





Intelligence Unit

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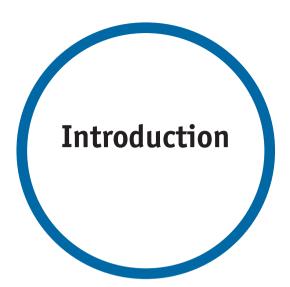


Value-based Healthcare in Korea: A pioneer in Asia is an Economist Intelligence Unit (EIU) report, commissioned by Gilead Sciences. It is the latest in a series of reports which examines the development of value-based healthcare in countries around the world. Our thanks are due to the following for their time and insight (listed alphabetically):

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- Dong-Churl Suh, RPh, MBA, PhD, Professor and Director, Chung-Ang University, College of Pharmacy
- Gi-Jong Ahn, Head of Korea organisation for patient group

- Sang-Moo Lee, Senior Research Fellow & Executive Director of the office of Research Planning, National Evidence-based Healthcare Collaborating Agency(NECA)
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The EIU bears sole responsibility for the content of this report. The findings and views expressed in the report do not necessarily reflect the views of the sponsor. Andrea Chipman was the author of the report, and Naka Kondo was the editor.



Korea is one of Asia's leaders in using valuebased analysis to underpin decisions about healthcare expenditure. The country has one of the region's only comprehensive health insurance systems, which also provides a rich trove of data that analysts can use to help direct spending decisions.

Korean healthcare spending as a percentage of GDP is comparatively low, just 7.7% in 2016, according to the Organisation of Economic Cooperation and Development (OECD), compared with an OECD average of 9.0% and 10.9% in neighbouring Japan.¹ Yet, the country ranks well on health metrics in comparison with many other Asian countries. Life expectancy for men was 77.7 years in 2011 and nearly 85 for women, while child mortality figures have fallen significantly over the last two decades due, in part, to high rates of prenatal care.²

Notably for the region, Korean policymakers have used cost-effectiveness (CE) measures to shape health investment decisions since 2007.

"Korea is the first country in Asia that adopted the cost-effectiveness concept in determining the price of new drugs," says Dong-Churl Suh, a professor and director of Chung-Ang University College of Pharmacy. He added that policy makers use cost effectiveness "frequently" when evaluating investments in new technology.

Yet Korea still has work to do to ensure that value-based analysis is fully embedded in its system of health technology assessment (HTA), much of which is likely to require more explicit commitments on the part of the country's politicians and policymakers.

Despite being a pioneer in the use of some value-based measures, the concept of value-based healthcare has not yet been fully institutionalised, healthcare experts say, with the result that the infrastructure for assessment and evaluation are growing more slowly than the developing need for HTA and CE analysis.

It is also unclear whether politicians have sufficient understanding about value-based assessment and, in particular, cost-effectiveness analysis. This need for further education has become more evident as the growing cost and complexity of new medications and health technologies has led to controversy over reimbursement decisions in recent years, which in turn has exacerbated political pressure on politicians.

Further development of cadre of independent researchers with the skills to conduct value-

¹ http://stats.
oecd.org/Index.
aspx?DataSetCode=SHA

² "Republic of Korea Health System Review", *Health Systems in Transition*, Vol 5 No. 4, 2015. Asia Pacific Observatory on Health Systems and Policies/WHO, page 15.

based analysis also is needed in order to support value-based healthcare in the future, those interviewed for this paper say.

As Korea's population ages and the cost of new medical treatments continues to rise, the

country's policymakers will face more difficult choices about where to invest scarce resources. The development of a reliable and transparent framework for increasing value cannot come soon enough.



Evolution of the Korean System— institutional development

Korea's healthcare infrastructure is well developed compared to that of neighbouring countries. In addition, cost-effectiveness is well-established as one aspect of the process used to analyse healthcare value for money, however, a consistent understanding of what value entails is still not established, according to Sean Kim, executive director of the Korea Research-based Pharmaceutical Industry Association (KRPIA).

