Summary of the 2019 ERA-EDTA Registry Annual Report
National and regional renal registries that contributed data to the 2019 ERA-EDTA Registry Annual Report

- Renal registries contributing with individual patient data
- Renal registries contributing with aggregated data
Incident patients accepted for RRT in 2019, at day 1 by country
Incident patients accepted for RRT in 2019 at day 1

Unadjusted incidence
renal registries providing individual patient data

Unadjusted incidence
renal registries providing aggregated data

- patients younger than 20 years of age are not included; 
- patients younger than 18 years of age are not included; 
- data includes patients receiving dialysis only
Incident patients accepted for RRT in 2019 at day 1 by country adjusted for age and sex

Adjusted incidence
renal registries providing individual patient data

Adjusted incidence
renal registries providing aggregated data

Incidence (per million population)

patients younger than 20 years of age are not included; data includes patients receiving dialysis only
Mean age at start of RRT
renal registries providing individual patient data

Mean age at start of RRT
renal registries providing aggregated data

patients younger than 20 years of age are not included; patients younger than 18 years of age are not included; data includes patients receiving dialysis only
Incident patients accepted for RRT in 2019, at day 1

registries providing individual patient data only

Mean age at start of RRT

**male patients**

<table>
<thead>
<tr>
<th>Country</th>
<th>Mean age (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK, Scotland</td>
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Mean age (years)

**female patients**

<table>
<thead>
<tr>
<th>Country</th>
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<tr>
<td>All countries</td>
<td>64.8</td>
</tr>
</tbody>
</table>

*patients younger than 20 years of age are not included;*
Incident patients accepted for RRT in 2019, at day 1
by age category

Incidence by age category
for all registries

75+ 363.0
65-74 339.6
45-64 154.0
20-44 46.4
0-19 6.1

Incidence (per million age-related population)

Incidence by age category
by type of data provided by registry

75+ 26
65-74 30
45-64 27
20-44 37
0-19 15

All countries
Individual data
Aggregated data
Incident patients accepted for RRT in 2019, at day 1 by sex

Incidence by sex for all registries

- Women: 90.5
- Men: 157.6

Incidence by sex by type of data provided by registry

- All countries:
  - Women: 38
  - Men: 62

- Individual data:
  - Women: 36
  - Men: 64

- Aggregated data:
  - Women: 40
  - Men: 60
Incident patients accepted for RRT in 2019, at day 1
by primary renal disease

Incidence by primary renal disease

for all registries

<table>
<thead>
<tr>
<th>Disease</th>
<th>Incidence (per million population)</th>
</tr>
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<tbody>
<tr>
<td>Unknown/missing</td>
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<tr>
<td>Miscellaneous</td>
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<tr>
<td>Renal vascular disease</td>
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<tr>
<td>Hypertension</td>
<td>16.5</td>
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<tr>
<td>Diabetes mellitus</td>
<td>26.8</td>
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<tr>
<td>Polycystic kidneys, adult type</td>
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<tr>
<td>Pyelonephritis</td>
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<tr>
<td>Glomerulonephritis/sclerosis</td>
<td>15.2</td>
</tr>
</tbody>
</table>

Incidence by primary renal disease

by type of data provided by registry

- All countries
- Individual data
- Aggregated data

Legend:
- Unknown/missing
- Miscellaneous
- Renal vascular disease
- Hypertension
- Diabetes mellitus
- Polycystic kidneys, adult type
- Pyelonephritis
- Glomerulonephritis/sclerosis
Incident patients accepted for RRT in 2019, at day 1
by primary renal disease and age category

Incidence by primary renal disease
patients from registries providing individual patient data only

- All patients:
  - Glomerulonephritis/sclerosis, 11%
  - Unknown/missing, 20%
  - Pyelonephritis, 4%
  - Polycystic kidneys, adult type, 5%
  - Diabetes mellitus, 22%
  - Renal vascular disease, 2%
  - Miscellaneous, 19%
  - Hypertension, 16%

- Patients younger than 65 years of age at the start of RRT:
  - Unkn/miss, 17%
  - Miscellaneous, 20%
  - HT, 10%
  - DM, 21%
  - RVD, 1%
  - GN, 16%
  - PN, 5%
  - PKD, 9%

