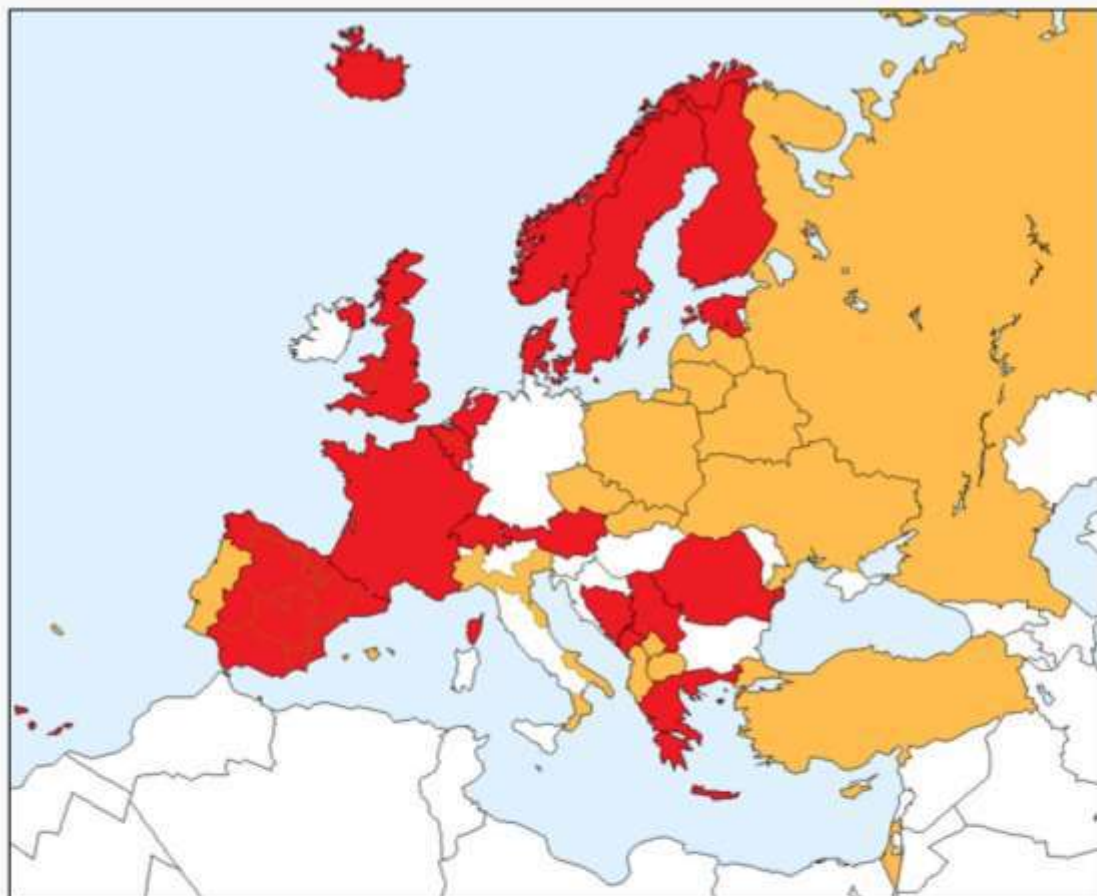






# **Summary of the 2019 ERA-EDTA Registry Annual Report**

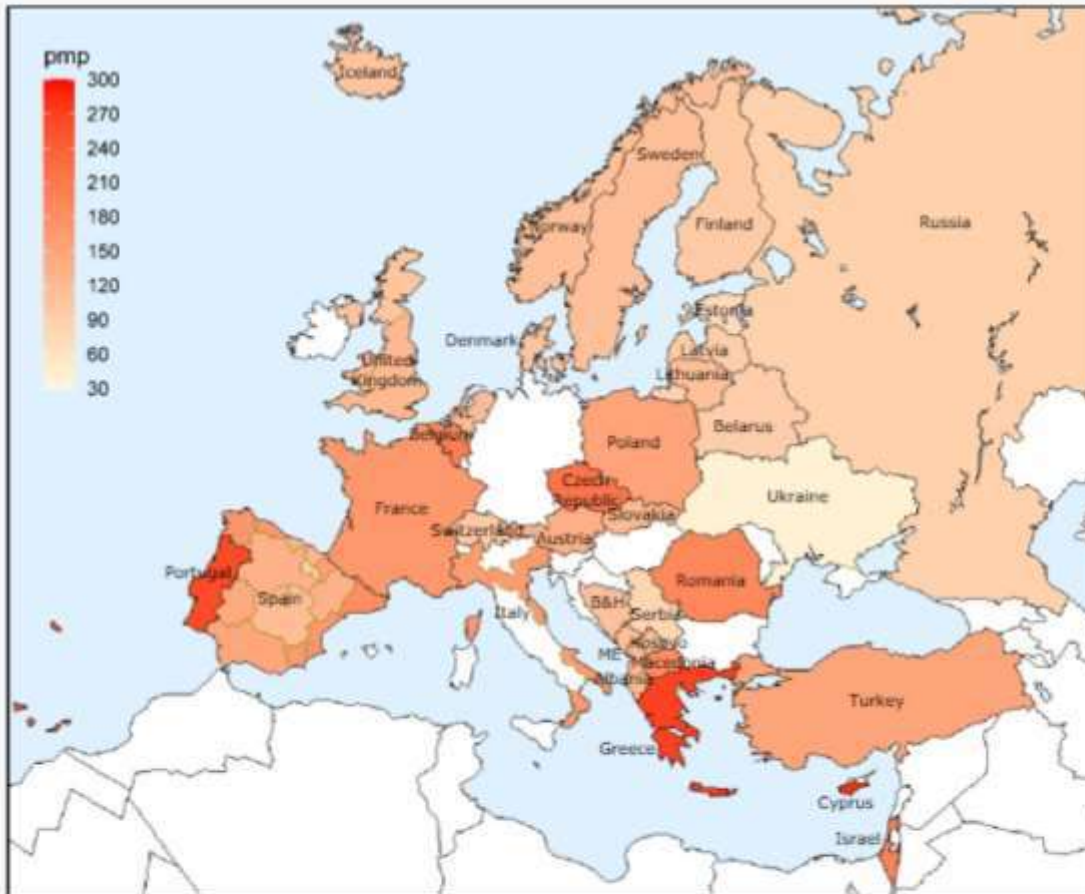


## National and regional renal registries that contributed data to the 2019 ERA-EDTA Registry Annual Report



-  Renal registries contributing with individual patient data
-  Renal registries contributing with aggregated data

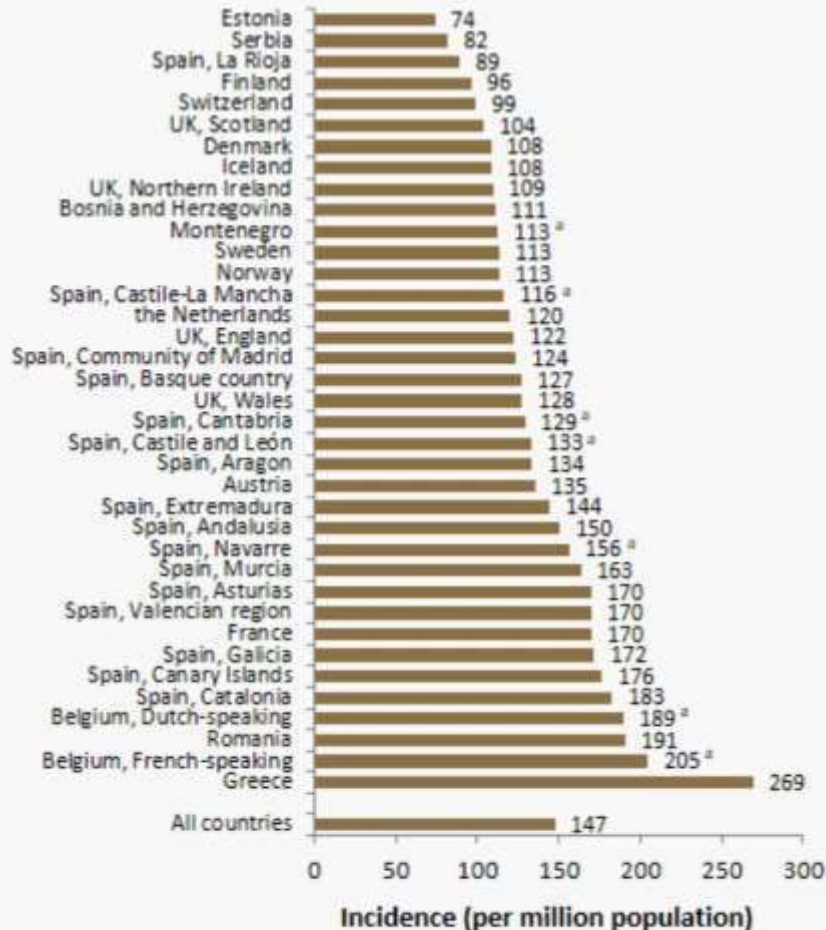
# Incident patients accepted for RRT in 2019, at day 1 *by country*



# Incident patients accepted for RRT in 2019 at day 1 by country

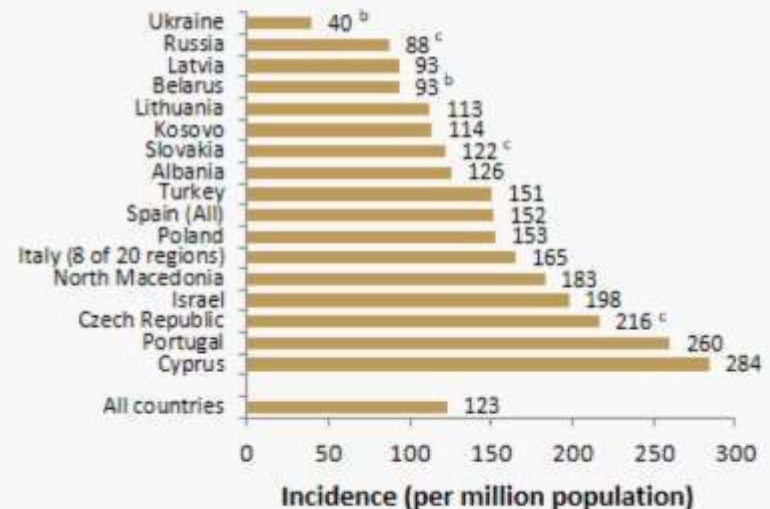
## Unadjusted incidence

renal registries providing individual patient data



## Unadjusted incidence

renal registries providing aggregated data



<sup>a</sup> patients younger than 20 years of age are not included; <sup>b</sup> patients younger than 18 years of age are not included; <sup>c</sup> data includes patients receiving dialysis only

