

# THE GLOBAL KIDNEY HEALTH ATLAS

*<Congress title>*

Date

# Overview

- Aim
- Methods
- Key Results
- Implications

# Aim of the Global Kidney Health Atlas

To understand, compare and monitor how different countries around the world detect, treat, monitor and advocate for people with kidney disease (AKI or CKD)

**Key focus on availability, accessibility, affordability and quality of ESKD care**

# Global Kidney Health Atlas survey



# Design and scope

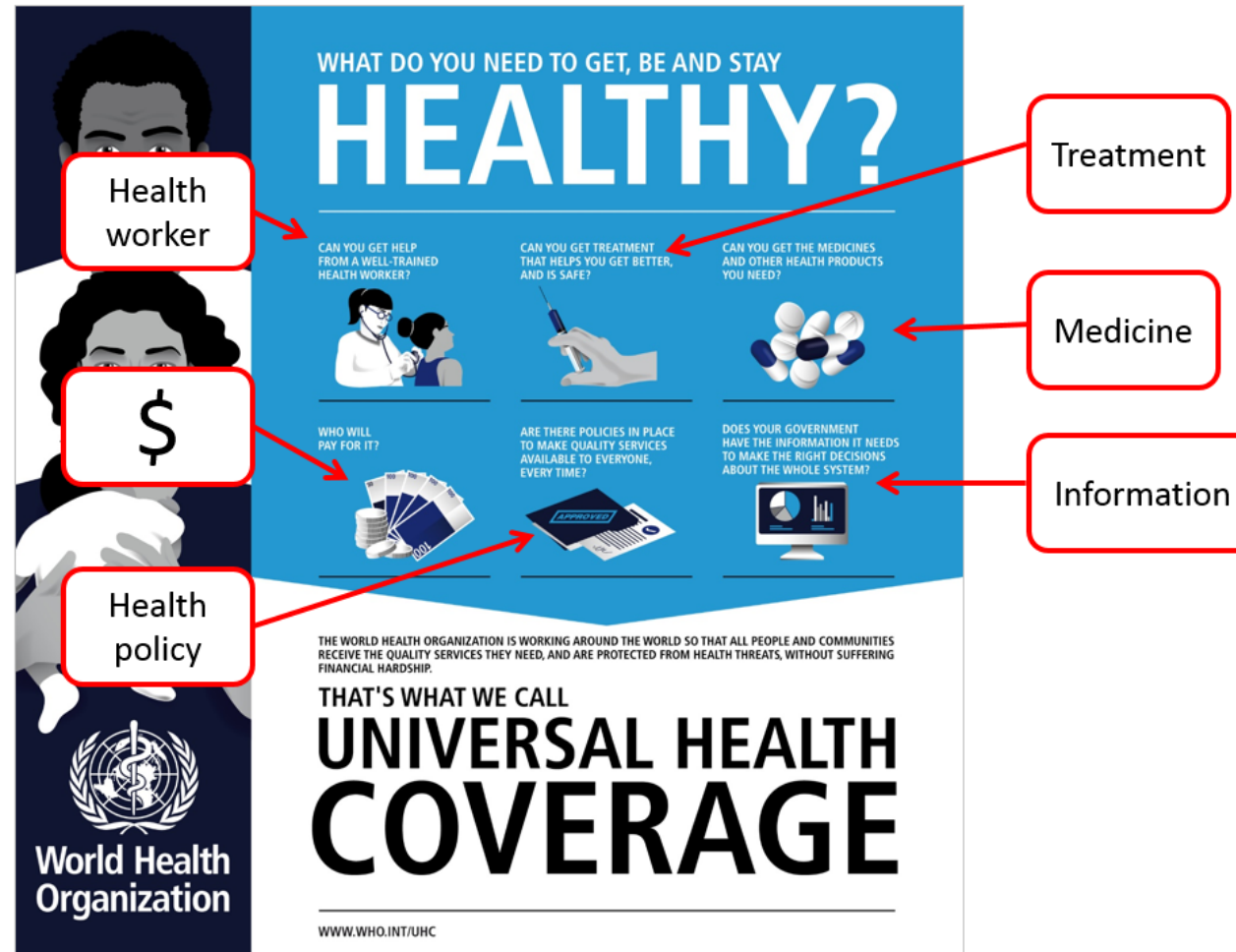
## **Desk research (across countries and regions)**

- Published and grey literature review
- Systematic review ESKD burden and outcomes
- Data extraction from major renal registries (USRDS, ERA-EDTA) and relevant national registries where available
- Scoping review of KRT cost estimates

## **Online questionnaire-based survey July – September 2018**

- 3 languages (English, French, Spanish)
- Across 182 countries
- ≥3 stakeholders per country
  - National nephrology society leadership
  - Healthcare policymakers
  - Patients / patient advocacy groups
- Discrepancies resolved by follow-up conferences with regional and country nephrology leaders