"The reconciliation of relative value and common value sums up the challenge facing South Korea's healthcare system," he says. "Cost-effectiveness is relative value that applies to the prioritisation of new products and new treatments coming on the market. The country's healthcare system is based on universal coverage, which is common value."

Ultimately, Mr. Kim notes, the country's healthcare system is structured around the principle of delivery of maximum coverage within limited resources, which involves a significant degree of prioritisation in resource allocation.

"This is not an absolute value proposition, but a relative value proposition of determining the relative value of one thing over another in terms of cost-effectiveness," he adds.

National Health System

Korea's social health insurance system was established in 1977, and became fully universal in 1989. The current single payer system with uniform benefits has been in place since 2000.³ Yet high out of pocket (00P) spending and insufficient financial protection remain significant worries for the country's population.

While healthcare is publicly financed under the single national insurer, healthcare delivery relies heavily on the private sector and is primarily feefor-service, even in the acute hospital sector.

The Ministry of Health and Welfare (MoHW) has a key role in health planning and policy formulation nationally, while individual municipalities have responsibility for managing health centres and primary healthcare within their regions.

Two quasi-government organisations—the National Health Insurance Services (NHIS) and the Health Insurance Review and Assessment Service (HIRA)—run the National Health Insurance (NHI) system for the ministry.

Korea's health expenditure was just over \$2,000 per capita in 2014, up from \$790 a decade earlier. Public spending made up just 54% of overall health spending in Korea in 2014 (including both government and out-of-pocket (00P) expenditure), well below the OECD average. 00P healthcare spending fell from just over 38% of total expenditure in 2004 to 34% in 2010, before climbing back to 37% in 2014, suggesting that escalating costs are having an impact on government budgets and the population as a whole. 5

Over the past decade, the government has been making efforts to provide more detailed analysis

^{3 &}quot;Republic of Korea Health System Review", Health Systems in Transition, Vol 5 No. 4, 2015. Asia Pacific Observatory on Health Systems and Policies/WHO, page 14.

⁴ http://data.worldbank.
org/indicator/SH.XPD.
PCAP?locations=KP-KR

http://data.worldbank. org/indicator/SH.XPD. 00PC.TO.ZS?locations=KP-KR

of healthcare provision in a number of disease areas, as well as manage costs more efficiently. Korea's NHI Act allows for quality assessment in areas such as cancer, long-term care, mental health care and chronic diseases, as well as pay for performance (P4P) incentives.⁶

Around 97% of Korea's population are covered by NHI, financed by contributions paid jointly by the insured and by the government. The remaining 3% of the population, consisting of the lowest income groups, are funded through national budgets.⁷

Because South Korea's healthcare spending as a percentage of GDP nevertheless remains low by OECD standards, Mr. Kim and others argue that there is clearly room for further growth in health spending.

"If you look at government funding, just about 14% of taxpayers' money is used by the government to finance [NHI] annually," he says. "The rest of healthcare spending comes out of the pockets of healthcare recipients."

At the same time, he notes, changing the funding mix of the South Korean system is a politically challenging prospect due to the public's high expectations of the system.

Health Insurance Review and Assessment Service (HIRA)

HIRA, founded in 2000, manages reimbursement coverage, pharmaceutical reimbursement applications, coding and pricing of medical devices and diagnostics under the supervision of the health ministry. In addition, it has primary responsibility for medical claims reviews, quality assessment, drug management and Drug Utilisation Review (DUR), inspection and payment arrangement.8

HIRA has access to a substantial "data warehouse" to use in decision-making, including claims review data, healthcare organisation

profile data and drug utilisation review data. In addition, HIRA can access clinical data from the Hospital Quality Data Acquisition System and mortality data from the Ministry of the Interior and Safety (MOIS).