# Incident patients accepted for RRT in 2019 at day 1

by country  
adjusted for age and sex

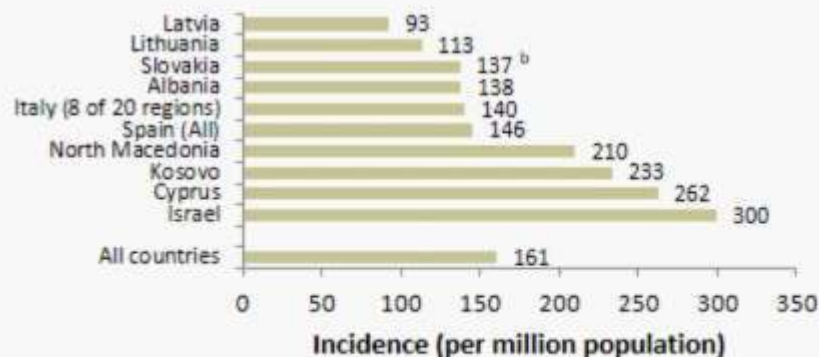
## Adjusted incidence

renal registries providing individual patient data



## Adjusted incidence

renal registries providing aggregated data

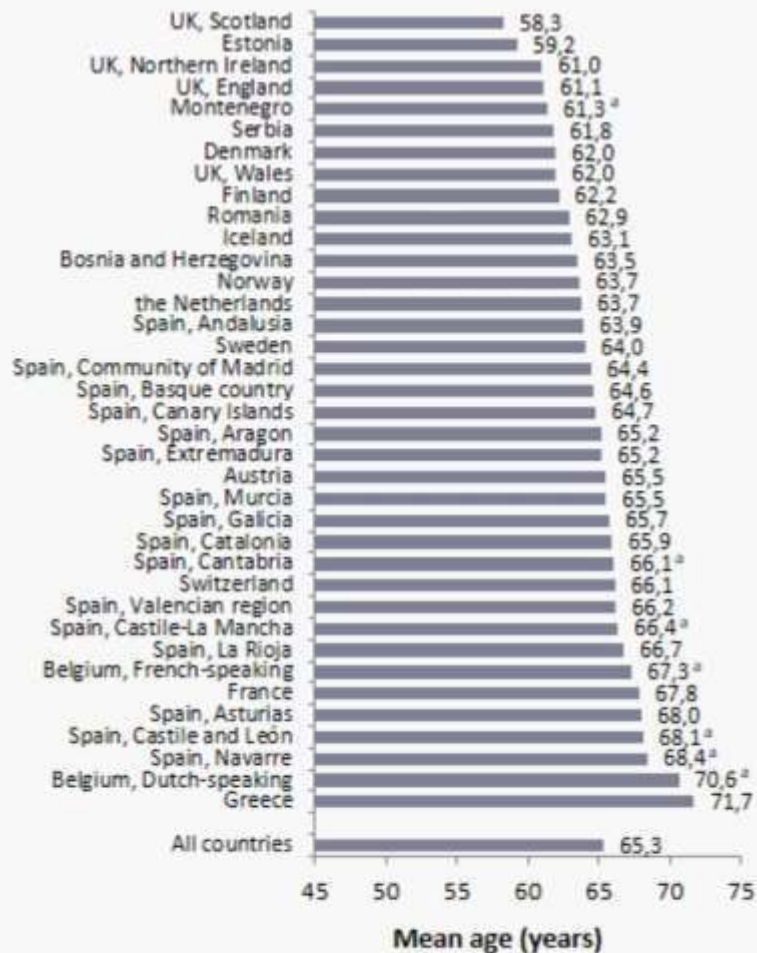


<sup>a</sup> patients younger than 20 years of age are not included; <sup>b</sup> data includes patients receiving dialysis only

# Incident patients accepted for RRT in 2019 at day 1 mean age

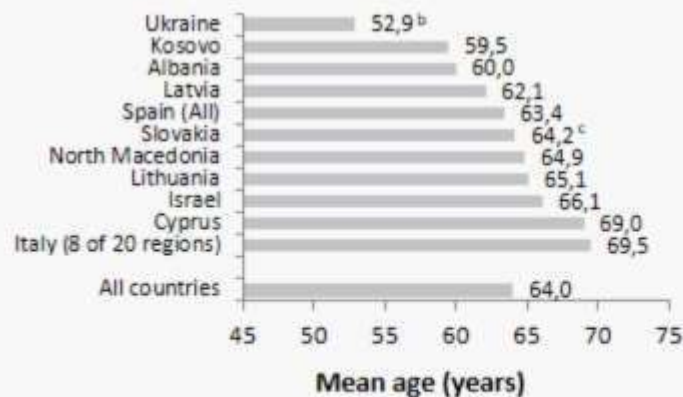
## Mean age at start of RRT

renal registries providing individual patient data



## Mean age at start of RRT

renal registries providing aggregated data



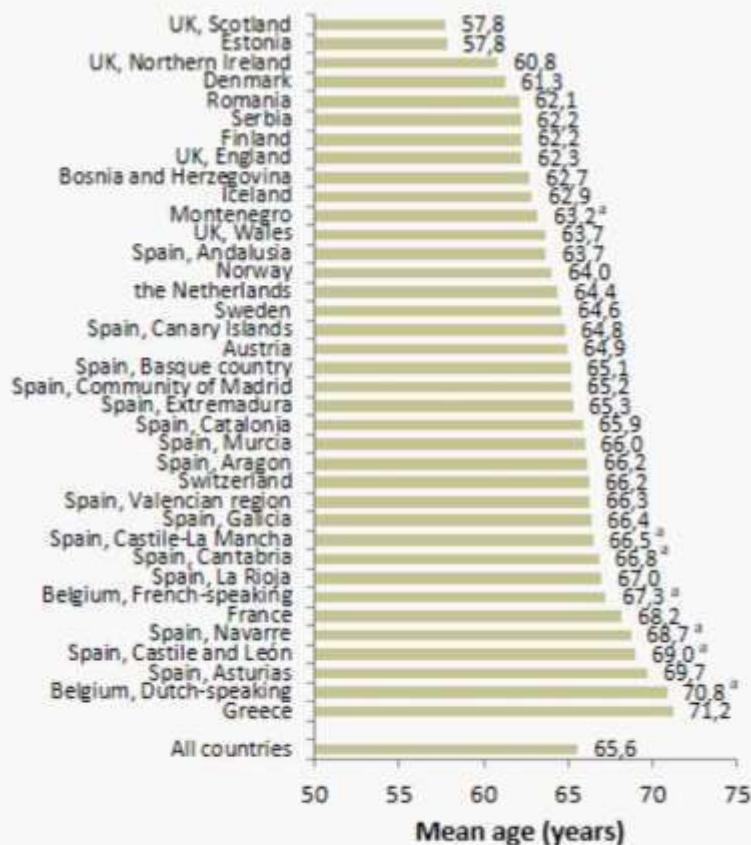
<sup>a</sup> patients younger than 20 years of age are not included; <sup>b</sup> patients younger than 18 years of age are not included; <sup>c</sup> data includes patients receiving dialysis only

# Incident patients accepted for RRT in 2019, at day 1

registries providing individual patient data only

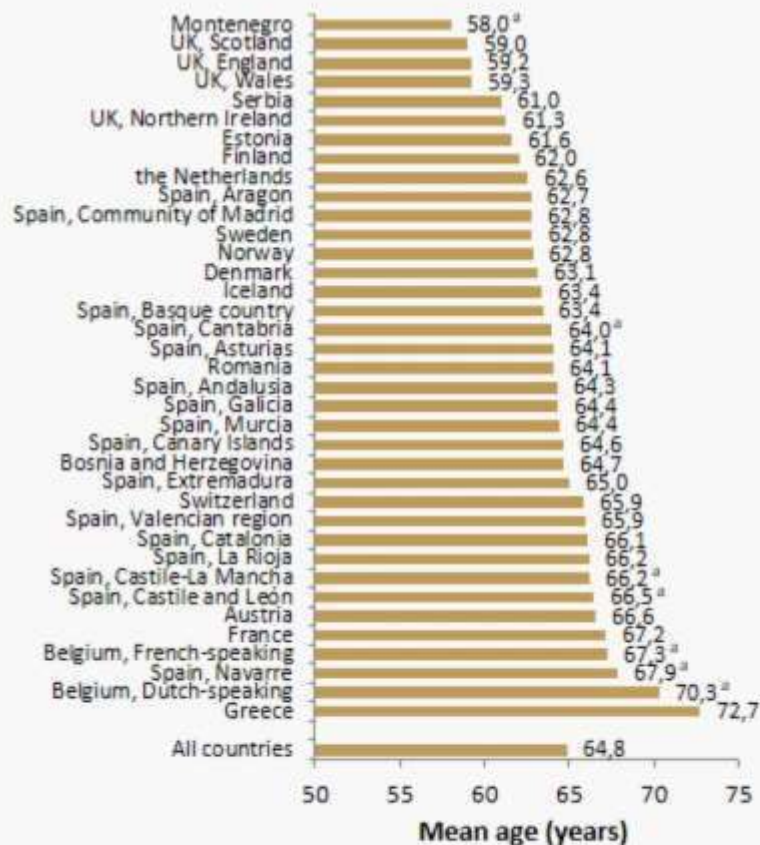
## Mean age at start of RRT

*male patients*



## Mean age at start of RRT

*female patients*

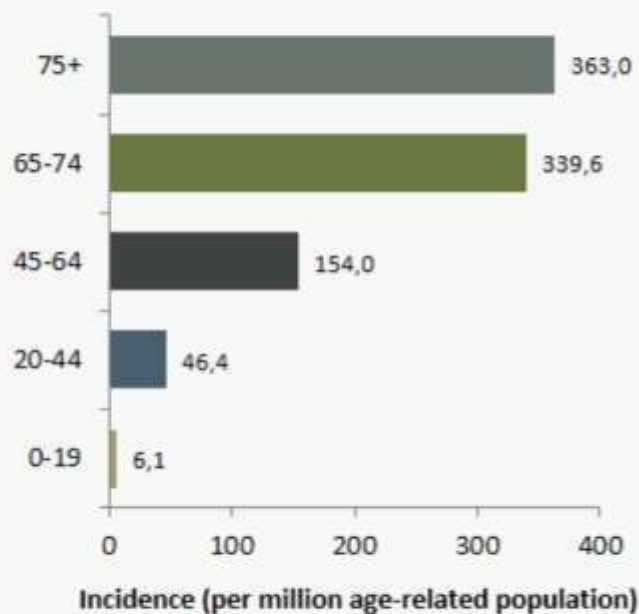


<sup>a</sup> patients younger than 20 years of age are not included;

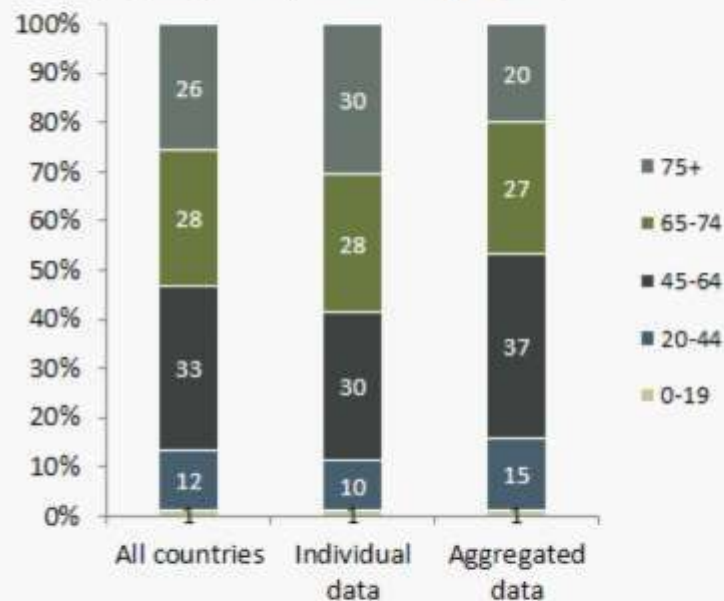
# Incident patients accepted for RRT in 2019, at day 1

