

## 2019 GKHA REGIONAL SLIDES PRESENTATIONS

### EASTERN AND CENTRAL EUROPE

#### 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 survey, which were published in the 2019 report.

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 2018 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 2018 survey compared to the 2016 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 Eastern and Central Europe.
- There are 20 countries in this region, 0 are low income, 2 is lower-middle, 8 are upper-middle, and 10 are high income.

#### SLIDE 10:

- At the time of the survey, there were 209,784,111 people living in the 20 countries in Eastern and Central Europe. The average country population was 3,643,806.
- The median GDP was 81 billion
- On average, 7% of the GDP was spent on healthcare (i.e., total health expenditure)

#### SLIDE 11:

- An estimated 13% (13.32%) of the Eastern and Central Europe population have CKD, which is slightly higher than the global prevalence of 10%.
- In the region, Latvia has the highest CKD prevalence of 20.67% and Turkey has the highest proportion of deaths attributable to CKD, which is about 4% (3.77%).
- Obesity rates range in the region, from 19.4% in Bosnia and Herzegovina to 32.2% in Turkey. The average rate of increased blood pressure in the region is 29.1%. Cyprus has the lowest rate (19.8%) and Croatia has the highest (32.4%)
- Approximately 24% (24.1%) of E&C European population smokes, and ranges from 15.6% in Albania to 31.4% in Macedonia.

#### SLIDE 12:

- Data availability on the burden of end stage kidney disease is fairly good in the region, particularly for prevalence.
- The average prevalence of treated ESKD in the region is 788 per million population (0.08%). The country with the highest was Croatia (1248 pmp) and the lowest was in Kosovo (319 pmp).
- The country with the highest prevalence of chronic dialysis (either peritoneal or hemodialysis) was Romania with 1043.4 people receiving dialysis per million population. The lowest was Cyprus with 23.5 pmp.
- The median prevalence of chronic HD (512 pmp) was higher than that for chronic PD (37 pmp).

#### SLIDE 13:

- Data on kidney transplantation in Eastern and Central Europe is similarly fairly available. Six of the 20 (24%) do not have data on the prevalence of kidney transplantation (Croatia, Cyprus, Czech Republic, Kosovo, Moldova, and Montenegro)



- The average prevalence of kidney transplantation in the region was 230.5 per million population.
- Of the 14 countries with data available, the country with the highest prevalence was Estonia (396 pmp) and the country with the lowest was Albania (80pmp).
- Deceased donation is much more common in this region, the incidence of deceased donor transplantation was 20.7 pmp and only 2.9 pmp for living donation.

#### SLIDE 14:

- Annual costs of kidney replacement therapy were estimated for each country.
- 16/21 countries in the region had data to estimate the annual cost of HD and PD, which were 20,077 and 21,137 USD, respectively.
- Transplantation costs were only available in 4/21 countries. In these countries, it was estimated that the first year of transplantation would cost USD 37,004 and 14,073 per year following.
- The HD/PD cost ratio was estimated for 16 countries and estimated to be exactly 1.0

#### SLIDE 15:

- 19 of the 20 countries in Eastern and Central Europe (95%) responded to the 2018 survey. Montenegro did not complete the 2018 survey.
- This represents 99.7% 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 2016 and the follow-up two years later in 2018.
- Green represents availability and red represents not available and grey represents unknown or not applicable if they didn't complete a survey that year.
- From the 2018 survey, hemodialysis and peritoneal dialysis was available in all countries in Eastern and Central Europe. Transplantation was similarly available in all but one (Kosovo).
- All countries but one in Eastern and Central Europe cover dialysis patients' medications exclusively through government funding, with no fees at all to patients. Hungary reported that the government does fund the medications; however, patients are required to cover some costs. Drug coverage in this region

is much higher than the global average, which showed that only 41% of countries fund medication exclusively by the government.

- Similarly, all but one country in the Eastern and Central European region exclusively covers medications needed for patients that have had kidney transplantation with no fees to patients. One country (Macedonia) requires patients to pay for some costs; however the government does otherwise fund medications for this group.
- Overall, countries in the E&C European region had substantially more drug coverage. 95% of countries in this region fully cover medications for both dialysis and transplant patients, compared to only 41% and 57% of the worldwide score.
- 47% of countries in E&C Europe have an advocacy group for CKD and 16% have an advocacy group for AKI. 42% of countries in the region have an advocacy group for end stage kidney disease. These were all equal or higher than the global score.

