Primary Care Based NCDs Management and their financial effects in NHIS

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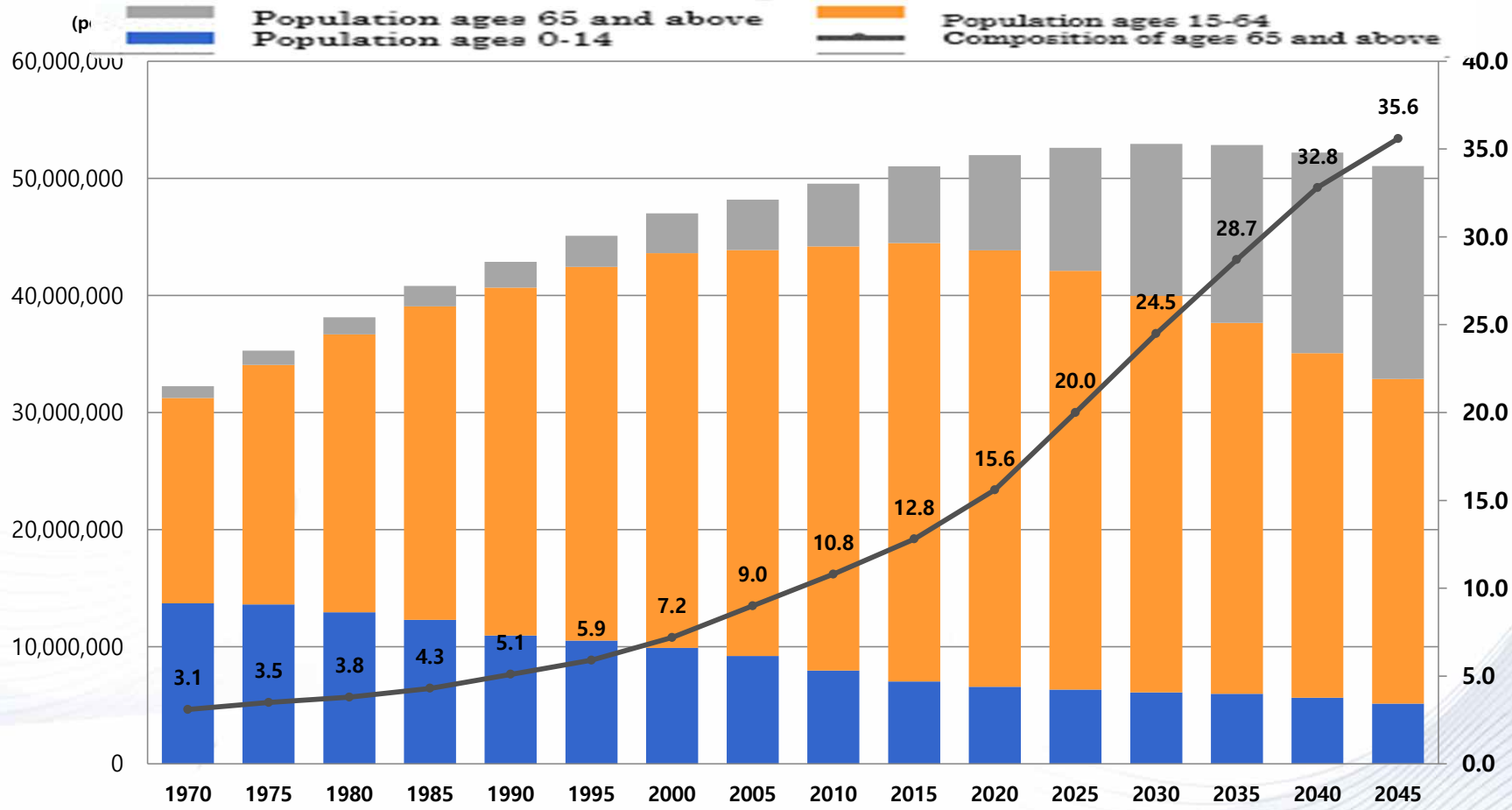
Contents

Increasing diseases burdens due to population aging

- **Population over 65Y will be over 20% of total population in 2025**
- **The percentage will reach over 35% of total population in 21 years later**