*by age category*

**Incidence by age category**  
*for all registries*



**Incidence by age category**  
*by type of data provided by registry*



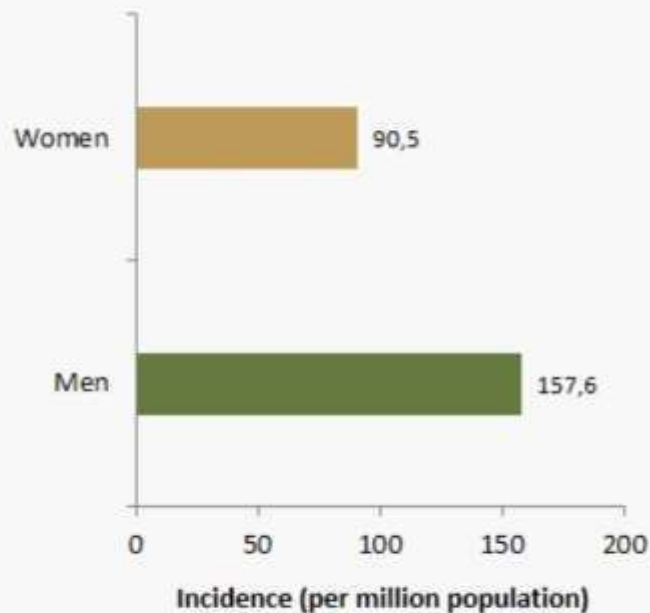


# Incident patients accepted for RRT in 2019, at day 1

*by sex*

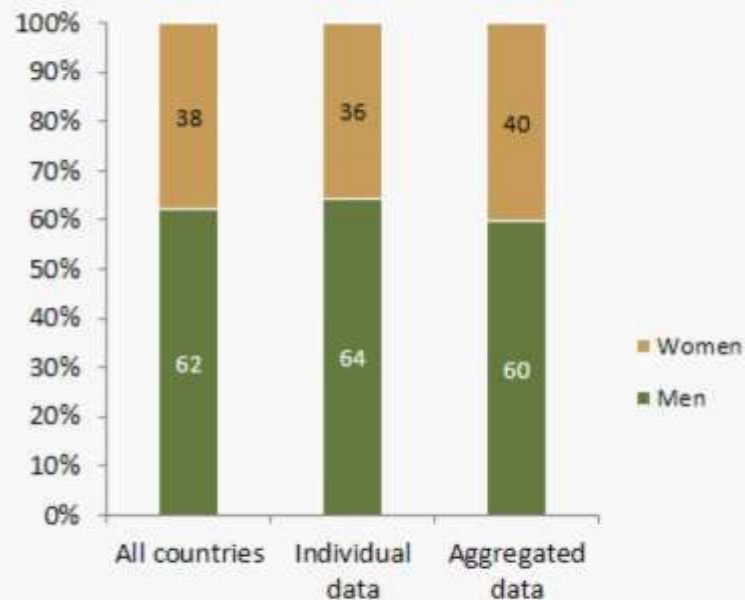
### Incidence by sex

*for all registries*



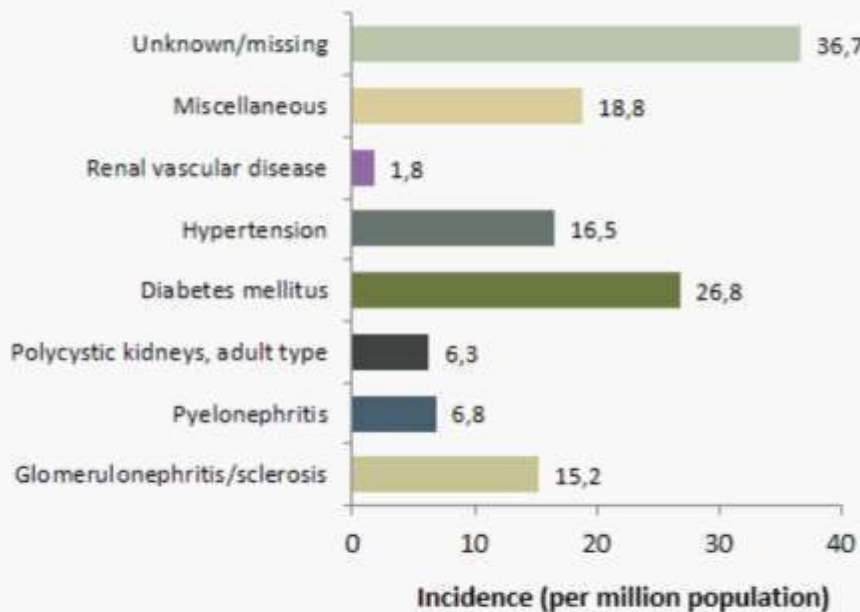
### Incidence by sex

*by type of data provided by registry*

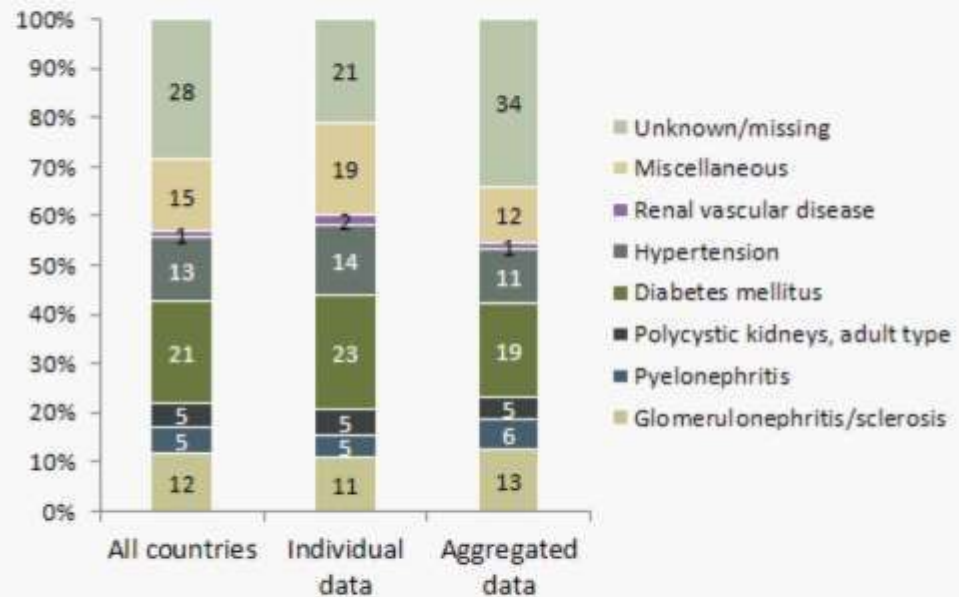


# Incident patients accepted for RRT in 2019, at day 1 *by primary renal disease*

**Incidence by primary renal disease**  
*for all registries*



**Incidence by primary renal disease**  
*by type of data provided by registry*



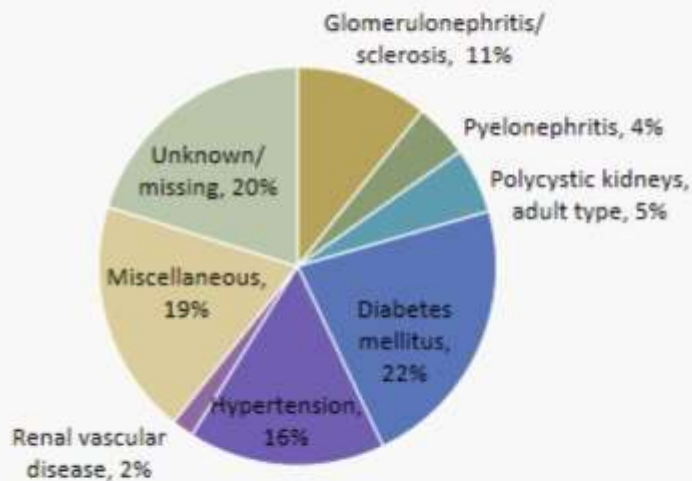
# Incident patients accepted for RRT in 2019, at day 1

*by primary renal disease and age category*

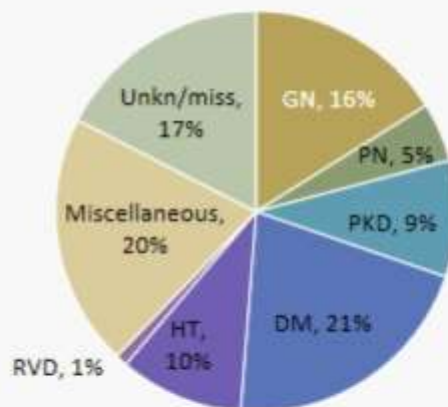
## Incidence by primary renal disease

*patients from registries providing individual patient data only*

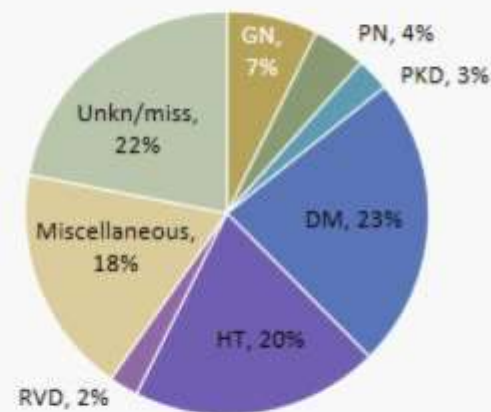
**all patients**



**patients younger than 65 years  
of age at the start of RRT**

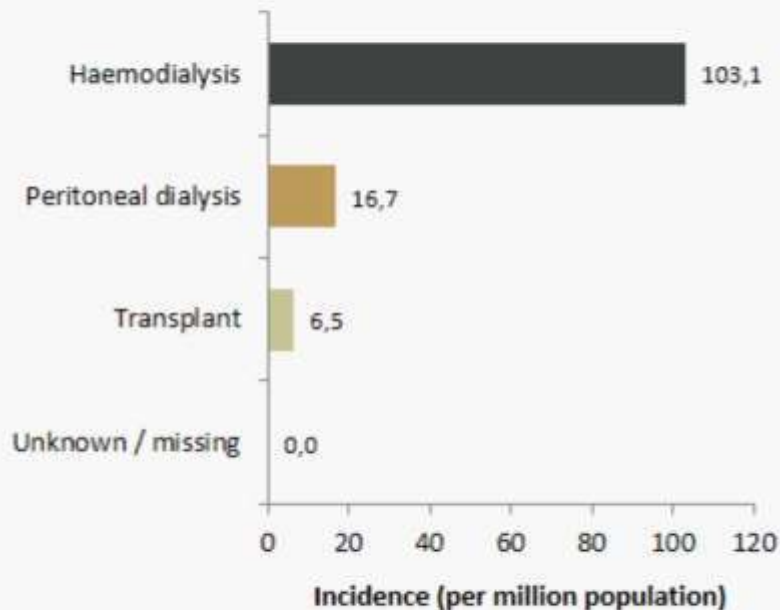


**patients aged 65 years or older  
at the start of RRT**

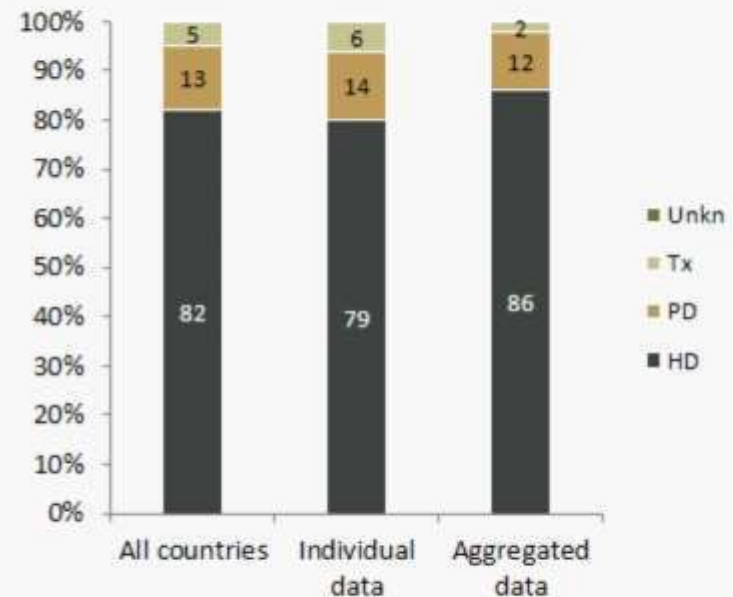


# Incident patients accepted for RRT in 2019, at day 91 *by established modality*

**Incidence at day 91  
by established modality**  
*for all registries*



**Incidence at day 91  
by established modality**  
*by type of data provided by registry*



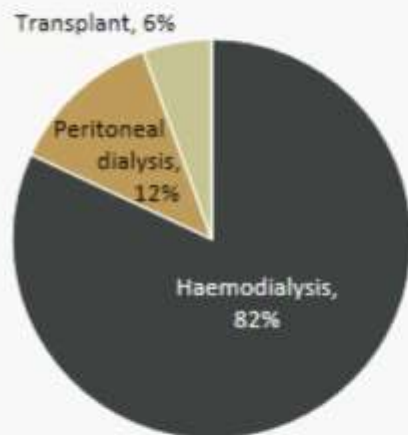
# Incident patients accepted for RRT in 2019, at day 91

*by established modality and age category*

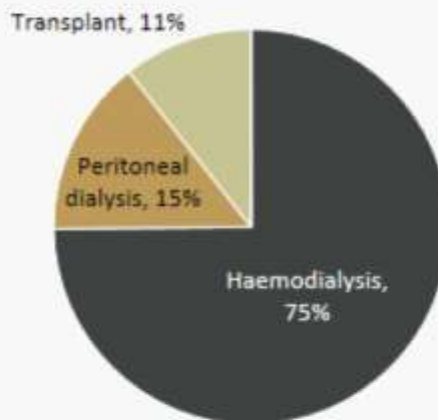
## Incidence at day 91 by established modality

