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KIDNEY HEALTH EDUCATION FOR GLOBAL IMPACT

ISN NORTH AND EAST ASIA REGIONAL BOARD WEBINAR

Rethinking CKD Screening: Global Perspectives

Who, When, and How to Screen for CKD?

Tuesday 13 October • 9:00 CEST

CKD Screening in Japan

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Structure, evidence, and remaining gaps



Japan Has a High CKD Burden

Approx. 20 million

CKD patients

20% of adults — about twice the global average [1]

Approx. 340,000

Dialysis patients

Among the highest rates worldwide [2]

Why is the burden high?

Aging: CKD prevalence rises sharply with age

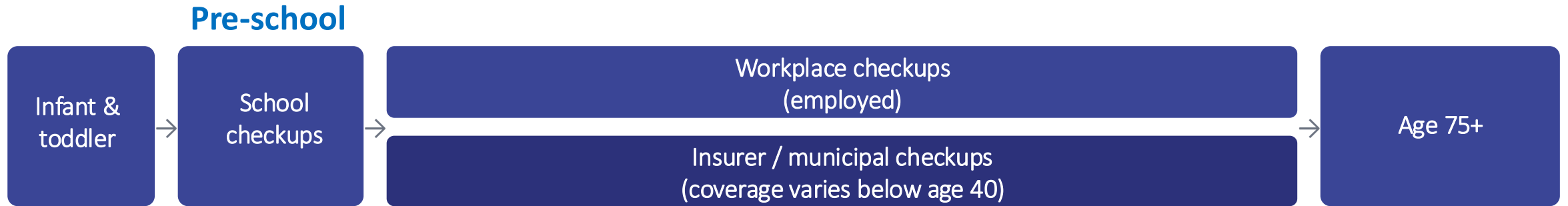
Biology: Fewer glomeruli and lower baseline GFR may contribute [3]

Detection: Extensive checkups may identify more mild CKD

- **CKD is silent — screening enables early detection**



Checkups Cover Most Stages of Life



Broad coverage

Urinalysis

Urinalysis is usually included. Gaps remain in early childhood and for some younger adults.

Less consistent

Serum Creatinine (eGFR)

Creatinine is often optional. Workplace testing becomes mandatory in April 2027.

- Different systems cover each life stage. Gaps remain before school and for some younger adults.



A Five- to Six-Year Gap before School

One-time
urinalysis



Routine urinalysis is absent at ages 0–2 and around ages 4–6.

- **Age 3: one-time dipstick urinalysis; attendance 95.7% [1]**
- **Ages 4–6: only 15% of municipalities fund an additional checkup [2]**
- **Pre-school-entry checkup: urinalysis is not routinely included**
- **Elementary school onward: yearly urinalysis resumes**

Approx. 5–6 years

Combined years without
routine urinalysis

15%

Municipalities funding
an ages 4–6 checkup

Adult Checkups: Broad Coverage, but Not Universal



Urinalysis: once yearly

Usually included; access varies below age 40

Blood draw: age 35; yearly from 40

Creatinine optional; workplace mandate: April 2027

- Coverage after school depends on employment, insurer, and local programs.
- Employees receive yearly workplace checkups.
- Some non-employed and part-time adults below 40 lack regular access.
- National Specific Health Checkups start at age 40.



Gap 1: CKD Testing Is Not Consistent

- Creatinine testing is not standardized across programs.
- Workplace testing becomes mandatory in April 2027.
- **Municipal and insurer programs may add testing.**
- Local implementation therefore varies.