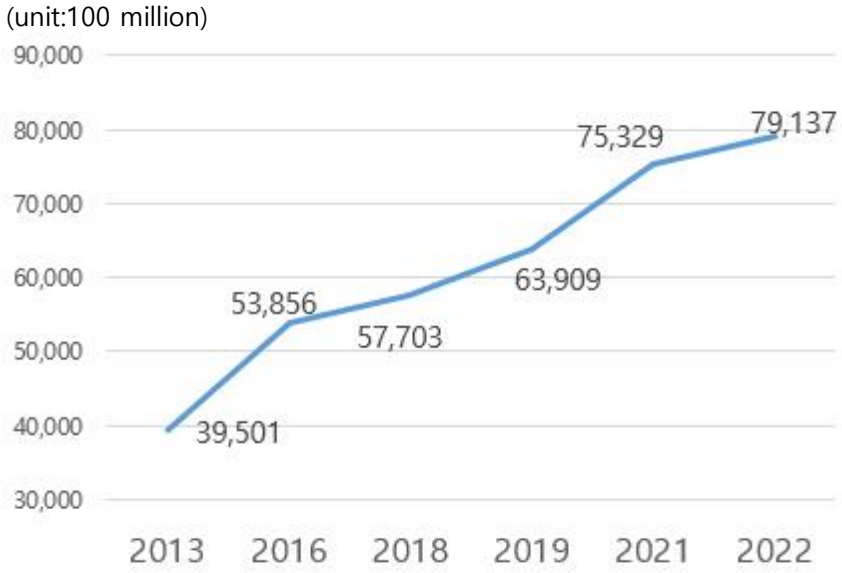


Source: 2022 Statistics Korea: Population Estimates

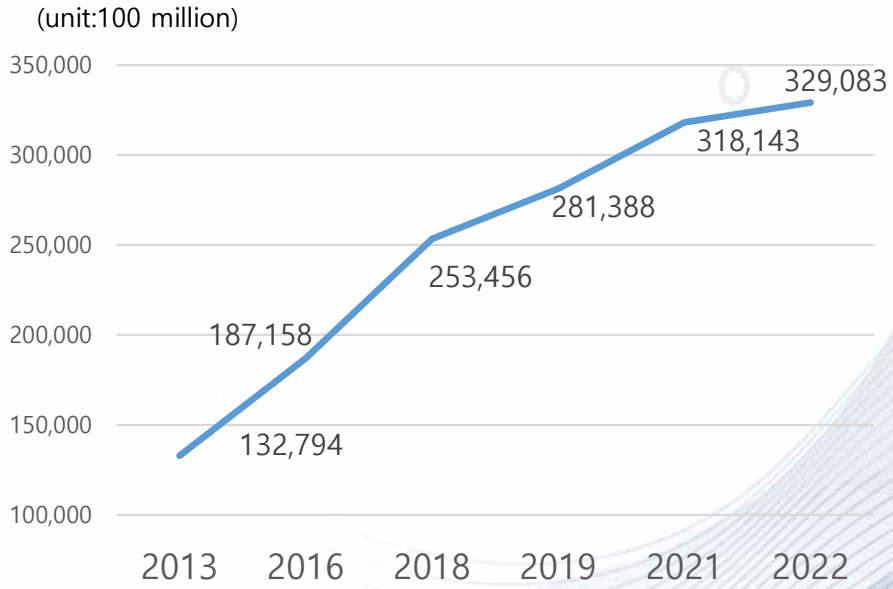
Increasing social and economical burdens due to non-communicable diseases

- **20.6 million patients with chronic diseases (40.1% of the total population)**
- **Treatment cost for chronic disease is almost 3 billion dollars (about 33 Trillion KRW/38% of the total treatment cost as of 2022)**

