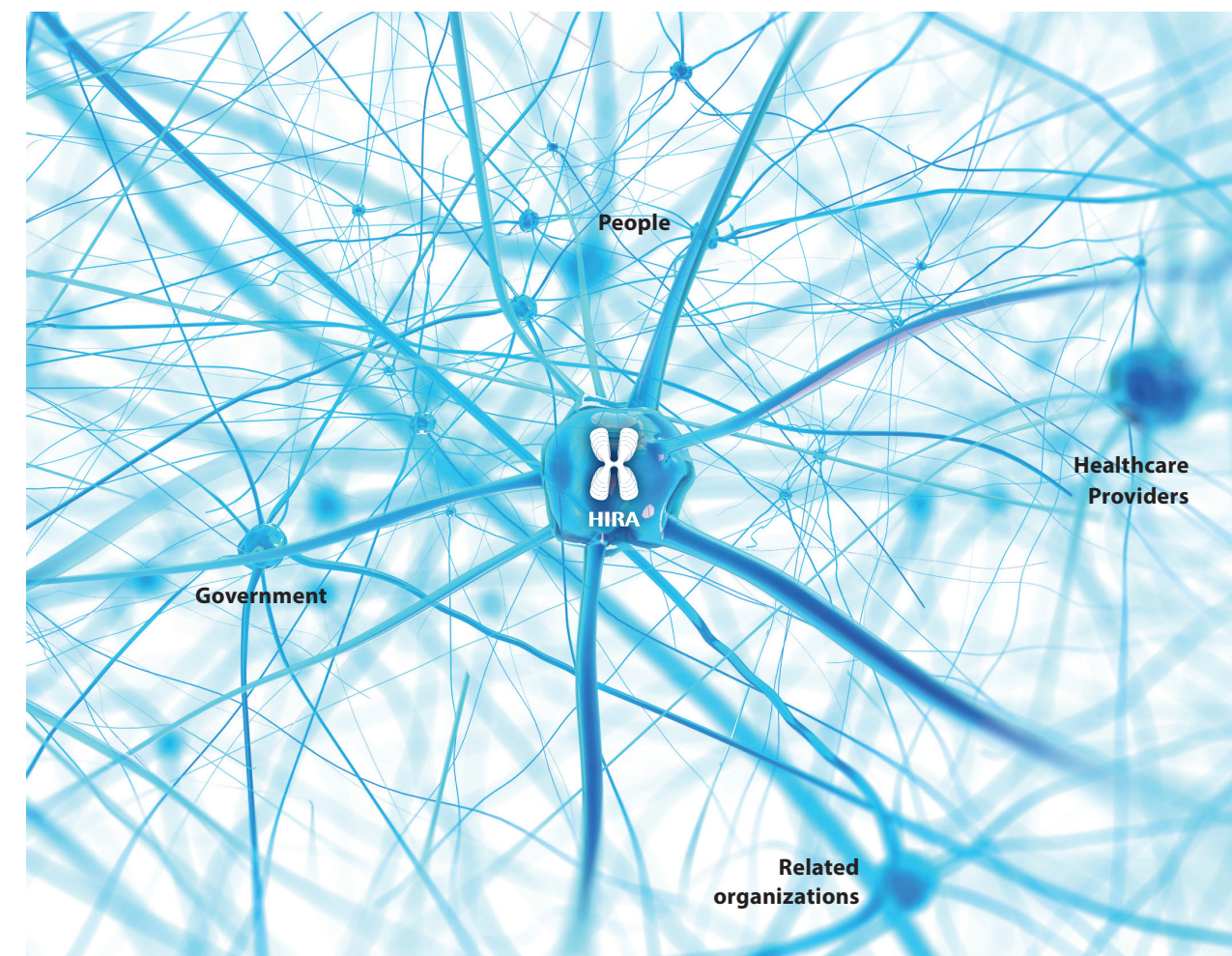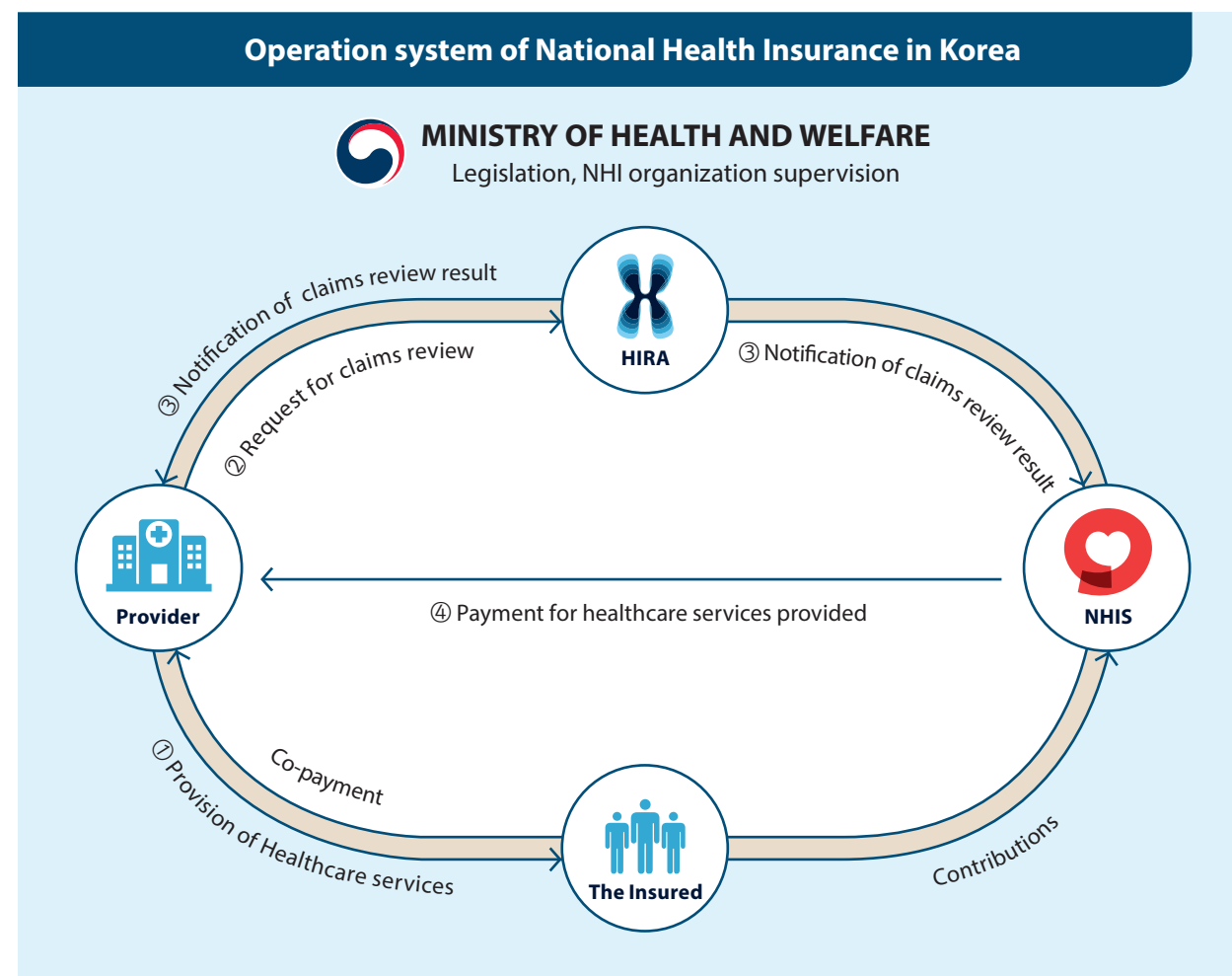
The National Health Insurance of Korea