# Overall survey components



# Overall GKHA response

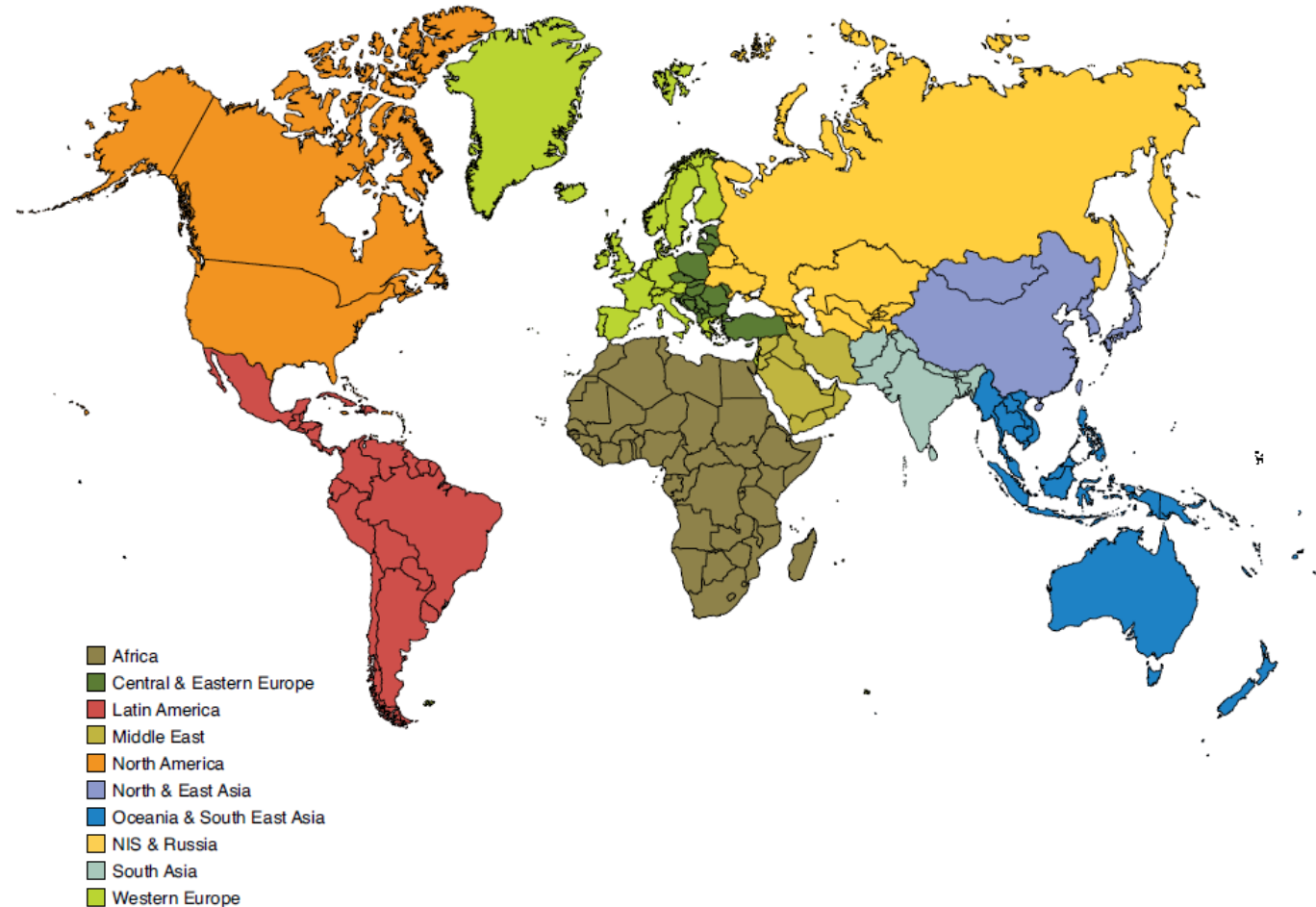
■ Participated in survey   ■ Did not participate in survey



**160 countries (88%)**  
**99% world's population**  
**317 individuals (69%) response**  
**3 respondents/country (IQR 2-4)**

113 countries participated  
in both GKHA surveys

# Results presented by ISN regions



# ISN Region: North & East Asia



# Demographics

| Country                   | World bank ranking  | Area (sq km) | Total population (2018) | GDP (PPP) (\$ billion) | Total health expenditures (% of GDP) |
|---------------------------|---------------------|--------------|-------------------------|------------------------|--------------------------------------|
| China                     | Upper middle income | 9,596,960    | 1,384,688,986           | 23210                  | 5.0                                  |
| Hong Kong SAR, China      | High income         | 1,108        | 7,213,338               | 455.9                  | -                                    |
| Japan                     | High income         | 377,915      | 126,168,156             | 5443                   | 10.9                                 |
| Korea, Dem. People's Rep. | Low income          | 120,538      | 25,381,085              | 40                     | -                                    |
| Korea, Rep.               | High income         | 99,720       | 51,418,097              | 2035                   | 7.4                                  |
| Macao SAR, China          | High income         | 28.2         | 606,340                 | 71.82                  | -                                    |
| Mongolia                  | Lower middle income | 1,564,116    | 3,103,428               | 39.73                  | 3.9                                  |
| Taiwan, China             | High income         | 35,980       | 23,545,963              | 1189                   | -                                    |

'-': data not reported/unavailable



# CKD and its risk factors burden

| Country                      | CKD Prevalence<br>% (95% CI) | Death attributed<br>to CKD<br>% (95% CI) | DALYS attributed<br>to CKD<br>% (95% CI) | Obesity<br>% (95% CI) | Increased BP<br>% (95% CI) | Smoking<br>% (95% CI) |
|------------------------------|------------------------------|--|--|-----------------------|----------------------------|-----------------------|
| China                        | 9.76 (8.98 - 10.6)           | 1.68 (1.54 - 1.72)                       | 1.32 (1.21 - 1.41)                       | 6.6 (5.1 - 8.4)       | 19.2 (14.9 - 24.0)         | 22.0 (21.6 - 22.4)    |
| Hong Kong SAR,<br>China      | -                            | -  | -  | -                     | -                          | -                     |
| Japan                        | 17.62 (16.43 - 19.08)        | 2.6 (2.48 - 2.79)                        | 1.92 (1.74 - 2.08)                       | 4.4 (3.3 - 5.7)       | 17.6 (14.1 - 21.5)         | 17.2 (16.8 - 17.6)    |
| Korea, Dem.<br>People's Rep. | 8.95 (8.27 - 9.68)           | 1.55 (1.37 - 1.74)                       | 1.46 (1.3 - 1.62)                        | 7.1 (3.8 - 6.2)       | 18.2 (12.7 - 24.9)         | 19.2 (17.4 - 21.1)    |
| Korea, Rep.                  | 10.85 (10.01 - 11.71)        | 2.03 (1.91 - 2.16)                       | 1.4 (1.26 - 1.53)                        | 4.9 (4.2 - 10.6)      | 11 (8.2 - 14.3)            | 22.1 (20.5 - 23.7)    |
| Macao SAR, China             | -                            | -  | -  | -                     | -                          | -                     |
| Mongolia                     | 8.68 (8.0 - 9.39)            | 1.55 (1.43 - 1.84)                       | 1.25 (1.14 - 1.5)                        | 19.6 (15.6 - 23.9)    | 29.0 (22.5 - 35.9)         | 21.7 (19.1 - 24.5)    |
| Taiwan, China                | 12.2 (11.32 - 13.12)         | 3.75 (3.57 - 3.93)                       | 2.53 (2.3 - 2.72)                        | -                     | -                          | 11.5 (9.8 - 13.4)     |

## Abbreviations:

CKD (Chronic Kidney Disease),  
DALYS (disability-adjusted life years),  
BP (blood pressure),  
CI (confidence interval)

## Data source:

GBD study database  
(<http://www.healthdata.org/gbd>),  
WHO data observatory  
(<https://www.who.int/gho/en/>)

'-': data not reported/unavailable

# Burden of ESKD

## Prevalence of treated ESKD



■ <433.0 pmp  
 ■ 433.0–759.0 pmp  
 ■ 759.1–1048.0 pmp  
 ■ >1048.0 pmp  
 ■ Data not reported

Treated ESKD: all dialysis + transplant

\* pmp (per million population)

Data source: Chi Bon Leung et al. (Kidney Int. Suppl.) 2015,  
Jain et al. (JASN) 2012, 2017/2018 USRDS Annual Data Report