*patients from registries providing individual patient data only*

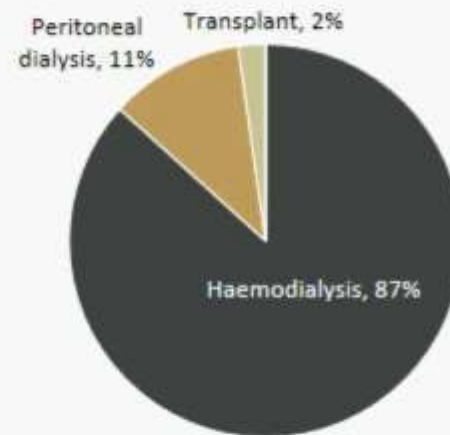
all patients



patients younger than 65 years  
of age at the start of RRT



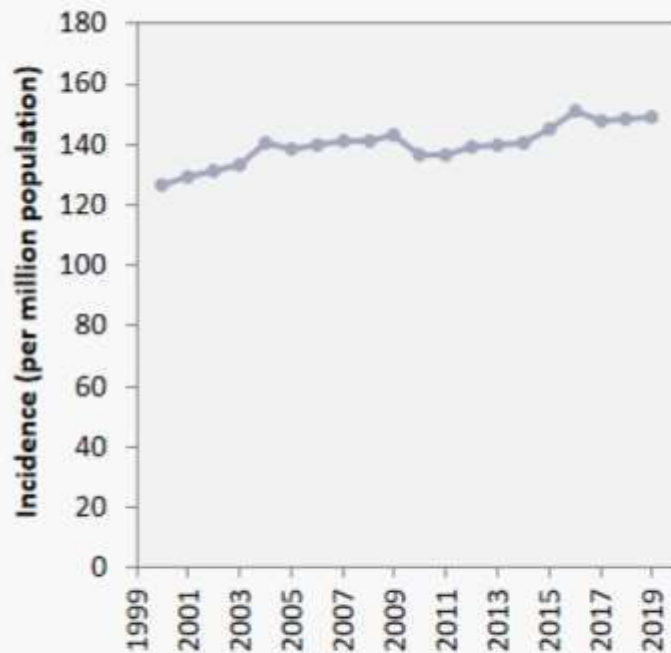
patients aged 65 years or older  
at the start of RRT



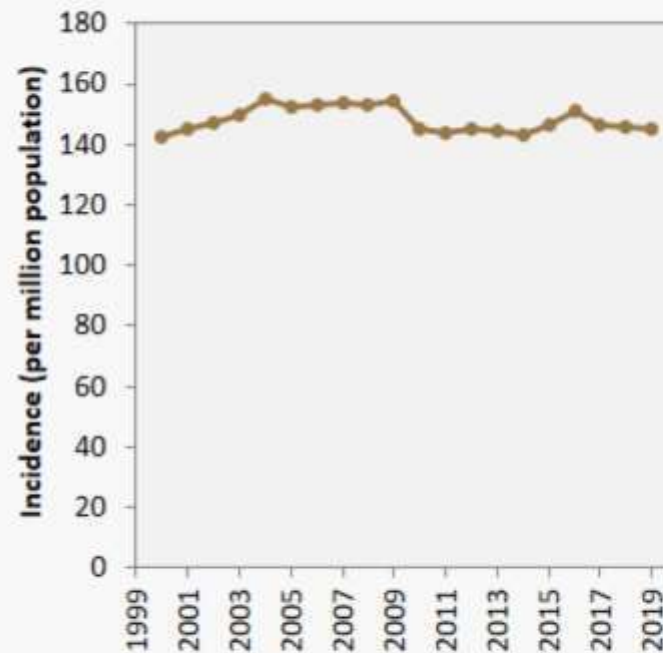
# Incident patients accepted for RRT, at day 1

*last 20 years (2000-2019)*

**Unadjusted incidence over time**  
*all patients starting RRT*



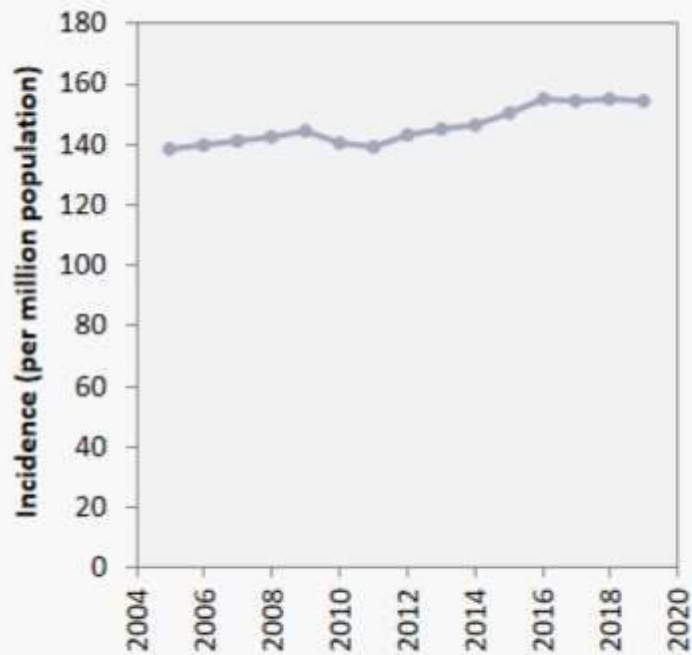
**Adjusted incidence over time**  
*all patients starting RRT*



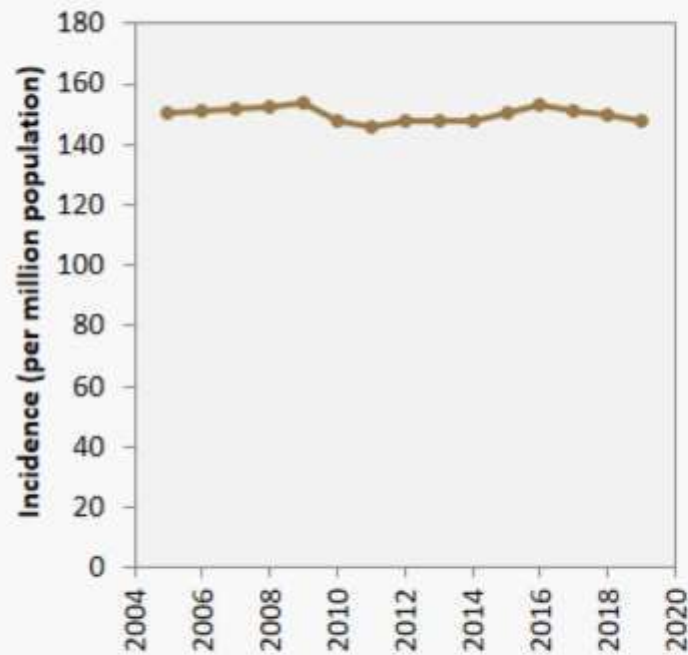
# Incident patients accepted for RRT, at day 1

*last 15 years (2005-2019)*

**Unadjusted incidence over time**  
*all patients starting RRT*



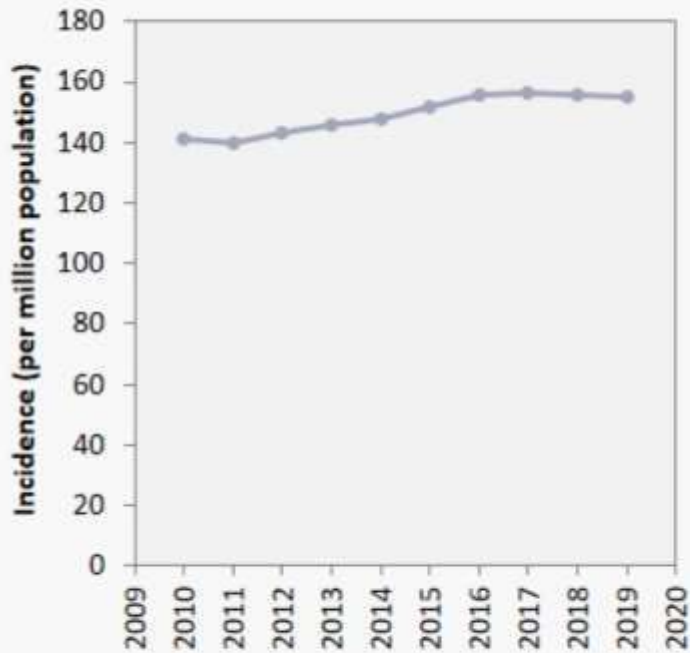
**Adjusted incidence over time**  
*all patients starting RRT*



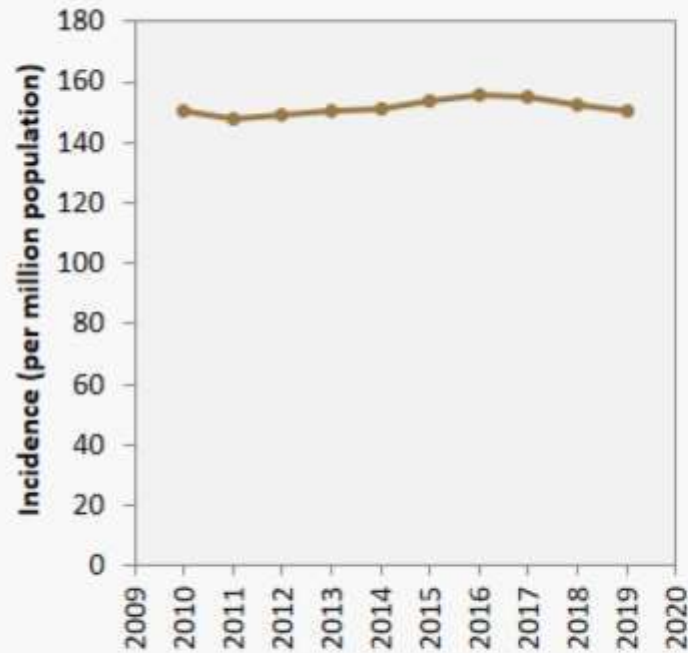
# Incident patients accepted for RRT, at day 1