This information allows Korean HTA policymakers to see what procedures, drugs and testing the healthcare system currently provides. The agency also has access to quality assessments by facility level, data on drug utilisation (which looks to avoid negative drug interactions), cost data for procedures, drugs and materials, as well as information on human resources, facilities and equipment. In addition, it provides information on production, import, provision and use of drugs.⁹

In 2014 there were 273 applications for new products and technology assessment in Korea, of which 101 were approved, compared with 135 applications and 44 approvals in 2010. However, the number of applications for reimbursement were just 17 in 2014, compared with 38 in 2010. The average assessment took just under 10 months to complete. ¹⁰

For pharmaceutical products, reimbursement rates remain relatively low in some categories. Between 2007 and 2015, 26% of all reimbursements applications for medicines in Korea were rejected, with rates of reimbursement approval for oncology and rare disease treatments even lower at 39% and 42%, respectively. Indeed, a reportr last year by the Korean Cancer Care Alliance found that the proportion of expedited new cancer medicines actually launched and reimbursed as a percentage of the number registered between 2009 and 2014 in Korea was one of the lowest in the OECD. 12

The KRPIA has argued that low reimbursement rates and existing reimbursement restrictions have led to a low uptake of new drug classes in Korea, compared with that in OECD countries, as we will see later in this paper.¹³

- 6 "Strengthening Information Infrastructure: National Experiences from Korea," Sun Min Kim PH.D., HIRA, Slideshow, 6 November 2012.
- ⁷ "Health Technology Assessment in Korea," Seong-Hi Park, HIRA slideshow, September 2008
- 8 "Strengthening Information Infrastructure: National Experiences from Korea," Sun Min Kim PH.D., HIRA, Slideshow, 6 November 2012 and https://www.ispor.org/ HTARoadMaps/S-KoreaMD. asp
- 9 Ibid.
- ¹⁰ Lee, S.M. and Kim, S.H., "Future Directions for Health Technology Assessment," *Evidence and Values in Healthcare*, Vol. 2, No. 1, March 2016
- 11 "Proposals for Improving Patient Access to New Prescription Pharmaceuticals in Korea," Korea Researchbased Pharma Industry Association (KRPIA), April 2016, page 11. Information based on date from HIRA.
- ¹² "Improving cancer care in Korea," Korea Cancer Care Alliance. May 2016, page 24.
- ¹³ Ibid, page 22-23.

National Evidence-based Healthcare Collaborating Agency (NECA)

NECA, which was established in 2009, is in charge of carrying out health technology assessment, and generates evidence on clinical effectiveness and cost-effectiveness of health services, technologies and health products. It provides information on the results of its evaluations to consumers, healthcare providers and health policy decision-makers, including the NHI.¹⁴

The agency is responsible for presenting directions for the "sustainable growth of the healthcare sector," as well as for undertaking comparative assessment of medical technologies and establishing a "globally competitive" system for HTA.¹⁵

NECA consists of a core research body, which concentrates on HTA and Collaboration Research, the Rapid Assessment & Production of High Quality Information Demanded Program (RAPID) and the Center for New Health Technology, which supports the Committee for New Health Technology Assessment.

Collaboration Research works in conjunction with other international and domestic public organisations, by pooling resources for research projects initiated by the health ministry, National Assembly and other decision-makers.

RAPID fields urgent requests for scientific evidence, while new Health Technology
Assessment uses literature to review the safety and effectiveness of new health technologies. The health ministry publishes the results of all safety and effectiveness studies in a public format.

"For new devices, we consider costs or budget impact," says Dr. Sang-Moo Lee, senior research fellow and Executive Director of the Office of Research Planning at NECA. "Only in the case of new drugs does our agency look at cost-effectiveness, but in other cases, we look at benefit and budget impact."

Since 2014, NECA has also begun horizon scanning for the early detection of trends in emerging technologies, ¹⁶ and in 2015, it reported on the first drug for Bronchopulmonary dysplasia (BPD) in premature infants. ¹⁷ Yet, there has been little similar activity over the past couple of years, according to Dr. Lee.

In Korea, Mr. Kim notes, horizon scanning has come up against problems of "overlapping investment and inconsistent priorities."