Medical cost for Hypertension & Diabetes



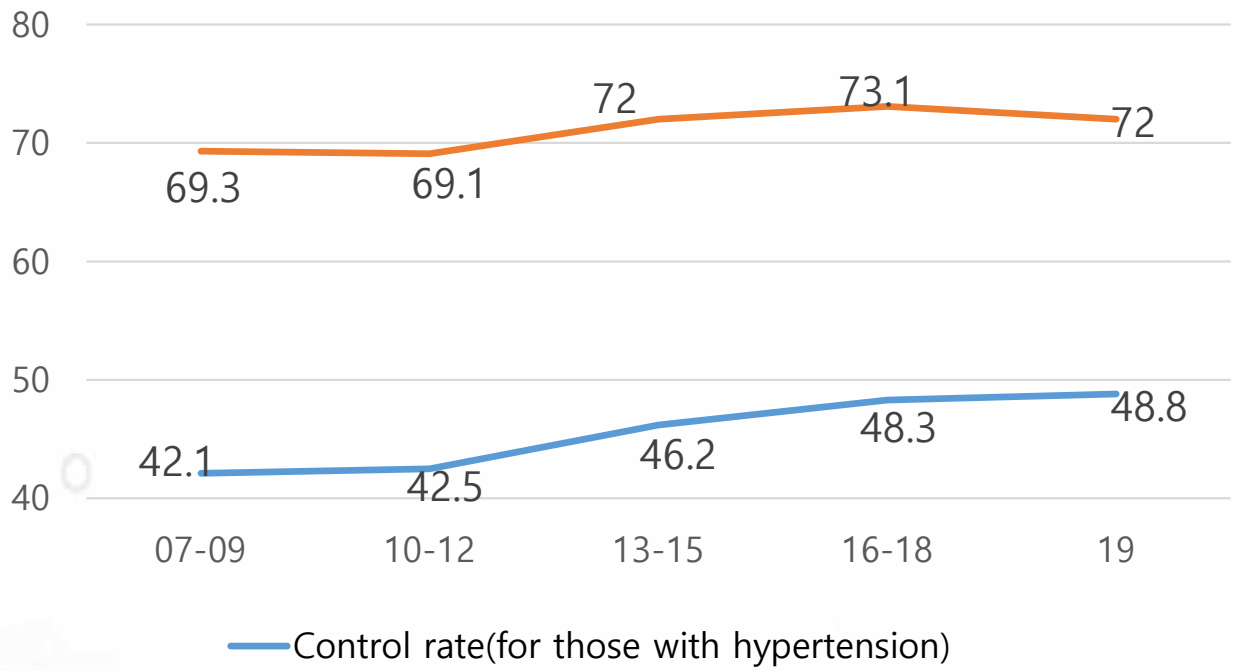
Medical cost for chronic diseases



Source: 2022 Health Insurance Statistics Annual Report

Needs of NCDs Management

- 72% of those who received treatment have their hypertension under control. Overall, less than 50% of those who have hypertension have under control



Source: Korea National Health and Nutrition Examination Survey
(Korea Disease Control and Prevention Agency, 2020)

1 Integrated Primary Care Based NCDs Management Project

- The need for efficient implementation of chronic disease management projects has been raised. (Inspection and Investigation of the National Assembly, 2016)
- The clinic-level chronic disease management project was included in the New Government's Agenda (May 2017)

- Strengthen patient-centered healthcare system based on local communities

- Build a chronic disease control system centering on local clinics and strengthen the role of primary care medical institutions as navigators by providing education, guidance, and coordination for managing lifestyle choices and diseases.

Systematic control of chronic diseases, establishment of private-public governance systems, and activation of primary care