‘ – ’ : data not reported/unavailable

| Country                   | Treated ESKD |            | Chronic dialysis (HD+PD) |            | Chronic HD |            | Chronic PD |            |
|---------------------------|--------------|------------|--------------------------|------------|------------|------------|------------|------------|
|                           | Incidence    | Prevalence | Incidence                | Prevalence | Incidence  | Prevalence | Incidence  | Prevalence |
| China                     | -            | -          | -                        | 88.4       | 94.4       | 76.3       | -          | 12.1       |
| Hong Kong SAR, China      | 171          | 1315       | 154.7                    | 818        | 22.1       | 165.8      | 132.6      | 531        |
| Japan                     | 296          | 2599       | -                        | 2532       | -          | 2148.4     | -          | 71.9       |
| Korea, Dem. People's Rep. | -            | -          | -                        | -          | -          | -          | -          | -          |
| Korea, Rep.               | 311          | 1816       | 250                      | 1464       | -          | 1216       | -          | 143        |
| Macao SAR, China          | -            | -          | -                        | -          | -          | -          | -          | -          |
| Mongolia                  | -            | -          | -                        | -          | -          | -          | -          | -          |
| Taiwan, China             | 493          | 3392       | -                        | 3251       | -          | 2106.8     | -          | 216        |

# Burden of ESKD (cont'd)

## Incidence of kidney transplantation



■ <5.2 pmp 
 ■ 5.2–13.5 pmp 
 ■ 13.6–37.8 pmp 
 ■ >37.8 pmp 
 ■ Data not reported

| Country                   | Kidney transplantation |                    |                             |                           |                          |
|---------------------------|------------------------|--------------------|-----------------------------|---------------------------|--------------------------|
|                           | Incidence overall      | Prevalence overall | Incidence of deceased donor | Incidence of living donor | Incidence of pre-emptive |
| China                     | 6.52                   | -                  | 5.23                        | 1.3                       | -                        |
| Hong Kong SAR, China      | -                      | 497                | -                           | -                         | -                        |
| Japan                     | 13.05                  | 67                 | 1.4                         | 11.65                     | -                        |
| Korea, Dem. People's Rep. | -                      | -                  | -                           | -                         | -                        |
| Korea, Rep.               | -                      | 352                | -                           | -                         | -                        |
| Macao SAR, China          | -                      | -                  | -                           | -                         | -                        |
| Mongolia                  | 6.67                   | -                  | 0                           | 6.67                      | -                        |
| Taiwan, China             | -                      | 141                | -                           | -                         | -                        |

\* pmp (per million population)

Data source: GODT database (<http://www.transplant-observatory.org/data-charts-and-tables/>),  
2017/2018 USRDS Annual Data Report

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# Annual cost of kidney replacement therapy components

| Country                   | Hemodialysis | Peritoneal dialysis | Kidney Transplant (First year) | Kidney Transplant (later years) | HD/PD cost ratio |
|---------------------------|--------------|---------------------|--------------------------------|---------------------------------|------------------|
| China                     | 22,617       | 8,122               | 25,356                         | -                               | 2.78             |
| Hong Kong SAR, China      | 35,074       | 15,199              | -                              | -                               | 2.31             |
| Japan                     | 52,834       | 58,103              | 43,374                         | 22,886                          | 0.91             |
| Korea, Dem. People's Rep. | -            | -                   | -                              | -                               | -                |
| Korea, Rep.               | 19,812       | 15,330              | 50,613                         | 35,765                          | 1.29             |
| Macao SAR, China          | -            | -                   | -                              | -                               | -                |
| Mongolia                  | -            | -                   | -                              | 5,392                           | -                |
| Taiwan, China             | -            | -                   | -                              | -                               | -                |

\*Cost is in \$US 2016

**Abbreviations:**

HD (hemodialysis),  
PD (peritoneal dialysis)

Data source: Fukuhara et al. (2007), Hu et al. (1998), Kwon et al. (2011), Lee et al. (2014), Li & Chow (2001), Neil et al. (2009), Shimizu et al. (2012), Tumurbaatar et al. (2012), van der Tol et al. (2019), Yu et al. (2007)

'-': data not reported/unavailable

# Survey response

- 7 of 8 countries (88%) in North & East Asia responded to the 2018 survey
- This represents 98.4% of the region's population

# Country level scorecard

| Countries                    | Availability of KRT and CKM |                             |                        |     | Funding for Medications |                        | Availability and Distribution of Registry |          |                 |     | Advocacy Group |     |           | Nephrology Workforce (PMP) |                       |
|------------------------------|-----------------------------|-----------------------------|------------------------|-----|-------------------------|------------------------|---|----------|-----------------|-----|----------------|-----|-----------|----------------------------|-----------------------|
|                              | Chronic hemodialysis        | Chronic peritoneal dialysis | Kidney transplantation | CKM | Dialysis medications    | Transplant medications | CKD                                       | Dialysis | Transplantation | AKI | CKD            | AKI | ESKD/RRT  | Nephrologists              | Nephrologist trainees |
| <b>North &amp; East Asia</b> |                             |                             |                        |     |                         |                        |   |          |                 |     |                |     |           |                            |                       |
| China                        | 2017                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 5.12                       | 0.73                  |
|                              | 2019                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 5.78                       | 1.09                  |
| Hong Kong                    | 2017                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 16.31                      | 2.04                  |
|                              | 2019                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 18.02                      | 2.08                  |
| Japan                        | 2017                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 78.79                      | 35.46                 |
|                              | 2019                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 79.26                      | 5.94                  |
| Korea, Rep.                  | 2017                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 18.32                      | 1.12                  |
|                              | 2019                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 19.45                      | 1.94                  |
| Macao                        | 2017                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           |                            |                       |
|                              | 2019                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 25.56                      | 9.07                  |
| Mongolia                     | 2017                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 15.04                      | 2.00                  |
|                              | 2019                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 9.67                       | 3.22                  |
| Taiwan                       | 2017                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 61.97                      | 5.56                  |
|                              | 2019                        |                             |                        |     |                         |                        |   |          |                 |     |                |     |           | 54.60                      | 3.91                  |
| Nephrologists density        |                             |                             |                        |     |                         |                        | <1.2 PMP                                  |          | 1.2–10.0 PMP    |     | 10.1–22.9 PMP  |     | >22.9 PMP |                            |                       |
| Nephrology trainees density  |                             |                             |                        |     |                         |                        | <0.3 PMP                                  |          | 0.3–1.4 PMP     |     | 1.5–3.7 PMP    |     | >3.7 PMP  |                            |                       |