Some Insurers Add Creatinine for Everyone

Examples for National Health Insurance participants who attend

Yokohama City NHI | 100%

Creatinine is a standard added item [2]

Kitaibaraki City NHI | 100%

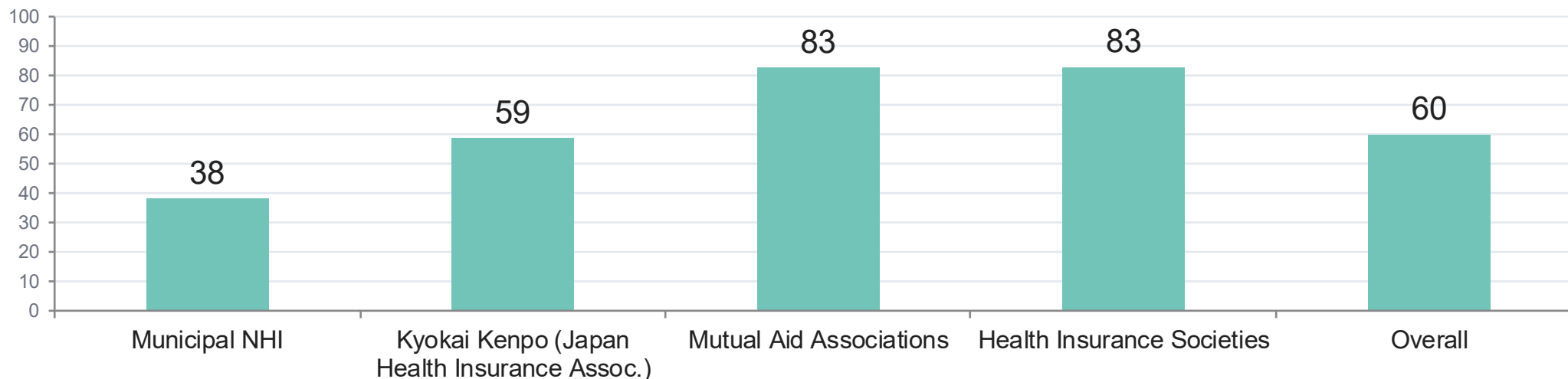
Creatinine is a standard added item [3]



Gap 2: Low Participation

- This graph shows CHECKUP PARTICIPATION, not urine-testing rates.
- FY2023: 59.9% overall; 38.2%–82.9% by insurer [1].
- **Eligibility does not guarantee attendance.**
- The gap is participation, not legal eligibility.

Specific Health Checkup Implementation Rate
(by Insurer Type, FY2023)



Ref: [1] MHLW. Specific Health Checkups, FY2023.

Screening Finds Nephritis before Symptoms

How IgA nephropathy is found [3]

70%

Found without symptoms
through routine checkups

11.5%

Found after symptoms
such as gross hematuria

- Without systematic urinalysis, more cases are found after symptoms [1,2].
- **Japan often detects disease earlier.**

- **Chronic glomerulonephritis among children starting KRT:**
- **~50% before 1980 → 13.3% in 1998 → 5.9% in 2006–2011 [4]**

Caution: screening likely helped, but better care and other changes may also have contributed.

Refs: [1] IgA Nephropathy Clinical Guidance, 2nd ed. [2] J Jpn Soc Nephrol. 2008;50:442–447. [3] Clin Exp Nephrol. 2024. [4] Hattori M, et al. Clin Exp Nephrol. 2015.



Several Lines of Evidence Support Screening

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Glomerulonephritis-related kidney failure
Japan: about one-quarter of the US rate

Economic model of school urinalysis

6.03 → 3.17

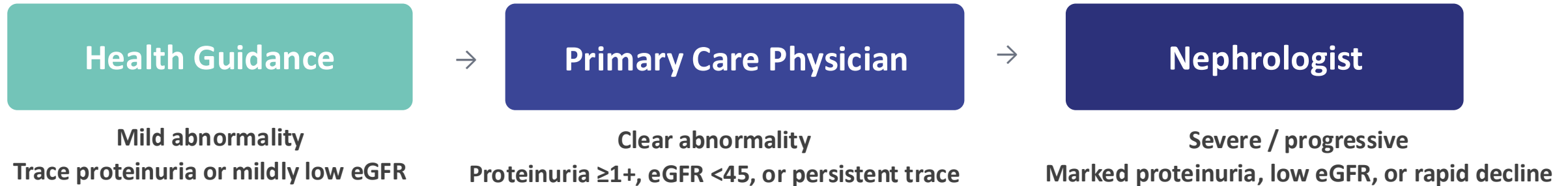
IgA nephropathy-related ESKD per 100,000
without screening → with screening
Also concluded to be cost-effective [1]

Caution: the Hattori report is incompletely documented. The economic study is a simulation.