1 Process of Service Provision

Registration

Application for participation

20 or more local clinics

Local doctors' association

Pubic NHIS | health centers | Private clinics

Participation of subjects

Recruitment of participants

Guidelines for participation

Establishment of Care Plans

Doctors

Comprehensive Evaluation

Interview Examination

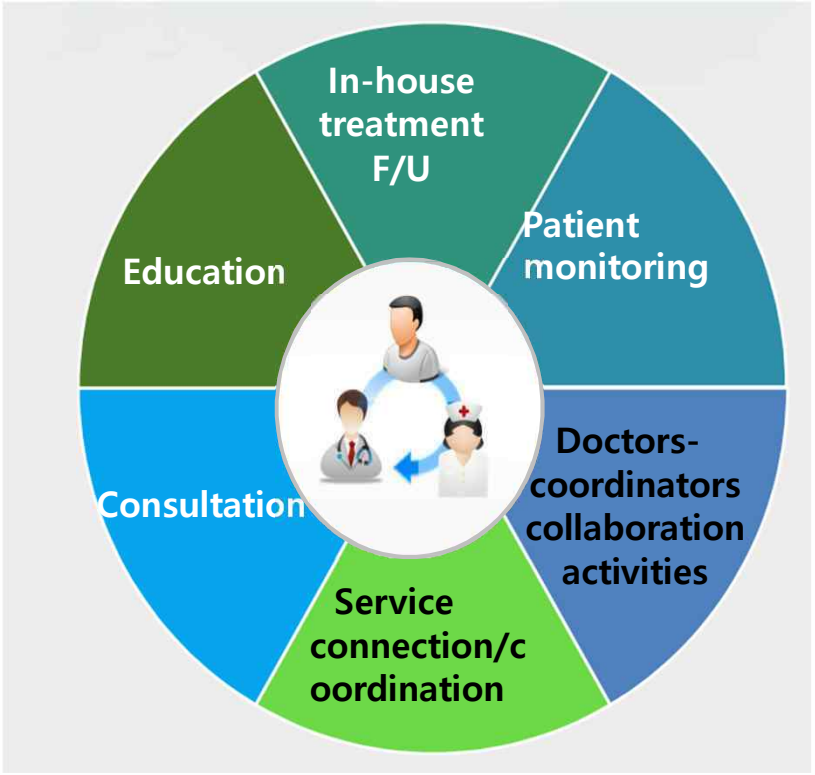
Physical Examination

Clinical Tests

Establishment of care plans for individual

Patient Care

Doctors or Care Coordinators



Check and Evaluation

Doctors

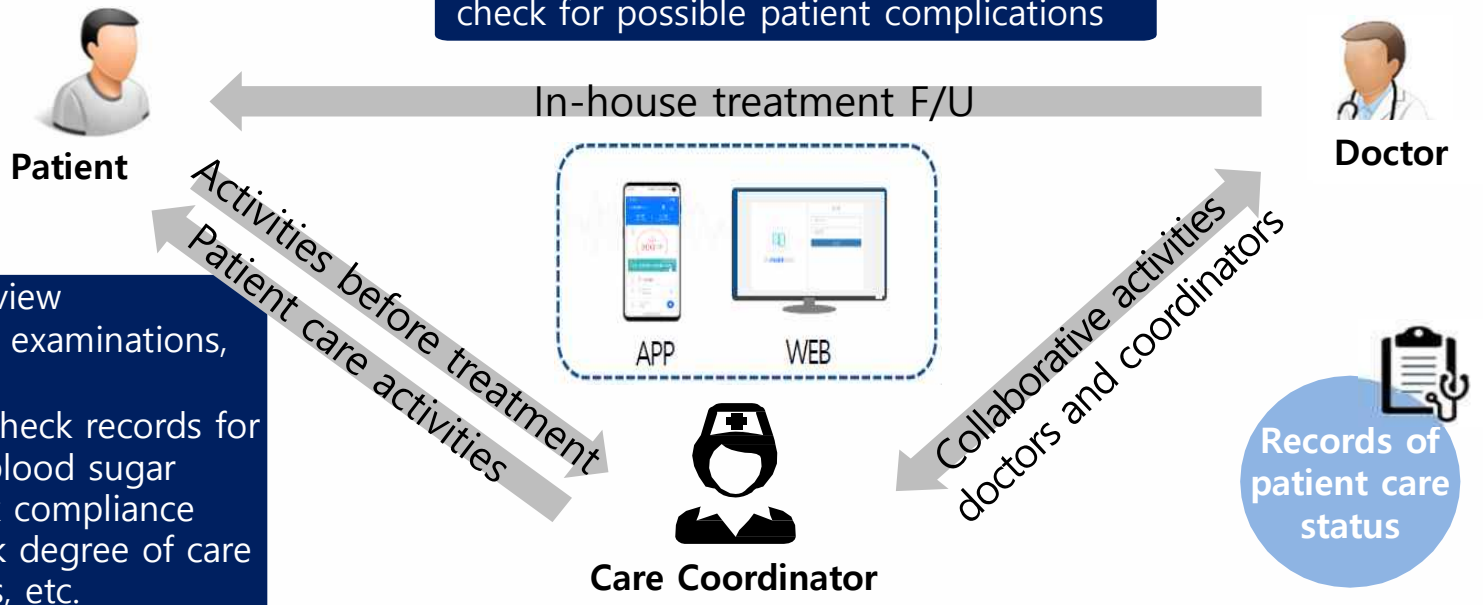
- Twice a year, patient care check-up and evaluation
- Preparation of patient care records

Yearly provision of service

3 Care Coordinator Model

Qualifications of Care Coordinators **Nurses & Nutritionists**

- **(New)** Care plan establishment
- **(F/U)** Check details patient care plans, check for possible patient complications



- **(New patients)** Interview examination, physical examinations, lifestyle survey, etc.
- **(Enrolled patients)** Check records for blood pressure and blood sugar levels at home, check compliance with medicines, check degree of care plan implementations, etc.

Patient care activities

- Blood sugar/pressure monitoring
- Medicine compliance monitoring
- Check lifestyle execution
- Guide for visit schedule (recall)
- Complications check-up
- Education
- Consultation
- Resource Linkage

4 Fee Schedule & Patient Incentives

- Annual fees applied per patient: about 290 dollars(KRW 398,850 max.)
- Out of Pocket Payment rate: 10% or exemption

Category		Details		Amount (KRW)	Remark
Comprehensive Evaluation and Plan Management Fee	A. Comprehensive Evaluation and Plan Establishment	(1) Initial evaluation and planning		46,110	Yearly
		(2) Consistent planning		25,730	
	B. Checkup and Evaluation			25,730	twice a year
Patient Care Fees	A. Patient care fee I			29,410	Quarterly
	B. Patient care fee II			46,350	twice a year
Education/ Consultation Fee	A. Initial education /consultation fee	(1) Initial period		36,240	Yearly
		(2) Consistent (from the second cycle)		25,310	
	B. Basic education /consultation	(1) Integration	(a) Individuals	10,920	eight times a year
			(b) Groups	3,260	
		(2) Lifestyle improvement	(a) Individuals	9,350	
			(b) Groups	2,730	
	C. Intensive education /consultation	(1) Individuals		20,170	Yearly
		(2) Groups		5,990	