Korea's National Health Insurance (NHI) system operates under 3 major acting bodies: The Ministry of Health and Welfare (MOHW), the National Health Insurance Service (NHIS) and the Health Insurance Review & Assessment service (HIRA).

The MOHW oversees the National Health Insurance system and supervises its two main pillars: the NHIS and HIRA. The NHIS is in charge of eligibility management and the collection of insurance contributions. HIRA is responsible for setting the scope and standards of services that are covered by the NHI, evaluating the cost and quality of healthcare services and monitoring and managing a wide range of health resources in a centralized way.

What sets the Korean NHI system apart

Korea can collect comprehensive data in healthcare at the national level. This is possible because Korea legally requires that all people and healthcare providers participate in its single-payer insurance system. On top of that, the fee-for-service (FFS) payment system that has been the standard payment model for outpatient care and the majority of inpatient care allows for the collection of a wide range of healthcare data from claim submissions. By means of its exceptional ICT system, HIRA is able to collect, connect, and utilize health data from all across the country.

HIRA has built and operated systematically connected network with healthcare providers, the government, and relevant organizations.

Operation system of National Health Insurance in Korea

MINISTRY OF HEALTH AND WELFARE
Legislation, NHI organization supervision

HIRA

NHIS

Provider

The Insured

③ Notification of claims review result
② Request for claims review
③ Notification of claims review result
④ Payment for healthcare services provided
① Provision of Healthcare services
Co-payment
Contributions

