



1st INSPIRE Health Forum

IT based NCDs Management Systems for the Elderly in NHIS



WHO Collaborating Centre for
Health Insurance Governance and Services



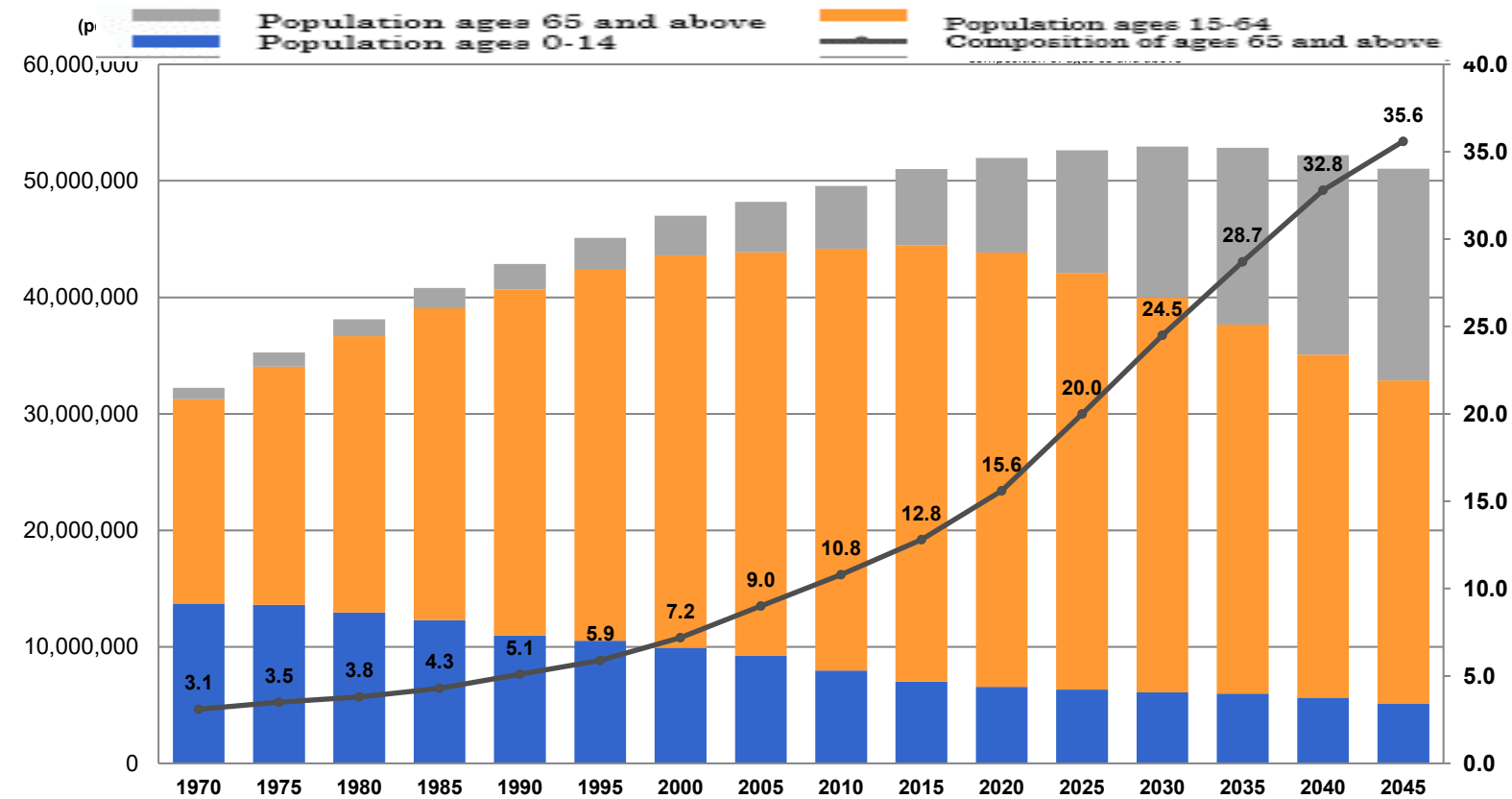
Dr. Yanghee Kim
National Health Insurance Service
Republic of Korea