"More often than not, new health technologies do not work in the real world because clinical trial design is wrong, because clinical evidence is lacking, or because they are simply not safe enough," he says. "Horizon scanning is in the early stages of deployment in South Korea as a solution to these problems facing health technology assessment."

At the same time, he adds, NECA's role in harnessing the benefits of horizon scanning to public health is important, and the agency continues to engage a "broad range of stakeholders" in emerging technologies through newsletters, updates and online postings. NECA also seeks out stakeholder participation from government agencies such as the Ministry of Health and Welfare, the Ministry of Food and Drug Safety and HIRA.

The evolution of a workable HTA framework in Korea continues to be a work in progress. In a 2012 interview in the *Journal of Comparative Effectiveness Research*, health economist Bon-Min Yang noted that initially, effectiveness and efficiency data from Korean populations often weren't available, meaning that government decision-makers and pharmaceutical companies often relied on foreign outcome data; given potential genetic differences between populations in different countries, he said, this could "result in different scales of effectiveness." ¹⁸

¹⁴ "Republic of Korea Health System Review", Health Systems in Transition, Vol 5 No. 4, 2015. Asia Pacific Observatory on Health Systems and Policies/WHO, page 17/37.

¹⁵ http://www.inahta.org/members/neca/

http://www.inahta.org/ members/neca/

¹⁷ NECA, H-Sight 2015 003, October 2005 full citation needed

¹⁸ "Health technology assessment in Asia: an emerging trend," *Journal of Comparative Effectiveness Research*, 2012.

Another challenge, he noted, involved the lack of experts capable of preparing evaluations or reviewing submitted data. "Establishing a high enough number of reasonable quality HTA experts takes a long time, which the Korean system did not prepare well for in advance," he added. Professor Suh agrees that the lack

of sufficient expertise suggests the need for further training and adaptation of existing HTA frameworks.

"We need to adjust or revise cost-effectiveness guidelines developed by other countries to fit our system," says Professor Suh.



Measuring value in Korea's healthcare system and making difficult decisions about where to invest scarce resources in public health is a complex process. It requires policy-makers to balance public health requirements, public demands, medical feasibility and socio-economic impact, according to Changjun Lee, director general of the Center for Infectious Disease Control at Korea's Centres for Disease Control and Prevention (CDC).

The ministry of health separates reimbursement and price decisions for new drugs, with HIRA's Drug Reimbursement Evaluation Committee responsible for the former and the National Health Insurance Service (NHIS) negotiating prices with pharmaceutical companies. The NHI only funds drugs that are on the Positive List Scheme (PLS).

Since 2007, Korea has required economic evidence for a drug to be included in the PLS, making it the first Asian economy to do so. ¹⁹ There is no set costeffectiveness ratio, and HIRA retains a degree of flexibility, but generally uses as a reference point a benchmark of around one times gross domestic product per capita, a figure that equated to US\$29,000 in 2017, according to Dr. Lee.

Manufacturers looking to list a new drug make an application to HIRA, which evaluates the portfolio and collects additional data and expert opinion before communicating the results of its review to its Drug Reimbursement Evaluation Committee, which makes a recommendation on whether to list the drug, reject it or restrict

access by indication. Decisions are made according to cost-effectiveness data, clinical usefulness, the availability of alternative treatments, severity of the condition, budgetary impact, assessments fro other countries and uncertainty of evidence presented.²⁰

There continue to be questions about the methodology with which cost-effectiveness ratios are calculated. In a 2014 article in the Bulletin of the World Health Organisation (WHO), the authors argued that there were "major shortcomings" in using per capita GDP as a guideline for policymakers, observing that cost-effectiveness analysis is only useful insofar as it enables policymakers to make choices between health investments available in a particular setting and context.²¹

Some drugs treating less common forms of cancer and other rare diseases affecting a very small number of patients are exempted from economic evaluation due to the difficulty of determining their cost-effectiveness. Even this exemption is strictly limited, however.²²

The NHIS uses HIRA's assessment and international price references when it negotiates with companies on price; an unsuccessful outcome means the drug will not be included on the PLS. Since 2006, the agency has used individual prices in Australia, France, Germany, Italy, Japan, Singapore, Spain, Switzerland, Taiwan and the UK as a basis for price negotiations.²³

¹⁹ Kennedy-Martin, T., Mitchell, B. et al., "The Health Technology Assessment Environment in Mainland China, Japan, South Korea and Taiwan – Implications for the Evaluation of Diabetes Mellitus Therapies," Value in Health Regional Issues, (2014), page 109.