People

Healthcare Providers

HIRA

Government

Related organizations

What HIRA pursues
Sustainable Health Financing

1) We design and implement the healthcare provider payment systems

Korea primarily uses a Fee-For-Service (FFS) payment system in which fees for each service are unbundled and paid separately. HIRA functions to calculate the "Resource-Based Relative Value Scale (RBRVS)" which acts as the basis for FFS pricing. The RBRVS of a procedure is comprised of three base components: physician work, practice expense, and risk (malpractice). The resulting RBRVS can then be multiplied by the conversion factor (unit price) to arrive at a monetary amount.
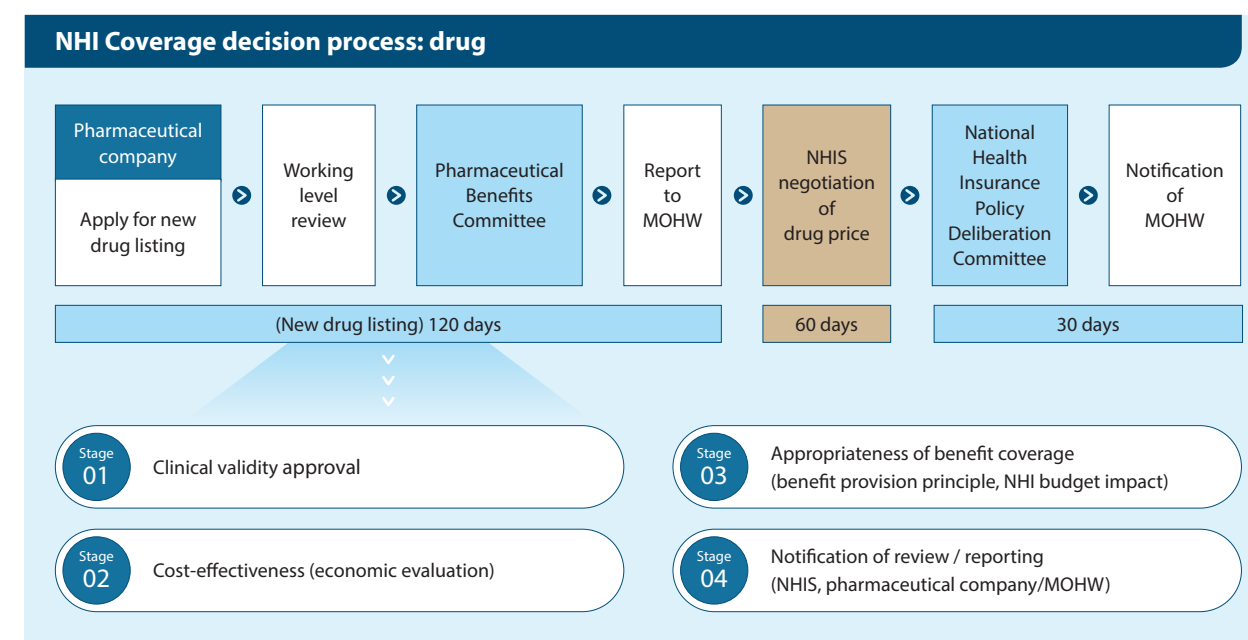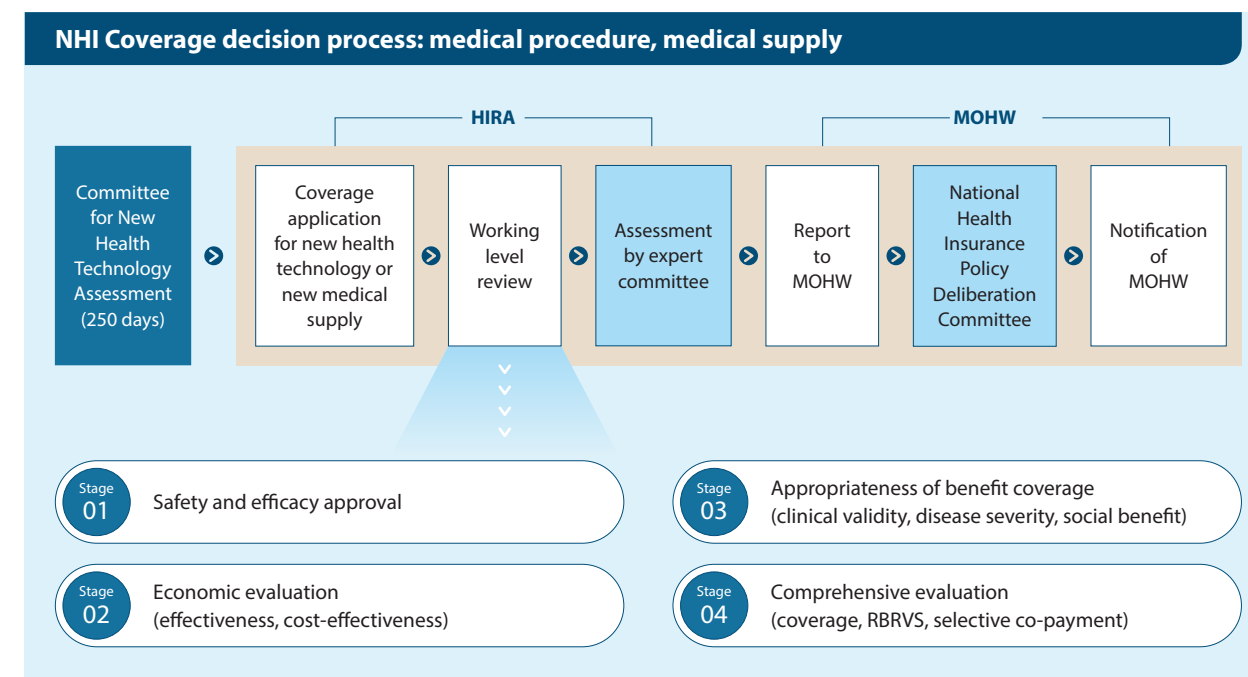
Standard-setting and operation of benefit criteria

Fee-For-Service Payment system (using Relative Value Scale)	• Since the adoption of medical insurance in 1977, FFS has been the basic payment system in Korea - Consisting of procedure (8,699), drug (23,589), medical material (31,373) as of January 2020
DRG	• Inpatient 1. 7 disease groups 2. New DRG (pilot)
Per-diem	• Inpatient - Per diem payment for long term care hospital & hospice • Outpatient - Per visit payment for public healthcare institution

In order to utilize health resources more efficiently, the National Health Insurance employs a variety payment systems to supplement the FFS that is in place. These include a Diagnosis-Related Group (DRG) system for 7 disease groups, a per-diem rate system (for long-term care hospitals & hospice), and a flat per-visit rate system (for public healthcare institutions). Korea also operates a new DRG system, known as the Korea Case Payment System, which is an alternative model that blends the positive aspects of both the FFS and DRG to reap the benefits of both systems.

2) We design the health benefits package

HIRA designs the health benefits package used in the National Health Insurance of Korea. HIRA determines what items are covered, and sets the scope, criteria, and costs of health services (including procedures, drugs, and medical supplies).

NHI Coverage decision process: medical procedure, medical supply

HIRA: Committee for New Health Technology Assessment (250 days) → Coverage application for new health technology or new medical supply → Working level review → Assessment by expert committee
MOHW: Report to MOHW → National Health Insurance Policy Deliberation Committee → Notification of MOHW

Stage 01 — Safety and efficacy approval
Stage 02 — Economic evaluation (effectiveness, cost-effectiveness)
Stage 03 — Appropriateness of benefit coverage (clinical validity, disease severity, social benefit)
Stage 04 — Comprehensive evaluation (coverage, RBRVS, selective co-payment)

NHI Coverage decision process: drug

Pharmaceutical company — Apply for new drug listing → Working level review → Pharmaceutical Benefits Committee → Report to MOHW → NHIS negotiation of drug price → National Health Insurance Policy Deliberation Committee → Notification of MOHW

(New drug listing) 120 days | 60 days | 30 days

Stage 01 — Clinical validity approval
Stage 02 — Cost-effectiveness (economic evaluation)
Stage 03 — Appropriateness of benefit coverage (benefit provision principle, NHI budget impact)
Stage 04 — Notification of review / reporting (NHIS, pharmaceutical company/MOHW)

3) We conduct the claims review to evaluate healthcare costs

HIRA conducts the claims review to check whether the healthcare services on the claim are compliant with the predetermined criteria in order to prevent waste and keep healthcare costs affordable. Claims review is conducted to verify that healthcare services that are provided are clinically valid, and that claimed costs are accurately calculated according to the NHI benefit criteria. After 3 step-claims review is completed, HIRA submits the results to the NHIS where reimbursement for providers is processed.