1. Backgrounds

1 Implications of Rapid Aging : Increasing Diseases Burdens Due to Population Aging



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



Source: 2022 Statistics Korea: Population Estimates

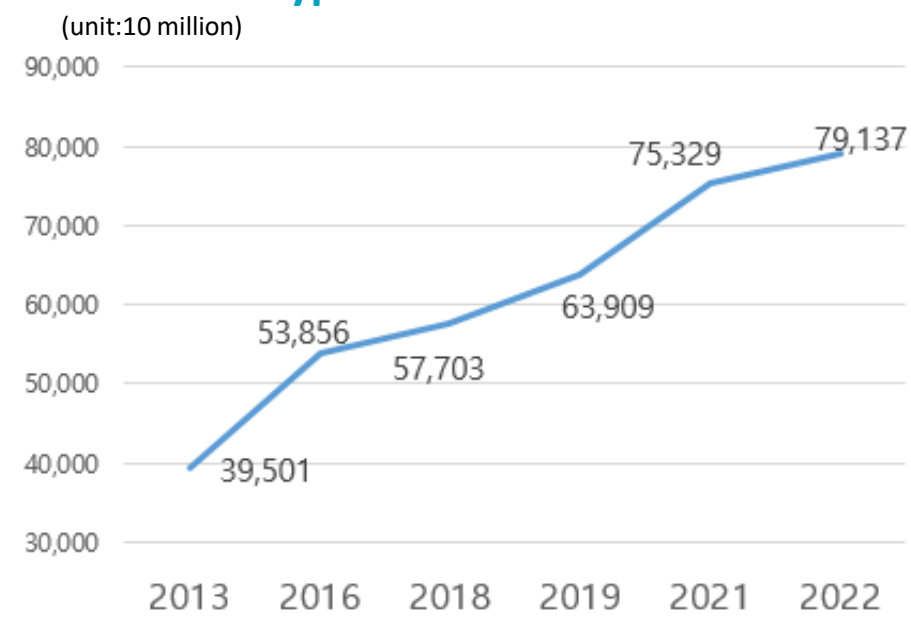
1. Backgrounds

1 Implications of Rapid Aging : Increasing Diseases Burdens Due to Population Aging

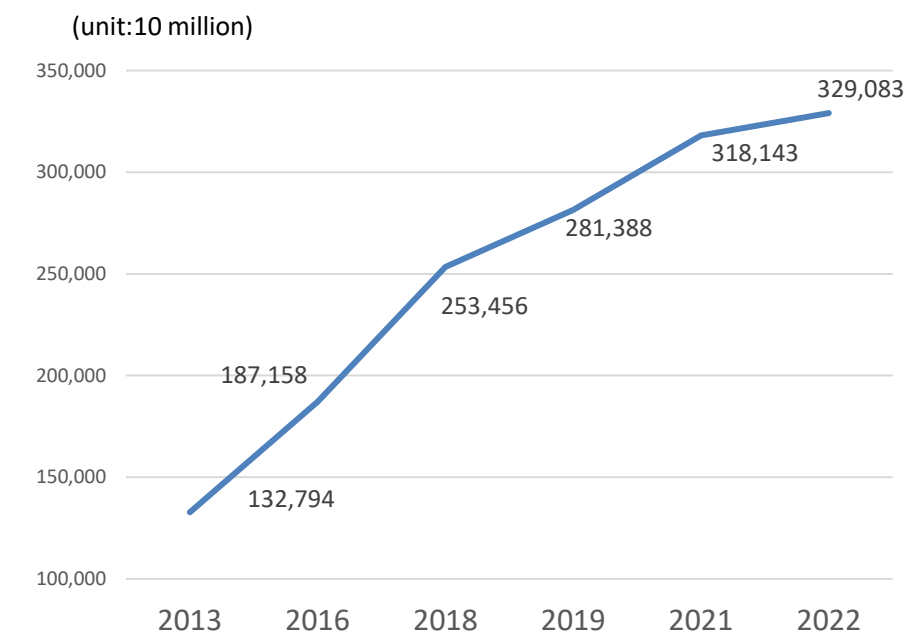


- 20.6 million patients with NCDs (40.1% of the total population)
- Treatment cost for chronic disease is almost 3 billion dollars (38% of the total treatment cost as of 2022)

