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

LATIN AMERICA

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.

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- 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 Latin America region.

SLIDE 11 – 12:

- Responses were received from 22 of the 31 countries (71%) representing 96.5% of the region's population.
- Of the 22 countries, 4 (18.2%; Bolivia, El Salvador, Haiti, and Nicaragua) are LMICs, 11 (50%; Argentina, Brazil, Colombia, Cost Rica, Dominican Republic, Ecuador, Guatemala, Mexico, Paraguay, Peru, and Venezuela) are UMICs, and 7 (31.8%; British Virgin Island, Cayman Islands, Chile, Curacao, Panama, Puerto Rico, and Uruguay) are HICs.
- At the time of the survey, there were 610,356,490 people living in all the countries that participated in the study. Brazil had the highest population (208.8 million) and British Virgin Islands had the lowest population (39,369).
- GDP (PPP) in the region ranges from US$ 0.5 billion (British Virgin Islands) to US$ 3.44 trillion (Brazil).
- Total health spending as a percentage of GDP ranged from 4.7% in Haiti to 11.3% in Cuba.
- Total health spending per capita ranged from US$ 53 (Haiti) to US$ 1,500 (Uruguay). However, government health spending per capita ranged from US$ 6 (Haiti) to US$ 1,117 (Uruguay).

SLIDE 13:

- The median CKD prevalence in Latin America was10.2% (global median was 9.5%) and ranged from 5.8% in Haiti to 16.8% in Puerto Rico.
- Median disability adjusted life years (DALYs) attributed to CKD was 3.1%; lowest in Haiti (1.5%) and highest in Nicaragua (7.1%).
- Median deaths attributable to CKD was 5.5% (highest across all regions); lowest in Haiti (2.4%) and highest in Nicaragua (11.9%).
- The prevalence of other risk factors (hypertension, obesity, and smoking) varied across countries in the region.

SLIDE 14 – 15:

- Incidence and prevalence data on treated kidney failure (dialysis and kidney transplantation) were readily available for most countries in Latin America. Overall, the median incidence and prevalence of treated kidney failure were 134.5 per million population (pmp) and 684 pmp, respectively.
- The incidence of treated kidney failure ranged from 33.0 pmp in Nicaragua to 526.5 pmp in Mexico. Prevalence of treated kidney failure ranged from 111 pmp in Nicaragua to 2,129 pmp in Puerto Rico.
- Overall, the median incidence of chronic dialysis (HD + PD) was 111 pmp and was highest in Brazil (218 pmp) and lowest in Ecuador (6 pmp).
- The overall prevalence of chronic dialysis, HD, and PD was 633 pmp, 501.5 pmp, and 59.5 pmp, respectively.
- Overall incidence of KT was 4.4 pmp and ranged from 0.1 pmp in Honduras to 27.1 pmp in Argentina. Median prevalence of KT in the region was 99.5 pmp and ranged from 3 pmp in Bolivia to 704 pmp in Mexico.
- The overall median incidence of deceased donor KT and living donor KT were 2.9 pmp and 1.6 pmp, respectively; data on pre-emptive KT is unavailable in the region.
- Incidence of deceased donor KT was highest in Uruguay (22.29 pmp) and living donor KT was highest in Argentina (4.9 pmp).

SLIDE 16:

- The median annual cost of in-centre HD, PD, and first year KT were US$ 17,240.6, US$ 15,845.9, and US$ 20,837, respectively.
- Brazil had the lowest annual cost of HD (US$ 9,615), Mexico had the lowest annual cost of PD (US$ 5,474) while Bolivia had the lowest first year cost of KT (US$ 15,250)
- Annual cost of HD was higher that annual cost of PD in seven countries – Brazil, Costa Rica, Ecuador, Guatemala, Mexico, Panama, and Uruguay all of which have a HD:PD ratio greater than 1.