In 2019, 1.5 billion cases were reviewed and USD 1.4 billion was saved (1.7% of the total claimed benefit of USD 81.2 billion)
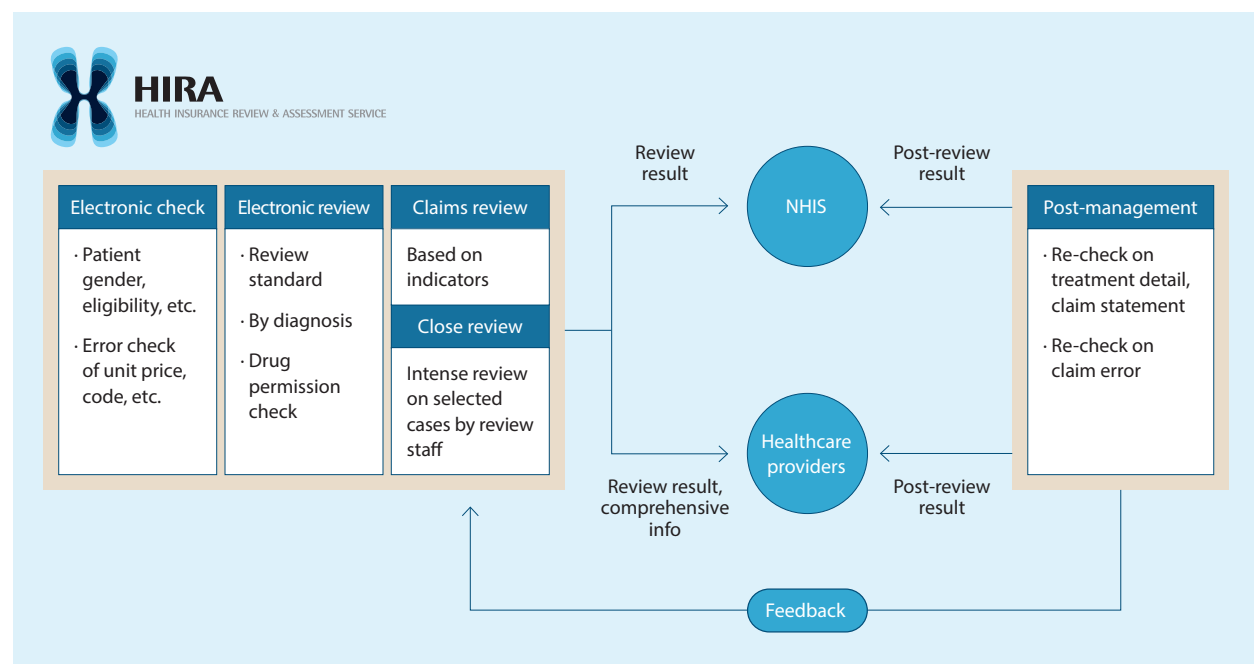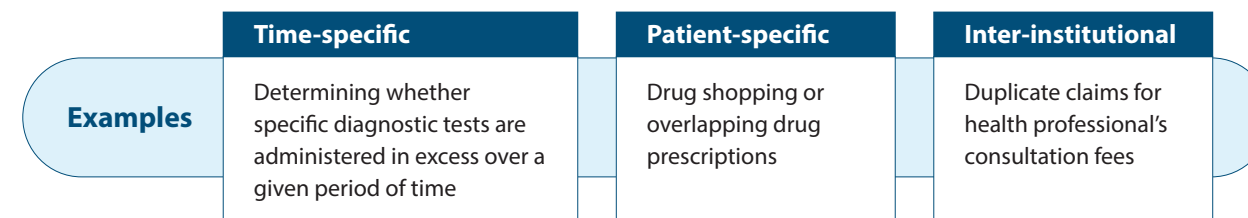

The Reform of the Review & Assessment System

In the past, HIRA conducted clams review on an individual claim-case basis. However the drastic rise in health insurance expenditures due to an aging population and the increase in items examined in the review process as a result of coverage expansion policies have made it difficult to complete all individual claims reviews within established statutory periods. To confront these problems, HIRA has striven to reform their review system into one that comprehensively evaluates quality and cost together in relation to the particular characteristics of patients and healthcare institutions from a clinical perspective. With the active involvement of the medical community, HIRA was able to implement a by-provider Analytical Claims Review system that factors in cost and quality, as clinical validity.

4) We re-review claims and providers via a follow-up review and on-site investigation
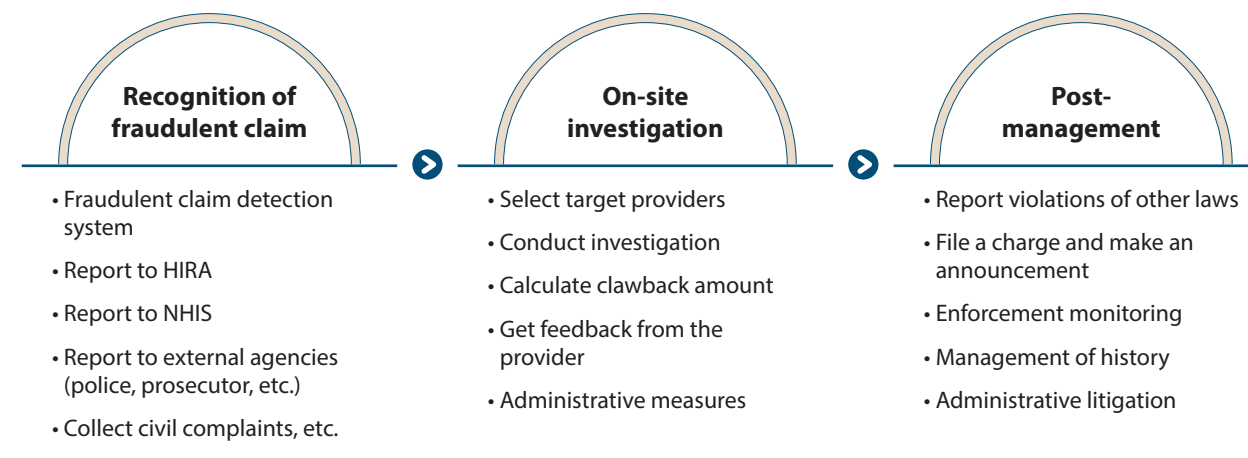
* Re-check Process