Medical cost for Hypertension & Diabetes



Medical cost for chronic diseases



Source: 2022 Health Insurance Statistics Annual Report

2. Health Check-up

1

National Health Check-Up: Lifetime Periodic Health Screening & Cancer Screening

< Lifetime >

Infants (4mth~71mth)	Youth (6~18 yrs)	Adults (over 19 yrs)
<p>Screening for Infants</p> <ul style="list-style-type: none"> • 7 times until the children start school • Basic medical exam, questionnaire and diagnosis • Developmental evaluation and consultation • Health education for parents 	<p>Screening for Students</p> <ul style="list-style-type: none"> • Students in primary, middle and high school • Basic medical exam • Pathology exam • Dental check <p>Health Screening For Out-of-School Children</p> <ul style="list-style-type: none"> • Out-of-School Children (9~24 yrs) 	<p>General Screening (NCDs focused)</p> <ul style="list-style-type: none"> • Basic medical exam and health questionnaire • Breast radiography check • Urine and blood test • Dental check <p>Cancer Screening</p> <ul style="list-style-type: none"> • Stomach, liver, colorectal, breast and cervical cancer

< Cancer >

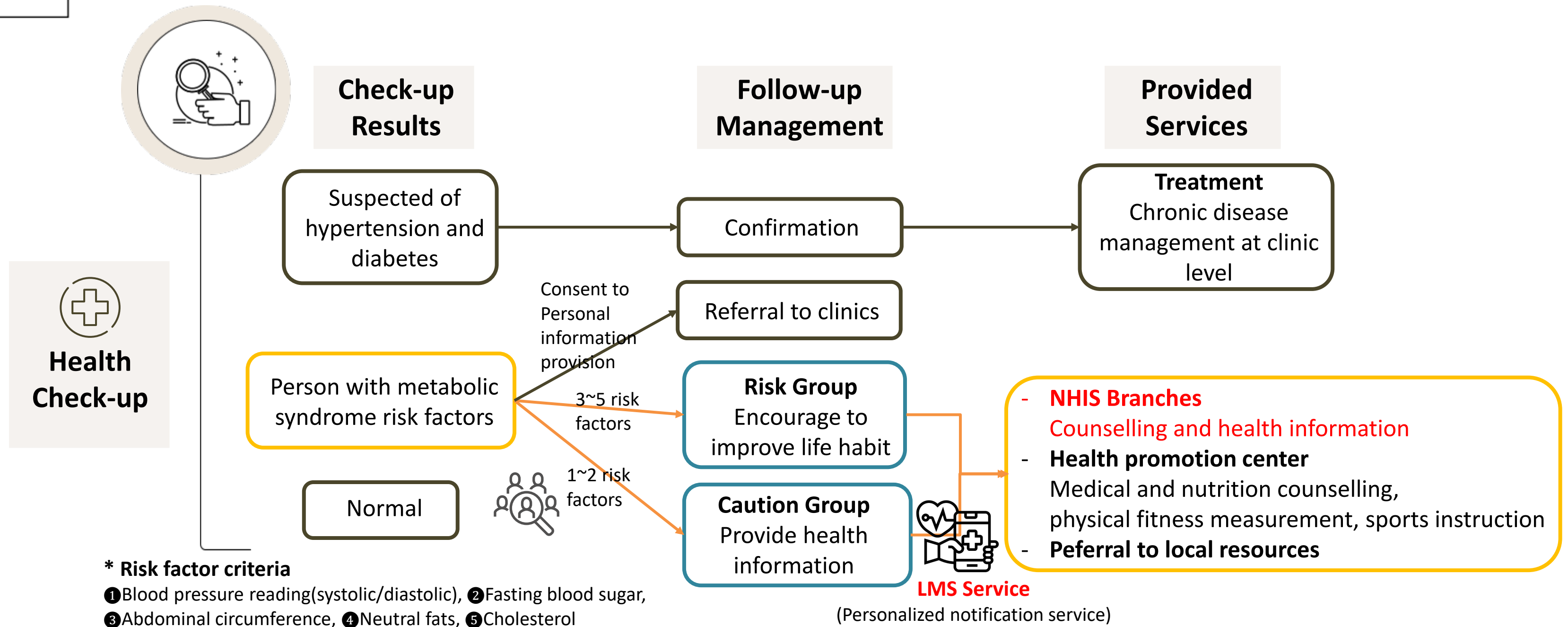
Category	Screening Age	Screening Period
Gastric	Men and Women over the age of 40	2 years
Liver	Men and Women at high risk who are over the age of 40	1 year
Colon	Men and Women over the age of 50	1 year
Breast	Women over the age of 40	2 years
Cervical	Women over the age of 20	2 years