Yes

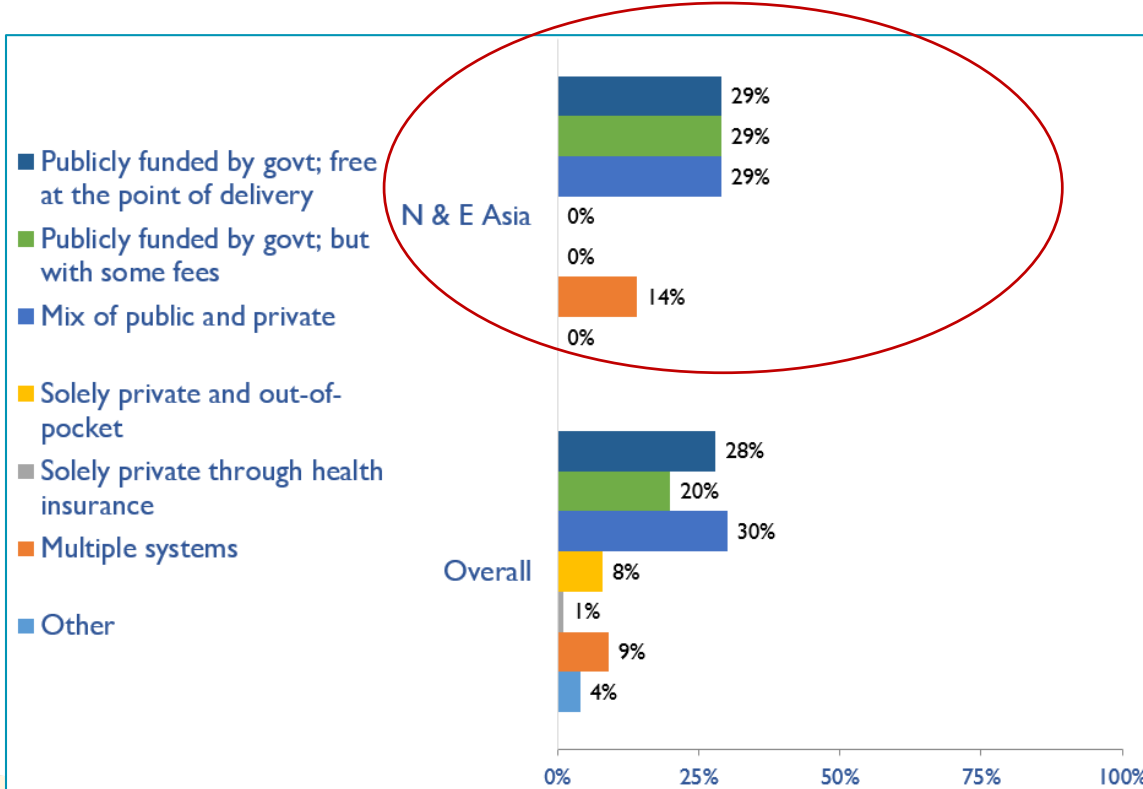
No

N/A

## Abbreviations

KRT: kidney replacement therapy  
 CKM: conservative kidney management  
 CKD: chronic kidney disease  
 AKI: acute kidney injury  
 ESKD: end stage kidney disease  
 RRT: renal replacement therapy

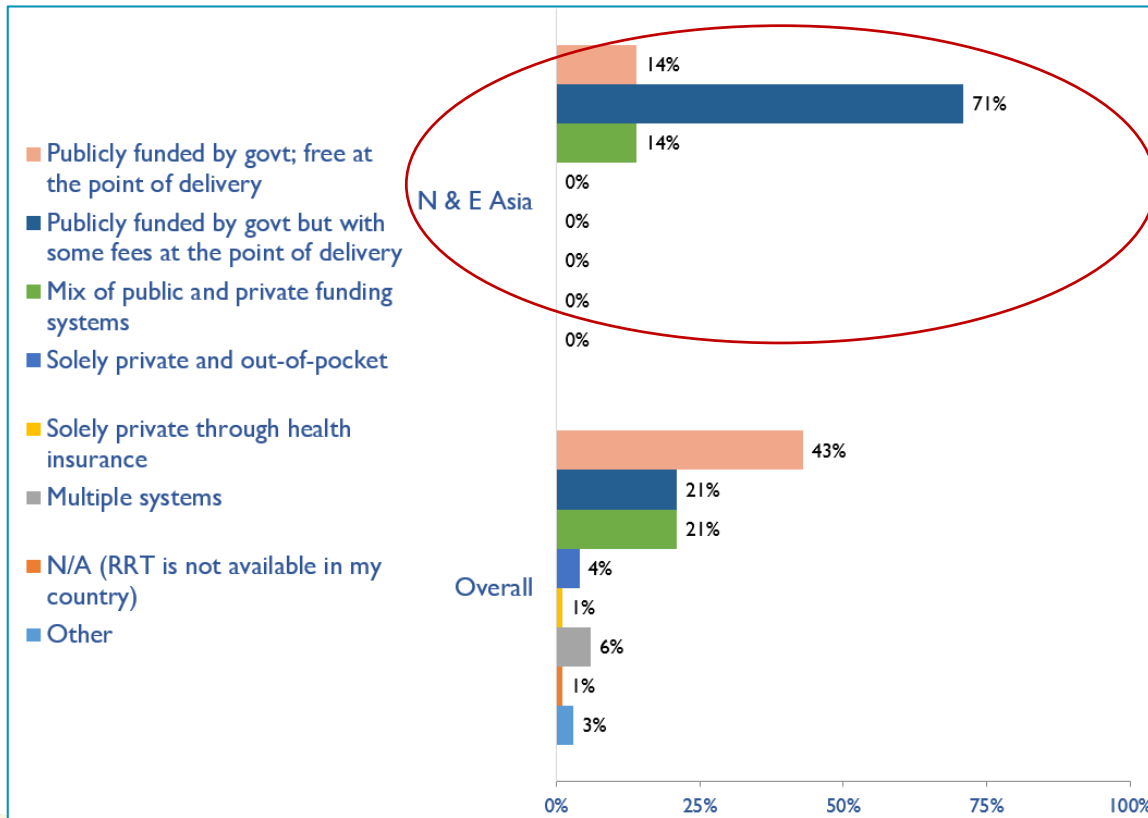
# Funding for non-dialysis CKD



| Country              | Publicly funded by govt; free at the point of delivery | Publicly funded by govt but with some fees at the point of delivery | Mix of public and private funding systems | Solely private and out-of-pocket | Solely private through health insurance | Multiple systems | Other |
|----------------------|--|---|---|----------------------------------|---|------------------|-------|
| China                |  |   | X   |                                  |   |                  |       |
| Hong Kong SAR, China |  |   | X   |                                  |   |                  |       |
| Japan                |  | X   |   |                                  |   |                  |       |
| Korea, Rep.          |  | X   |   |                                  |   |                  |       |
| Macao SAR, China     |  |   |   |                                  |   | X                |       |
| Mongolia             | X  |   |   |                                  |   |                  |       |
| Taiwan, China        | X  |   |   |                                  |   |                  |       |