HIRA conducts follow-up re-checks on items not included in individual case reviews. This includes review of select time-specific, patient-specific, and inter-institutionally shared items.

Examples	Time-specific	Patient-specific	Inter-institutional
	Determining whether specific diagnostic tests are administered in excess over a given period of time	Drug shopping or overlapping drug prescriptions	Duplicate claims for health professional's consultation fees

* On-site investigation

To supplement the claims review process, HIRA employees visit healthcare providers to make on-site investigations. On-site investigation is conducted to check facts and verify the legality of claims at selected providers with a high probability of fraudulent and false claims on site of the providers. On-site investigations enhance the review process and help prevent false and fraudulent claims. It also promotes a sound claims submission culture, prevents loss for the insurance fund, and protects the public's entitlement to coverage. In 2019, USD 28 million was taken back from 983 providers.

On-site investigation process

Recognition of fraudulent claim	On-site investigation	Post-management
• Fraudulent claim detection system	• Select target providers	• Report violations of other laws
• Report to HIRA	• Conduct investigation	• File a charge and make an announcement
• Report to NHIS	• Calculate clawback amount	• Enforcement monitoring
• Report to external agencies (police, prosecutor, etc.)	• Get feedback from the provider	• Management of history
• Collect civil complaints, etc.	• Administrative measures	• Administrative litigation

What HIRA pursues

Excellence in Quality Healthcare

### 1) We conduct quality assessment to improve quality of care

At HIRA, our Quality Assessment (QA) measures the quality of care with the intent of preventing the overuse, underuse, or misuse of healthcare services of providers. At the same time, it aims to reduce the variability of quality between individual healthcare providers, ultimately resulting in more stable and consistent provision of healthcare services nationwide.

HIRA assesses the quality of: [cancer care, acute disease care, infectious disease care, mental health care, medical procedures, provider-level items, and patient experience.] HIRA then publishes the review results on HIRA's website and notifies the healthcare providers, while also providing support for quality improvement practices. Additionally, some items qualify for the Pay-For-Performance Programs, granting incentives. Finally, review results also influence a variety of other activities, including the quality improvement grant program, hospital designation evaluations, and claims review.

6 Domains	35 Items
Patient Safety	Risk Standardized Readmission Ratio (RSRR), Prophylactic use of antibiotics in surgery, ICU, Anesthesia, Small- and Medium-sized hospitals, Injection, Antibiotics use for acute upper/lower respiratory infection, Blood transfusion
Effectiveness	Acute stroke, Coronary artery bypass graft surgery (CABG), Ischemic heart disease (AMI, PCI), Pneumonia, Colon cancer, Breast cancer, Lung cancer, Stomach cancer, Liver Cancer, Service volume of 4 operations, Tuberculosis, Hypertension, Diabetes, Asthma, COPD, Dental root canal treatment, Hemodialysis, Hospital Standardized Mortality Ratio (HSMR), NICU, Long-term care hospital, Psychiatric department of Medical Aid, Outpatient care for depression
Patient-centeredness	Patient experience
Efficiency	Number of drugs in a prescription, Drug cost per day
Integration of care (continuity of care)	(Indicators in development)
Equity	(Indicators in development)

(As of January 2020)