*last 10 years (2010-2019)*

**Unadjusted incidence over time**  
*all patients starting RRT*



**Adjusted incidence over time**  
*all patients starting RRT*



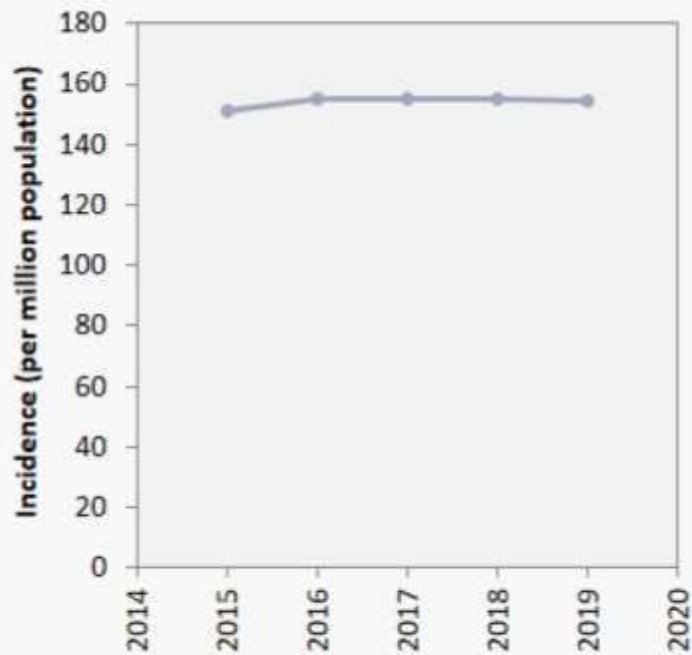


# Incident patients accepted for RRT, at day 1

*last 5 years (2015-2019)*

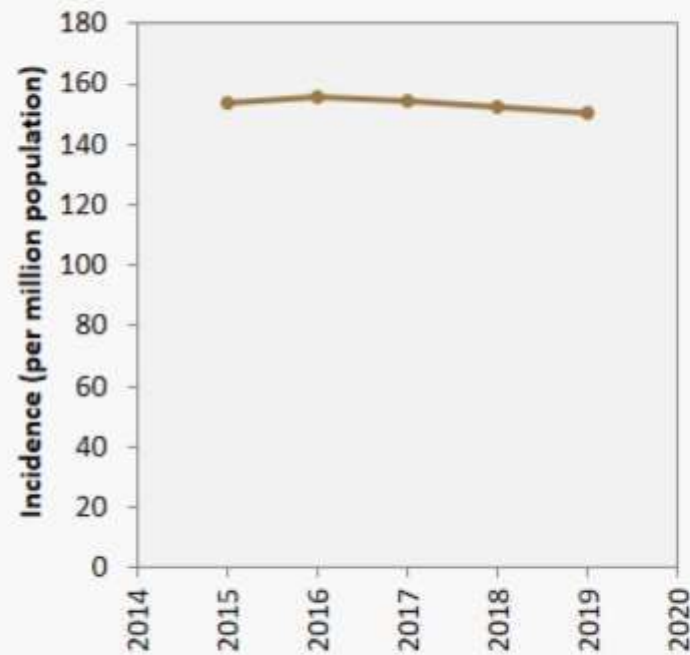
### Unadjusted incidence over time

*all patients starting RRT*



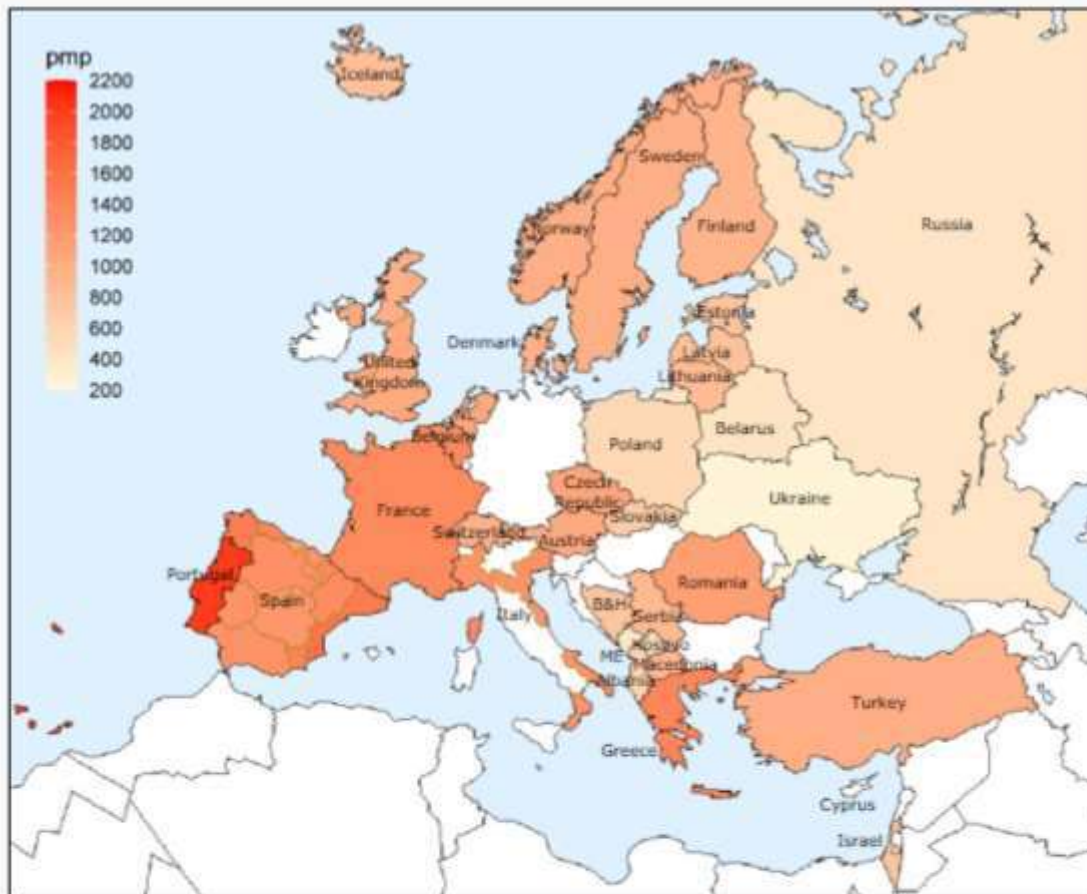
### Adjusted incidence over time

*all patients starting RRT*



# Prevalent patients on RRT in 2019

*by country*

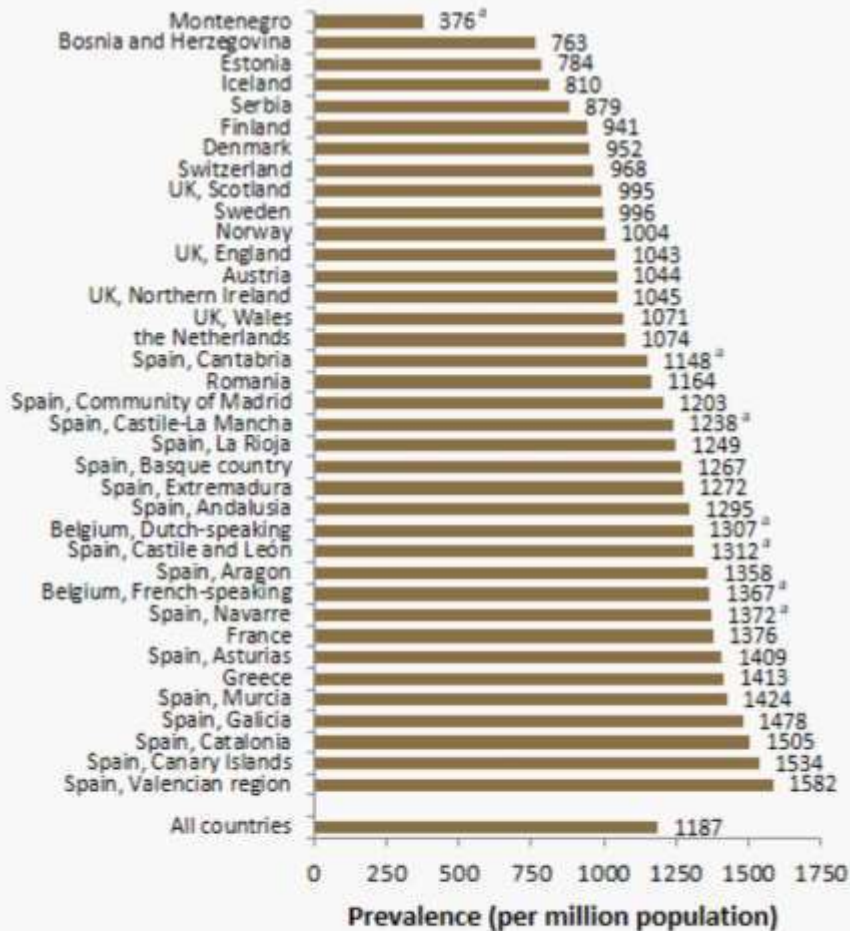


# Prevalent patients on RRT in 2019

by country

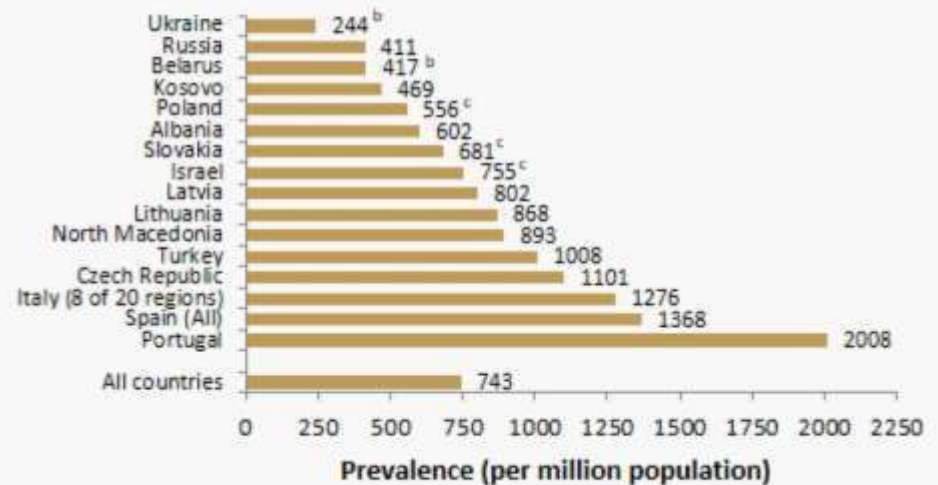
## Unadjusted prevalence

renal registries providing individual patient data



## Unadjusted prevalence

renal registries providing aggregated data



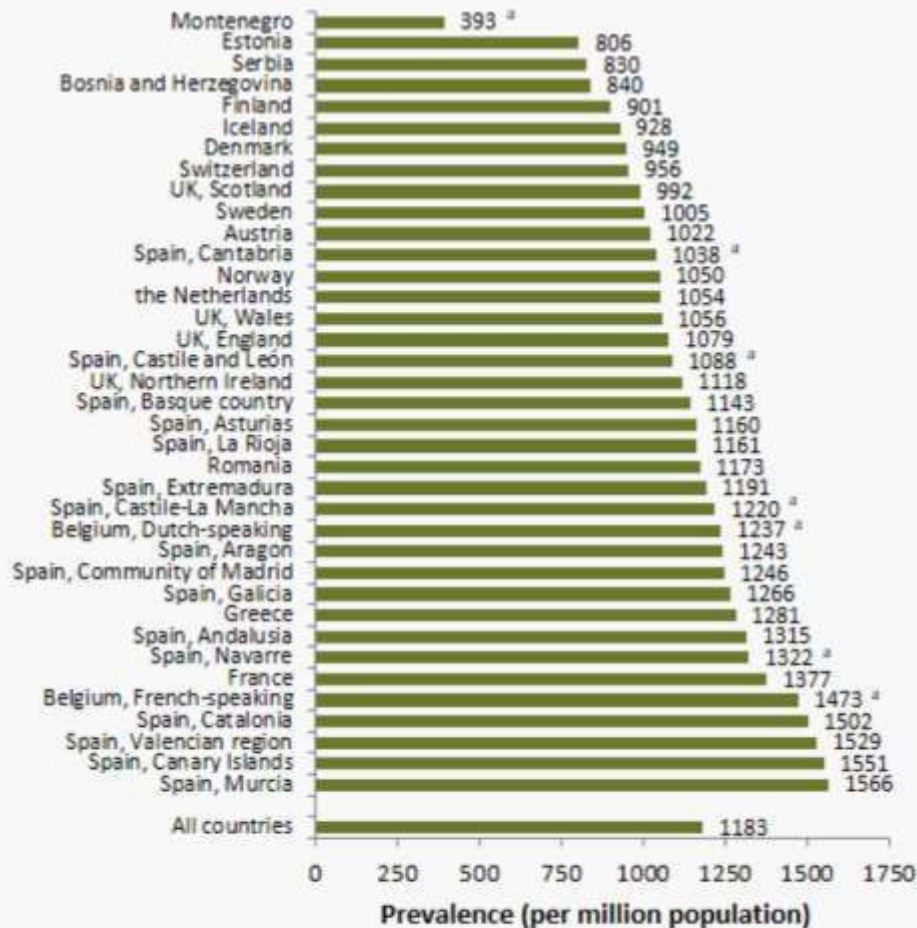
<sup>a</sup> patients younger than 20 years of age are not included; <sup>b</sup> patients younger than 18 years of age are not included; <sup>c</sup> data includes patients receiving dialysis only

