# 2019 GKHA REGIONAL SLIDES PRESENTATIONS

## MIDDLE EAST

### 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.
- The survey was repeated again in 2018 and will be every 4 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.
- 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 the Middle East.
- There are 13 countries in the Middle East, 3 are lower-middle income, 4 are upper-middle, and 6 are high income.

SLIDE 10:

- At the time of the survey, there were 245,543,388 people living in the 13 countries in the Middle East. The average country population was 9,701,315
- The median GDP was 190 billion
- On average, 5% of the GDP was spent on healthcare (i.e., total health expenditure)

SLIDE 11:

- The average prevalence of CKD in the Middle East is 7.5%, which is lower than the global average of 10%.
- Yemen has the lowest prevalence (5.24%) and Iran has the highest (10.57%).
- Just under 3% (2.87%) of all deaths in the Middle East are attributable to CKD.
- Nearly 30% (29.3%) of the region has obesity and similarly 23% have increased blood pressure.
- Only one country (West Bank and Gaza) did not have data available on the burden and risk of CKD.

SLIDE 12:

- Data availability on the burden of end stage kidney disease was relatively lower in the region, compared to CKD.
- Five countries (Jordan, Lebanon, Syria, West Bank/Gaza, Yemen) do not have data on either the prevalence or incidence of treated ESKD.
- Information on the prevalence of chronic dialysis is more available; however, no countries in the region have data on the incidence of chronic hemodialysis.
- The country with the highest prevalence of chronic dialysis (either peritoneal or hemodialysis) was Lebanon with 759.6 people receiving dialysis per million population. The lowest was Tanzania with 694 pmp. The lowest was Iraq, with 145 pmp.
- The overall prevalence of chronic HD was substantially higher than for PD. In this region, the average prevalence of chronic HD was 257 (256.65) compared to only 17.5 for PD.

SLIDE 13:

- Regarding kidney transplantation, 9 of the 13 countries have data available on the overall incidence of kidney transplantation and 7 have data on the overall prevalence.
- Of countries with data available, the prevalence of kidney transplantation was lowest in Bahrain (52.7 pmp) and highest in Kuwait (363 pmp)

SLIDE 14:

- Annual costs of kidney replacement therapy were estimated for each country. 7 countries had data to estimate the annual cost of HD, which was USD 19,489. The costs of PD were available in 4 countries and estimated at USD 16,551 per year. Transplantation costs were also available in 6 countries. It was estimated that the first year of transplantation would cost USD 18,361 and 7,345 per year following.
- The HD/PD cost ratio was estimated for 4 countries and estimated to be exactly 1.0

SLIDE 15:

- Responses were received from 11 of 13 countries in the Middle East (84.6%) representing 87% 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, hemodialysis was available in all countries. Of the 11 countries that completed the questionnaire, chronic peritoneal dialysis and kidney transplantation were available in all countries
- 8 countries (of 11) in the Middle East reported that medications for dialysis patients are covered by the government. The three that do not are: Lebanon, Qatar, and United Arab Emirates. 9 cover medications for transplant patients (Iraq and Qatar do not).
- Three countries in the Middle East (Lebanon, Oman, and Saudi Arabia) have an advocacy group for CKD and 9 countries in the region have an advocacy group for end stage kidney disease. No countries in the Middle East have an advocacy group for AKI.

SLIDE 18:

- 8 countries (73%) in the Middle East reported that non-dialysis CKD care was funded by the government: 7 exclusively and 1 with some fees at the point of care. 3 reported a mix of public and private sources. None reported that care was exclusively private and out-of-pocket for patients.

SLIDE 19:

- All 11 countries in the Middle East reported that kidney replacement therapy was funded by the government: 10 exclusively and 1 (Qatar) with some fees at the point of care.
- This was much higher than the global average, which reported that only 64% overall fund medications for transplantation.

SLIDE 20:

- All countries in the Middle East reported that nephrologists are primarily responsible for people with ESKD.
- Other healthcare providers share the responsibility for ESKD care. For example, 4 countries reported that nurses are also responsible for ESKD care. One country (Oman) reported that primary care physicians also share the responsibility.
- 4 countries (Lebanon, Oman, Qatar, and UAE) reported that multidisciplinary teams are utilized to care for people with ESKD.

SLIDE 21:

- Workforce shortages, highlighted in red, were commonly reported in the Middle East.
- Only 3 countries in the region (Jordan, Lebanon, and Qatar) reported no shortage of nephrologists.
- Dietitians and radiologists were the least commonly reported workforce shortage in the region, only one country (Syria) have limited supply of these professionals.

SLIDE 22:

- Worldwide, the median number of nephrologists is 9.95 nephrologists per million population.
- In the Middle East, the median density of nephrologists was 8.08 nephrologists per million population. Countries in the region with the highest density were Lebanon (28.28 pmp in 2018), Oman (20.03 pmp in 2018), and Qatar (15.87 pmp in 2018). Countries with the lowest densities were Iraq (2.49), West Bank and Gaza (3.04), and Iran (4.97).
- The global median density of nephrology trainees is 1.4 per million population. In the Middle East, the median density was 1.82 pmp. 1 country reported 0 trainees (West Bank/Gaza).