SLIDE 17 – 19:

- 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.
- In-centre HD was available in all countries in the region. However, PD remains unavailable in British Virgin Islands and Haiti for both periods. KT was unavailable in British Virgin Islands in 2019 but was available in 2023, however, KT was available in Haiti in 2019 but unavailable in 2023. Other countries had PD and KT in both periods.
- Public funding for all aspects of kidney care (ND-CKD, dialysis, and KT) is limited in the region. However, for dialysis, public funding was remains in use in Brazil for both periods and was available in Colombia in 2023 although unavailable in 2019.
- Most countries that had dialysis and KT registries in 2019 still had them in 2023. However, El Salvador and Peru both did not have a dialysis registry in 2019 but it has become available in 2023.
- Advocacy groups for CKD, kidney failure and KRT remains low in the region.

SLIDE 20 – 21:

- Overall, reimbursement for non-dialysis CKD (ND-CKD) treatment mostly utilized a mixture of public and private funding systems (13 countries; 59%) while multiple funding systems were in use in 5 (23%) countries, public funding with some fees in 3 (14%) countries, and only Ecuador reported use of public funding (free at point of delivery) for ND-CKD care. No country in the region utilized private and solely out-of-pocket payment systems for funding ND-CKD treatment.
- Public government funding that is free for acute dialysis, chronic HD, chronic PD, and KT medications were available in 7 (31.8%), 6 (27.3%), 6 (27.3%), and 6 (27.3%) of countries respectively. Solely private, and out-of-pocket payment systems for these services are not in use in any of the countries in this region.

SLIDE 22:

- Nephrologists bear primary responsibility for kidney failure care in 21 (95%) countries in Latin America (global median was 87%).

SLIDE 23 – 24:

- Across most domains or healthcare workers, there were high levels of shortages reported in the region compared to global median.

- More than two-thirds of countries in the region reported shortages of nephrologists (68%), paediatric nephrologists (73%), transplant surgeons (86%), and palliative care physicians (68%).

SLIDE 25:

- The median prevalence of nephrologists in Latin America was 12.5 pmp (higher than global median of 11.75 pmp). Uruguay had the highest density of nephrologists (64.6 pmp) while Nicaragua had the lowest (5.1 pmp). More than half of countries in the region had higher nephrologist density than global median.
- The median prevalence of nephrology trainees in the region was 1.4 pmp and was highest in Uruguay (13.2 pmp) and lowest in Haiti (0.18 pmp). Three countries (British Virgin Islands, Cayman Islands, and Curacao) did not have nephrology trainees.

SLIDE 26 – 28:

- Estimates of the number of centres providing KRT was assessed across all countries.
- Median prevalence of HD centres in the region was 4.7 pmp. Haiti had the lowest density of HD centres (0.71 pmp) while Cayman Islands had the highest density of HD centres (31.1 pmp).
- Median prevalence of PD centres in the region was 1.8 pmp (compared to 1.57 pmp globally). Cayman Islands had the highest density of PD centres (15.6 pmp) while Brazil had the lowest (0.37 pmp).
- KT centres are available in 19 (86%) countries; median prevalence of KT centres was 0.47 pmp and was highest in British Virgin Islands (25.9 pmp) and lowest in Venezuela (0.10 pmp).

SLIDE 29:

- Four (21%) countries (Bolivia, British Virgin Islands, El Salvador, and Venezuela) rely on live only KT program while all other countries with a KT program (79%) use a combined donor KT program.
- Fifteen (64%) countries in the region have a national KT waitlist; Guatemala uses a regional waitlist, while three (16%) countries (British Virgin Islands, El Salvador, and Venezuela) have no KT waitlist.

SLIDE 30:

- Capacity to provide adequate frequency of HD i.e., three times weekly for 3 – 4 hours per session, was available in all (100%) Latin America countries (compared to 81% globally).
- Capacity to provide adequate PD exchanges i.e., three to four exchanges per day was available in 19 (86%) countries (compared to 61% globally).

SLIDE 31:

- Home HD was only available in Puerto Rico.