5 Patient Incentives

• Free Health Check-up Vouchers

- **(Subject)** Provision of customized health check-up vouchers for patients participating in the pilot project
- **(Details)** The inspection of relevant test items for NCDs at clinics participating in the project (1time/year)
- Health check-up items for each disease

Common	Hypertension	Diabetes
Two sessions of four types of lipid tests, Potassium (K), Albuminuria, Urinalysis, e-GFR	Electrocardiogram, sodium	Glycated hemoglobin

❖ Conduct all tests for complicated patients (with both hypertension and diabetes)

6 Monitoring

- Monitoring the performance of clinic, regional, and national level by using patient management system data

Monitoring Indicator

	Structure	Process	Result
Goals	Activation of participation	Improvement in quality of NCD control	Control rate of hypertension/diabetes
Evaluation Areas	• No. of participated clinics, patients • Status of patient • local steering committee	• Evaluation/planning • Education • Patient care • Interim check • Complications check-up	• Regular visit rate • Hypertension/diabetes control rate • Health goals achievement rate

- Provision of monthly monitoring data
  - Using for local steering committees meetings
  - (local doctors' association, public health centers, NHIS)

7 Registration Status

- 3,591 clinics from 109 communities have participated (with 3,550 doctors and 132 care coordinators)
- Over 66 million patients registered

(As of 31 Mar. 2024, Unit: Places, Persons, Cases)

Selected Clinics	Clinics with Registered Patients	Participants			Registered Patients and Services			Examination Vouchers & Patients
		Doctors	Nurses	Nutrition-ists	Number of patients	Care Plans	Education (Sessions)	
3,591	2,609	3,550	124	8	**665,714**	637,756	6,289,048	356,673

- **(1st phase)** 27 regions and 870 clinics in the project regions (27 Dec. 2018)
- **(2nd phase)** 31 regions and 937 clinics in the project regions (13 Feb. 2019)
- **(3rd phase)** 16 regions and 771 clinics in all regions (27 Mar. 2019)
- **(4th phase)** one city and 24 clinics in the community care leading region (May 2019)
- **(5th phase)** 34 regions and 1,140 clinics in all regions (8 Mar. 2021)
- **(Irregular selected)** Application of clinics in the project regions (From 1 May ~)

8 Economic Evaluation Results (1)

- (Case) Management of chronic diseases using ICT and AI technology in primary care settings
- Collaborative Projects by MOHW and four Korean hospitals

[Basic Analysis] The result of performing a cost-utility analysis over a lifetime analysis period

- For patients with diabetes or hypertension who visited primary care clinics, the ICER(Incremental Cost-Effectiveness Ratio) of implementing
- An ICT-based NCDs management system compared to the usual care group was 5,353 dollars/QALY(Quality-Adjusted Life Year)
- It is indicating that the ICT-based NCDs management system is cost-effective.

		Total cost (KRW)	Incremental cost (△ KRW)	Total effect (QALY)	Effect increment (△QALY)	ICER (KRW/QALY)
For people with hypertension and diabetes (based on the Framingham model)						
All groups (Basic analysis)	Usual care	29,555,525		11.868		
	ICT-based chronic disease management system	30,567,795	1,012,270	12.006	0.138	7,334,326
General care group	Usual care	29,555,525		11.868		
	ICT-based chronic disease management system	30,325,308	769,783	12.014	0.146	5,282,949

<source: J.H.Kang (2024), Management of chronic diseases using ICT and AI technology in primary care settings, p50>