Number of Indicators by Provider Type
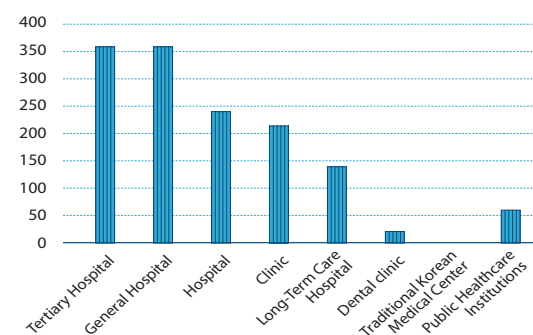
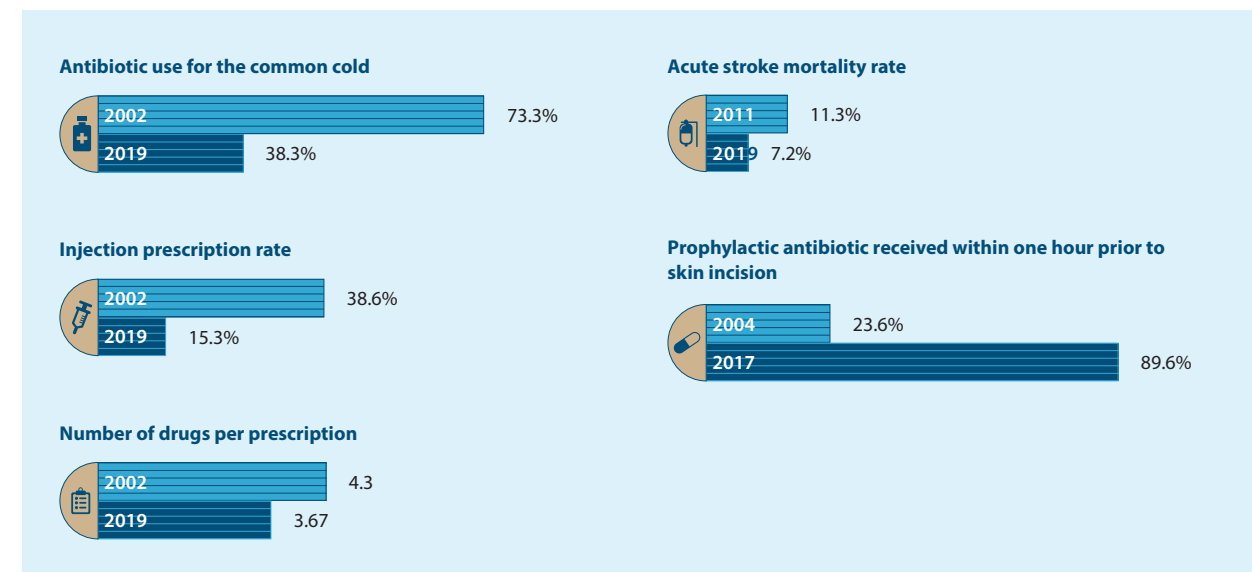**Number of Indicators by Domain**
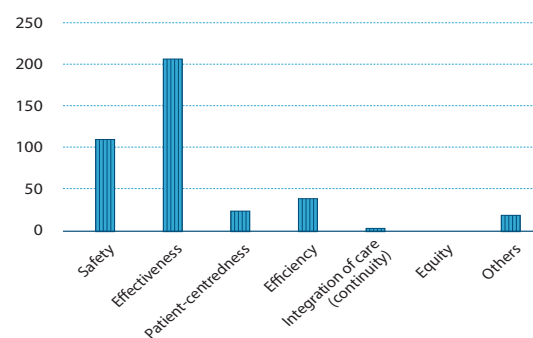
2) We encourage providers to take more steps toward quality improvement

HIRA has introduced a pay-for-performance system called the Value Incentive Program (VIP) to further promote improving the quality of care. Providers that receive high grades and show significant improvement receive incentives, while scoring under acceptable thresholds results in the issuing of disincentives. Additionally, HIRA provides various support programs to providers for voluntary quality improvement, such as consulting and training courses.

HIRA has established a quality assessment grant program for tertiary hospitals and general hospitals. These healthcare institutions are evaluated according to six categories: healthcare quality, patient safety, public interest, healthcare delivery system & support, education & training, and R&D. Based on these categories, healthcare institutions are subjected to a comprehensive evaluation of their overall quality of service. The results are then used to provide compensation according to the grade.

3) We designate tertiary hospitals with QA results

Quality Assessment results are used in the designation of tertiary hospitals where specialized services are offered for patients with serious conditions. The objective of designating such tertiary hospitals is to enable the efficient allocation and utilization of health resources by establishing a sensible healthcare delivery system alongside logical patient assignment according to the severity of illness. Tertiary hospital designations are conducted by evaluating medical specialities (departments), training competency, health resources (workforce, facilities, & devices), patient composition by disease group, and overall quality of care.

Antibiotic use for the common cold

| 2002 | 73.3% |
| 2019 | 38.3% |

Acute stroke mortality rate

| 2011 | 11.3% |
| 2019 | 7.2% |

Injection prescription rate

| 2002 | 38.6% |
| 2019 | 15.3% |

Prophylactic antibiotic received within one hour prior to skin incision

| 2004 | 23.6% |
| 2017 | 89.6% |

Number of drugs per prescription

| 2002 | 4.3 |
| 2019 | 3.67 |

What HIRA pursues

Maximizing the Value of Health Data

1) We collect, connect, and utilize nationwide data in healthcare

HIRA collects, connects and utilizes data in healthcare about the cost & quality of healthcare services, drug use, and health resources for the entire population and providers of Korea

Drug Management (KPIS/DUR)