< Cost payment >

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

2. Health Check-up

2 Follow-Up Management



2. Health Check-up

2

National Health Check-up & Post-Examination Management



※ Website: <http://www.nhis.or.kr/nhis/healthin>

The screenshot shows the h·well NHIS website interface. At the top left is the logo 'h·well 국민건강보험'. A navigation bar contains several menu items: '민원서비스', '건강모아', '정책·제도', '정보공개', '국민소통·참여', and '공단소개'. The '건강모아' menu is highlighted with a red box. Below this, a sidebar lists various health management options: '나의 건강관리', '가족 건강관리', '건강 프로그램', '건강 자료실', '건강 새소식', '검진기관/병원찾기', and '비급여 정보 포털(새창)'. The main content area is titled 'My Health Management' and features four colored buttons: 'National Health Check-Up information' (pink), 'My Medical Service Usage Information' (orange), 'Health Check-Up Status and Health Prediction' (green), and 'My Health Practices' (blue).

2. Health Check-up

2

Post-Examination Management: Mobile Application



The건강보험

※ Mobile application

h·well 국민건강보험 홍진국님

건강생활

홈 민원여기요 건강모아 장기요양

나의 건강나이 **56**세 (현재나이 : 47세) 상세보기 >

홍진국님은 2025년 건강검진 대상이 아닙니다. 확인하기 >

나의건강관리 건강프로그램

종합건강정보	진료 및 투약정보
건강검진 결과 조회	영유아 검진대상 조회
검진 문진표/평가도구 작성	영유아 건강검진결과 조회
검진기관/병(의)원 찾기	의료영상촬영현황

건강검진 결과 조회

홍진국 님의 건강검진 결과

검진 항목별 그래프 >

검진종류	검진일자	검진기관명
일반	2021-10-08	광혜병원
일반	2019-12-30	강남베스트내과의원
상예	2017-12-02	의료법인 청해의료재단 제일병원
상예	2017-06-12	의료법인 청해의료재단 제일병원
암(위)	2017-06-12	의료법인 청해의료재단 제일병원

- 안내사항**
- 건강검진 결과정보는 최근 10년간 국민건강보험공단에서 실시한 일반건강검진, 암검진 및 최근 5년간 실시한 영유아 검진의 정보를 제공합니다.
 - 최근 10년 이내 학생검진결과는 건강모아>자녀 건강(검진)>학생 건강검진결과 조회 메뉴에서 확인하실 수 있습니다. [학생 건강검진결과 조회 바로가기]
 - 검진결과 그래프는 일반건강검진의 정보를 제공합니다.
 - 본 서비스는 검진기관에서 청구완료되어야 제공 가능합니다.
 - 검진일로부터 청구완료까지 통상 30일 소요됩니다.

