2023 ISN-GKHA (GLOBAL KIDNEY HEALTH ATLAS) REGIONAL SLIDES PRESENTATIONS

SOUTH ASIA

SLIDE 1-2:

<Opening slides>

SLIDE 3:

Overview of presentation

- Aim
- Methods
- Key results

SLIDE 4:

Aim of the ISN-GKHA:

- The incentive for the ISN-GKHA initiative arose from unavailability of consolidated reliable data on the status of kidney care either globally or major world regions, especially in low-resource countries that have a higher burden of kidney disease. Previous iterations of the ISN-GKHA have identified gaps in availability and access to care. Hence, in order to improve kidney care worldwide, there is need to document and update the status of kidney care globally to allow monitoring and implementation of necessary change.
- The vision of the ISN-GKHA is to achieve optimal and equitable kidney care worldwide by identifying gaps and processes to close gaps related to the capacity or equity of kidney care. Hence, the ISN-GKHA serves to collect data using standardized indicators that measure kidney care delivery to provide evidence-based recommendations to relevant stakeholders.
- Overall, the goal of the ISN-GKHA is to improve the understanding of inter- and intranational variability across the globe with respect to capacity for kidney care delivery. Through assessing and documenting capacity for kidney care across all world regions, we can work toward improving the quality and equity of kidney care worldwide.

- Key focus on availability, accessibility, affordability, and quality of kidney failure care.
- To achieve this mission, the strategy of the ISN-GKHA is to collect data using standardized indicators that measure kidney care delivery to provide evidence-based recommendations to relevant stakeholders.
- Previous iterations (2017 and 2019) documented capacity of kidney care and identified major gaps across countries. Both iterations allowed for the establishment of overall benchmarks, within ISN regions, and across World Bank income groups.
- The current iteration was conducted in 2022 and published in 2023 and will be repeated every 4 years to monitor progress and optimally measure and address new gaps.
- Today's discussion will focus on the 2022 results, which were published in the 2023 Atlas.

SLIDE 5:

Timelines of the ISN-GKHA

SLIDE 6:

Design and scope:

- **Desk research (across countries and regions)**
  - Published and grey literature review
  - Systematic review of kidney failure burden and outcomes
  - Data extraction from major kidney registries (USRDS, ERA-EDTA) and relevant national registries where available
  - Scoping review of KRT cost estimates
- **Online questionnaire-based survey July – September 2022**
  - 3 languages (English, French, Spanish)
  - 191 countries were contacted.
  - ≥3 stakeholders per country
    - ✓ National nephrology society leadership
    - ✓ Healthcare policymakers
    - ✓ Patients / patient advocacy groups
  - Discrepancies were resolved by follow-up conferences with regional board chairs and country nephrology leaders.

SLIDE 7:

- The survey followed a framework developed by the World Health Organization (WHO) on health systems evaluation.
- This framework was released in 2010, which was a handbook of indicators and measurement strategies to monitor the building blocks of a health system. The WHO recognized that information is needed to track how health systems respond to increased inputs and improved processes, and the impact they have on improved health indicators. Therefore, a set of core indicators of health system performance was established, along with sustainable measurement strategies, to generate the required data.
- The framework considers health systems in terms of six core components or "building blocks":
  - Service delivery.
  - Health workforce.
  - Health information systems.
  - Access to essential medicines.
  - Financing; and
  - Leadership/governance
- Through addressing each of these domains, the overall goals of the WHO strategy are to improve health (level and equity), health system responsiveness, protect social and financial risk, and improve efficiency.
- The ISN-GKHA models this framework to similarly aim to achieve these objectives, specific to kidney care.

SLIDE 8:

- Of the 191 countries we invited, 167 (92%) countries participated in the 2022 survey representing 97% of the world's population.
- Individual response was obtained from 329 individuals representing a 63% response rate.
- There was a median response of 2 respondents/country (IQR 2-3).
- 108 countries participated in the 2017, 2019, and 2023 GKHA surveys.

SLIDE 9:

- The ISN-GKHA reports overall global results for each indicator and separates the data by ISN region and income group.

- The ISN-GKHA is therefore able to examine the level of variability across income levels and geographical regions.
- Knowing if there is variation between countries, either within a common ISN region or income group, is helpful when trying to promote equity of care.

SLIDE 10:

- This talk focuses on the ISN South Asia region.