HIRA collects, connects, and utilizes all of Korea's drug data through two systems. First, HIRA assigns a standard code to all drugs in Korea to track and trace them in the market. The Korea Pharmaceutical Information Service (KPIS) is then used to manage all drug distribution data across various all stages— from import and production to patient consumption. Second, the Drug Utilization Review (DUR) system provides real-time information in order to minimize and prevent the unsafe use of drugs at the time of prescribing and dispensing.
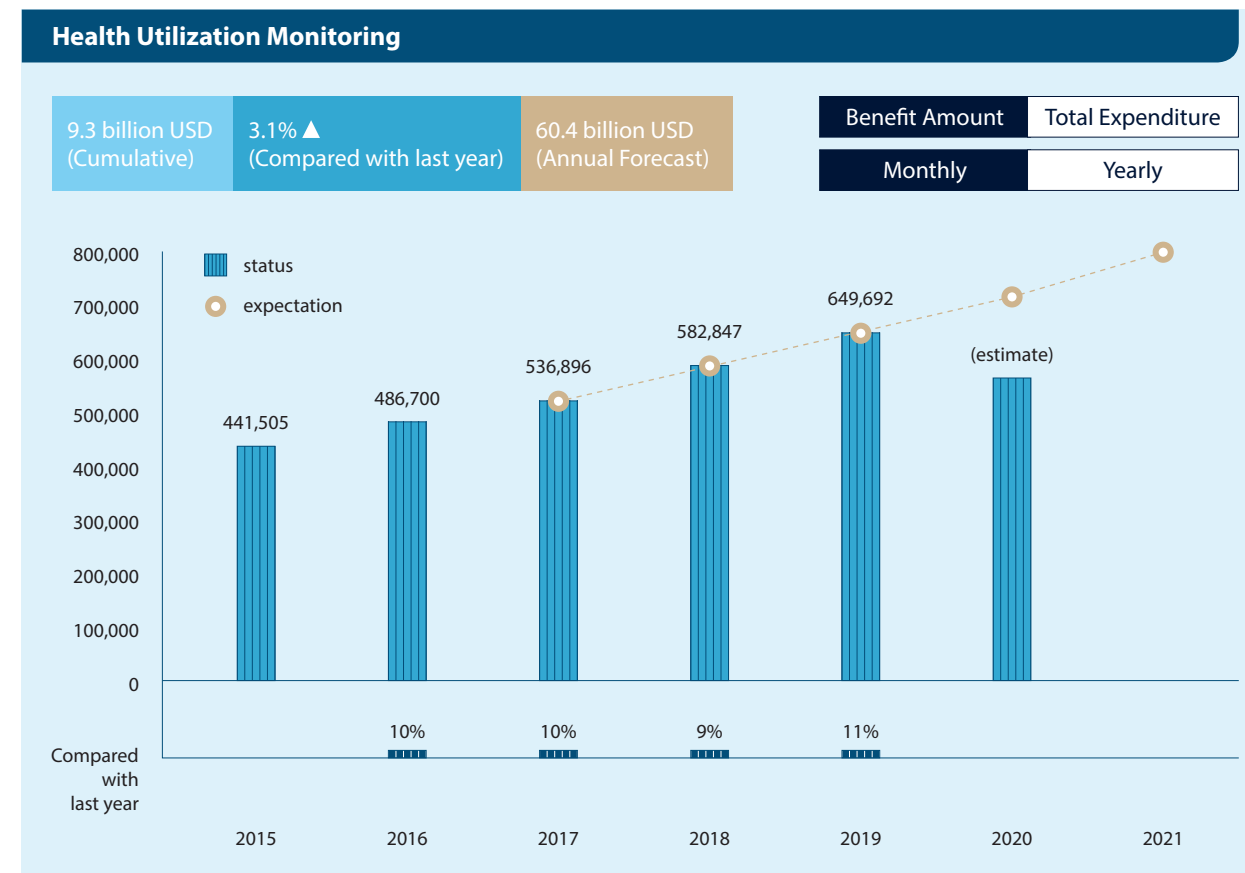
Health Resources Management

HIRA collects information on a wide range of health resources such as workforce, medical devices, and facilities across the country. HIRA utilizes this health resource data in a variety of ways, including claims review, quality assessment, on-site investigation, and benefits package design.

> * Workforce: Number and type; Hiring & resignation data of doctors, nurses, pharmacists, and other healthcare professionals
>
> * Medical Devices: Name, lot number, and price; Certification number of devices such as MRI, CT, PET, and Mammography machines
>
> * Facilities: Number and type, including beds, wards, ICUs, and Negative Pressure Isolation Rooms

Healthcare Utilization Monitoring – Dashboard

The Healthcare Utilization Monitoring system is used to monitor healthcare utilization at the national level and updated weekly. The system is used to predict fluctuations, detect abnormal patterns in health expenditure and provide useful information for a data-driven health policy making.

Health Utilization Monitoring

| 9.3 billion USD (Cumulative) | 3.1% ▲ (Compared with last year) | 60.4 billion USD (Annual Forecast) |

Benefit Amount | Total Expenditure
Monthly | Yearly

status / expectation

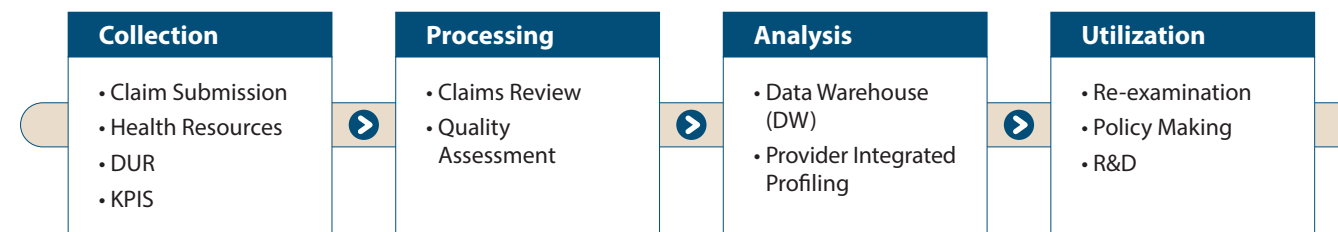| Year	Value	Compared with last year
2015	441,505	
2016	486,700	10%
2017	536,896	10%
2018	582,847	9%
2019	649,692	11%
2020	(estimate)	
2021		

2) We play a key role in creating added value

HIRA collects data from various stakeholders including healthcare providers, pharmaceutical companies, and the government, then connects and integrates its own data to create the Big Data in healthcare.

HIRA opens diverse channels for Big Data Use to further improve the healthcare sector, while leading the research and development of promising technologies, ideas, and new values.

HIRA Big Data from collection to utilization

Collection	Processing	Analysis	Utilization
• Claim Submission • Health Resources • DUR • KPIS	• Claims Review • Quality Assessment	• Data Warehouse (DW) • Provider Integrated Profiling	• Re-examination • Policy Making • R&D

What HIRA pursues

Bringing Sustainable Universal Health Coverage to the World

1) We collaborate with various international organizations

The OECD

HIRA has played an active role in the OECD Health Committee to serve as a leader in global health, and has represented the Republic of Korea in the OECD Health Care Quality and Outcomes (HCQO) Working Party since 2007. In this position, HIRA leads the way in developing, collecting, and comparing statistical indicators based on comparable data sets to create and share a robust picture of healthcare quality across various nations. HIRA also produces health statistics from Korea that are published in the OECD's official publication "Health at a Glance". These cross-country comparisons are then used for policy-making purposes in nations all around the world.

www.oecd.org/els/health-systems/health-care-quality-and-outcomes.htm

The World Health Organization(WHO)

HIRA's expert improved the quality, safety, integration, and people-centeredness of health services around the world. This direct cooperation along with HIRA's successful contributions to improving global health thus form a bridgehead between HIRA and other international organizations.

www.who.int/servicedeliverysafety/measurement/en/

Joint Learning Network

HIRA organized and hosted the Medical Audit Collaborative (MAC) for the Joint Learning Network for Universal Health Coverage (JLN). HIRA worked with the MAC to develop a practical toolkit for how to design, implement, and strengthen medical audit systems to improve quality of care. In addition, HIRA has released a detailed case study to act as a reference point for other countries and to share its institutional memories.

www.jointlearningnetwork.org/what-we-do/medical-audits-for-quality-health-care/

2) We provide consultation and capacity-building programs

Expert Consulting

In cooperation with multilateral development banks, HIRA provides expert consulting services to help countries around the world improve their health systems.