8 Economic Evaluation Results (2)

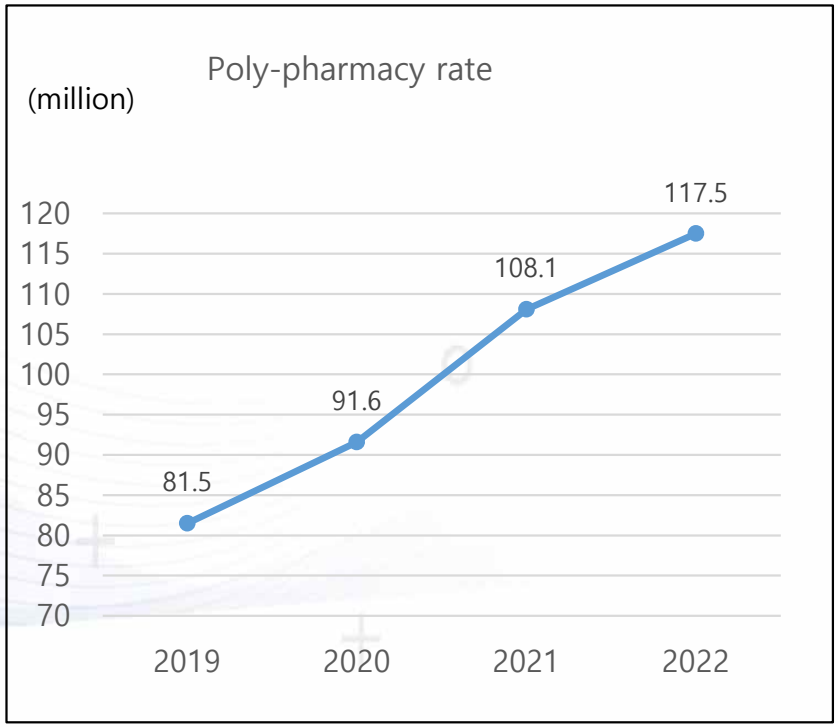
- (Medical cost effectiveness) Medical cost saving, NCDs complication prevention, loss of productivity prevention
- (Cost-benefit analysis) 3.17 times (MOHW & Yonsei Univ., 2021)

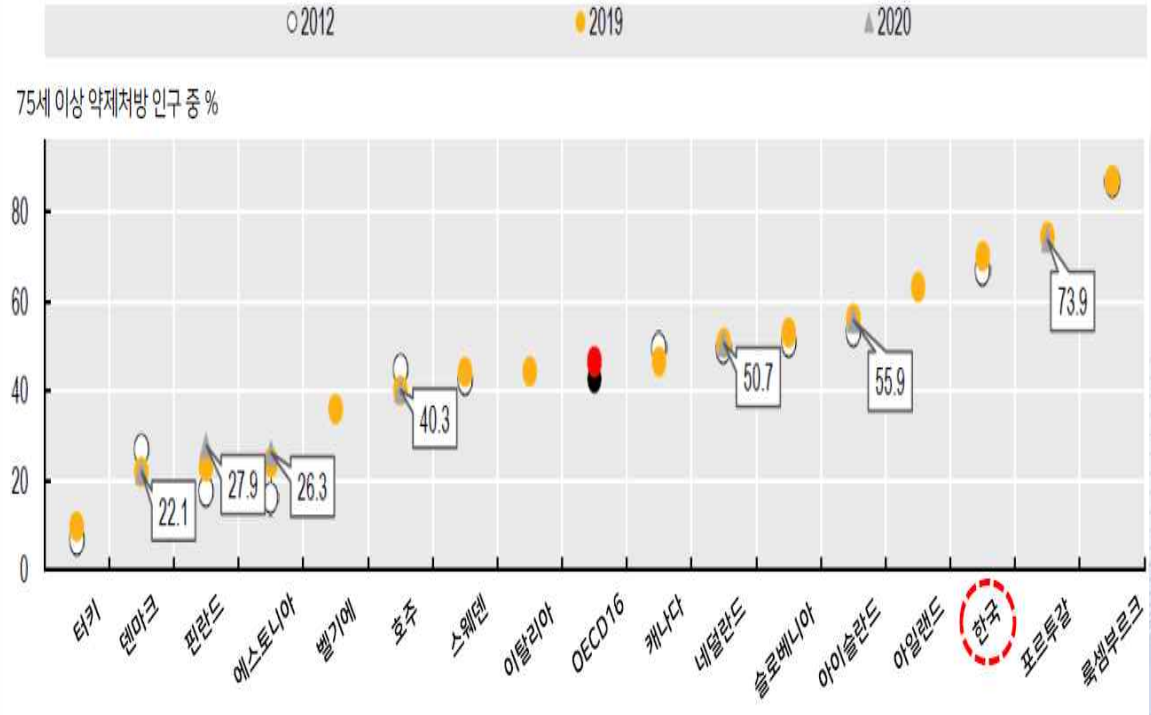



<picture source: J.H.Kang (2024), Management of chronic diseases using ICT and AI technology in primary care settings, p21>

Needs of Polypharmacy Management

- Due to population aging and NCDs patients, polypharmacy rate is increasing
- Multi-drug prescription rate is higher than OECD average rate





