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## 2019 GKHA regional slides presentations

### Latin America

#### Slide 1:

<opening slide>

#### Slide 2:

- Overview of presentation
  - Aim of GKHA
  - Methods (desk research and survey)
  - Key Results
  - Summary and implications

#### Slide 3:

- The impetus for the Atlas project came from the fact that we don't have any consolidated reliable data on the current status of kidney care either globally or regionally. In order to improve kidney care worldwide, we need to document where we are and where we need to go to monitor and motivate change.
- The vision of the Atlas is to achieve optimal and equitable kidney care worldwide. To accomplish this, we need to identify and close gaps related to the capacity or equity of kidney care. Hence, the 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 GKHA is to improve the understanding of inter- and intra-national 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.

#### Slide 4:

- To achieve this mission, the strategy of the GKHA is to collect data using standardized indicators that measure kidney care delivery to provide evidence-based recommendations to relevant stakeholders.
- First in 2016, the ISN conducted the first-ever survey to document the baseline capacity of kidney care. This allowed for the establishment of benchmarks overall, within ISN regions, and by World Bank income group. This was an important first step to understand where we are globally, with respect to the capacity and equity of kidney care delivery.



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- The survey was repeated again in 2018 and will be every 3 years moving forward to monitor progress so we can work toward improving the areas needing change.
- Today's discussion will focus on the 2018 results, which were published in the 2019 Atlas.

#### Slide 5:

- Two key methods were used to produce the atlas: a desk research component, which involved searching literature and other data sources to calculate estimates; and a key opinion leader survey, whereby three leaders from each country (a nephrology society leader, a leader of a consumer representative organization, and a policymaker) submitted details on national kidney care capacity and practices with a specific focus on kidney disease.
- The online questionnaire was completed in July-September 2018. Stakeholders from 182 countries were invited to participate.
- Approximately 3 stakeholders from each country completed the survey. Any discrepancies within a country were resolved through follow-up meetings with regional and country leaders.

#### Slide 6:

- The survey followed a framework developed by the World Health Organization 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.



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- The GKHA models this framework to similarly aim to achieve these objectives, specific to kidney care.

**Slide 7:**

- The 2019 survey received input from 160 of the 182 invited countries, equaling a response rate of 88%.
- This covered nearly 99% of the world's population.
- An additional 36 countries participated in the 2019 survey compared to the 2017 survey.

**Slide 8:**

- The GKHA reports overall global results for each indicator, and as well separates the data by ISN region and income group.
- Therefore, we are 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 9:**

- This talk focuses on the region of Latin America.
- There are 31 countries in Latin America, 1 is low income (Haiti), 5 are lower-middle, 16 are upper-middle, and 9 are high income.

**Slide 10:**

- Demographic data were available for 28 countries. At the time of the survey, there were 631,082,303 people living in these 28 countries in Latin America. The average country population was 8,104,265.
- The median GDP was 89 billion
- On average, 6.9% of the GDP was spent on healthcare (i.e., total health expenditure)

**Slide 11:**

- 26 of the 31 countries in Latin America have data available on the risks and burden of CKD (French Guiana, Guadeloupe, Martinique, St. Barthelemy, and St. Martin do not have data).
- Of the countries with data, the median prevalence of CKD in the region is 9.3%, which is roughly the same as the global average (10%).
- Puerto Rico has the highest CKD prevalence of 15.39% and Haiti has the lowest at 6.3%.
- Approximately 5% (4.63%) of all deaths in the region are attributable to CKD, the highest in El Salvador (9.89%) and lowest in Honduras (1.67%).



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- Over 20% of the Latin America population has obesity (22.45%). Uruguay, Chile, Argentina, Mexico, and Dominica have the highest at just over 28%.
- Similarly, 20% of the population has increased blood pressure. Haiti and Paraguay reported the highest levels of increased BP in the region, with just over 24% of the population.
- The proportion of population that smokes ranges from 3.5% in Panama to 25.6% in Chile.

**Slide 12:**

- Twelve countries in Latin America do not have data available on the incidence or prevalence of treated ESKD. No countries have data available on the incidence of chronic dialysis (HD or PD).
- The median prevalence of treated ESKD in the region (of the 20 countries with data) is 558.05 people per million population. This ranges from 190 in Paraguay to 1850 in Puerto Rico.
- The prevalence of chronic HD is much higher than PD in the region, where there are 349 people receiving HD pmp compared to 48 for PD.