Colombia (2016-2017)
Supporting Healthcare Quality Governance and Financial Management in Colombia

(2019)
Payment Certification Agency (PCA) Capacity Building Consultancy

Bahrain (2017~2019)
Cooperation Project for Implementing Bahrain National Health Insurance System Construction of ICT-based health insurance management system

The Philippines (2018)
Technical Assistance for the Improvement of Philippine Health Insurance Corporation (PhilHealth)

Peru (2015-2016, 2018)
1. Systemic Use of Information to Improve Health Systems Governance
2. Support for a Health Information Management System for Transparency and Accountability

Malaysia (2018)
Supporting Development of Framework on Medical Audit System

(2019)
Supporting Guidance Development and Implementation of Health Technology Assessment in Malaysia

Indonesia (2014)
Systemic Use of Information to Improve Health Systems Governance

Capacity Building program

- HIRA International training program: In this annual training course, HIRA invites healthcare experts from the world and shares its knowhow of review and assessment.
- HIRA International symposium: An annual symposium to discuss global healthcare issues with experts

Since 2013, HIRA has shared its expertise and experience with the world through international training courses and symposiums. As of 2019, 47 countries and about 300 individuals have participated in these events.

HIRA in response to COVID-19

Building off of the MERS crisis in 2015, laws and systems were put in place to rapidly respond to the threat of emerging epidemic outbreaks. HIRA utilized tools and skills that enable a rapid and flexible approach to dealing with COVID-19. With data from patients and providers nationwide, HIRA contributes to preventing spread, detecting and treating cases early, and responding quickly to the surge capacity of the healthcare system.

Our ICT system is connected with all healthcare facilities and pharmacies across the country for claims and reimbursement purposes. HIRA has widened the use of this interconnected system piece-by-piece over the last several decades, developing it into a multifunctional network. We have taken full advantage of the existing systems and can adapt their functionality swiftly according what is needed during an outbreak.

↓ Staff watch thermal imaging camera screen for checking body temperature in Seoul National University Bundang Hospital.

Early detection & treatment of confirmed cases

↑ Facility team staff in charge of facility safety and prevention of epidemics of Daegu Dongsan Hospital as one of the designated COVID-19 regional hub hospital.

1) Detection of high-risk groups using DUR/ITS

Using the Drug Utilization Review (DUR) and International Traveler Information System (ITS), HIRA can detect and track high-risk groups during the COVID-19 pandemic and thus prevent spread within healthcare providers at the reception, consultation, prescribing and dispensing stages. This includes identifying groups such as recent overseas travelers, people who have had close contact with confirmed patients, and confirmed patients who are released from quarantine.

2) Expanding health benefits package rapidly

The Korean government and NHI together cover the entire cost of COVID-19 testing and treatment for all citizens. In addition, HIRA greatly expedited the process of expanding health benefits for diagnostic testing and alternative therapeutic drugs.

*Diagnostic testing: 30-60 days → 2 days
**Therapeutic drugs: 107 days → 1day

3) Responding quickly to surge capacity through resource reallocation

HIRA operates a health resource monitoring system to provide a daily snapshot of the resources being used by critical COVID-19 patients, including negative-pressure isolation rooms, ECMO machines, and ventilators. This system can identify hospitals with available resources and relocate patients in critical condition in a timely manner. HIRA also can actively track and trace drug distribution data across the country to supply therapeutic drugs where they are needed the most.

Preventing transmission of COVID-19

↑ Ulsan University Hospital's medical staff wearing Level D protective clothing participated in the Thanks To You Challenge campaign.

1) Stabilizing the protective face mask supply

HIRA implemented a Mask Supply Inventory System to stabilize the protective face mask supply. Although face masks are not covered by the national health insurance scheme, the Korean government maximized the use of existing HIRA systems to develop a solution to the growing concerns and demands from the public over face mask shortages.

2) "National Safe Hospital" designation (COVID-19 Protection Hospital)

HIRA designated "National Safe Hospitals" (or COVID-19 Protection Hospitals), where respiratory patients are separated from other patients during the entire care process, from hospital visits to hospitalization. These designated National Safe Hospitals ensure three essential things: patients can receive essential health services from hospitals safely, health professionals can provide well-organized services, and the government can safeguard the resilience of the health system.

National COVID-19 Data Warehouse

1) National COVID-19 Patient Data Repository

HIRA has developed a national COVID-19 patient data repository system through the combined effort of all the major parties involved in handling the pandemic, including the Korea Disease Control and Prevention Agency, central and local governments, and healthcare providers nationwide.
This system allows us to centralize how we collect data and make decisions. Its primary functions are to allocate patients to appropriate levels of care by severity of illness, monitor patient status in real-time, and adjust the national COVID-19 response measures as necessary.

2) COVID-19 Global Research Collaboration Platform

HIRA has shared the world's first de-identified nationwide COVID-19 patient database with domestic and international researchers: the COVID-19 Global Research Collaboration Platform. With Korea's NHI system acting as a foundation, HIRA collected and processed real-world data sets to build this robust platform. To date, 129 projects from 32 countries have completed research with HIRA's data (as of October, 2020).

↓ HIRA's efforts for responding COVID-19