20 Ibid.

²¹ Marseille, E., Larson, B. et al., "Thresholds for the cost-effectiveness of interventions: alternative approaches," Bulletin of the World Health Organisation 15 December 2015. In particular, the authors arque that, "It is not enough to know that, per disabilityadjusted life-year (DALY) avoided, an intervention costs less than three times the local annual per capita gross domestic product. We also need to know if it costs less—per DALY avoidedthan other needed and feasible interventions."

²² "Proposals for Improving Patient Access to New Prescription Pharmaceuticals in Korea," KRPIA, April 2016, page 17.

23 https://ec.europa.eu/
health//sites/health/files/
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assessment/docs/erp_
reimbursement_medicinal_
products_en.pdf

The

"Many new drugs failing to clear the costeffectiveness hurdle are excluded from insurance coverage and are only available to a small number of wealthy patients who can afford the high cost of non-reimbursable treatments," says Gi-Jong Ahn, head of the Korean Organisation for Patient Groups.

Although there have been few alterations to the Korea's HTA process since its introduction in 2007, there are new quidelines to help researchers assess clinical benefits. These changes have been introduced as policymakers seek to downplay the previous reliance on expert opinion in favour of outcome-based evidence from clinicians and patient preferences and to allow for more objective decision-making.

The transparency of the assessment process has improved somewhat, in tandem with the availability of a pre-consultation with HIRA reviewers for drug and device manufacturers. There is some anticipation that future changes in Korea's HTA framework could involve acceptance of a higher incremental cost-effectiveness ratio (ICER) threshold for unique technologies that address severe diseases, or the use of risksharing programs.²⁴ Thresholds may also be more flexible in the case of rare diseases or cancer, where quality of life is more likely to be taken into account, according to Dr. Lee.

"There isn't a clearly explicit threshold," he says.

An analysis of 47 evaluations approved by HIRA after the PLS was introduced showed that an average of 14 of the 20 items HIRA submitted for pharma-economic evaluations received positive coverage decisions.²⁵

Yet, there is clearly room for improvement in the system, according to Dr. Lee. He identifies four potential areas: improving policymakers' understanding of value-based healthcare, further embedding and institutionalising the HTA infrastructure in Korea, cultivating researchers and improving research funding.

"The National Assembly don't understand the concept of cost-effectiveness," he says, noting that one Assembly member recently sought a cut in NECA's annual budget without any opposition from fellow legislators. "There is a need to enhance policymakers' understanding of our activities."

In addition, he points out, there is little close linkage between NECA and HIRA. "Closer cooperation between these two institutions needs to be increased for better institutionalisation of evidence-based and valuebased decision-making," he adds.

With regard to the need to cultivate researchers, it's particularly important to find researchers "free from industry conflicts of interest," he notes, something he argues is especially important as many Korean economists have close ties to industry.

Finally, Dr. Lee points out, there is a clear need at the legislative level to establish a non-profit public research fund for HTA. Korean legislators have allocated a budget of just \$9 billion a year to HTA, well below similar levels in the UK and US.

Controversy over reimbursement levels

A special area of controversy concerns levels of reimbursement for healthcare providers and manufacturers in the Korean market. Some experts argue that low levels of reimbursement in the past have deterred international companies from entering the market.

To be sure, compared with China and other Asian markets, South Korea is a more promising market for global health companies, says Mr. Kim.