# Prevalent patients on RRT in 2019

by country  
adjusted for age and sex

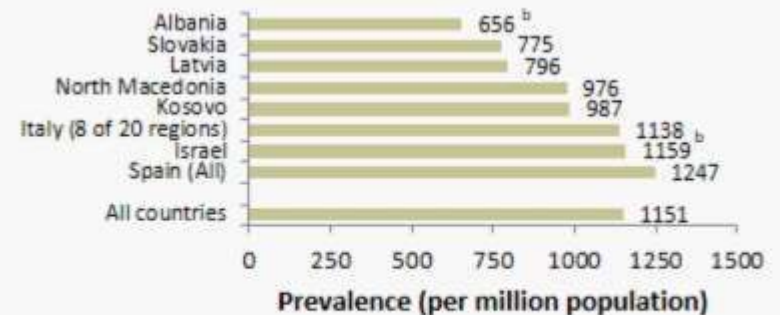
## Adjusted prevalence

renal registries providing individual patient data



## Adjusted prevalence

renal registries providing aggregated data



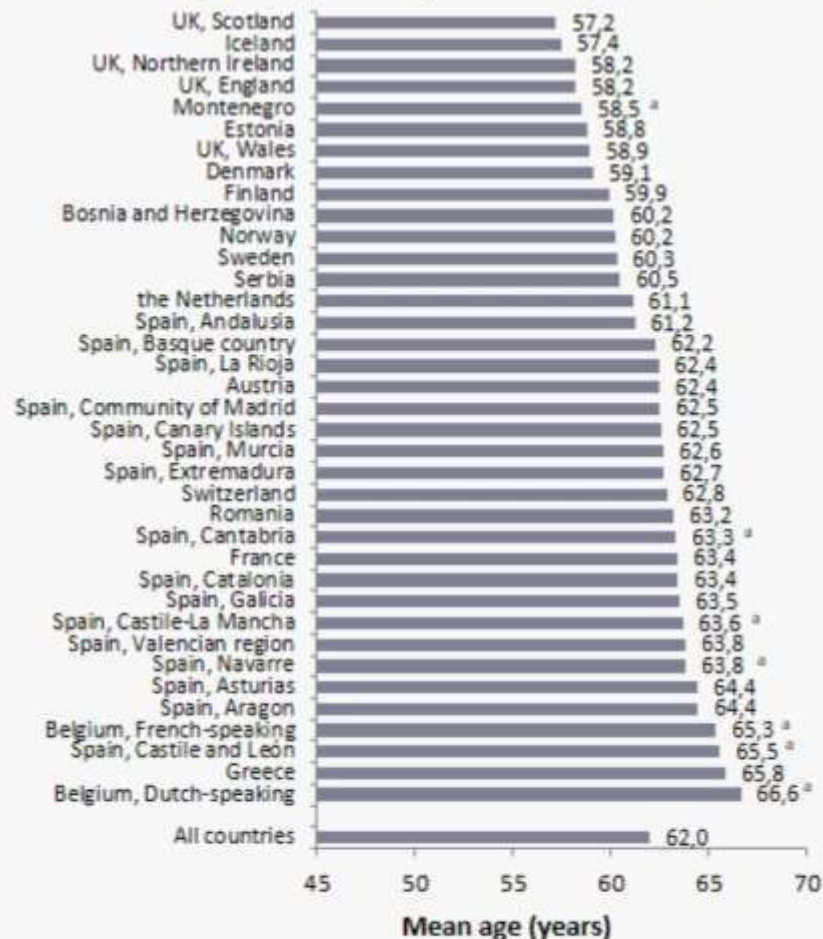
<sup>a</sup> patients younger than 20 years of age are not included; <sup>b</sup> data includes patients receiving dialysis only

# Prevalent patients on RRT in 2019

mean age

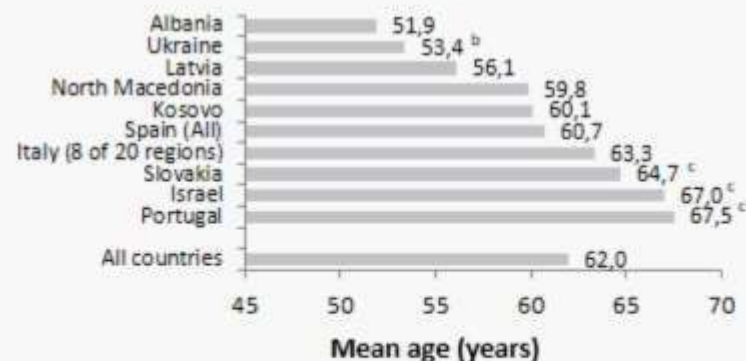
## Mean age on 31 December 2019

renal registries providing individual patient data



## Mean age on 31 December 2019

renal registries providing aggregated data



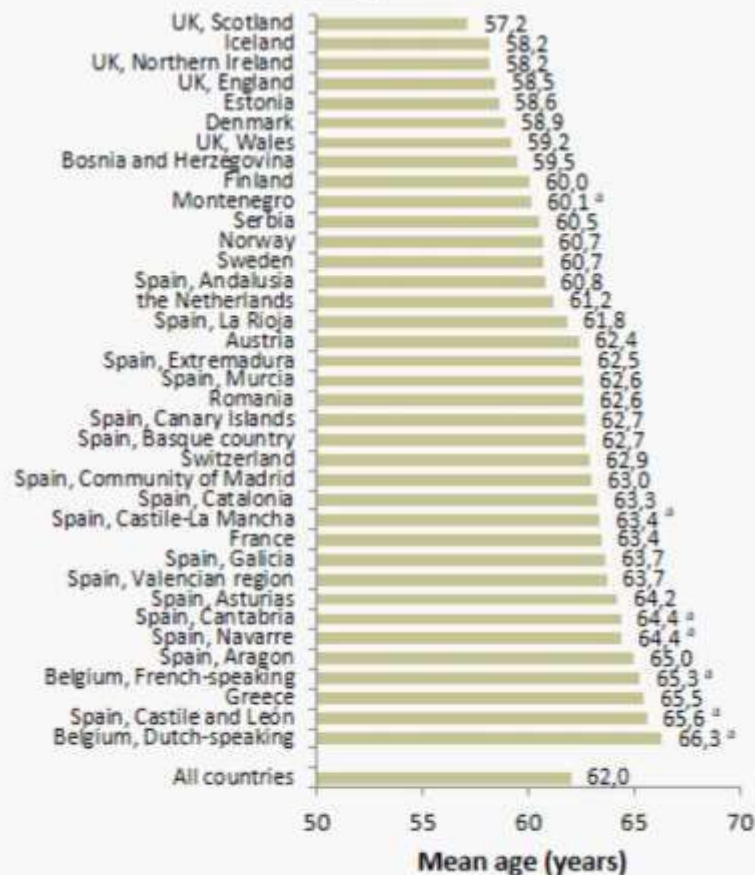
<sup>a</sup> patients younger than 20 years of age are not included; <sup>b</sup> patients younger than 18 years of age are not included; <sup>c</sup> data includes patients receiving dialysis only

# Prevalent patients on RRT in 2019

*for registries providing individual patient data only*

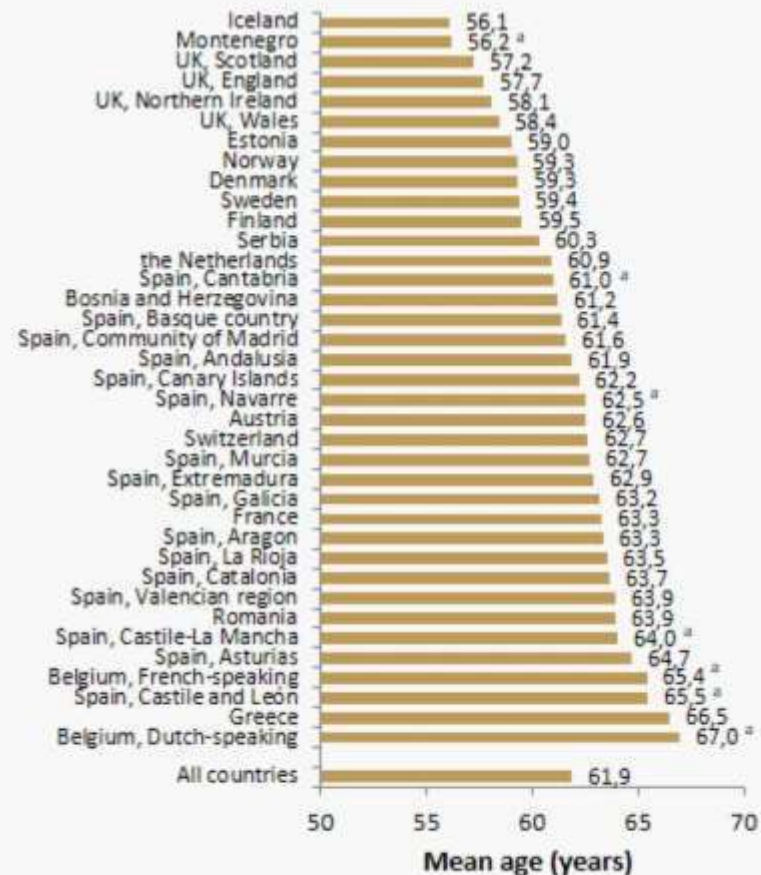
## Mean age on 31 December 2019

*male patients*



## Mean age on 31 December 2019

*female patients*

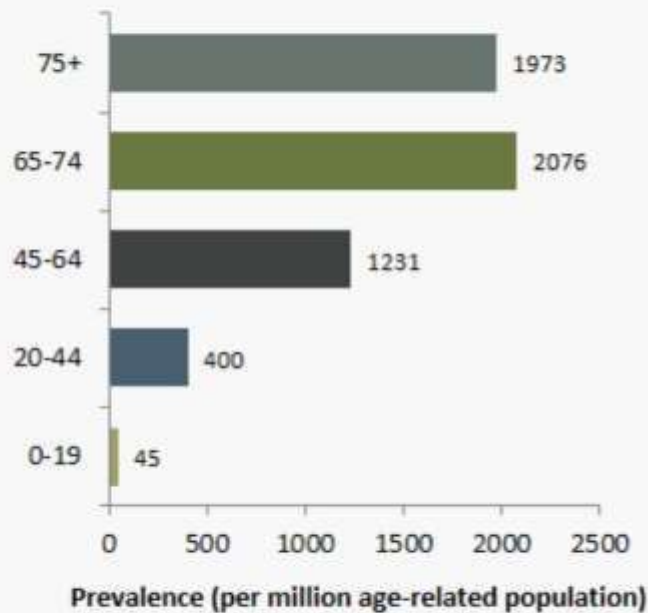


<sup>a</sup> patients younger than 20 years of age are not included;

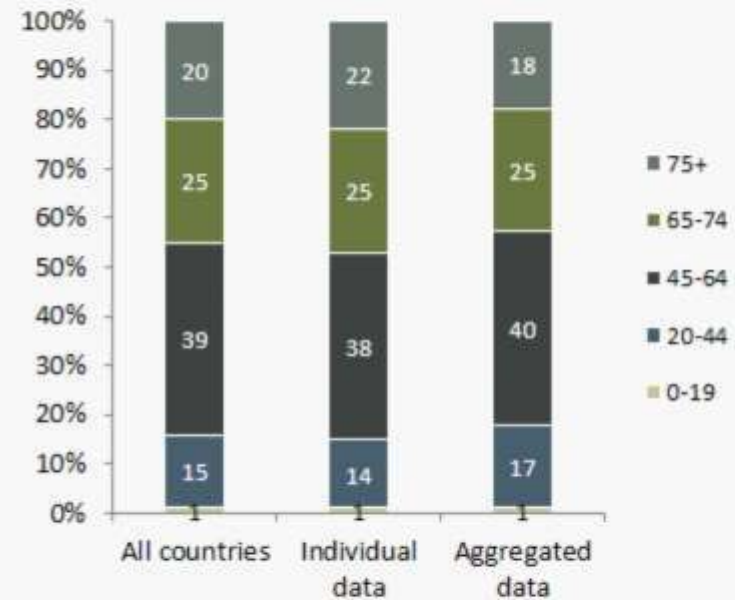
# Prevalent patients on RRT in 2019

*by age category*

**Prevalence by age category**  
*for all registries*



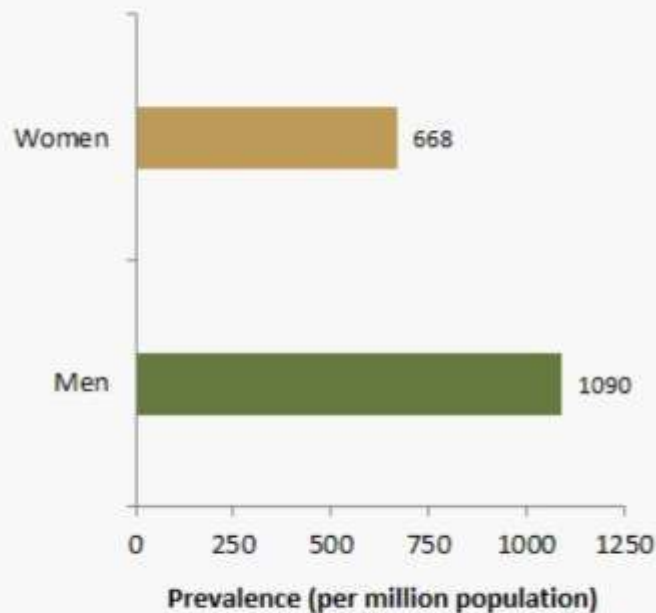
**Prevalence by age category**  
*by type of data provided by registry*