- Patients aged 65 years or older at the start of RRT:
  - Unkn/miss, 22%
  - Miscellaneous, 18%
  - HT, 20%
  - DM, 23%
  - RVD, 2%
  - GN, 7%
  - PN, 4%
  - PKD, 3%
Incident patients accepted for RRT in 2019, at day 91
by established modality and age category

Incidence at day 91 by established modality
patients from registries providing individual patient data only

- All patients:
  - Transplant, 6%
  - Peritoneal dialysis, 12%
  - Haemodialysis, 82%

- Patients younger than 65 years of age at the start of RRT:
  - Transplant, 11%
  - Peritoneal dialysis, 15%
  - Haemodialysis, 75%

- Patients aged 65 years or older at the start of RRT:
  - Peritoneal dialysis, 11%
  - Transplant, 2%
  - Haemodialysis, 87%
Incident patients accepted for RRT, at day 1
last 20 years (2000-2019)

Unadjusted incidence over time
all patients starting RRT

Adjusted incidence over time
all patients starting RRT
Incident patients accepted for RRT, at day 1
last 15 years (2005-2019)

Unadjusted incidence over time
all patients starting RRT

Adjusted incidence over time
all patients starting RRT
Incident patients accepted for RRT, at day 1
last 10 years (2010-2019)

Unadjusted incidence over time
all patients starting RRT

Adjusted incidence over time
all patients starting RRT
Incident patients accepted for RRT, at day 1
last 5 years (2015-2019)

Unadjusted incidence over time
all patients starting RRT

Adjusted incidence over time
all patients starting RRT
Prevalent patients on RRT in 2019 by country
Prevalent patients on RRT in 2019
by country

Unadjusted prevalence
renal registries providing individual patient data

Unadjusted prevalence
renal registries providing aggregated data

* patients younger than 20 years of age are not included;  
* patients younger than 18 years of age are not included;  
* data includes patients receiving dialysis only
Prevalent patients on RRT in 2019
by country
adjusted for age and sex

Adjusted prevalence
renal registries providing individual patient data

Prevalence (per million population)

Adjusted prevalence
renal registries providing aggregated data

Prevalence (per million population)

\(^a\) patients younger than 20 years of age are not included;  \(^b\) data includes patients receiving dialysis only
Prevalent patients on RRT in 2019

Mean age on 31 December 2019
renal registries providing individual patient data

Mean age on 31 December 2019
renal registries providing aggregated data

\[\text{Mean age (years)}\]

\[\text{All countries} \quad 62.0\]

\[\text{Albania} \quad 51.9\]

\[\text{Ukraine} \quad 53.4\]

\[\text{Latvia} \quad 56.1\]

\[\text{North Macedonia} \quad 59.8\]

\[\text{Kosovo} \quad 60.1\]

\[\text{Spain (All)} \quad 60.7\]

\[\text{Italy (8 of 20 regions)} \quad 63.3\]

\[\text{Slovakia} \quad 64.3\]

\[\text{Israel} \quad 67.0\]

\[\text{Portugal} \quad 67.5\]

\[\text{All countries} \quad 62.0\]

\[\text{a} \quad \text{patients younger than 20 years of age are not included; b} \quad \text{patients younger than 18 years of age are not included; c} \quad \text{data includes patients receiving dialysis only}\]
Prevalent patients on RRT in 2019 for registries providing individual patient data only

Mean age on 31 December 2019

**Male patients**

<table>
<thead>
<tr>
<th>Country</th>
<th>Mean Age (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK, Scotland</td>
<td>57.2</td>
</tr>
<tr>
<td>Iceland</td>
<td>56.2</td>
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<td>UK, England</td>
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<td>Denmark</td>
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<td>Bosnia and Herzegovina</td>
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<td>Finland</td>
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</tr>
<tr>
<td>Montenegro</td>
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</tr>
<tr>
<td>Serbia</td>
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<td>All countries</td>
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**Female patients**

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<th>Country</th>
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<td>Belgium, Dutch-speaking</td>
<td>67.0</td>
</tr>
<tr>
<td>All countries</td>
<td>61.9</td>
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</tbody>
</table>