"China is a huge market with enormous domestic demand. That sounds like a strong profit opportunity; however, that is not necessarily the case for many global companies because China is a highly uncertain market, which makes it difficult to plan ahead and strategise market entry," he says. "South Korea is a high-predictability market. Entry barriers are high, but once you are in the market, you know your way around to make money on the

- ²⁴ Ibid and Park, S.H., and Lee S. M., "Evidence-based Decision-Making and Health Technology Assessment in South Korea," Value Health, March 11, 2008.
- ²² "The Health Technology Assessment Environment in Mainland China, Japan, South Korea and Taiwan—Implications for the Evaluation of Diabetes Mellitus Therapies,"

market, because HTA and the overall healthcare system infrastructure is well established there."

Yet, a 2016 report by the KRPIA concludes that current policy in Korea focuses on lowering prices at the expense of patient access to innovation, arguing that prices for newly registered drugs are often set relative to generic drugs. As a consequence, the report notes, both domestic and global pharmaceutical companies are less inclined to register innovative drugs in Korea, and the number of clinical trials multinational companies are running in Korea is "steadily declining."26 This state of affairs also impedes the success of local companies hoping to take their products global, as prices in many countries are benchmarked on those of the country of origin, the report adds. On average, it notes, the price of newly listed medicines in Korea are just 45% of the average across OECD countries.²⁷

Against a backdrop of high prices for state-of-the-art drugs for some diseases, this means coverage gaps that reduce access for patients.

A 2016 report by the Korea Cancer Care Alliance found that, while the country did well at cancer diagnosis, surgery and radiotherapy, less than a third of new cancer medicines were reimbursed by the healthcare system, less than half of that for other diseases. The report also observed that Korea was the slowest country to reimburse new cancer medicines of 20 OECD members studied.²⁸ Although recent changes in reimbursement policy have improved access to new treatments, they do not fully address the gap, the report concluded.

Gi-Jong Ahn, head of the Korean Organisation for Patient Groups, notes that pharmaceutical companies selling proprietary cancer drugs and treatments for rare or infectious diseases want prices high enough to cover the cost of development. At the same time, he says, copayments for drugs on the national insurance list are kept at a maximum of 5% for cancer patients, 10% for rare diseases and 30% for infectious diseases and other prescription medicines, to keep them affordable for patients.

Yet others interviewed for this paper say that the healthcare investment climate in South Korea has improved in recent years, both on a relative and absolute level.

"I think in the case of oncology and cancer drugs, around 60% of new drugs have been covered in our country, and that isn't low compared to other countries," Dr. Lee says.

Recent policy changes have been designed to help address the gap. One of these is the introduction of risk-sharing contracts between the health service and pharmaceutical manufacturers, enabling patients to access medicines that would normally not be reimbursed. Yet, contracts are temporary and do not permit new uses for drugs established after the contract takes effect.

Public pressure is also a feature of the Korean system, according to Mr. Ahn, who notes that new drugs that are approved by the Ministry of Food and Drug Safety but excluded from the PLS are still available to anyone willing to pay for them.

"Low-income patients seeking the same benefit of new drugs demand that they be covered, which creates pressure on the government and weakens the government's ability to negotiate cuts in drug prices," he says.

What Korea needs, says Mr. Ahn, is a system that makes drugs for cancer, rare and infectious diseases and other new treatments directly reimbursable once the Ministry of Food and Drug Safety approves them, if they have no substitute and proven efficacy.

"Such a system would solve the problem in two ways," he adds. "First, drugs companies have no reason to demand high prices for new drugs with a short protection period. Second, patients have no need to demand coverage at the expense of economic evaluation, which is a powerful instrument for lowering drug prices."

²⁶ "Policy Proposal for Pricing System in Korea," KRPIA, page 5.

²⁷ Ibid, page 8.

²⁸ "Improving cancer care in Korea," Korea Cancer Care Alliance. May 2016, page 9.