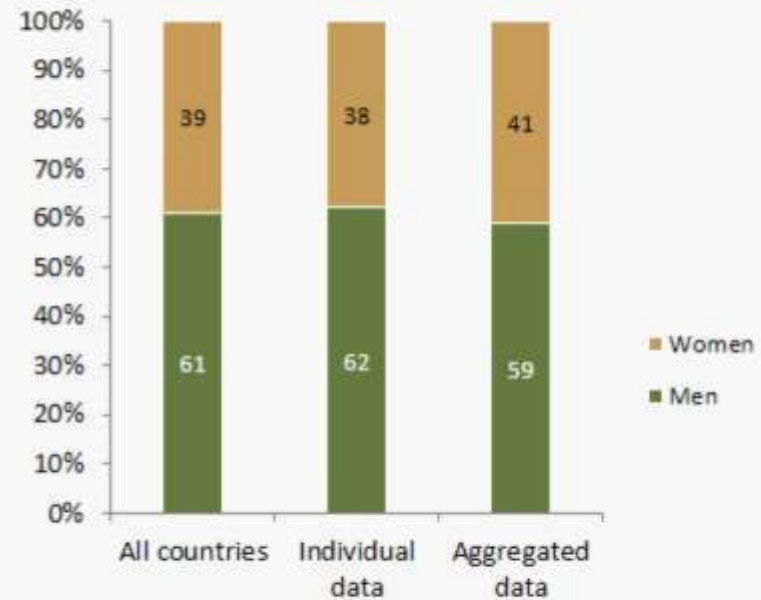
# Prevalent patients on RRT in 2019

*by sex*

**Prevalence by sex**  
*for all registries*



**Prevalence by sex**  
*by type of data provided by registry*

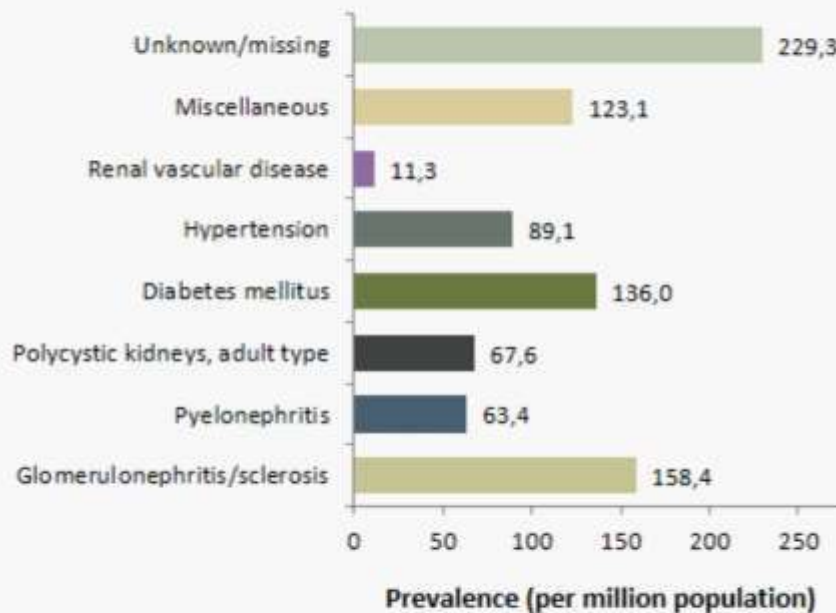




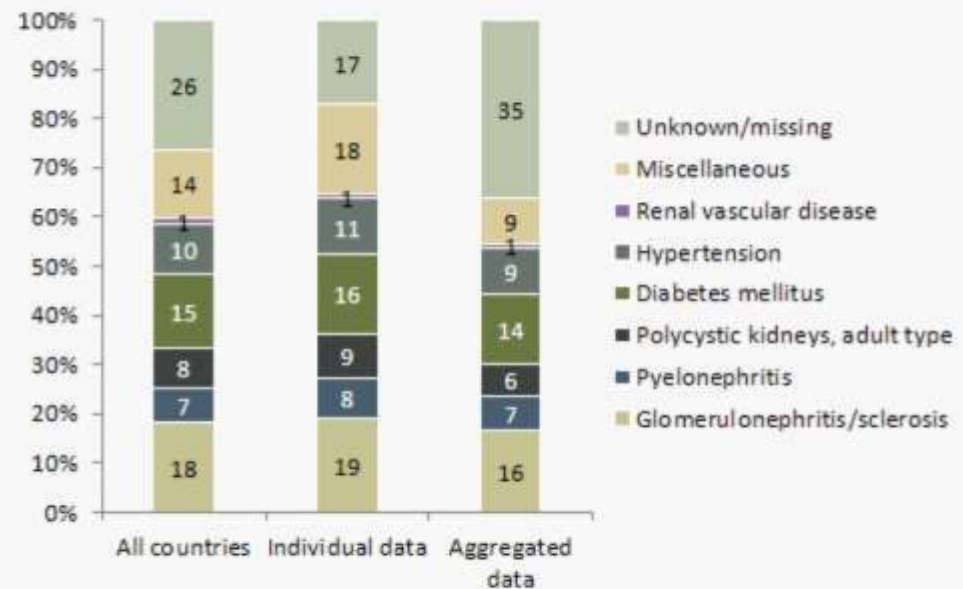
# Prevalent patients on RRT in 2019

*by primary renal disease*

**Prevalence by primary renal disease**  
*for all registries*



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



# Prevalent patients on RRT in 2019

*by primary renal disease and age category*

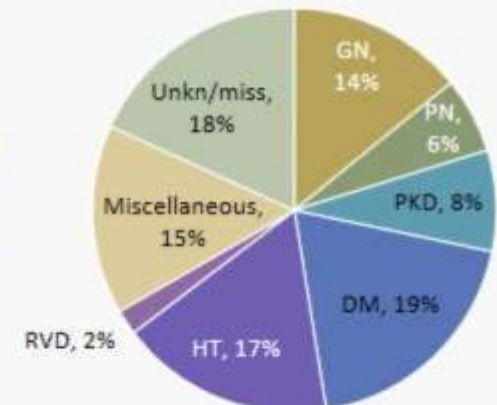
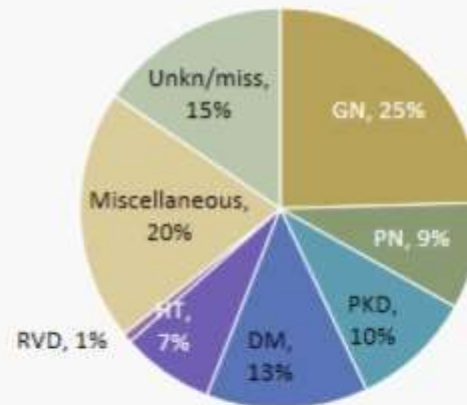
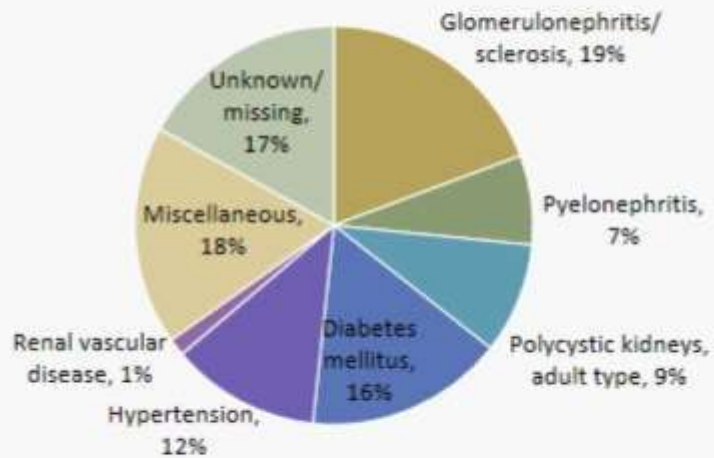
## Prevalence by primary renal disease