SLIDE 32 – 33:

- Conservative kidney management (CKM) established through shared-decision making was available in 11 (50%) countries (Argentina, Cayman Islands, Colombia, Costa Rica, Curacao, Dominican Republic, Haiti, Nicaragua, Panama, Paraguay, and Puerto Rico)
- Choice restricted CKM (where resource constraints prevent or limit access) was available in 9 (41%) of countries (Argentina, Colombia, Costa Rica, Dominican Republic, Haiti, Nicaragua, Panama, Paraguay, and Puerto Rico).
- Choice restricted CKM (where no resource constraints prevent or limit access) was also available in 11 (50%) of countries (Argentina, Cayman Islands, Colombia, Costa Rica, Curacao, Dominican Republic, El Salvador, Haiti, Panama, Paraguay, and Puerto Rico).

SLIDE 34 – 36:

- Multiple methods are used for funding cost of kidney care medications in Latin America.
- Medications for ND-CKD are free at point of delivery in 2 (9%) countries (Brazil and Nicaragua) while mix of public and private funding systems are used in 11 (50%) countries.
- However, medications for dialysis patients (HD or PD) are free in 4 (18%) countries while mix of public and private funding systems are used in 11 (50%) countries.
- Finally, more countries fund KT medications through public and free methods in 8 (36%) countries while mix methods are in use in 9 (41%) countries in the region.

SLIDE 37:

- Availability of official kidney registries varied across countries.

- ND-CKD registries are available in 11 (50%) countries; dialysis registries in 16 (72.7%), and KT registries are available in 15 (68.2%) countries in the region. Acute dialysis registry was available in 3 (13.6%) (Costa Rica, Paraguay, and Puerto Rico), and 2 (9.1%) countries (Costa Rica and Puerto Rico) had a CKM registry.

SLIDE 38-39: SUMMARY OF FINDINGS

In summary, the 2023 ISN-GKHA highlights several important findings for Latin America.

KRT availability, access, and quality is high.

- HD is available in all countries; however, PD services are unavailable in British Virgin Islands and Haiti.
- Capacity to provide adequate frequency of HD i.e., three times weekly for 3 – 4 hours per session, was available in all (100%) Latin America countries.
- Capacity to provide adequate PD exchanges i.e., three to four exchanges per day was available in 19 (86%) countries.
- Home HD was only available in Puerto Rico.
- KT centres are available in 19 (86%) countries with a median prevalence of KT centres of 0.47 pmp.

CKM is available and predominately chosen or medically advised.

- Established CKM through shared decision making was available in 11 (50%) countries.
- 9 (41%) countries stated that CKM is choice-restricted, meaning that patients are not choosing to receive CKM because it is better for them but because they cannot receive KRT due to limitations in resources.
- Also, 11 (50%) countries reported that CKM is chosen or medically-advised, meaning that the decision to not receive KRT wasn't due to resource limitations.

Government funding for kidney care services and medication is low.

- Reimbursement for medications that is free at point of delivery for ND-CKD, dialysis, and KT are available in 2 (9%), 4 (18%), and in 8 (36%) countries, respectively.
- Reimbursement that is free for acute dialysis, chronic HD, and chronic PD were available in 7 (31.8%), 6 (27.3%), and 6 (27.3%) 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 registries are available in 11 (50%) countries; dialysis registries in 16 (72.7%), and KT registries are available in 15 (68.2%) countries in the region. Acute dialysis registry was available in 3 (13.6%) (Costa Rica, Paraguay, and Puerto Rico), and 2 (9.1%) countries (Costa Rica and Puerto Rico) had a CKM registry.

Many workforce limitations are present.

- The median prevalence of nephrologists was 12.5 pmp with the highest prevalence in Uruguay (64.6 pmp) and the lowest in Nicaragua (5.1 pmp).
- The median prevalence of nephrology trainees in the region was 1.4 pmp and was highest in Uruguay (13.2 pmp) and lowest in Haiti (0.18 pmp).
- More than two-thirds of countries in the region reported shortages of nephrologists (68%), paediatric nephrologists (73%), transplant surgeons (86%), and palliative care physicians (68%).

Moderate advocacy for kidney disease in Latin America.

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

SLIDE 40-41: 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.).