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## 2019 GKHA regional slides presentations

### WESTERN 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.



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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 Western Europe
- There are 29 countries in Western Europe, all are high income countries.

#### Slide 10:

- Demographic data were available for 24 countries of the 29 in Western Europe. Of these 24 countries, there were 433,270,367 people living in the region at the time of the survey (2018). The average country population was 8,358,857.
- The median GDP was 335 billion.
- On average, 10% of the GDP was spent on healthcare (i.e., total health expenditure).

#### Slide 11:

- Just over 10% (10.14%) of the population in Western Europe has CKD, which is similar to what is observed globally.
- Israel and Iceland had the lowest prevalence at 7.84% and 7.87%, respectively. Greece, Portugal, Germany, and Sweden had the highest rate of CKD; however, the highest (Sweden) was less than 12%
- Approximately 2% (1.79%) of the deaths in the region are attributed to CKD; highest in Israel at 4.91% and lowest in Andorra and Finland at 1.03%.
- The median obesity prevalence in Western Europe was 23.2%; highest in Malta (31%) and lowest in Switzerland (21.2%).



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- About 20% (19.8%) have increased blood pressure (Portugal has the highest at 24.4% and the UK has the lowest at 15.2%).
- 18.8% smoke.

#### Slide 12:

- Overall, data on the burden of ESKD was available in Western Europe. In total, 21 countries have data on the incidence and prevalence of treated ESKD.
- Of the countries with data, the median prevalence of treated ESKD was 980 people receiving treatment for ESKD per million population. With respect to chronic dialysis (HD or PD), an average of 438 people were receiving dialysis per million population.
- The prevalence of HD was much higher than PD: 387 pmp vs. 53 pmp, respectively.
- Portugal reported the highest rate of chronic dialysis (1212 pmp) and Luxembourg reported the lowest (87 pmp).
- Greece has the highest rate of chronic HD (1010 pmp) and Denmark has the highest rate of chronic PD (94.7 pmp).

#### Slide 13:

- Many countries in Western Europe have data available on the utilization of kidney transplantation.
- 20/29 (70%) countries have data on the incidence of kidney transplantation. In the region, the average rate was 46 pmp.
- The overall prevalence was 545 pmp; highest in Portugal (693 pmp) and lowest in Greece (242 pmp).
- Deceased donation was more common than live donation: the average incidence rate of deceased donor transplantation was 33.9 pmp compared to 10.6 pmp for living donation.

#### Slide 14:

- Annual costs of kidney replacement therapy were estimated for each country.
- 18 countries had data to estimate the annual cost of HD, which was USD 60,037. The costs of PD were also available in 18 countries and estimated at USD 43,689 per year.
- Transplantation costs were also available in 13 countries. It was estimated that the first year of transplantation would cost USD 63,196 and 14,173 per year following (12 countries).
- The HD/PD cost ratio was estimated for 18 countries and estimated to be 1.47.



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#### Slide 15:

- Responses were received from 21 of 29 countries in Western Europe (72.4%) representing 99% 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.
- All 21 countries offer hemodialysis and peritoneal dialysis. All countries except for Luxembourg and Liechtenstein offer kidney transplantation.
- Nine countries (Belgium, Denmark, France, Greece, Italy, Malta, Portugal, Spain, and the United Kingdom) fund medications for both dialysis and transplantation.
- Finland provides medication required for kidney transplantation, but not for dialysis.
- Few countries in Western Europe reported an advocacy for kidney disease. Only 4 countries (Finland, Ireland, Liechtenstein and the Netherlands) have an advocacy group for CKD and 5 for AKI (Finland, Italy, Liechtenstein, the Netherlands, and Switzerland). Over half (12/21; 57%) reported an advocacy group for ESKD.

#### Slide 18:

- 18/21 (86%) of countries reported that non-dialysis CKD care is publicly funded by the government: 8 with no fees and 10 with some fees at the point of delivery.
- Only one country (Liechtenstein) reported that care was solely private through health insurance.
- Government funding was more common in Western Europe compared to the global average. Nearly 90% of countries in Western Europe fund CKD care, and only 48% do worldwide.

#### Slide 19:

- Similarly, many countries in Western Europe fund kidney replacement therapy. 19/21 (90%) of countries reported that KRT is funded by the government: 14 with no fees and 5 with some fees at the point of care.
- Liechtenstein also reported that KRT is funded exclusively privately through health insurance.
- Where 90% of countries in Western Europe publicly fund KRT, only 64% of countries do worldwide.