Infectious and chronic disease and the primary care approach

Infectious diseases, chronic diseases and rare diseases pose the largest financial burden to South Korea's healthcare system. It can be easier, however, to measure the economic value of treating the former two, than the latter.

In the 1960s and 1970s, Korea suffered significant socioeconomic burdens due to endemic, high levels of parasites, Mr. Lee said. Following the introduction of a series of regulations and hygiene education programs, as well as the establishment of the Association for Parasite Eradication—which was charged with combatting the problem on a country-wide level—the percentage of surviving parasite eggs fell to 2.6% from 80%, he added.

Preventative treatment is a central part of the Korean health system, and is also based on the cost-effectiveness principle, those interviewed say, with treatment for diseases such as hepatitis at an early stage seen as preferable to leaving the treatment burden of more advanced disease to the government.

"The Korean government frequently use the concept of cost-effectiveness to adopt preventive treatment, vaccines, etc., "Professor Suh says. "Effectiveness means outcome. We measure a patient's quality of life after they are treated, or better productivity after they get the treatment, avoided emergency visits, reduced use of medications, etc. There are multiple ways to measure outcomes, depending on what we want to evaluate."

Where evidence-based decisions have been made to approve a preventive measure, such as a screening test, measurement or vaccine, all Koreans are required to have the procedure under their national health coverage, Professor Suh adds.

"This is mandatory," he says, adding that over the past decade, the NHI has put limits on compensation for Koreans who suffer from a disease for which there was a preventive measure that they did not make use of. One example is the biannual endoscopy to detect some forms of cancer, introduced over the past decade; as a result of this program, Korea has a high early detection rate for cancer.

Vaccines show their value

In the case of vaccines, the government can use its own data to compare the cost of the vaccine itself and the logistics of administering it with the effectiveness or benefit derived from the program, says Mr. Lee of the CDC.

In 2001, a vaccination verification campaign for pre-school children let to South Korea being declared the first measles-free country in the WHO Western Pacific region in 2006, with net savings to the country calculated at 5.2 billion South Korean won.

The Korean healthcare system was able to make a clear-cut assessment of the value of a pilot Hepatitis B virus (HBV) vaccination pilot

program; the program, which aimed to stop HBV transmission from mothers to babies, ran from 2005 to 2014 and involved 180,000 infants; 97% of those who were vaccinated developed antibodies against HBV. The project cost \$15 billion over its ten-year life, and is assumed to have saved the government \$323 billion, Dr. Lee added.

In the case of treatments for the hepatitis virus more generally, HIRA's Drug Reimbursement Evaluation Committee assigned a "higher weight" to clinical efficacy relative to cost-effectiveness, with the result that the National Health Insurance system agreed to higher negotiated prices, allowing the newest hepatitis drugs to be listed on the reimbursable list, Mr. Ahn said.

"What this experience tells us is that it can make sense to put the value of a treatment above its cost-effectiveness, when it comes to contagious disease," he adds. "In determining the value of a cure or a treatment, we need to consider whether the target disease is a life-threatening contagious disease, whether there are substitute cures, whether the target patient groups are small like rare diseases, and whether there have been meaningful improvements in clinical metrics, including long-term survival rates."

The CDC has recently launched a new economic evaluation program for latent tuberculosis and HIV screening, according to Dr. Lee, while NECA introduced its Human Papilloma Virus vaccination program in 2016, after a cost-effectiveness analysis.

When it comes to trying to put a value on vaccines and other treatments for infectious disease, policymakers focus on cost-effectiveness, disease severity and burden of disease, while social considerations such as end of life are only beginning to be looked at in Korea.

"So far, we don't have explicit and transparent criteria for social value," Mr. Ahn says, noting that the government is in the process of preparing guidelines to make such value-based assessments. "I think in the future, we will have more transparent and explicit social factors."

In the case of both infectious and chronic disease, policymakers can balance reduced mortality, direct cost savings in expenses for medical treatment or transport to hospital and indirect opportunity cost savings such as reduced absenteeism from work as part of a broader economic analysis.