검진현황

생활 습관

검진 항목별 그래프

수축기 혈압

본 화면에서 보여주는 건강검진결과 판정은 보건복지부 고시 [건강검진실시기준]에서 제시하는 기준을 일괄 적용한 결과입니다. 개인별 건강상태에 따라 검진결과 해석이 달라질 수 있으니 정확한 진단을 위해서는 검진별 의사소견을 참고하시거나 주치의와 상담하시기 바라며, 본 화면에서 보여주는 정보는 참고용으로만 활용하시기 바랍니다.

수축기 혈압

혈압 기록 목록

기록목록 차트보기

2025-06-25 ~ 2025-07-02 검색

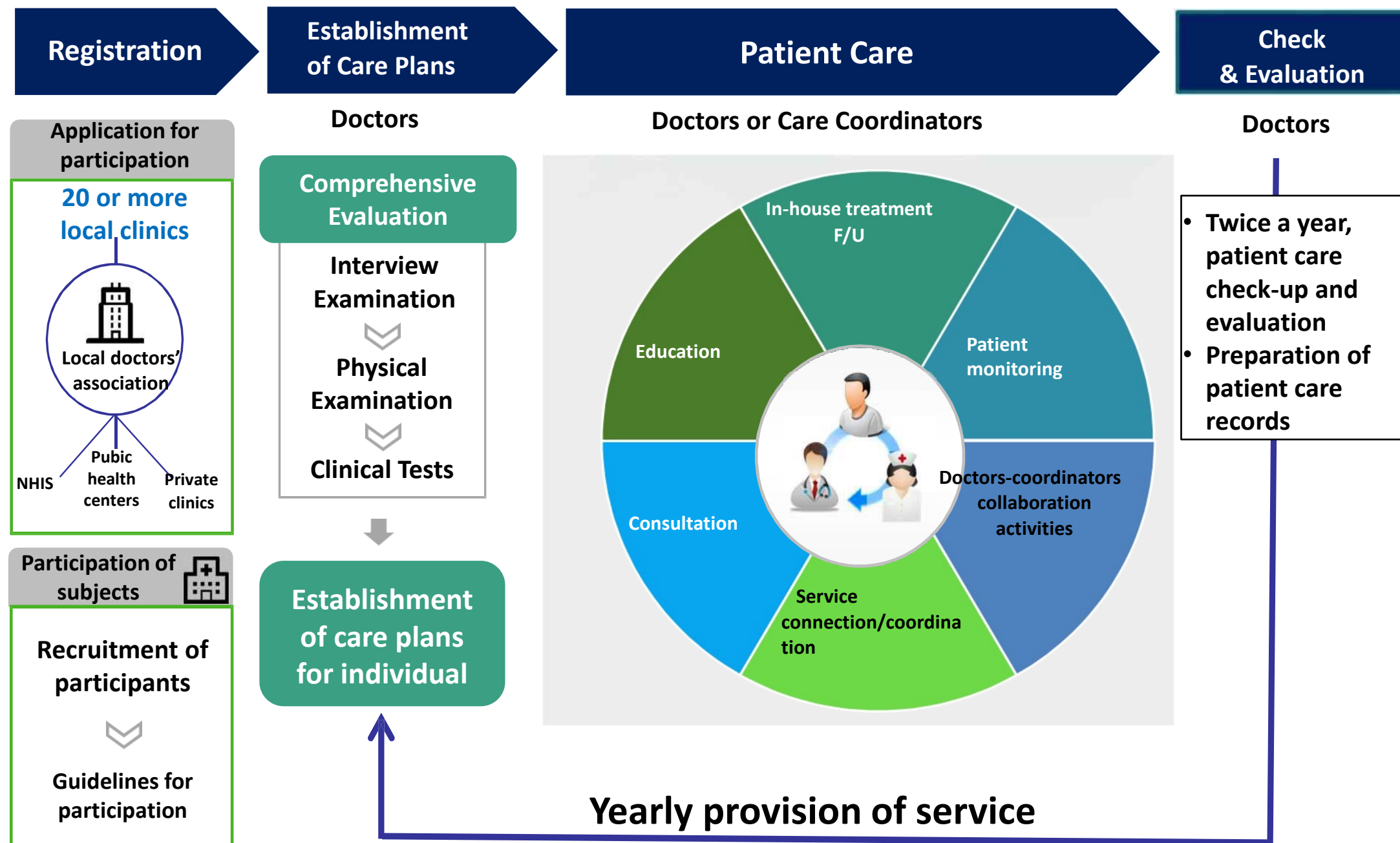
2025.07.01 화요일(수동)	오전 11:30	140/88 mmHg	86 bpm
2025.06.27 금요일(삼성헬스)	오전 10:14	128/80 mmHg	60 bpm
2025.06.26 목요일(삼성헬스)	오전 10:56	123/83 mmHg	50 bpm
2025.06.26 목요일(삼성헬스)	오전 10:52	120/80 mmHg	99 bpm
2025.06.26 목요일(삼성헬스)	오전 10:46	125/80 mmHg	99 bpm