SLIDE 11 – 12:

- Responses were received from all 8 countries (100%) of the region representing 100% of the region's population.
- One (12.5%) country (Afghanistan) was LIC; 6 (75%) were LMICs (Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka); and 1 (12.5%) (Maldives) was UMIC.
- At the time of the survey, there were 1,891,669,944 people living in all the countries in the region. India had the highest population (1.39 billion) while Maldives had the lowest population (389,569). This region had the highest population of all ISN regions.
- GDP (PPP) in the region ranges from US$ 9.3 billion (Bhutan) to US$ 10.2 trillion (India).
- Total health spending as a percentage of GDP ranged from 2.5% in Bangladesh to 13.2% in Afghanistan.
- Total health spending per capita ranged from US$ 42 (Pakistan) to US$ 148 (Sri Lanka). However, government health spending per capita ranged from US$ 3 (Afghanistan) to US$ 82 (Bhutan).

SLIDE 13:

- The median CKD prevalence in the South Asia region was 6.5% (global median was 9.5%) and ranged from 4.5% in Afghanistan to 13.5% in Sri Lanka.
- Median disability adjusted life years (DALYs) attributed to CKD was 1.8%; lowest in Bangladesh (1.1%) and highest in Sri Lanka (2.9%).
- Median deaths attributable to CKD was 2.6%; lowest in Bangladesh (1.5%) and highest in Sri Lanka (4.1%).
- The prevalence of other risk factors (hypertension, obesity, and smoking) varied across countries in the South Asia region.

SLIDE 14 – 15:

- There was scant incidence and prevalence data on treated kidney failure from this region.
- Incidence and prevalence of treated kidney failure was only available from Bangladesh and was 64 per million population (pmp) and 116 pmp, respectively.
- There was also no incidence data for chronic dialysis. Overall, the median prevalence of chronic dialysis (HD and PD) was 51.3 pmp. Prevalence of chronic dialysis was lowest in Nepal (11.6 pmp) and was highest in Bangladesh (112 pmp).
- The overall median prevalence of HD in the region was 26.1 pmp and was lowest in Nepal (10.1 pmp) and highest in Bangladesh (107.9 pmp) while the overall median prevalence of PD was 1.9 pmp (lowest in Pakistan [0.2 pmp] and highest in Maldives [14.4 pmp]).
- Overall incidence of KT was 3.5 pmp and ranged from 0.58 pmp in Pakistan to 14.4 pmp in Sri Lanka. Median prevalence of KT in the region was 6.0 pmp with data available only from Bangladesh (6.0 pmp).
- The overall median incidence of deceased donor KT and living donor KT were 0.0 pmp and 3.5 pmp, respectively. Incidence of pre-emptive KT was unavailable in this region.

SLIDE 16:

- The median annual cost of in-centre HD, PD, and first year KT were US$ 4,310.2, US$ 5,531.2, and US$ 4,142.8, respectively. Annual cost of all KRT modalities were lowest in this region compared to other regions.
- Nepal had the lowest annual cost of HD (US$ 3,254) while India had the highest (US$ 18,659). India also had the highest annual cost of PD (US$ 6,507) while Nepal also had the lowest cost of PD (US$ 3,904). Pakistan had the highest annual cost of first-year KT (US$ 6,464) while Nepal had the lowest (US$ 3,969).
- HD to PD cost ratio was lower than one in Bangladesh, Nepal, and Sri Lanka highlighting the higher cost of PD than HD in these countries. Other countries (India and Pakistan) had ratios higher than unity.

SLIDE 17:

- Scorecards were created for each country to allow comparison of results with other countries in the same region as well as between the previous (2019) survey and current (2023) survey.

- Green represents availability, red represents not available and grey represents unknown or not applicable if they didn't complete a survey that year.
- Afghanistan had HD in 2019 but does not have HD available in 2023. All other countries have HD services in 2023.
- Afghanistan and Maldives do not have PD services in 2023.
- Afghanistan, Bhutan, and Maldives do not have KT services in 2023.
- Only Bhutan and Maldives use public funding to cover the cost of medications for ND-CKD, dialysis, and KT.
- Few kidney registries are available in this region.
- Advocacy groups for CKD, kidney failure and KRT are not readily available in many countries in the region.

SLIDE 18 – 19:

- Different reimbursement methods are used to cover the cost of non-dialysis CKD (ND-CKD) services. Overall, 3 (38%) countries (Afghanistan, Bhutan, and Maldives) reimbursed ND-CKD services through public funds (and free), 2 (25%) countries (India and Sri Lanka) through a mix of public and private funds, and 2 (25%) countries (Nepal and Pakistan) through multiple systems.
- Public government funding that is free for acute dialysis, chronic HD, chronic PD, and KT medications were available in 2 (25%), 3 (37.5%), 3 (37.5%), and 2 (25%) of countries, respectively. Only Bhutan funds these services through public funds and free at delivery.
- Various methods of reimbursement are used to cover the cost of KRT services in this region.

SLIDE 20:

- Nephrologists bear primary responsibility for kidney failure care in most countries (75%) in the region (global median was 87%). Primary care physicians bear responsibility for care in 2 (25%) of countries in the region (Afghanistan and Bhutan).