Ultimately, Mr. Kim says, high levels of access to primary care in the South Korean system makes it a strong benchmark for both developing countries and even developed countries.

"South Korea has an excellent track record of managing contagious diseases as a consistent policy priority," he adds.

Drug costs pose funding dilemmas

At the same time, the country faces a particular challenge in addressing the needs of those with rare diseases, which put special demands on healthcare budgets due to the relatively limited number of patients effected, according to Mr. Kim, who calls this category the "grey zone".

"The South Korean healthcare system's common-value policy approach works very well when it comes to managing chronic diseases cost-effectively," he says. "However, the idea of healthcare for all collides with the reality of higher costs required to treat speciality disease patients. How to handle healthcare demand from high-cost diseases in a low-cost healthcare system is the fundamental policy dilemma facing South Korea."

The government of Geun-Hye Park increased coverage and accessibility for the treatment of key severe diseases, such as cancer and stroke, with an estimated 6% of National Health Service spending dedicated to the treatment of cancer alone, Mr. Kim observes.

"Cancer patients will continue to increase as South Korea becomes an ageing society, and new cancer drugs will continue to demand high costs," he says. "The government's healthcare cost-efficiency focus has been, and will remain the maximisation of cost savings from chronic disease and the reallocation of cost savings to specialty diseases."

With cancer the leading cause of death in Korea and a major cost to the health service, policymakers will face difficult choices as they balance the escalating price of treatments with the economic burden of increasing cancer rates, and as patient expectations increase.

The 2015 Patient Access to Cancer Care Excellence (PACE) survey found that only 39% of Korean patients were satisfied with cancer treatment courses and 82% said it took too long for new cancer medicines to reach patients. ²⁹ Korea was ranked fourth lowest of 20 OECD countries studied in the total number of reimbursed new cancer medicines. Indeed, from 2009 to 2014, 29% of new cancer medicines registered in Korea were reimbursed, compared with 67% of new medicines for other diseases. ³⁰ As a result, out-of-pocket

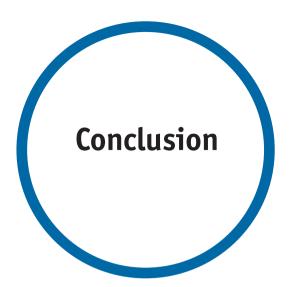
payments for non-reimbursed cancer medicines reached 20% of the amount spent by the National Health Service in 2014.

Looking ahead, South Korea's healthcare system needs to assess the value of treatments for different categories of disease in different ways, Mr. Ahn says.

"The social value of a cure or vaccine for the treatment of infectious diseases like hepatitis and HIV needs to be highlighted in terms of curing diseases and allowing patients to live a healthier life," he says. By contrast, treatments for cancers and rare diseases "is focused on making patients live longer, and the government's drug prices should reflect the social value of infectious disease treatments as accurately as possible."

In addition, Korea might follow the model of other regions developing value-based care, such as Europe, and look to disinvest in procedures or treatments already in use, which experts determine to be of lower-value. Dr. Lee notes that HTA led to a decision to stop using glucosamine, but that there have been few other similar decisions.

²⁹ "Improving cancer care in Korea," page 20.



Korea's healthcare made great strides in assessing value of treatments and in using cost-effectiveness as a key factor in making healthcare policy and investments.

The country nevertheless has more work to do in developing a consistent analysis process that will enable policymaking to be more transparent. Better education and transparency about the choices facing healthcare policymakers will no doubt lead to difficult discussions, but could shore up both political and public support for funding decisions.

Given its relatively low level of health spending compared with that of other developed countries, Korea has scope to increase health spending. At the same time, with Korea's population ageing at a similar rate to those of its peers, stark choices lie ahead. In particular, policymakers will have to develop more robust systems for assessing the cost-effectiveness of expensive new medicines for chronic diseases, as well as determining how to measure value in the case of treatments for rare diseases.

Tackling these challenges successfully will enable Korea's healthcare system to continue to be a model for the rest of Asia.

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