1

3. NCDs Management System

1

Primary Care Based NCDs Management System: Process of Service Provision

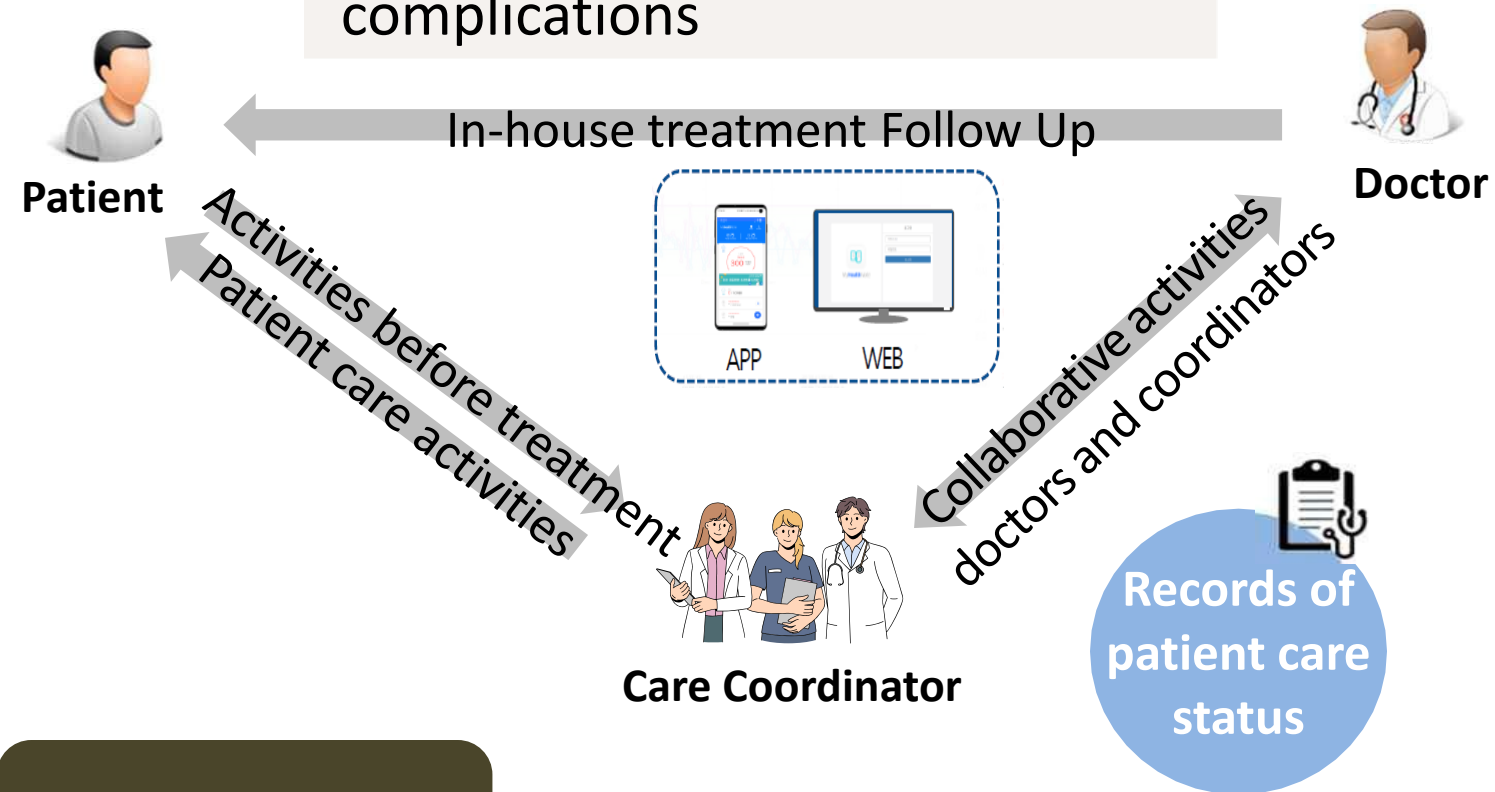


3. NCDs Management System

1 Primary Care Based NCDs Management System: Care Coordinator Model

- **(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.

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



Qualifications of Care Coordinators


Nurses & Nutritionists

※ Patient care activities

1. Blood sugar/pressure monitoring
2. Medicine adherence monitoring
3. Check lifestyle execution
4. Guide for visit schedule(recall)
5. Check-up for complications
6. Education
7. Consultation
8. Resource Linkage

2 Personalized NCDs Management System: Customized Self-Care Support Services

- Tailored health information for patients
- Individual health counseling services




**Personalized
Information
Delivery**
(Health logbook)

+



**Rental of Self-
Monitoring Devices**
(Including user training)

+



LMS Service
(Personalized
notification service)

+



**Appropriate
Medication
Management**

2 Personalized NCDs Management System: Customized Self-Care Support Services



< NCDs Management Support Services >

- ① **(Objective)** Improving self-care capabilities of patients with hypertension and diabetes
- ② **(Targets)** Applicants Patients for primary care based NCDs Management Services
- ③ Providing customized self-care support services
 - Tailored health information for patients / Individual health counseling services
- ④ IT based NCDs Management Support
 - Providing LMS service: Customized health information services based on basic health behavior survey results
 - Online Health information portal(www.nhis.or.kr)
 - Home Monitoring Device Rental Services
 - Rental of blood pressure and blood glucose monitors
 - Provision of consumables (e.g., test strips, lancets)
 - Education on proper measurement techniques



□ **All Patient-Measured
Health Data
Collected by NHID**

3. NCDs Management System

2 Personalized NCDs Management System: Customized Self-Care Support Services

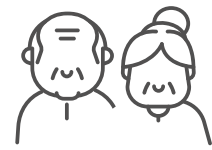
< Self-blood glucose monitor >



< Self-blood pressure monitor >



3 Polypharmacy Management: Polypharmacy Management Services



Target groups

1. Patients from long-term care facility
2. Patients with one or more NCDs, and regularly taking 10 or more medications
3. Patients taking high-risk medications

Selection

Participant Selection using Big Data



- > Sending information letters
- > Obtaining consent-> Proceeding with the intervention

Community Based Model

Home visits by Health Professionals(doctor, pharmacist, nurse), or Pharmacy visits by the patients