SLIDE 23:

- Respondents were asked to report the number of centres that provide chronic hemodialysis in their country. All countries in the Middle East reported that chronic HD services were available.
- Globally, the median density was 4.5 centers per million population. In the Middle East, the density was 3.75 pmp. Countries in the Middle East with the lowest density were: Iraq (1.24), United Arab Emirates (2.06), and Kuwait (2.06).

SLIDE 24:

- Respondents were also asked to report the number of centres that provide chronic peritoneal dialysis in their country. In the Middle East, all 11 countries reported that chronic PD was available. This is higher than 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 the Middle East, the density was 0.77 pmp. Countries in the region with the lowest density (that offer PD) were: Iraq (0.2 pmp), Jordan (0.29 pmp), and the United Arab Emirates. (0.41 pmp).

SLIDE 25:

- Respondents were also asked to report the number of centres that provide kidney transplantation in their country. In the Middle East, all 11 countries reported that kidney transplantation was available. 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 the Middle East, the median density was 0.41 pmp.

Countries with the lowest density were: Iraq (0.15 centres pmp), Syria (0.31 pmp), and Kuwait (0.34 pmp).

SLIDE 26:

- Most countries (8/11) in the Middle East rely on a combination of live and deceased organ donation. Three countries use live donation only: Iraq, Syria, and West Bank/Gaza.
- Five countries use a national waitlist, 4 use a regional list only, and 2 (Jordan and West Bank/Gaza) have no wait list for transplantation.

SLIDE 27:

- The quality of dialysis delivered in the Middle East was reportedly high. All 11 countries in the region have a center-based HD service that involves treatment 3x week for 3-4 hours. This is much higher than the global average, which reported that 77% of countries offer adequate frequency for HD services.
- Seven of the 11 countries (64%) in the Middle reported an ability to do adequate PD exchanges 3-4x day (or equivalent cycles on automated PD). This is slightly higher than the global average of 58% of countries that offer adequate PD exchange.

SLIDE 28:

- Home hemodialysis was not generally available in most countries in the Middle East. Only one country (Qatar) reported that home HD was generally available (meaning that home hemodialysis training is offered in at least 50% of dialysis centres).
- Oman reported that home hemodialysis was never 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 the Middle East, 9 of 11 countries reported that CKM was available (not available in Syria or West Bank/Gaza).
- Only 2 countries (Jordan and Oman) reported that chosen or medically-advised CKM was generally available.

SLIDE 30:

- Registries for kidney disease are common in the Middle East, particularly for dialysis and transplantation.
- Five of 11 countries have a registry for dialysis (Jordan, Kuwait, Oman, Qatar, Saudi Arabia).
- All but 3 (Syria, UAB, West Bank/Gaza) have registries for kidney transplantation.
- Only one country (Oman) has registries for non-dialysis CKD and AKI.

SLIDE 31:

In summary, the 2019 GKHA highlights several important findings for the Middle East region:

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

- All countries in the Middle East offer HD, PD, and kidney transplantation.
- Access to care and quality of treatment was also high in the region. All 11 countries offer hemodialysis in centers that involves treatment 3x week for 3-4 hours. This is higher than the global average, which reported that 77% of countries offer adequate frequency for HD services.
- Home hemodialysis is generally not available in most countries in the Middle East region. Only one country (Qatar) reported that home HD was generally available (meaning that home hemodialysis training is offered in at least 50% of dialysis centres).
- Seven countries (64%) reported an ability to do adequate exchanges 3-4x day (or equivalent cycles on automated PD).
- All countries in the region offer kidney transplantation services. Five countries use a national waitlist, 4 use a regional list only, and 2 (Jordan and West Bank/Gaza) have no wait list for transplantation.

*Conservative kidney management is available, focus on improved services*

- Most countries (9/11) reported that CKM services are generally available.
- Focusing on improving the quality of CKM care (for example, psychological services, symptom management, etc.) is important.

*Government funding for kidney care is high*

- KRT services are typically covered by the government in the Middle East. All countries fund KRT (dialysis, transplant) through the government and 8 cover non-dialysis CKD through government funding.
- In the Middle East, most countries fund medications for ESKD patients through the government. Nearly all (10/11; 91%) fund medications for dialysis patients as well as transplant patients by the government. This is higher than the reported global average (62% and 75%, respectively).

*High presence of registries, particularly for ESKD care*

- Five of 11 countries have a registry for dialysis (Jordan, Kuwait, Oman, Qatar, Saudi Arabia).
- All but 3 (Syria, UAB, West Bank/Gaza) have registries for kidney transplantation.
- Only one country (Oman) has registries for non-dialysis CKD and AKI.

*Good supply of nephrologists but other workforce limitations present*

- The nephrologist density in the Middle East (8.08 pmp) was similar to the overall (9.10 pmp).
- Three countries reported shortages of nephrologists, as well as other healthcare providers essential for kidney care delivery.
- 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.

*Little advocacy for kidney disease in the Middle East*

- Advocacy groups were minimal in both regions for AKI, CKD, and ESKD.
- 3 countries in the Middle East have an advocacy group for CKD and 9 have an advocacy group for ESKD. No countries in the region have an advocacy group for AKI.
- 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.
- Highlighting the gaps of care, with respect to quality and equity, coupled with the burden and consequences of untreated ESKD may help improve advocacy.

SLIDE 32:

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 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.

*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.