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#### Slide 20:

- All countries in Western Europe reported that nephrologists are primarily responsible for people with ESKD.
- Other healthcare providers share the responsibility in other countries, for example 2 countries (Israel and Luxembourg) reported that primary care physicians are also responsible for ESKD care and 2 (Ireland and Norway) reported that nurses share the responsibility.
- One country in Western Europe (Ireland) reported that multidisciplinary teams are utilized to care for people with ESKD.
- Overall, this is similar as to what was reported worldwide.

#### Slide 21:

- Workforce shortages, highlighted in red, were not often reported in Western Europe.
- 9 countries (31%) in the region reported shortage of nephrologists (Austria, Germany, Iceland, Ireland, Israel, Luxembourg, Malta, Norway, and Sweden).
- Dialysis nurses were also in limited supply in 9 countries. Surgeons (for HD and PD access) were limited in 8 and 4 countries, respectively and vascular access coordinators shortages were noted in 6 countries.
- No shortages were reported in Finland, France, Liechtenstein, Spain, or the United Kingdom.

#### Slide 22:

- Worldwide, the median number of nephrologists is 9.95 nephrologists per million population.
- In Western Europe, the density of nephrologists was 24.37 nephrologists per million population, nearly three times the global rate. One country (Belgium) did not report the number of nephrologists.
- Of the 20 countries in Western Europe with estimated rates, the highest nephrologist densities were: Greece (55.75 pmp), Liechtenstein (51.88 pmp), and Italy (48.2 pmp). The lowest were reported in Ireland (9.47 pmp) and the United Kingdom (9.78 pmp).
- Nephrology trainee density was similarly high in the region. The global median density of trainees is 1.4 per million population.
- In Western Europe, the median density was 5.81 pmp. Data on trainee densities were provided for 18 countries (not available in Luxembourg, Iceland, or Belgium).
- Of the 18 countries with data, the highest trainee densities were: Malta (22.27 pmp) and Norway (18.61 pmp). The lowest were Liechtenstein (0 trainees) and Finland (1.81 pmp).



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#### Slide 23:

- Respondents were asked to report the number of centres that provide chronic hemodialysis in their country. All countries in Western Europe reported that chronic HD services were available.
- Globally, the median density was 4.5 centers per million population. In Western Europe, the density was 6.93 pmp.
- Countries in Western Europe that had the highest densities were: Liechtenstein (25.94 pmp) and Greece (15.8 pmp).
- Countries with the lowest densities were: United Kingdom (0.95 pmp) and Denmark (2.32 pmp).

#### Slide 24:

- Respondents were also asked to report the number of centres that provide chronic peritoneal dialysis in their country. All countries in Western Europe reported that PD was available, which was 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 Western Europe, the density was 2.33 pmp.
- Countries in the region with the highest densities were: Liechtenstein (25.94 pmp) and Switzerland (7.24 pmp).
- Countries with the lowest densities were: the United Kingdom (0.8 pmp) and Austria (1.14 pmp).

#### Slide 25:

- Respondents were also asked to report the number of centres that provide kidney transplantation in their country. In Western Europe, 19/21 countries (90%) reported that kidney transplantation was available (not available in Liechtenstein or Luxembourg). 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 Western Europe, the median density was 0.52 pmp.
- Countries in the region with the highest densities were: Iceland (5.82 pmp) and Malta (2.23 pmp).
- Countries with the lowest densities were: Finland (0.18 pmp) and Norway (0.19 pmp).

#### Slide 26:

- Of the 19 countries in Western Europe that offer kidney transplantation services, only one (Iceland) relies on live donation only and the remaining 95% use a combination of live and deceased donation. This is higher than the



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global average, which reported that 72% rely on a combination of sources for organ donation and 28% use live donation only.

- All countries in Western Europe that offer transplantation have a wait list: 2 regional (Austria and Denmark) and 17 nationally. No countries in the region reported an absence of a wait list, as compared to 19% globally.

**Slide 27:**

- The quality of HD delivery in Western Europe was high. All countries in the region offer chronic HD services, and only all reported they have a center-based service that involves treatment 3x week for 3-4 hours. (note: Iceland did not answer the question).
- This is much higher than the global average, which reported that 77% of countries offer adequate frequency for HD services.
- Similarly, all countries in Western Europe offer chronic PD services, and all reported an ability to do adequate exchanges 3-4x day (or equivalent cycles on automated PD). (note: Iceland did not answer the question).
- Only 58% of countries worldwide reported an adequate PD exchange.