*patients younger than 20 years of age are not included;*
Prevalent patients on RRT in 2019
by age category

Prevalence by age category
for all registries

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Prevalence (per million age-related population)</th>
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<td>65-74</td>
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<td>45-64</td>
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<td>20-44</td>
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<td>0-19</td>
<td>45</td>
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Prevalence by age category
by type of data provided by registry

<table>
<thead>
<tr>
<th>Age Category</th>
<th>All countries</th>
<th>Individual data</th>
<th>Aggregated data</th>
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<tbody>
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Prevalent patients on RRT in 2019

by sex

Prevalence by sex
for all registries

<table>
<thead>
<tr>
<th>Prevalence (per million population)</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>668</td>
<td>1090</td>
</tr>
</tbody>
</table>

Prevalence by sex
by type of data provided by registry

- All countries
  - Women: 39
  - Men: 61

- Individual data
  - Women: 38
  - Men: 62

- Aggregated data
  - Women: 41
  - Men: 59
Prevalent patients on RRT in 2019
by primary renal disease

Prevalence by primary renal disease
for all registries

- Unknown/missing: 229.3
- Miscellaneous: 123.1
- Renal vascular disease: 11.3
- Hypertension: 89.1
- Diabetes mellitus: 136.0
- Polycystic kidneys, adult type: 67.6
- Pyelonephritis: 63.4
- Glomerulonephritis/sclerosis: 158.4

Prevalence by primary renal disease
by type of data provided by registry

- Unknown/missing: 26
- Miscellaneous: 17
- Renal vascular disease: 18
- Hypertension: 1
- Diabetes mellitus: 10
- Polycystic kidneys, adult type: 14
- Pyelonephritis: 9
- Glomerulonephritis/sclerosis: 16

Prevalence (per million population)
Prevalent patients on RRT in 2019
by primary renal disease and age category

Prevalence by primary renal disease
patients from registries providing individual patient data only

all patients
- Glomerulonephritis/sclerosis, 19%
- Miscellaneous, 18%
- Diabetes mellitus, 16%
- Polycystic kidneys, adult type, 9%
- Renal vascular disease, 1%
- Hypertension, 12%

patients younger than 65 years of age
- Unkn/miss, 15%
- GN, 25%
- Miscellaneous, 20%
- HT, 7%
- DM, 13%
- PKD, 8%

patients aged 65 years or older
- Unkn/miss, 18%
- PN, 9%
- Miscellaneous, 15%
- DM, 19%
- RVD, 2%
- HT, 17%
Prevalent patients on RRT in 2019 by modality

Prevalence by modality for all registries:
- Haemodialysis: 520
- Peritoneal dialysis: 42
- Transplant: 329
- Unknown/missing: 1

Prevalence by modality by type of data provided by registry:
- All countries:
  - Unkn: 58
  - Tx: 48
  - PD: 66
- Individual data:
  - Unkn: 5
  - Tx: 5
  - PD: 66
- Aggregated data:
  - Unkn: 5
  - Tx: 5
  - PD: 66
Prevalent patients on RRT in 2019 by modality and age category

Prevalence by modality
patients from registries providing individual patient data only

- **All patients**
  - Haemodialysis, 50%
  - Transplant, 45%
  - Peritoneal dialysis, 5%

- **Patients younger than 65 years of age**
  - Haemodialysis, 36%
  - Transplant, 60%
  - Peritoneal dialysis, 4%

- **Patients aged 65 years or older**
  - Haemodialysis, 64%
  - Transplant, 30%
  - Peritoneal dialysis, 5%
Prevalent patients on RRT
last 20 years (2000-2019)

Unadjusted prevalence over time
all patients on RRT

Adjusted prevalence over time
all patients on RRT
Prevalent patients on RRT
last 15 years (2005-2019)

Unadjusted prevalence over time
all patients on RRT

Adjusted prevalence over time
all patients on RRT
Prevalent patients on RRT
last 10 years (2010-2019)

Unadjusted prevalence over time
all patients on RRT

Adjusted prevalence over time
all patients on RRT

Prevalence (per million population)
Prevalent patients on RRT
last 5 years (2015-2019)