3 Community Based Polypharmacy Management

- Hospital Based Service Model
- Community Based Pharmacist Service Model

	1st service		2th		3th		4th
type	Home-visit or Pharmacy visit	⇨	Telephone consultation or Pharmacy visit	⇨	Telephone consultation or Pharmacy visit	⇨	Home-visit or pharmacy visit
service	Medication consultation		Monitoring, consultation		Monitoring, consultation		Evaluation
Consul-tation	Consultant Pharmacist+ NHIS staff or Assistant Personnel (2 persons per 1 team)		Consultant Pharmacist		Consultant Pharmacist		Consultant Pharmacist+ NHIS staff or Assistant Personnel (2 persons per 1 team)

Financial effect of hospital based service

- 18,125 patients are beneficiaries of the project (2018~2022)
- According to the estimate, when 100 patients receive the service, preventing 4 patients from re-hospitalization
- Annually 12,328 dollar saved (KRW 1,689 million Won)

Financial effect of community based service

- Medication problem reduced (among pilot test participants, from 2020~2021)
- Emergency room visit 23% decreased

Lifetime Periodic Health Screening

Infants
(4mth~71mth)

Screening for Infants

- *7 times until the children start school*
- *Basic medical exam, questionnaire and* diagnosis
- Developmental evaluation and consultation
- Health education for parents

Youth
(6~18 yrs)

Screening for Students

- Students in primary, middle and high school
- Basic medical exam
- Pathology exam
- Dental check

Health Screening For Out-of-School Children

- Out-of-School Children (9~24 yrs)

Adults
(over 19 yrs)

General Screening

- Basic medical exam and health questionnaire
- Breast radiography check
- Urine and blood test
- Dental check

Cancer Screening

- Stomach, liver, colorectal, breast and cervical cancer

Cancer Screening

Category	Screening Age	Screening Period
Gastric	Men and Women over the age of 40	2 years
Liver	Men and Women at high risk who are over the age of 40	1 year
Colon	Men and Women over the age of 50	1 year
Breast	Women over the age of 40	2 years
Cervical	Women over the age of 20	2 years

Cost payment

- For regular cancer checkups : co-payment 10% (except Cervical patients pay none)

Follow-up Service

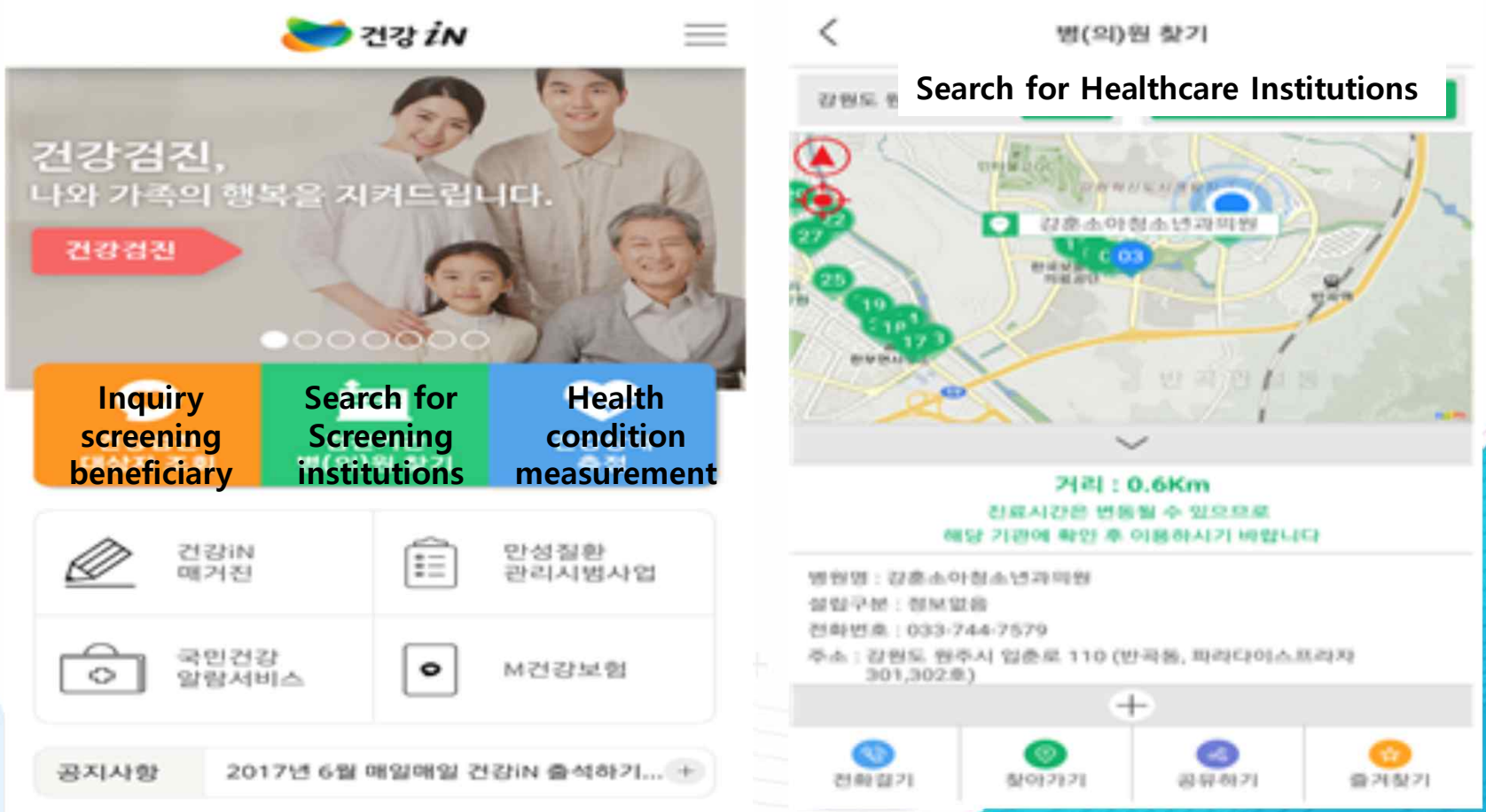
- According to the screening results, dividing them into cautionary group(1~2 risk factors) and risk group(3~5 risk factors)
- Follow-up service is provided to the risk groups that have metabolic syndrome
- Telephone counseling, health information provided by the staffs from NHIS branch offices → Medical/nutritional counseling, fitness tests, exercise guides offered by health promotion centers
- Risk factor criteria: 1) Blood pressure reading(systolic/diastolic), 2) Fasting blood sugar, 3) Abdominal circumference 4) Neutral fats 5) Cholesterol