**Slide 13:**

- Only 19 countries in the region have data on kidney transplantation.
- Of these, the median prevalence is 66.3 pmp and the incidence is nearly 11.
- The incidence of deceased kidney donation was higher than living donation (7.46 pmp vs. 3.71 pmp).
- No countries had data available on the incidence of pre-emptive transplantation.
- The country with the highest prevalence of kidney transplantation was Mexico (634 pmp). Honduras had the lowest at 3.8 pmp.

**Slide 14:**

- Data on the costs of kidney replacement therapy were limited, only 10 countries had data available to estimate the annual cost of KRT.
- Of the countries with data available, the estimated cost of HD per year was USD 17,454 and the costs of PD were estimated at USD 16,826 per year.
- Transplantation costs were only available in 5 countries. It was estimated that the first year of transplantation would cost USD 15,913 and 4,294 per year following (note only 1 country had data to estimate the follow-up costs – Mexico).
- The HD/PD cost ratio was estimated for 10 countries and estimated to be exactly 1.0



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#### Slide 15:

- Responses were received from 18 of 31 countries in Latin America (58.1%) representing 93% of the region's population.

#### Slides 16-17:

- Scorecards were created for each country so they could compare results with other countries in the same area as well as between the first survey in 2017 and the follow-up two years later in 2019.
- Green represents availability, red represents not available and grey represents unknown or not applicable if they didn't complete a survey that year.
- In the 2019 survey, most forms of KRT were available across the region. Of the 18 countries that completed the survey, hemodialysis was available in all countries and PD was available in 16 (2 countries [BVI and Haiti] do not offer PD).
- Kidney transplantation was available in 17 of the 18 countries (BVI do not have transplantation available).
- Only 5 of the 18 countries in Latin America (Brazil, BVI, Cuba, Panama, and Venezuela) reported that medications for dialysis patients are funded by the government.
- Similarly, only 7 countries (Bolivia, Brazil, Cuba, Dominican Republic, Mexico, Panama, and Peru) reported that medications needed for patients that have had kidney transplantation are funded by the government.
- 10 countries in Latin America have an advocacy group for CKD. 8 have an advocacy group for end stage kidney disease. Only 2 countries (Argentina and Puerto Rico) have an advocacy group for AKI.

#### Slide 18

- Only 2 countries (Cuba, BVI) in Latin America reported that non-dialysis CKD care was funded by the government. 11 reported a mix of public and private and 3 reported a combination of sources including non-government organizations, governments, communities, etc. One country (Haiti) reported that care was exclusively private and out-of-pocket for patients and 1 country (El Salvador) reported other funding sources for non-dialysis CKD care.

#### Slide 19:

- 7 countries reported that kidney replacement therapy was funded by the government: 4 exclusively and 3 with some fees at the point of care. One (Haiti) reported that KRT was exclusively covered out-of-pocket by patients. Nine reported that KRT costs were covered through a mix of public and



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private sources. Colombia reported a combination of sources including non-government organizations, governments, communities, etc.

**Slide 20:**

- All 18 countries in Latin America reported that nephrologists are primarily responsible for people with ESKD.
- Other healthcare providers share the responsibility in other countries, for example 22% of countries reported that primary care physicians are also responsible for ESKD care and 17% reported that nurses also share the responsibility. 28% of countries in Latin America reported that multidisciplinary teams are utilized to care for people with ESKD.

**Slide 21:**

- Workforce shortages, highlighted in red, were commonly reported in Latin America. Only 5 countries in the region (Brazil, Colombia, Cuba, Dominican Republic, and Uruguay) reported no shortage of nephrologists. Dietitians and radiologists were the least commonly reported workforce shortage in the region. Venezuela was the only country in the region to report shortages of these providers.

**Slide 22:**

- Worldwide, the median number of nephrologists is 9.95 nephrologists per million population.
- In Latin America, the density of nephrologists was 9.76 nephrologists per million population. Countries in Latin America with the lowest density were BVI (0 pmp in 2018), Haiti (0.56 pmp in 2018), Guatemala (4.34 pmp in 2018), and Colombia (5.19 pmp). Countries with the highest densities were Uruguay (53.42 nephrologists pmp), Cuba (38.95 pmp), Argentina (31.32 pmp), and Puerto Rico (30.35 pmp).
- Nephrology trainee density in the region was also similar to the global average. The global median density of trainees is 1.4 per million population. In Latin America, the median density was 1.37 pmp. 2 countries reported 0 trainees: BVI and Haiti. Cuba reported the highest density of 20.6 trainees pmp, followed by Uruguay (4.45).