LTC Facility Model

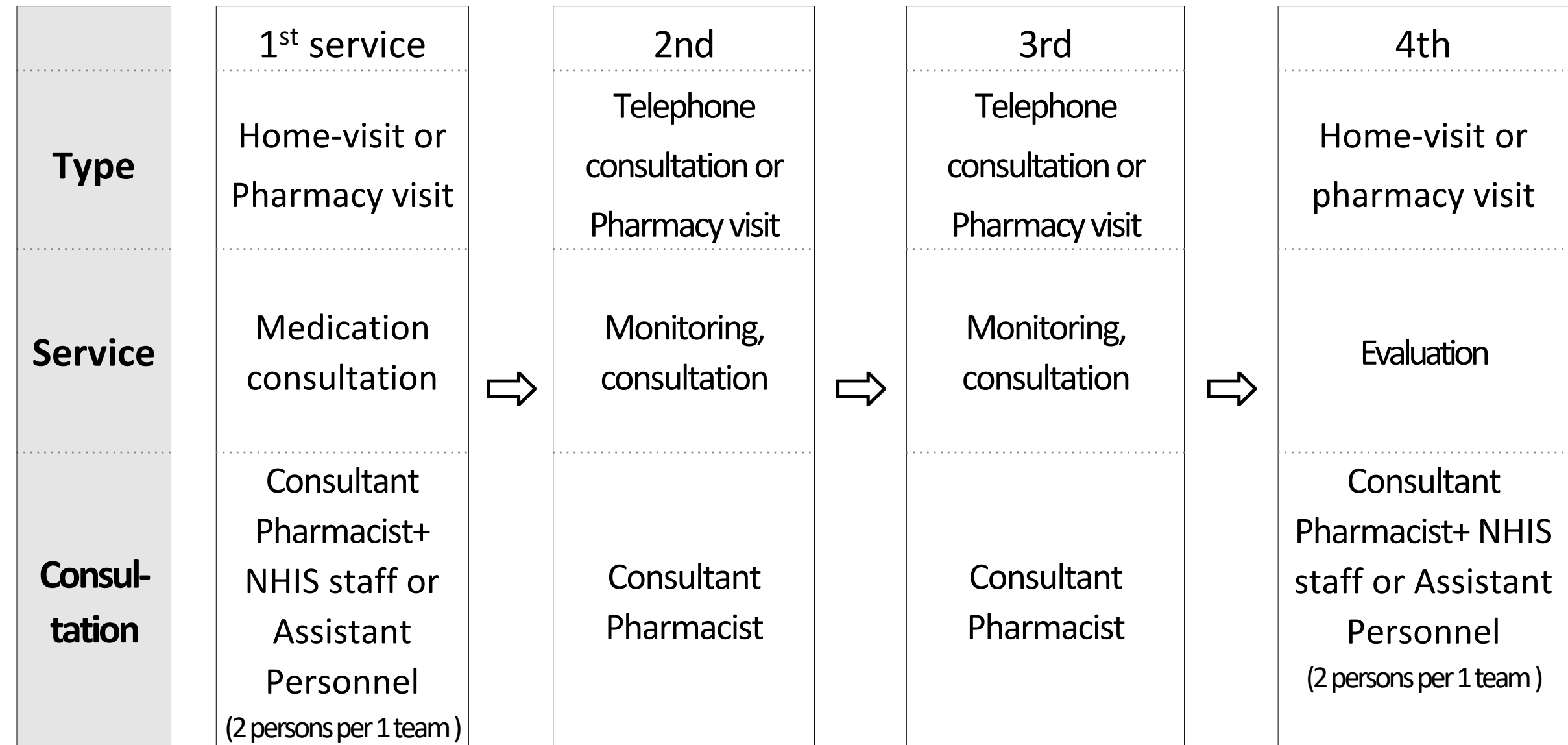
Comprehensive medication review & adjustment through interdisciplinary collaboration by doctor-pharmacist-nurses

Participants

132 communities, 60 hospital, 3796 patients as of 2024

3. NCDs Management System

3 Polypharmacy Management: Community Based Polypharmacy Management



4 Summary

1. Increase of NCDs Patients due to Population Aging

- Higher prevalence and risk among the elderly
- Leads to rising social and economic burden

2. NCDs Management Systems by NHIS

- National Health Check-up and Follow up Service
- Primary Care based NCDs Management Service
- NCDs Management Support Services
- Polypharmacy Management Service

3. All NCDs related health data is integrated into NHID



4. Customized Health Management Enabled by NHIS Big Data

- NHIS big data allows for personalized health support services
- Data-driven approach enhances efficiency and targeting





1st INSPIRE Health Forum

THANK YOU!



WHO Collaborating Centre for
Health Insurance Governance and Services



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National Health Insurance Service

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