X : Yes

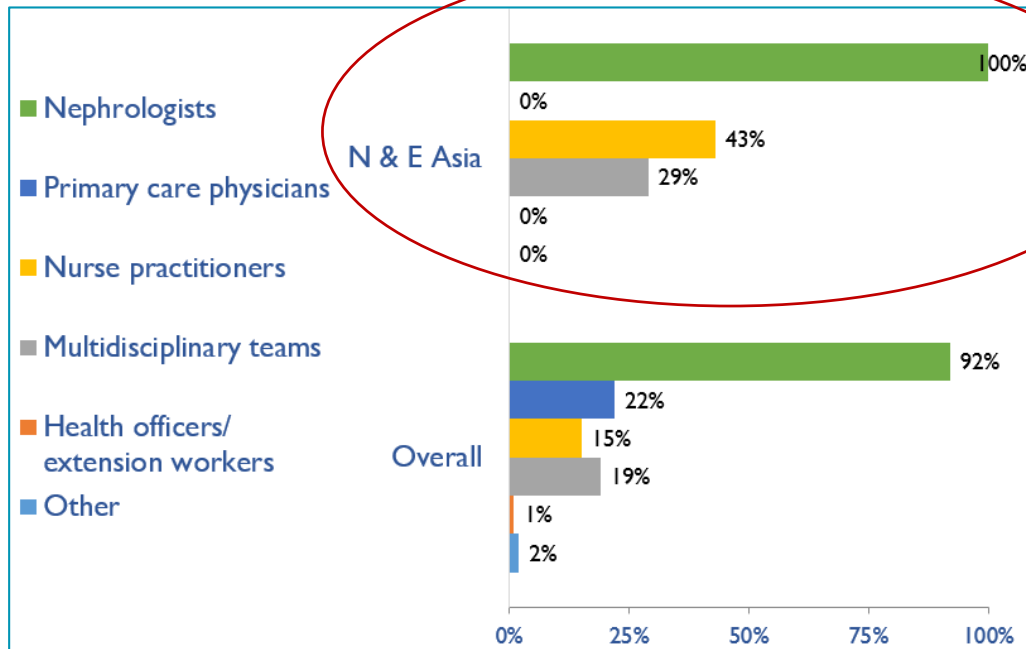
# Funding for kidney replacement therapy (KRT)



| Country              | Publicly funded by govt; free at the point of delivery | Publicly funded by govt but with some fees at the point of delivery | Mix of public and private funding systems | Solely private and out-of-pocket | Solely private through health insurance | Multiple systems | N/A (RRT is not available in my country) | Other |
|----------------------|--|---|---|----------------------------------|---|------------------|--|-------|
| China                |  | X   |   |                                  |   |                  |  |       |
| Hong Kong SAR, China |  |   | X   |                                  |   |                  |  |       |
| Japan                |  | X   |   |                                  |   |                  |  |       |
| Korea, Rep.          |  | X   |   |                                  |   |                  |  |       |
| Macao SAR, China     |  | X   |   |                                  |   |                  |  |       |
| Mongolia             | X  |   |   |                                  |   |                  |  |       |
| Taiwan, China        |  | X   |   |                                  |   |                  |  |       |

X : Yes

# Providers primarily responsible for ESKD care



| Country              | Nephrologists | Primary care physicians | Nurse practitioners or specialized nurses | Multidisciplinary teams | Health officers/extension workers | Other |
|----------------------|---------------|-------------------------|---|-------------------------|-----------------------------------|-------|
| China                | X             |                         | X   |                         |                                   |       |
| Hong Kong SAR, China | X             |                         | X   |                         |                                   |       |
| Japan                | X             |                         | X   | X                       |                                   |       |
| Korea, Rep.          | X             |                         |   |                         |                                   |       |
| Macao SAR, China     | X             |                         |   |                         |                                   |       |
| Mongolia             | X             |                         |   |                         |                                   |       |
| Taiwan, China        | X             |                         |   | X                       |                                   |       |

X : Yes

# Shortage of ESKD care providers

| Country              | Nephrologists | Transplant surgeons | Surgeons (HD access) | Surgeons (PD access) | Interventional radiologists (HD access) | Interventional radiologists (PD access) | Laboratory technicians | Dietitians | Radiologists (ultrasound) | Vascular access coordinators | Counsellors/psychologists | Transplant coordinators | Dialysis nurses | Dialysis technicians | No shortage |
|----------------------|---------------|---------------------|----------------------|----------------------|---|---|------------------------|------------|---------------------------|------------------------------|---------------------------|-------------------------|-----------------|----------------------|-------------|
| China                |               |                     |                      |                      |   |   |                        |            |                           |                              |                           |                         |                 |                      |             |
| Hong Kong SAR, China |               |                     |                      |                      |   |   |                        |            |                           |                              |                           |                         |                 |                      |             |
| Japan                |               |                     |                      |                      |   |   |                        |            |                           |                              |                           |                         |                 |                      |             |
| Korea, Rep.          |               |                     |                      |                      |   |   |                        |            |                           |                              |                           |                         |                 |                      |             |
| Macao SAR, China     |               |                     |                      |                      |   |   |                        |            |                           |                              |                           |                         |                 |                      |             |
| Mongolia             |               |                     |                      |                      |   |   |                        |            |                           |                              |                           |                         |                 |                      |             |
| Taiwan, China        |               |                     |                      |                      |   |   |                        |            |                           |                              |                           |                         |                 |                      |             |

No shortage

Shortage

# Prevalence of nephrologists and trainees

Nephrologists



Nephrology trainees



| Country              | Nephrologists<br>PMP | Nephrology<br>trainees<br>PMP |
|----------------------|----------------------|-------------------------------|
| China                | 5.78                 | 1.09                          |
| Hong Kong SAR, China | 18.02                | 2.08                          |
| Japan                | 79.26                | 5.94                          |
| Korea, Rep.          | 19.45                | 1.94                          |
| Macao SAR, China     | 25.56                | 9.07                          |
| Mongolia             | 9.67                 | 3.22                          |
| Taiwan, China        | 54.60                | 3.91                          |

'-': data not reported/unavailable

■ <1.2 pmp  
 ■ 1.2–10.0 pmp  
 ■ 10.1–22.9 pmp  
 ■ >22.9 pmp  
 ■ Data not reported

■ <0.3 pmp  
 ■ 0.3–1.4 pmp  
 ■ 1.5–3.7 pmp  
 ■ >3.7 pmp  
 ■ Data not reported

# Capacity for chronic dialysis (HD)

Chronic HD centers



- Chronic HD services are available in all countries of the region
- The North & East Asia average of HD treatment centers is 14.16 pmp

| Country              | Chronic HD Centres PMP |
|----------------------|------------------------|
| China                | 0.54                   |
| Hong Kong SAR, China | 1.80                   |
| Japan                | 34.84                  |
| Korea, Rep.          | 14.16                  |
| Macao SAR, China     | 4.95                   |
| Mongolia             | 16.11                  |
| Taiwan, China        | 35.36                  |