● ‘Gungang iN’ Health portal

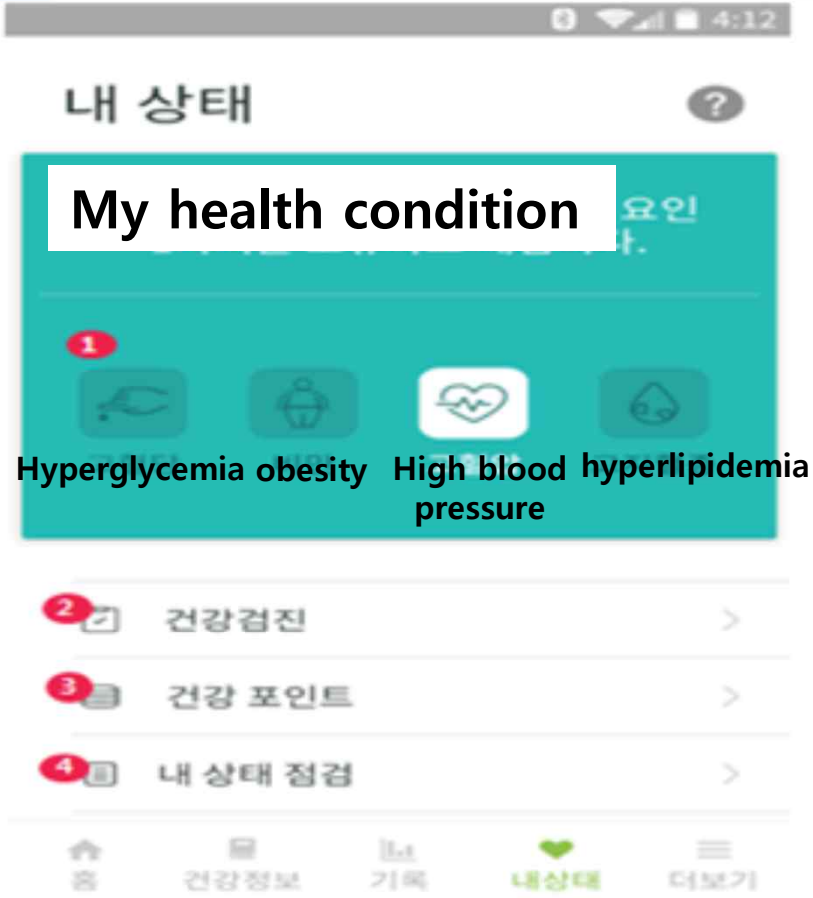
✓ **Website: http://hi.nhis.or.kr/main.do**

• Mobile ‘Health iN’ application

- Mobile ‘Health iN’ application
  - information on health screening results, general health questionnaires, doctor’s consultation and medication data, etc.



• Smart Screening Follow-up System



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Thank you!