- Early diagnosis, falling pediatric dialysis, international comparison, and economic modeling all point in the same direction.



Abnormal Results Trigger a Three-Tier Response



Health guidance is delivered by physicians, public health nurses, and dietitians.

Lower risk

One interview and follow-up evaluation

Multiple risks

Continuing support for at least 3 months

- Why refer after trace proteinuria for two years?
- A single trace result may be temporary. Persistent trace predicts mortality (adjusted HR 1.33) [1,2].

The staged approach reduces false-positive referrals without ignoring persistent abnormalities.



Three Organizations Share the Same Basic Approach

Mild abnormalities → health guidance and lifestyle change
Clear abnormalities → medical evaluation

Organization	Health Guidance (mild abnormality)	Refer to Doctor (clear abnormality)
Japanese Society of Nephrology	Trace proteinuria (single reading)	eGFR <45 / proteinuria ≥1+ / trace × 2 consecutive years
Japan Society of Ningen Dock	eGFR 45.0–59.9 / proteinuria +	eGFR ≤44.9 / proteinuria ≥2+
Ministry of Health, Labour and Welfare	eGFR <60	eGFR <45 (or proteinuria ≥1+ if creatinine not measured)

The logic is shared, but the exact thresholds still need harmonization.



Refs: [1] HGPI, 2025. [2] Japan Society of Ningen Dock, 2025. [3] MHLW, FY2024. [4] Japan Health Guidance Association.

Challenge 1: Most Abnormal Results Do Not Reach Care

Eligible for checkup

Eligible population: approx. 52.1 million

Attended checkup (59.9%)

Attendees: approx. 31.23 million (FY2023)

Sought care

(5%–10%)

Over 90% did not seek care

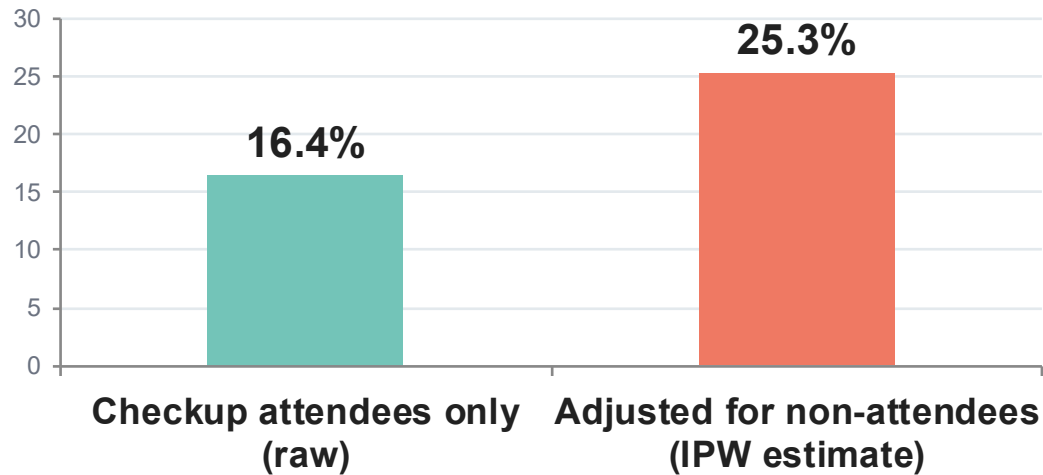
- After findings suggesting CKD, only 5%–10% seek medical care [1]
- More than 90% do not reach clinical assessment
- Common barriers: lack of time (17.5%) and not knowing where to go (9.3%) [2]

**Caution: the 5%–10% estimate is from a regional occupational cohort.
No nationwide follow-up system exists.**



Challenge 2: Reaching Non-Attendees May Improve CKD Detection

CKD Prevalence:
Observed vs Adjusted



- **Adjusted prevalence:**
age 65–74, 11.8% | age 75+, 34.6% [1]
- The updated national estimate reflects aging and improved estimation.