‘—’: data not reported/unavailable

 <1.2 pmp 1.2–4.5 pmp 4.6–9.9 pmp >9.9 pmp Data not reported

# Capacity for chronic dialysis (PD)

Chronic PD centers



- Chronic PD services are available in all countries of the region
- The North & East Asia average of PD treatment centers is 1.94 pmp

| Country              | Chronic PD Centres PMP |
|----------------------|------------------------|
| China                | 0.36                   |
| Hong Kong SAR, China | 1.94                   |
| Japan                | 3.96                   |
| Korea, Rep.          | 1.94                   |
| Macao SAR, China     | 1.65                   |
| Mongolia             | 1.61                   |
| Taiwan, China        | 5.44                   |

‘-’: data not reported/unavailable

 Chronic PD not provided   <0.4 pmp   0.4–1.3 pmp   1.4–2.5 pmp   >2.5 pmp   Data not reported

# Capacity for kidney transplantation

Kidney transplantation centers



□ Kidney transplantation not provided    □ <0.2 pmp    □ 0.2–0.4 pmp    □ 0.5–0.7 pmp    □ >0.7 pmp  
□ Data not reported

- Kidney transplantation services are available in all countries of the region
- The North & East Asia average of Kidney transplantation centers is 0.55 pmp

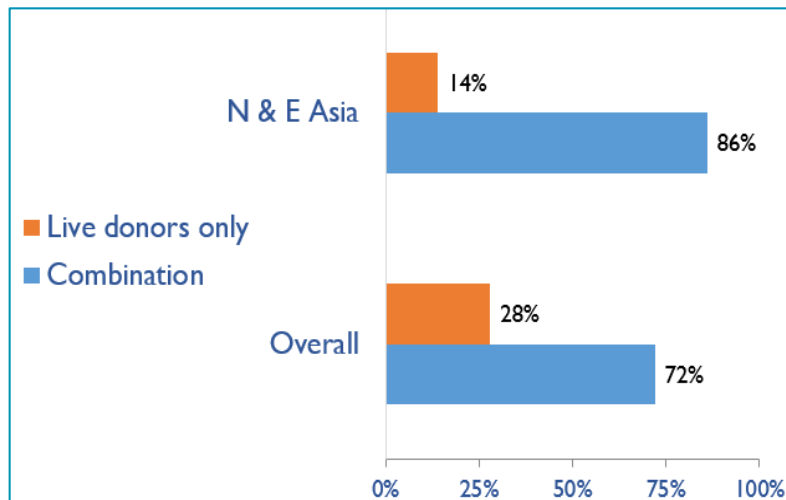
| Country              | Kidney Transplantation availability | Transplant centers PMP |
|----------------------|-------------------------------------|------------------------|
| China                | X                                   | 0.36                   |
| Hong Kong SAR, China | X                                   | 0.55                   |
| Japan                | X                                   | 1.14                   |
| Korea, Rep.          | X                                   | 1.23                   |
| Macao SAR, China     | X                                   | 1.65                   |
| Mongolia             | X                                   | 0.32                   |
| Taiwan, China        | X                                   | 0.42                   |

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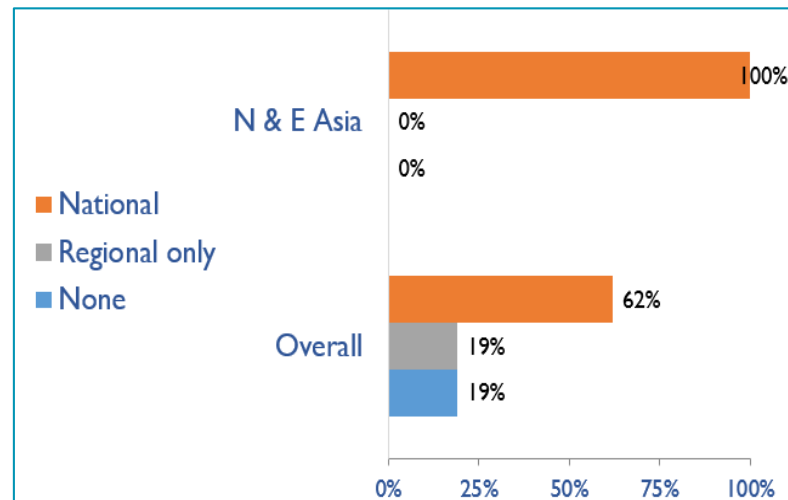
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# Capacity for kidney transplantation (cont'd)

Transplant donor type



Transplant waitlist

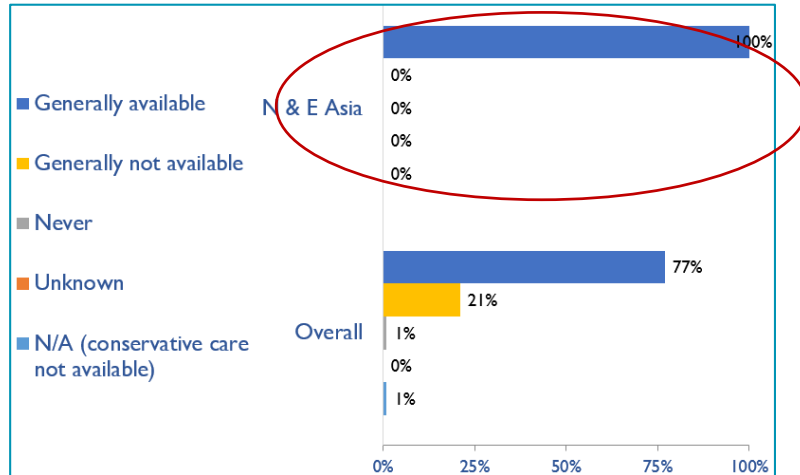


| Country              | Donor type       |             | Transplant waitlist |               |      |
|----------------------|------------------|-------------|---------------------|---------------|------|
|                      | Live donors only | Combination | National            | Regional only | None |
| China                |                  | X           | X                   |               |      |
| Hong Kong SAR, China |                  | X           | X                   |               |      |
| Japan                |                  | X           | X                   |               |      |
| Korea, Rep.          |                  | X           | X                   |               |      |
| Macao SAR, China     | X                |             | X                   |               |      |
| Mongolia             |                  | X           | X                   |               |      |
| Taiwan, China        |                  | X           | X                   |               |      |