**Slide 23:**

- Respondents were asked to report the number of centres that provide chronic hemodialysis in their country. All countries in Latin America reported that chronic HD services were available.
- Globally, the median density was 4.5 centers per million population. In Latin America, the density was 4.6 pmp. Countries in the region with the lowest



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density were: Haiti (0.65 pmp), Guatemala (0.9 pmp), and Colombia. (1.04 pmp).

- Countries with the highest were: BVI (27.93 pmp), Puerto Rico (16.39 pmp), and Chile (12.64 pmp).

#### Slide 24:

- Respondents were also asked to report the number of centres that provide chronic peritoneal dialysis in their country. In Latin America, 89% of countries (16/18 countries) reported that chronic PD was available. This is similar to the global average, which indicated that 81% of countries worldwide offer PD.
- The global median density of PD centers per million population was 1.3 centers pmp. In Latin America, the density was 0.96 pmp. Countries in the region with the lowest density (that offer PD) were: Guatemala (0.12 pmp), Colombia (0.21 pmp), Paraguay (0.28 pmp), and Bolivia (0.44 pmp).
- Countries with the highest PD center densities were: Argentina (4.47 pmp), Uruguay (2.37 pmp), and Chile (2.09 pmp).

#### Slide 25:

- Respondents were also asked to report the number of centres that provide kidney transplantation in their country. In Latin America, 94% of countries (17/18 countries) reported that kidney transplantation was available (BVI did not). This is higher than the global average, which indicated that 74% of countries worldwide offer kidney transplantation.
- Globally, among the countries with kidney transplantation services, the average is 0.4 centers pmp. In Latin America, the median density was 0.51 pmp. Countries with the lowest density (that offer kidney transplantation and have data available) in Latin America were: Haiti (0 pmp), Colombia (0.17 pmp), and Guatemala (0.24 pmp). Countries with the highest were: Mexico (1.36 pmp), Argentina (1.28 pmp), and Uruguay (0.89 pmp).

#### Slide 26:

- Of the 17 countries in Latin America that offer kidney transplantation services, only 2 (El Salvador and Haiti) rely on live donation only. All other countries use a combination of live and deceased organ donation. This is similar to what was reported globally, where 28% of countries reported live donation only and 72% rely on a combination of sources for organ donation.
- Ten countries use a national waitlist and 4 use a regional list only. El Salvador and Haiti have no wait list for transplantation. Globally, 19% of countries reported an absence of a wait list, which was slightly more than what was reported for Latin America.



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**Slide 27:**

- Of the 18 countries in Latin America that completed the 2018 survey, all reported that chronic HD was available. Of these, 16 have a center-based service that involves treatment 3x week for 3-4 hours. This is slightly higher than the global average, which reported that 77% of countries offer adequate frequency for HD services.
- Twelve countries in Latin America (67%) reported an ability to do adequate exchanges 3-4x day (or equivalent cycles on automated PD). Similarly, this is higher than the global average of 58% of countries that offer adequate PD exchange.

**Slide 28:**

- Only one country in Latin America (Puerto Rico) reported that home hemodialysis was generally available, which means that home hemodialysis training is offered in at least 50% of dialysis centres.
- Nine countries in Latin America stated that home hemodialysis is never available.
- These patterns are similar to what was reported globally, where 13% offer home HD and 35% never have home HD available.

**Slide 29:**

- Conservative kidney management is a treatment option for ESKD, which does not include dialysis or transplantation.
- There are 2 types of conservative kidney management: choice-restricted or medically advised. Choice-restricted means that patients opt for CKM due to limitations in resources, whereas medically advised, or chosen, is a deliberate choice of CKM as it is likely the better treatment option for an individual rather than KRT.
- In Latin America, CKM was not commonly available. 10 of the 18 countries reported that CKM was not available and only Argentina, BVI, and Paraguay reported the services were generally available.

**Slide 30:**

- Registries for kidney disease were relatively common in Latin America. 5 countries (Argentina, Bolivia, Colombia, Puerto Rico, and Uruguay) have a non-dialysis CKD registry. This represents 28% of the region, which is higher than the 12% reported worldwide.
- All but 4 countries (El Salvador, Haiti, Mexico, and Peru) reported a registry for dialysis. Similarly, this is higher than what was reported globally (78% vs. 66%).
- 13 countries have a transplantation registry, representing 72% of the region. This as well is higher than what was reported worldwide (57%).



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- Only 1 country (BVI) have a registry for AKI.

### Slide 31:

In summary, the 2019 GKHA highlights several important findings for Latin America.