Unadjusted prevalence over time
all patients on RRT

Adjusted prevalence over time
all patients on RRT
### Kidney transplants performed in 2019 by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Kidney Transplants (per million population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serbia</td>
<td>3</td>
</tr>
<tr>
<td>Montenegro</td>
<td>5</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>11</td>
</tr>
<tr>
<td>Romania</td>
<td>18</td>
</tr>
<tr>
<td>Greece</td>
<td>28</td>
</tr>
<tr>
<td>Iceland</td>
<td>32</td>
</tr>
<tr>
<td>Estonia</td>
<td>32</td>
</tr>
<tr>
<td>Belgium, French-speaking</td>
<td>34</td>
</tr>
<tr>
<td>Belgium, Dutch-speaking</td>
<td>34</td>
</tr>
<tr>
<td>UK, Wales</td>
<td>37</td>
</tr>
<tr>
<td>Switzerland</td>
<td>37</td>
</tr>
<tr>
<td>Spain, Extremadura</td>
<td>42</td>
</tr>
<tr>
<td>Austria</td>
<td>47</td>
</tr>
<tr>
<td>Sweden</td>
<td>45</td>
</tr>
<tr>
<td>Denmark</td>
<td>49</td>
</tr>
<tr>
<td>Norway</td>
<td>53</td>
</tr>
<tr>
<td>Spain, Canary Islands</td>
<td>53</td>
</tr>
<tr>
<td>the Netherlands</td>
<td>54</td>
</tr>
<tr>
<td>France</td>
<td>54</td>
</tr>
<tr>
<td>UK, England</td>
<td>55</td>
</tr>
<tr>
<td>Finland</td>
<td>56</td>
</tr>
<tr>
<td>UK, Scotland</td>
<td>56</td>
</tr>
<tr>
<td>Spain, Community of Madrid</td>
<td>58</td>
</tr>
<tr>
<td>Spain, Murcia</td>
<td>58</td>
</tr>
<tr>
<td>UK, Northern Ireland</td>
<td>60</td>
</tr>
<tr>
<td>Spain, Valencian region</td>
<td>60</td>
</tr>
<tr>
<td>Spain, Castile-La Mancha</td>
<td>65</td>
</tr>
<tr>
<td>Spain, Galicia</td>
<td>65</td>
</tr>
<tr>
<td>Spain, La Rioja</td>
<td>67</td>
</tr>
<tr>
<td>Spain, Castile and Leon</td>
<td>68</td>
</tr>
<tr>
<td>Spain, Andalusia</td>
<td>68</td>
</tr>
<tr>
<td>Spain, Aragon</td>
<td>69</td>
</tr>
<tr>
<td>Spain, Basque country</td>
<td>70</td>
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<tr>
<td>Spain, Cantabria</td>
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<tr>
<td>Spain, Asturias</td>
<td>82</td>
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<tr>
<td>Spain, Navarre</td>
<td>86</td>
</tr>
<tr>
<td>Spain, Catalonia</td>
<td>98</td>
</tr>
<tr>
<td>All countries</td>
<td>115</td>
</tr>
</tbody>
</table>

*patients younger than 20 years of age are not included; b: transplant rates are underestimated by 15%; c: transplant rates are underestimated by 30%; d: patients younger than 18 years of age are not included*
Kidney transplants performed in 2019
transplants from deceased donors
by country

Deceased donor transplant rate
renal registries providing individual patient data

Deceased donor transplant rate
renal registries providing aggregated data

patients younger than 20 years of age are not included; transplant rates are underestimated by 16% (b), 30% (c); patients younger than 18 years of age are not included
Kidney transplants performed in 2019
transplants from living donors
by country

Living donor transplant rate
renal registries providing individual patient data

Living donor transplant rate
renal registries providing aggregated data

- patients younger than 20 years of age are not included;
- transplant rates are underestimated by 12% (b), 30% (c);
- patients younger than 18 years of age are not included.
Kidney transplants performed in 2019
by donor type

Kidney transplants by donor type
for all registries

- Unknown donor: 0.7
- Deceased donor: 24.5
- Living donor: 10.1

Transplant rate (per million population)