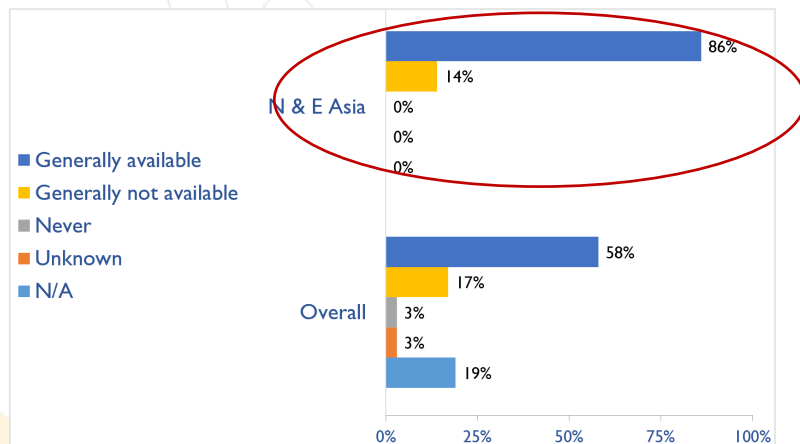
X : Yes

# Availability of services within dialysis care

## HD frequency



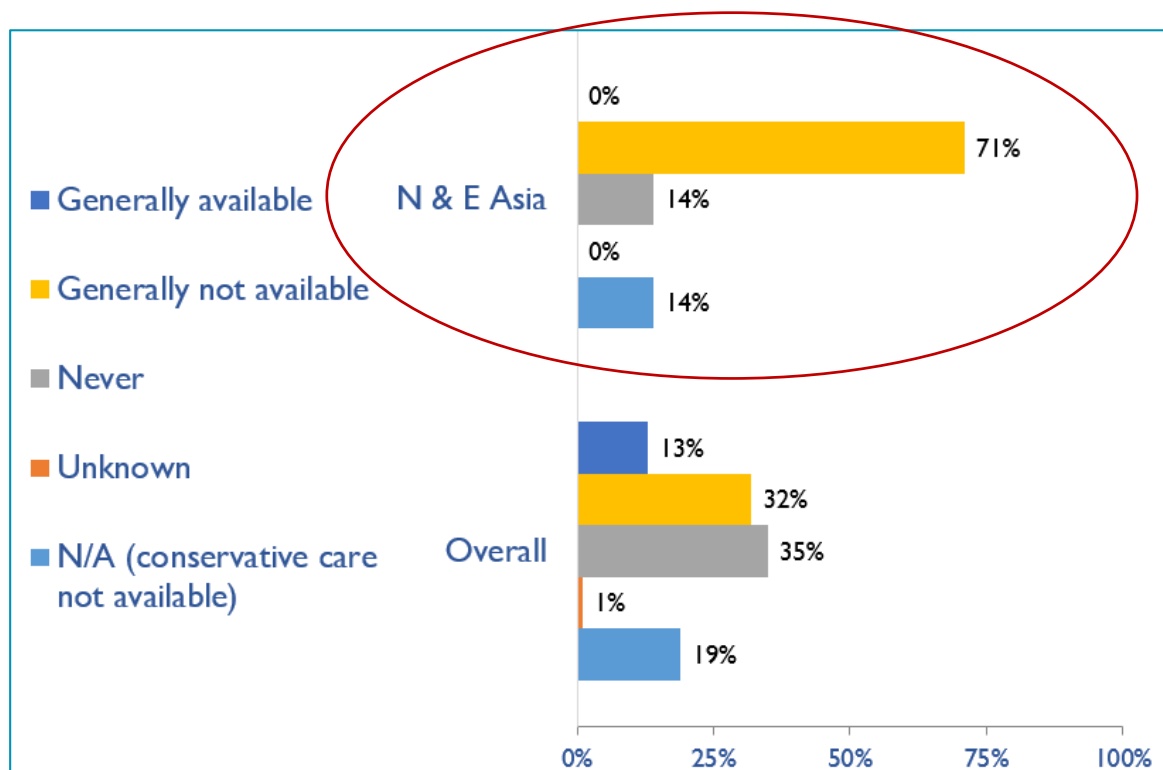
## PD frequency



| Country              | HD frequency<br>a center-based service that involves treatment<br>3x week/3-4x hours |                         |       |         |                             | PD frequency<br>ability to do adequate exchanges<br>3-4x day<br>(or equivalent cycles on automated PD) |                         |       |         |                             |
|----------------------|--|-------------------------|-------|---------|-----------------------------|--|-------------------------|-------|---------|-----------------------------|
|                      | Generally available  | Generally not available | Never | Unknown | N/A (dialysis not provided) | Generally available  | Generally not available | Never | Unknown | N/A (dialysis not provided) |
| China                | X  |                         |       |         |                             | X  |                         |       |         |                             |
| Hong Kong SAR, China | X  |                         |       |         |                             | X  |                         |       |         |                             |
| Japan                | X  |                         |       |         |                             | X  |                         |       |         |                             |
| Korea, Rep.          | X  |                         |       |         |                             | X  |                         |       |         |                             |
| Macao SAR, China     | X  |                         |       |         |                             |  | X                       |       |         |                             |
| Mongolia             | X  |                         |       |         |                             | X  |                         |       |         |                             |
| Taiwan, China        | X  |                         |       |         |                             | X  |                         |       |         |                             |

X : Yes

# Availability of home hemodialysis

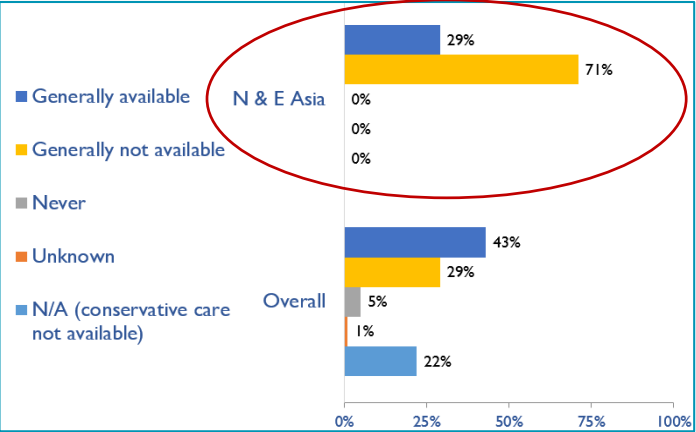


| Country              | Availability of Home hemodialysis |                         |       |         |                             |
|----------------------|-----------------------------------|-------------------------|-------|---------|-----------------------------|
|                      | Generally available               | Generally not available | Never | Unknown | N/A (dialysis not provided) |
| China                |                                   | X                       |       |         |                             |
| Hong Kong SAR, China |                                   | X                       |       |         |                             |
| Japan                |                                   | X                       |       |         |                             |
| Korea, Rep.          |                                   | X                       |       |         |                             |
| Macao SAR, China     |                                   |                         | X     |         |                             |
| Mongolia             |                                   |                         |       |         | X                           |
| Taiwan, China        |                                   | X                       |       |         |                             |