#### SLIDE 18

- 15 countries in E&C Europe reported that non-dialysis CKD care was funded by the government: 11 exclusively and 4 with some fees at the point of care. None reported that care was exclusively private and out-of-pocket for patients. 3 reported a mix of public and private sources and 1 (Slovak Republic) reported other.

#### SLIDE 19

- 16 countries in E&C Europe reported that kidney replacement therapy was funded by the government: 15 exclusively and 1 (Bulgaria) with some fees at the point of care. None reported that KRT was exclusively covered out-of-pocket by patients. Two reported that KRT costs were covered through a mix of public and private sources and 1 (Slovak Republic) reported other funding sources for KRT.

#### SLIDE 20

- All 19 countries in E&C Europe reported that nephrologists are primarily responsible for people with ESKD.
- Four countries in the region also reported that primary care physicians are primarily responsible for people with ESKD. No other HCPs were reported as primarily responsible, which is lower than what was seen globally.



- Similarly, the use of multidisciplinary teams for ESKD management was much lower in the E&C region than the global average. Only one country (Estonia) reported the use of MDTs, compared to almost 20% of the globe.

#### SLIDE 21

- Workforce shortages, highlighted in red, were reported in E&C Europe for most providers. Only 6 of the 19 countries in the region reported no shortage of nephrologists (Albania, Bulgaria, Cyprus, Lithuania, Poland, and Turkey). No countries in the region reported a Laboratory technicians and only one country (Romania) reported that radiologists were in short supply.

#### SLIDE 22

- Worldwide, the median number of nephrologists is 9.95 nephrologists per million population.
- In E&C Europe, the density of nephrologists was 25.6 pmp. Countries in the region with the highest density were Albania (53.97 pmp in 2018), Lithuania (50.12 pmp in 2018), Slovenia (40.44 pmp in 2018), and Croatia (39.81 pmp). Countries with the lowest densities were Turkey (8 nephrologists pmp), Moldova (11.64 pmp), Macedonia (12.27 pmp), and Estonia (14.47 pmp).
- Nephrology trainee density was similarly very high in the region, compared to the worldwide score. The global median density of trainees is 1.4 per million population. In E&C Europe, the median density was 3.3 pmp.
- The country in E&C Europe with the highest trainee density was Slovenia (14.27 trainees per million population). The country with the lowest was Serbia, with 0.71 pmp.

#### SLIDE 23

- Respondents were asked to report the number of centres that provide chronic hemodialysis in their country. All countries in Eastern & Central Europe reported that chronic HD services were available.
- Globally, the median density was 4.5 centers per million population. In E&C Europe, the density was 9 pmp. Countries with the lowest density were Moldova (2.91 pmp), Albania (3.93 pmp), and Cyprus (4.04 pmp).
- No countries in E&C Europe had missing data on centre density.

#### SLIDE 24

- Respondents were also asked to report the number of centres that provide chronic peritoneal dialysis in their country. In E&C Europe, all countries have chronic PD available. This (100%) 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 E&C Europe, the density was 1.92 pmp. Countries with the lowest density in E&C Europe (that offer PD and have data available) were: Albania (0.33 pmp), Macedonia (0.71 pmp), Lithuania (1.07 pmp), Turkey (1.23 pmp), and Bosnia and Herzegovina (1.30 pmp).

#### SLIDE 25

- Respondents were also asked to report the number of centres that provide kidney transplantation in their country. In E&C Europe, all but one country (Kosovo) reported that kidney transplantation was available. This (95%) is similarly 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 E&C Europe, the median density was 0.62 pmp. Countries with the lowest density in E&C Europe (that offer kidney transplantation) were: Romania (0.16 pmp), Moldova (0.29 pmp), Bulgaria (0.35 pmp), Hungary (0.41 pmp), and Czech Republic (0.47 pmp).

#### SLIDE 26

- Of the 18 countries in E&C Europe that offer kidney transplantation services, only 2 (Albania and Macedonia) rely on live donation only, whereas the rest use a combination of both live and deceased donors. This is similar to what was reported globally, where 28% of countries utilize live donation only and 72% rely on a combination of sources for organ donation.
- In E&C Europe, 16 countries use a national waitlist and 2 use a regional list only. No countries in the region reported no wait list at all for transplantation, whereas 19% of countries worldwide reported an absence of a wait list.