SLIDE 21 – 22:

- Across most domains or healthcare workers, there were varying levels of shortages reported in the region.
- Three quarters or more of countries in the region reported shortages across different cadres of healthcare workers. Such shortages were reported for nephrologists (75%), paediatric

nephrologists (88%), transplant surgeons (75%), surgeons or interventional radiologists for AVF/AVG creation (75%) and PD catheter insertion (75%), vascular access coordinators (88%), counsellors/psychologists (75%), transplant coordinators (88%), dialysis nurses (75%), kidney nurses (75%), dialysis technicians (75%), social workers (75%), palliative care physicians (75%), and kidney supportive care nurses (74%).

SLIDE 23:

- The median prevalence of nephrologists in South Asia was 1.8 pmp (global median of 11.75 pmp). Maldives had the highest density of nephrologists (10.3 pmp) while Afghanistan had the lowest (0.03 pmp).
- Overall, median prevalence of nephrology trainees was 0.27 pmp; Pakistan had the highest density of nephrology trainees (1.65 pmp) while India had the lowest (0.22 pmp). There are no nephrology trainees in Afghanistan, Bhutan, and Maldives.

SLIDE 24 – 26:

- Estimates of the number of centres providing KRT was assessed across all countries.
- Median prevalence of HD centres in the region was 2.3 pmp. India had the lowest density of HD centres (0.36 pmp) while Maldives had the highest density of HD centres (35.9 pmp).
- Median prevalence of PD centres in the region was 0.14 pmp (compared to 1.57 pmp globally). Nepal had the highest density of PD centres (0.33 pmp) while Bangladesh had the lowest (0.06 pmp).
- KT centres are available in 5 (63%) countries in the region; median prevalence of KT centres was 0.11 pmp and was highest in Nepal (0.26 pmp) and lowest in Bangladesh (0.03 pmp).

SLIDE 27:

- Three (60%) countries (Bangladesh, Nepal, and Pakistan) have only a live donor KT program while 2 (40%) countries (India and Sri Lanka) have a combined donor KT program.
- No country in the region had a national KT waitlist, 3 (60%) countries (India, Pakistan, and Sri Lanka) have a regional KT waitlist, and 2 (40%) countries (Bangladesh and Nepal) do not have a KT waitlist.

SLIDE 28:

- Capacity to provide adequate frequency of HD i.e., three times weekly for 3 – 4 hours per session, was available in 63% of countries in the region (compared to 81% globally).
- Capacity to provide adequate PD exchanges i.e., three to four exchanges per day was available in 50% of countries (compared to 61% globally).

SLIDE 29:

- Home HD was only available in India.

SLIDE 30 – 31:

- Conservative kidney management (CKM) established through shared-decision making was available in 3 (38%) countries (Bangladesh, India, and Maldives) (compared to 53% global median)
- Choice restricted CKM (where resource constraints prevent or limit access) was only available in 4 (50%) countries (compared to 39% global median).
- Choice restricted CKM (where no resource constraints prevent or limit access) was also available in 4 (50%) of countries (compared to 40% global median).

SLIDE 32 – 34:

- Multiple methods are used for funding cost of kidney care medications in this region.
- Medications for ND-CKD are funded publicly and free in 2 (25%) countries (Bhutan and Maldives); however, through a mix of public and private funds in 2 (25%) countries, and by solely private and out of pocket methods in 3 (38%) (Afghanistan, Bangladesh, and Nepal).
- Medications for dialysis patients (HD or PD) are free in only 2 (25) countries (Bhutan and Maldives), while publicly funded with some fees was used in 1 (13%) country (Nepal). Medications for dialysis patients is funded through a mix of private and public funds in 2 (25%) countries (India and Sri Lanka) and solely private in 2 (25%) countries (Afghanistan and Bangladesh).
- Similarly, KT medications are funded through public funds and free in 2 (25%) (Bhutan and Maldives), through a mix of private and public funds in 2 (25%) countries (India and Sri Lanka), and solely out of pocket means in 2 (25%) countries (Afghanistan and Nepal).

SLIDE 35:

- Availability of official kidney registries varied across countries in the region. Most countries do not have a registry.
- ND-CKD registry was only available in Sri Lanka while dialysis registry was only available in Afghanistan and Pakistan and a KT registry in India and Nepal.
- Other registry forms (AKI and CKM) are unavailable in the region.

SLIDE 36-37: SUMMARY OF FINDINGS

In summary, the 2023 ISN-GKHA highlights several important findings for the South Asia region.

KRT availability, access, and quality is high.

- All countries in the region except Afghanistan had HD services in the region. PD services were unavailable in Afghanistan and Maldives while KT services were unavailable in Afghanistan, Bhutan, and Maldives.
- Capacity to provide adequate frequency of HD i.e., three times weekly for 3 – 4 hours per session, was available in 63% of countries.
- Capacity to provide adequate PD exchanges i.e., three to four exchanges per day was available in 50% of countries.
- Home HD was only available in India.