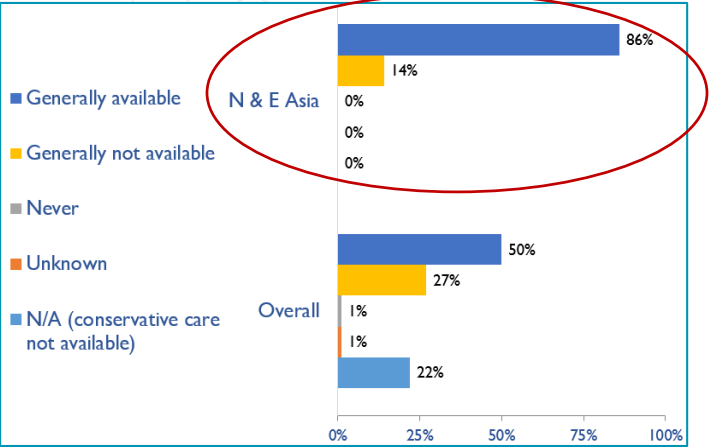
X : Yes

# Capacity for conservative kidney management (CKM)

Choice–restricted CKM



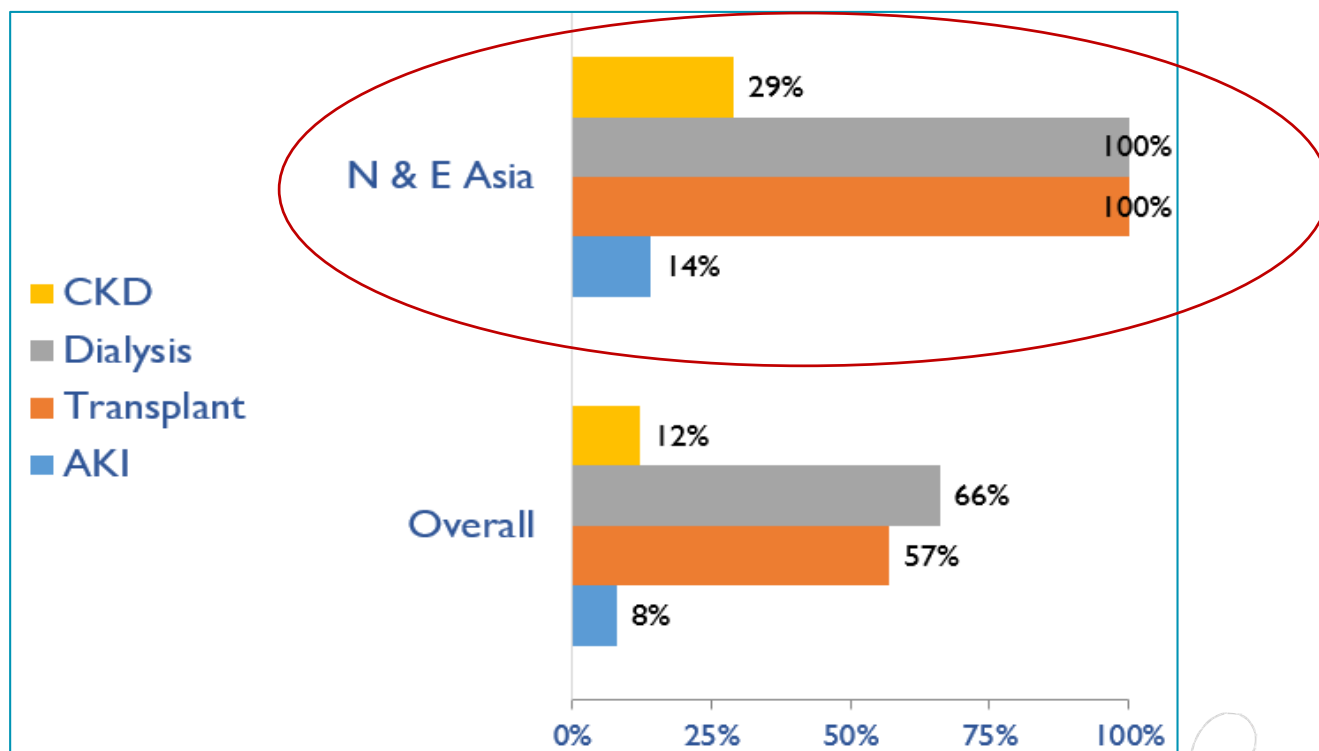
Chosen or medically advised CKM



| Country              | Established choice–restricted conservative care |                         |       |         |                                       | Established conservative care that is chosen or medically advised |                         |       |         |                                       |
|----------------------|---|-------------------------|-------|---------|---------------------------------------|---|-------------------------|-------|---------|---------------------------------------|
|                      | Generally available                             | Generally not available | Never | Unknown | N/A (conservative care not available) | Generally available   | Generally not available | Never | Unknown | N/A (conservative care not available) |
| China                | X   |                         |       |         |                                       | X   |                         |       |         |                                       |
| Hong Kong SAR, China | X   |                         |       |         |                                       | X   |                         |       |         |                                       |
| Japan                |   | X                       |       |         |                                       | X   |                         |       |         |                                       |
| Korea, Rep.          |   | X                       |       |         |                                       | X   |                         |       |         |                                       |
| Macao SAR, China     |   | X                       |       |         |                                       |   | X                       |       |         |                                       |
| Mongolia             |   | X                       |       |         |                                       | X   |                         |       |         |                                       |
| Taiwan, China        |   | X                       |       |         |                                       | X   |                         |       |         |                                       |

X : Yes

# Availability of official registry



| Country              | CKD | Dialysis | Transplant | AKI |
|----------------------|-----|----------|------------|-----|
| China                |     | X        | X          |     |
| Hong Kong SAR, China |     | X        | X          |     |
| Japan                | X   | X        | X          |     |
| Korea, Rep.          |     | X        | X          |     |
| Macao SAR, China     |     | X        | X          |     |
| Mongolia             |     | X        | X          | X   |
| Taiwan, China        | X   | X        | X          |     |

X : Yes

# Summary of 2019 GKHA findings

- KRT availability, access, and quality is high
- Conservative kidney management is available, typically chosen or medically-advised
- Government funding for medication is low but high for kidney care services
- High registry use in end-stage kidney disease
- Large variation in workforce capacity, highest in Japan, Korea, Taiwan
- Strong advocacy for chronic kidney disease in North & East Asia, limited for acute

# Implications

- Increase health care financing for ESKD prevention and management
- Address workforce shortages through multidisciplinary teams and telemedicine
- Incorporate the collection and reporting of quality indicators in ESKD care
- Expand health information systems to prevent and manage ESKD
- Promote ESKD prevention and treatment by implementing policies, strategies, and advocacy, and mitigating barriers

To access the Atlas report:

[www.theisn.org/global-atlas](http://www.theisn.org/global-atlas)