#### SLIDE 27

- All countries in E&C Europe reported that chronic HD was available. All 19 of these countries have a center-based service that involves treatment 3x week for



3-4 hours. This is greater than the global average which reported that only 77% of countries offer adequate frequency for HD services.

- Similarly, all 19 countries in E&C Europe reported that chronic PD was available. All but one country (Moldova) further reported an ability to do adequate exchanges 3-4x day (or equivalent cycles on automated PD). Overall, this is greater than the global average of 58% of countries that offer adequate PD exchange.

#### SLIDE 28

- Respondents were asked if home hemodialysis was generally available in their country, where 'Generally available' means that home hemodialysis training is offered in at least 50% of dialysis centres.
- Home hemodialysis was not generally available in any countries in E&C Europe, as opposed to 13% of countries worldwide.
- 6 (32%) countries in E&C Europe stated that home hemodialysis is 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 E&C Europe, all but one country (Lithuania) reported that conservative kidney management was available to patients with ESKD. Of these, 11 reported that CKM was offered in a choice-restricted basis and 15 reported it was chosen or medically advised.

#### SLIDE 30

- The use of registries was fairly common in E&C Europe, with respect to dialysis and transplantation.
- All but two countries in the region (Kosovo and Slovak Republic) have dialysis registries and similarly, all but two countries (Kosovo and Romania) have transplantation registries.

- The use of CKD and AKI registries in the region was quite low. Only one country (Slovak Republic) reported a registry for CKD and 2 countries (Moldova and Slovenia) reported registries for AKI. This is similar to what was reported globally.

### SLIDE 31

In summary, the 2019 GKHA highlights several important findings for E&C Europe.

#### *KRT availability, access, and quality is high*

- All countries in E&C Europe have HD and PD services available.
- Further, quality of dialysis was high in the region. Center-based service that involves treatment 3x week for 3-4 hours was generally available in all countries in the region for HD and all but one (Moldova) in PD.
- Home hemodialysis is generally not available in any country in E&C Europe.
- All countries in E&C Europe, except for one (Kosovo), offer kidney transplantation services. All countries that offer transplantation have an official wait list, 16 national and 2 regional.

#### *Conservative kidney management is available and predominately chosen or medically-advised*

- All countries except for one (Lithuania) reported that CKM is available in E&C Europe.
- 11 (61%) of these 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.
- However, 15 countries (83%) 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 high*

- 79% of countries in E&C Europe fund non-dialysis CKD care (not including medications) exclusively through the government; 11 with no fees to patients and 4 with some fees.
- 84% of countries in E&C Europe fund transplantation costs (not including medications) exclusively through the government; 15 with no fees to patients and 1 with some fees.
- All countries but one cover dialysis and transplant patients' medications exclusively through government funding, with no fees at all to patients.



- Overall, countries in the E&C European region had substantially more drug coverage. 95% of countries in this region fully cover medications for both dialysis and transplant patients, compared to only 41% and 57% of the worldwide score.

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

- Most countries in E&C Europe have a registry for dialysis and kidney transplantation.
- Only 1 country has a CKD registry and 2 countries reported an AKI registry.

*Many workforce limitations, especially nephrologists*

- The nephrologist density of E&C Europe (25.6 pmp) was nearly 4 times greater than the overall average (9.10 pmp).
- Nephrology trainee density was similarly high in the region. Worldwide, there are 1.4 trainees per million population. In E&C Europe, the median density was 3.3 pmp.
- Despite the higher nephrologist density in the region, respondents in this area still noted shortages of nephrologists.
- Shortages of other healthcare providers were noted in the region. Thirteen (68%) reported that nephrologists were in short supply, along with other essential healthcare providers, including dialysis nurses, other specialists (radiologists, surgeons), psychologists, among others.
- Increasing the workforce capacity through other providers such as dialysis technicians, 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 kidney disease in E&C Europe*

- About half of the region reported an advocacy group for CKD and ESKD; however, this was similar to what was reported globally.
- Only 16% of countries in E&C Europe reported an advocacy group for AKI; but again this was similar to the global score.
- 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.

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.