#### *KRT availability, access, and quality is high in the region*

- HD was available in all 18 countries that completed the GKHA survey.
- 16 of the 18 of countries in Latin America have chronic PD services available and 17 of the 18 offer transplantation services.
- The quality of HD and PD services was high, as most countries reported center-based services that involves treatment 3x week/3-4x hours.
- However, the prevalence of chronic HD is much higher than PD in the region, where there are 349 people receiving HD pmp compared to 48 for PD.
- Home hemodialysis is unavailable in most countries in Latin America, only 1 (Puerto Rico) reported that home HD was generally available.
- Of the 17 countries in Latin America that offer transplantation services, only 2 (El Salvador and Haiti) do not have an official wait list.

#### *Availability of conservative kidney management is low in Latin America*

- Only 3 countries in Latin America (Argentina, British Virgin Islands, and Paraguay) reported that CKM was generally available.
- All 3 countries reported that CKM was equally delivered in a choice-restricted manner and chosen or medically advised.

#### *Government funding for kidney care is low*

- Government funding for KRT was low in Latin America. Only 7 (39%) countries in the region publicly fund KRT, as opposed to 64% worldwide. Only 2 countries (12%; Cuba and the British Virgin Islands) publicly fund non-dialysis CKD services.
- Only 5 of the 18 countries in Latin America reported that medications for dialysis patients are exclusively covered by the government. This is less than the global average, which showed that 41% of countries fund medication for dialysis patients through the government.
- Only 7 (39%) countries cover medications needed for patients that have had kidney transplantation. This is similarly less than the global average, which showed that 57% of countries fund medication for transplantation patients through the government.



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#### *Moderate registry availability in Latin America, particularly for KRT*

- Most countries in Latin America reported a registry for dialysis and transplantation. Of the 18 countries in the region, all but 4 (El Salvador, Haiti, Mexico, and Peru) have a dialysis registry. Similarly, 14 countries have a transplant registry.
- Only 5 countries reported a registry for non-dialysis CKD, but this represented 28% of the region, which was more than double that reported globally (12%).
- Lastly, only 1 country (British Virgin Islands) reported a registry for AKI.

#### *Many workforce limitations, especially nephrologists*

- The nephrologist density of Latin America (9.76 pmp) was similar than the overall (9.10 pmp).
- Countries with the lowest nephrologist density were British Virgin Islands (0 pmp), Haiti (0.56 pmp), and Guatemala (4.34 pmp).
- Similarly, nephrology trainee density matched the worldwide score. Globally, there are 1.4 trainees per million population. In Latin America, the median density was also 1.4 pmp. 2 countries reported 0 trainees (BVI and Haiti)
- Despite this, most countries in the region reported a shortage of nephrologists. Only 5 countries in the region (Brazil, Colombia, Cuba, Dominican Republic, and Uruguay) reported no shortage of nephrologists.
- Dietitians, dialysis technicians, radiologists, and counselors had the fewest shortages reported.
- Increasing the workforce capacity through other providers such as nurses, pharmacists, dietitians, may help alleviate some of the limitations. Further, providing primary care physicians with accessible guidelines on how to prevent and treat kidney disease is important.

#### *Moderate advocacy for CKD and ESKD, little for AKI*

- Advocacy groups were moderate in Latin America for CKD and ESKD.
- 10/18 (56%) countries in the region have an advocacy group for CKD and 8 (44%) have an advocacy group for end stage kidney disease. Only 2 (11%) countries (Argentina and Puerto Rico) have an advocacy group for AKI.
- These findings are similar to what was reported worldwide. There was a slightly lower presence of advocacy for CKD in Latin America (56%) compared to the global score (63%). 44% of countries in Latin America reported an advocacy group for ESKD compared to 39% of countries, worldwide.
- AKI advocacy was low both globally (14%) and in Latin America (11%).
- Increasing the awareness of kidney disease in the public domain, as well as with other nonprofits devoted to global health, may help promote prioritization of kidney disease.



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- Highlighting the gaps of care, with respect to quality and equity, coupled with the burden and consequences of untreated ESKD may help improve advocacy, particularly in areas with limited resources.

### Slide 32:

There are important implications of this survey 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 ESKD prevention and management*

- While resource limitations are an obvious barrier, focusing on preventing ESKD 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 ESKD 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 ESKD 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 ESKD*

- 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.



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*Promote ESKD 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.) represent formidable barriers that can limit implementation of the recommended strategies in the region.

**Slide 33:**

- Each Atlas report is available for free download at the ISN webpage.
- To download a copy, please visit the ISN webpage.