Why adjust for non-attendance?

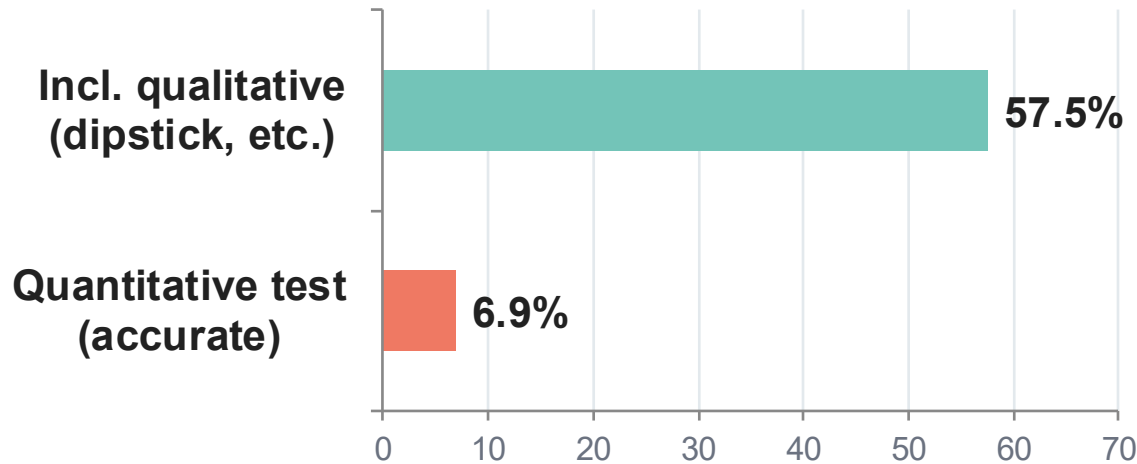
Attendees tend to be more health-conscious. Weighting by age, sex, insurance, and attendance history estimates prevalence in the whole community.

Attendance model: AUC 0.82 [1]



Challenge 3: Clinic Visits Do Not Guarantee CKD Testing

Urine Protein Testing Rate Among At-Risk CKD Patients (eGFR<90) in Clinical Care



- 788,059 patients with eGFR <90 at about 200 facilities [1]
- Only 6.9%—about 1 in 14—received quantitative testing
- Even with dipstick tests, the rate was below 60%
- The testing gap continues in routine care

A clinic visit does not guarantee the urine testing needed to detect and stage CKD. [1]



Japan Has a Strong System — but Weak Transitions

Strengths

BROAD LIFE-COURSE COVERAGE

Checkups cover most stages of life

EARLY DETECTION

~70% of IgA nephropathy is found without symptoms

FAVORABLE LONG-TERM SIGNALS

Glomerulonephritis-related dialysis has declined in young people

Systemic issues

CLOSE COVERAGE GAPS

Early childhood and some adults below 40

STANDARDIZE CREATININE TESTING

Extend beyond workplace checkups

HARMONIZE REFERRAL CRITERIA

Align JSN, Ningen Dock, and MHLW thresholds

Operational gaps

RAISE CHECKUP PARTICIPATION

Especially municipal NHI:
38.2%

CONNECT RESULTS TO CARE

Build nationwide follow-up data

IMPROVE CLINIC TESTING

Quantitative urine protein testing: 6.9%