**Slide 28:**

- Thirteen countries in Western Europe reported that home hemodialysis was generally available (meaning that home hemodialysis training is offered in at least 50% of dialysis centres). This is higher than the global average, that reported only 13% of countries have home HD generally available.
- One country (Greece) reported that home HD 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 Western Europe, 90% of countries offer CKM services (unknown in Finland, Germany, and Iceland).
- All countries that offer CKM reported that CKM was generally available as a chosen or medically-advised basis, as opposed to choice restricted. This is much higher than the global average, which reported only 50% of countries worldwide have chosen or medically-advised CKM generally available.



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**Slide 30:**

- Registries for dialysis and transplantation are common in Western Europe.
- All countries but 3 (Germany, Iceland, Luxembourg) have a dialysis registry and all but 2 (Iceland and Luxembourg) reported a transplant registry.
- This is higher than what was reported globally. Worldwide, only 66% of countries have a dialysis registry and 57% have a transplant registry (as opposed to 90% and 95%, respectively, for Western Europe).
- However, presence of non-dialysis CKD and AKI registries were less common. Only 3 countries (Malta, Sweden, and the United Kingdom) have a CKD registry and 2 countries (Malta and the United Kingdom) have an AKI registry.
- This is similar to what was reported globally. Worldwide, 12% and 8% of countries have CKD and AKI registries, respectively, compared to 15% and 10% in Western Europe.

**Slide 31:**

In summary, the 2019 GKHA highlights several important findings for Western Europe.

*KRT availability, access, and quality is high*

- All countries in Western Europe reported that chronic HD and PD were available. 27/29 countries have kidney transplantation available.
- Similar to availability, access to dialysis was high in Western Europe. All countries (one country did not answer the question) reported that access to HD center-based service that involves treatment 3x week for 3-4 hours was generally available.
- Sixty-four per cent of countries in Western Europe reported that home hemodialysis is generally available, only 1 country (Greece) reported it is never available.
- All countries (one country did not answer the question) similarly reported an ability to do adequate PD exchanges 3-4x day.
- Of the 27 countries in Western Europe that offer transplantation services, all have a waitlist.

*Conservative kidney management is available, generally chosen or medically-advised*

- Almost all (27/29; 90%) countries in Western Europe reported that CKM is available.
- All 27 countries stated that CKM delivery is generally chosen or medically advised, meaning that patients are choosing to receive CKM because it is the option for their circumstances, not because KRT is unavailable.

*Government funding for kidney care services is high, less for medications*

- Nearly 90% (18/21; 86%) of countries in Western Europe reported that non-dialysis CKD care is publicly funded by the government. This is much higher than what was reported globally, which showed that only 48% of countries worldwide publicly fund CKD care.
- Similarly, 90% of countries in Western Europe cover KRT costs, which is higher than the global average of 64%.
- Medication coverage in Western Europe was not as common as kidney care services. Only 9 countries in the region (43%) reported that medications for dialysis patients are exclusively covered by the government. However, this is similar to the global average, which showed that 41% of countries fund medication for dialysis patients through the government.
- The same 9 countries also cover medications needed for patients that have had kidney transplantation, as well as Finland (total of 10/21; 48%). This is slightly less than the global average, which showed that 57% of countries fund medication for transplantation patients through the government.

*Few registries across all levels of kidney disease*

- Most countries have registries for ESKD: 18 (62%) have a registry for dialysis and 19 (66%) have a registry for transplantation.
- Only 15% and 10%, respectively, have registries for non-dialysis CKD in Western Europe. However, this was still higher than what was reported globally (12% and 8%, respectively).

*Many workforce limitations, especially nephrologists*

- Few countries in Western Europe reported shortages of healthcare providers essential for ESKD care.
- Five countries (Finland, France, Liechtenstein, Spain, and the UK) reported no shortages of any provider type.
- One-third (9/29; 31%) of countries reported shortages of nephrologists and dialysis nurses.
- The nephrologist density of Western Europe (24.4 pmp) was nearly 3 times greater than the overall (9.10 pmp).
- Nephrology trainee density was similarly high in the region. Worldwide, there are 1.4 trainees per million population. In Western Europe, the median density was 5.8 pmp. Only one country (Liechtenstein) reported 0 trainees.
- Efforts to increasing the workforce capacity through other providers and multidisciplinary teams 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.



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### *Little advocacy for kidney disease in Western Europe*

- Advocacy groups were minimal in Western Europe for AKI, CKD, and ESKD.
- Only 4 countries have an advocacy group for CKD (Finland, Ireland, Liechtenstein, and the Netherlands) and 5 have an advocacy group for AKI (Finland, Italy, Liechtenstein, the Netherlands, and Switzerland).
- Over half of the countries in the region have an advocacy group for end stage kidney disease.
- 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.



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*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.