CKM is available and predominately chosen or medically advised.

- Conservative kidney management (CKM) established through shared-decision making was available in 3 (38%) countries.
- Choice restricted CKM (where resource constraints prevent or limit access) was only available in 4 (50%) countries.
- Choice restricted CKM (where no resource constraints prevent or limit access) was also available in 4 (50%) of countries.

Government funding for kidney care services and medication is low.

- Medications for ND-CKD are funded publicly and free in 2 (25%) countries (Bhutan and Maldives).

- Medications for dialysis patients (HD or PD) are free in 2 (25%) countries (Bhutan and Maldives) and was funded with some fees in Nepal.
- Medications for KT are funded publicly and free in 2 (25%) countries (Bhutan and Maldives).
- Reimbursement that is free for acute dialysis, chronic HD, and chronic PD were available in 2 (25%), 3 (37.5%), and 3 (37.5%) countries, respectively.

Most have registries for advanced kidney disease, few for CKD or AKI

- Availability of kidney registries varied across countries in the region.
- ND-CKD registry was only available in Sri Lanka while dialysis registry was only available in Afghanistan and Pakistan and a KT registry in India and Nepal.
- Other registry forms (AKI and CKM) are unavailable in the region.

Some workforce limitations are present.

- The median prevalence of nephrologists in South Asia was 1.8 pmp (global median of 11.75 pmp). Maldives had the highest density of nephrologists (10.3 pmp) while Afghanistan had the lowest (0.03 pmp).
- Overall, median prevalence of nephrology trainees was 0.27 pmp; Pakistan had the highest density of nephrology trainees (1.65 pmp) while India had the lowest (0.22 pmp). There are no nephrology trainees in Afghanistan, Bhutan, and Maldives.
- Three quarters or more of countries in the region reported shortages across different cadres of healthcare workers. Such shortages were reported for nephrologists, paediatric nephrologists, transplant surgeons, surgeons or interventional radiologists for AVF/AVG creation and PD catheter insertion, vascular access coordinators, counsellors/psychologists, transplant coordinators, dialysis nurses, kidney nurses, dialysis technicians, social workers, palliative care physicians, and kidney supportive care nurses.

Moderate advocacy for kidney disease in the NIS and Russia.

- Advocacy groups for CKD, kidney failure and KRT remains low in the region.

SLIDE 38-39: IMPLICATIONS

There are important implications to consider. Based on these survey findings, key recommendations to drive future activities for optimizing kidney care globally are proposed:

Increase health care financing for kidney failure prevention and management.

- While resource limitations are an obvious barrier, focusing on preventing kidney failure through appropriate hypertension and diabetes management may be more cost-effective overall. Government funding to cover medication costs may allow more patients to treat earlier stage CKD, thereby preventing the need for more costly kidney failure treatment and the obvious burden this has on patients wellbeing.

Address workforce shortages through multidisciplinary teams and telemedicine

- Shortages of nephrologists, surgeons, dialysis nurses, and other key allied health professionals were noted across most countries. Similarly, simply producing more nephrologists may not be feasible or appropriate, and sharing the workload across multiple providers will not only promote the use of multidisciplinary teams but further, allow for more and better care delivery across more patients. Telemedicine may help particularly in addressing gaps in care among rural patients, and enhancing capacity through training programs such as ISN Fellowship, visiting ambassador programs, etc.

Incorporate the collection and reporting of quality indicators in kidney failure care.

- Measuring and reporting on key quality indicators is an important driver in healthcare improvement. Ensuring facilities are supported with information systems that allow for the systematic measurement and reporting of indicators is a first key step to increasing the rate of monitoring among countries. Further, understanding if or how the collection and reporting of indicators are being used to improve care is needed.

Expand health information systems to prevent and manage kidney failure.

- Similarly, good quality HIS are vital for kidney disease management within a country. A lack of data on disease prevalence, incidence, resource use, and quality of care limits government and provider ability to monitor and evaluate the care provided as well as predicts appropriate resource allocation so that sufficient facilities, medicines, and healthcare professionals are trained and available.

Promote kidney failure prevention and treatment by implementing policies, strategies, and advocacy, and mitigating barriers.

- Lastly, policies and strategies are important for consistent approaches within a country for optimal care delivery, as well as for accountability, leadership, and knowledge exchange. Advocacy may help promote the increase of government prioritization and further, public awareness of how to prevent and manage kidney disease. Without acknowledging and mitigating barriers, it would be a challenge to achieve of successes out of these recommendations. Competing priorities and needs (for example, clean water supply and basic sanitation, maternal and child health, malnutrition, etc.).