Kidney transplants by donor type
by type of data provided by registry

- All countries: 69
- Individual data: 77
- Aggregated data: 67
Kidney transplants performed in 2019

dependent on donor type

Kidney transplants by donor type

patients from registries providing individual patient data only

- **All patients**
  - Donor type unknown, 0%
  - Living donor, 23%
  - Deceased donor, 76%

- **Patients younger than 65 years of age on transplantation**
  - Donor type unknown, 0%
  - Living donor, 26%
  - Deceased donor, 73%

- **Patients aged 65 years or older on transplantation**
  - Donor type unknown, 1%
  - Living donor, 15%
  - Deceased donor, 84%
Adjusted patient survival by primary renal disease
Incident RRT patients

from day 1, adjusted for age and sex

Survival probabilities were adjusted for fixed values for age (67 years), sex (63% men), and the primary renal disease distribution (24% diabetes mellitus, 19% hypertension / renal vascular disease, 11% glomerulonephritis and 46% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.
Adjusted patient survival by modality
Incident dialysis patients

from day 91, adjusted for age, sex, and primary renal disease

Survival probabilities were adjusted for fixed values for age (67 years), sex (63% men), and the primary renal disease distribution (24% diabetes mellitus, 19% hypertension / renal vascular disease, 11% glomerulonephritis and 46% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.
Adjusted patient survival by donor type
Patients receiving a first kidney transplant
from day of transplant, adjusted for age, sex, and primary renal disease

Survival probabilities were adjusted for fixed values for age (50 years), sex (63% men), and the primary renal disease distribution (14% diabetes mellitus, 10% hypertension / renal vascular disease, 23% glomerulonephritis and 53% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.
Survival probabilities were adjusted for fixed values for age (67 years), sex (63% men), and the primary renal disease distribution (24% diabetes mellitus, 19% hypertension / renal vascular disease, 11% glomerulonephritis and 46% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.
Patient survival on RRT

by cohort

Patient survival incident RRT patients

adjusted for age, sex and cause of renal failure

Survival probabilities were adjusted for fixed values for age (67 years), sex (63% men), and the primary renal disease distribution (24% diabetes mellitus, 19% hypertension / renal vascular disease, 11% glomerulonephritis and 46% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.
Survival probabilities were adjusted for fixed values for age (67 years), sex (63% men), and the primary renal disease distribution (24% diabetes mellitus, 19% hypertension / renal vascular disease, 11% glomerulonephritis and 46% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.
Patient survival on dialysis by cohort

Patient survival
incident dialysis patients
adjusted for age, sex and cause of renal failure

Survival probabilities were adjusted for fixed values for age (67 years), sex (63% men), and the primary renal disease distribution (24% diabetes mellitus, 19% hypertension / renal vascular disease, 11% glomerulonephritis and 46% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.
Patient survival after kidney transplantation by cohort

Patient survival after first kidney transplantation
adjusted for age, sex and cause of renal failure

Survival probabilities were adjusted for fixed values for age (50 years), sex (63% men), and the primary renal disease distribution (14% diabetes mellitus, 10% hypertension / renal vascular disease, 23% glomerulonephritis and 53% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.
Patient survival after kidney transplantation by cohort

Patient survival after first kidney transplantation
adjusted for age, sex and cause of renal failure

Survival probabilities were adjusted for fixed values for age (50 years), sex (63% men), and the primary renal disease distribution (14% diabetes mellitus, 10% hypertension / renal vascular disease, 23% glomerulonephritis and 53% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.
Graft survival after kidney transplantation by cohort

Graft survival after first kidney transplantation
adjusted for age, sex and cause of renal failure

Survival probabilities were adjusted for fixed values for age (50 years), sex (63% men), and the primary renal disease distribution (14% diabetes mellitus, 10% hypertension / renal vascular disease, 23% glomerulonephritis and 53% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.
Graft survival after kidney transplantation
by cohort

Graft survival after first kidney transplantation
adjusted for age, sex and cause of renal failure

Survival probabilities were adjusted for fixed values for age (50 years), sex (63% men), and the primary renal disease distribution (14% diabetes mellitus, 10% hypertension / renal vascular disease, 23% glomerulonephritis and 53% other primary renal diseases).

Cox regression model was used to calculate survival probabilities.