*patients from registries providing individual patient data only*

all patients

patients younger than 65 years of age

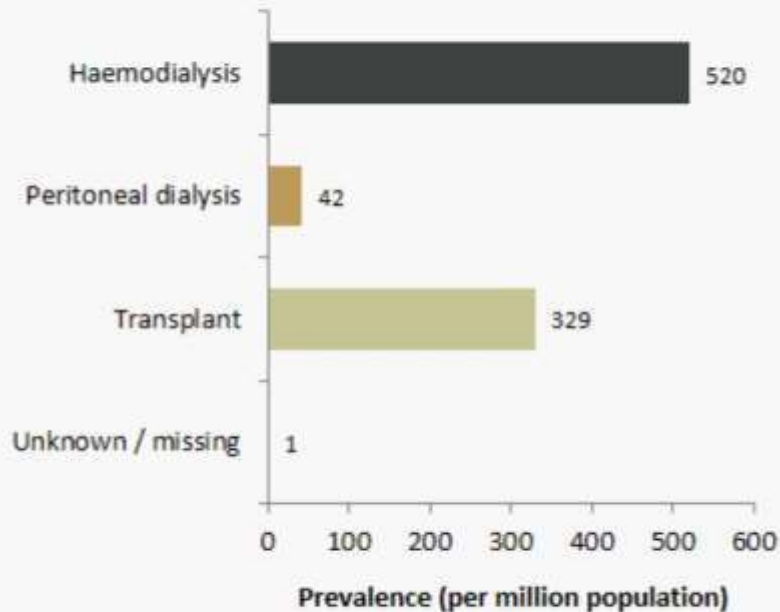
patients aged 65 years or older



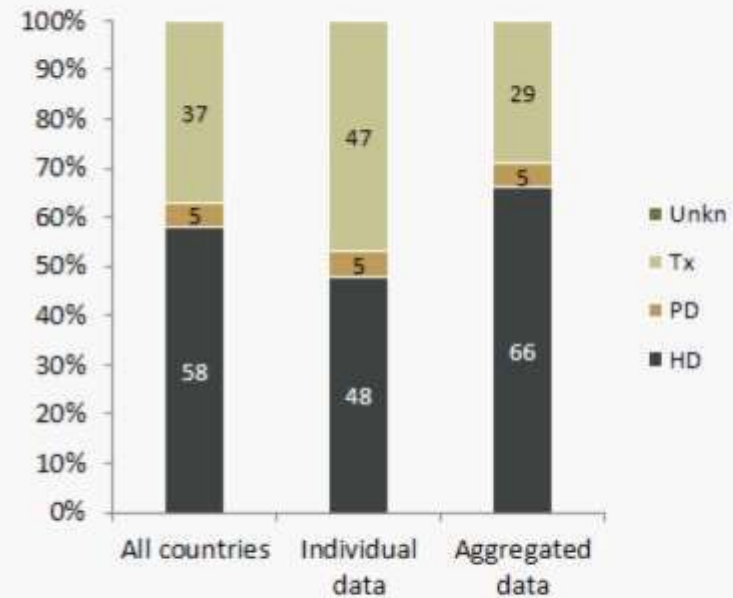
# Prevalent patients on RRT in 2019

*by modality*

**Prevalence by modality**  
*for all registries*



**Prevalence by modality**  
*by type of data provided by registry*



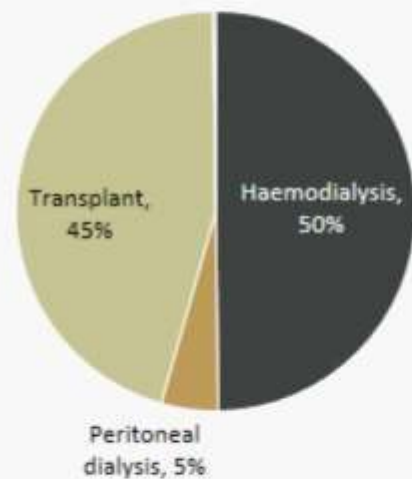
# Prevalent patients on RRT in 2019

*by modality and age category*

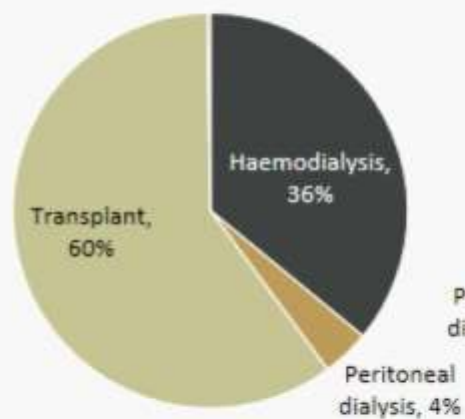
## Prevalence by modality

*patients from registries providing individual patient data only*

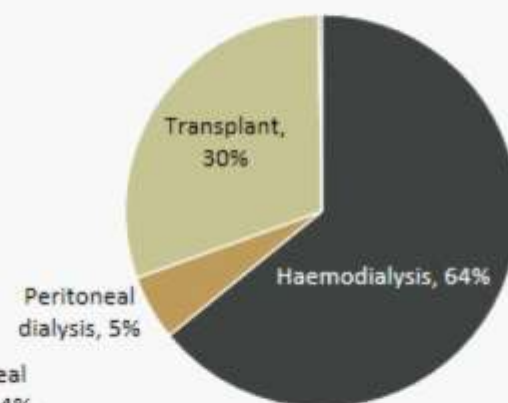
**all patients**



**patients younger than 65 years of age**



**patients aged 65 years or older**

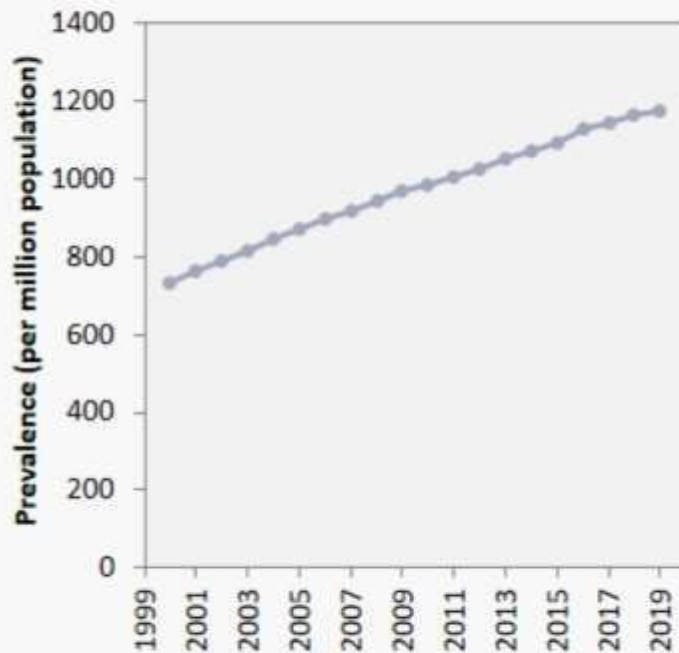


# Prevalent patients on RRT

*last 20 years (2000-2019)*

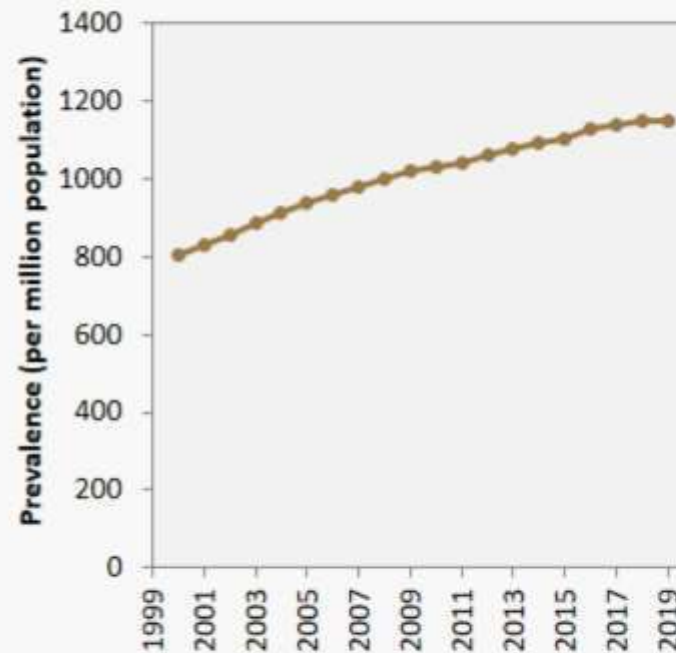
## Unadjusted prevalence over time

*all patients on RRT*



## Adjusted prevalence over time

*all patients on RRT*

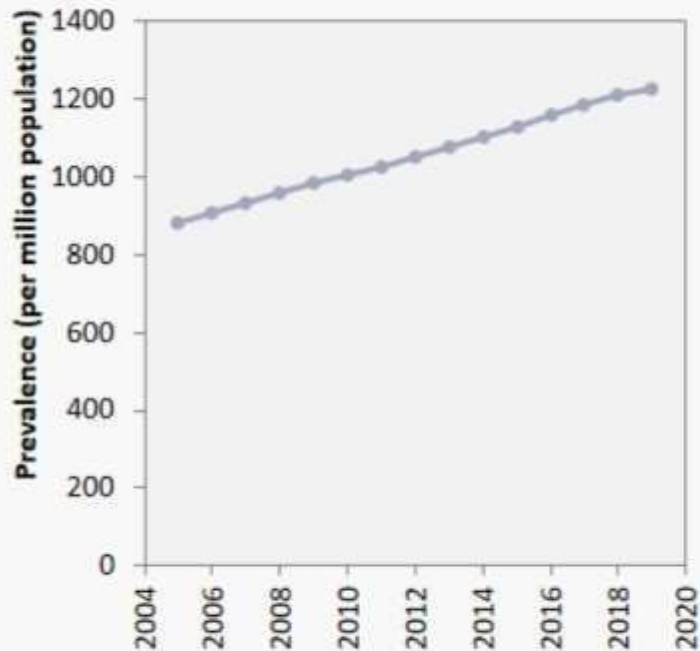


# Prevalent patients on RRT

*last 15 years (2005-2019)*

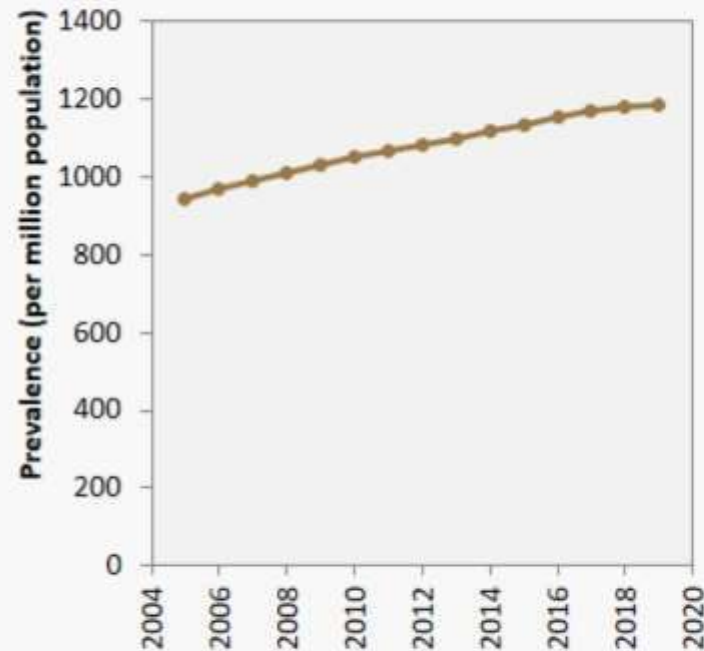
## Unadjusted prevalence over time

*all patients on RRT*



## Adjusted prevalence over time

*all patients on RRT*

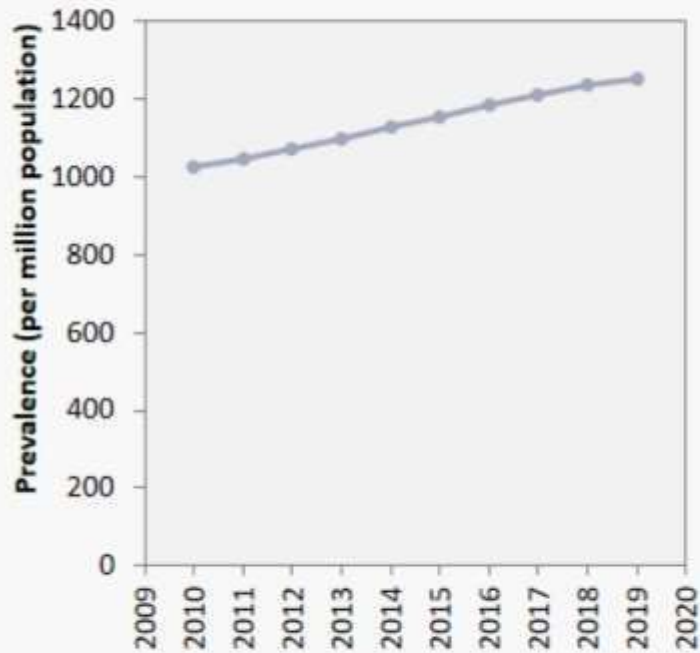


# Prevalent patients on RRT

*last 10 years (2010-2019)*

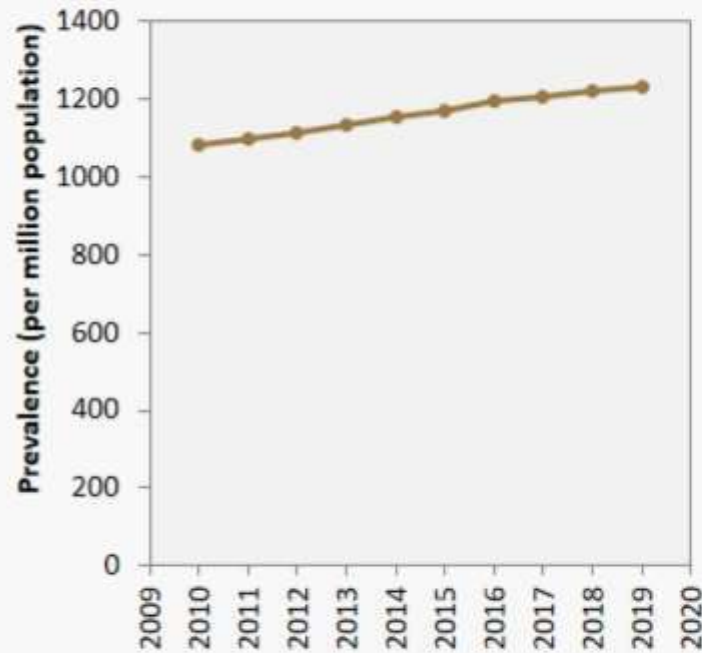
## Unadjusted prevalence over time

*all patients on RRT*



## Adjusted prevalence over time

*all patients on RRT*

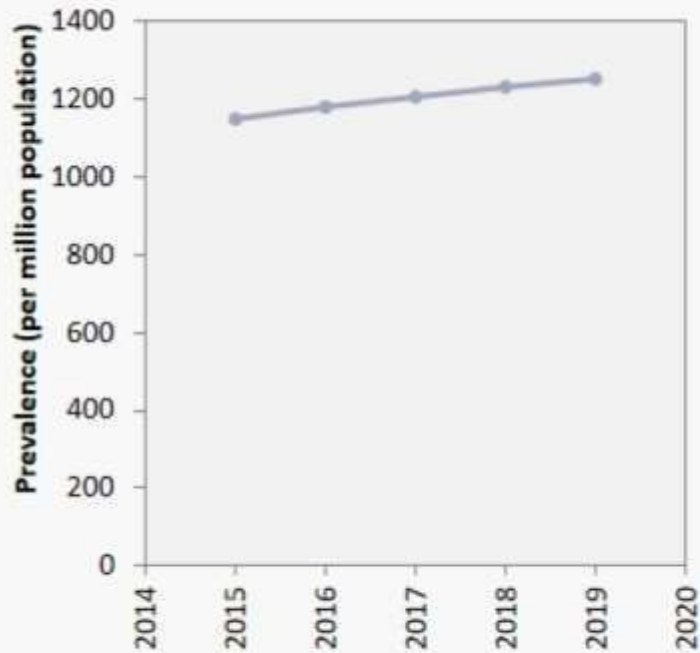


# Prevalent patients on RRT

*last 5 years (2015-2019)*

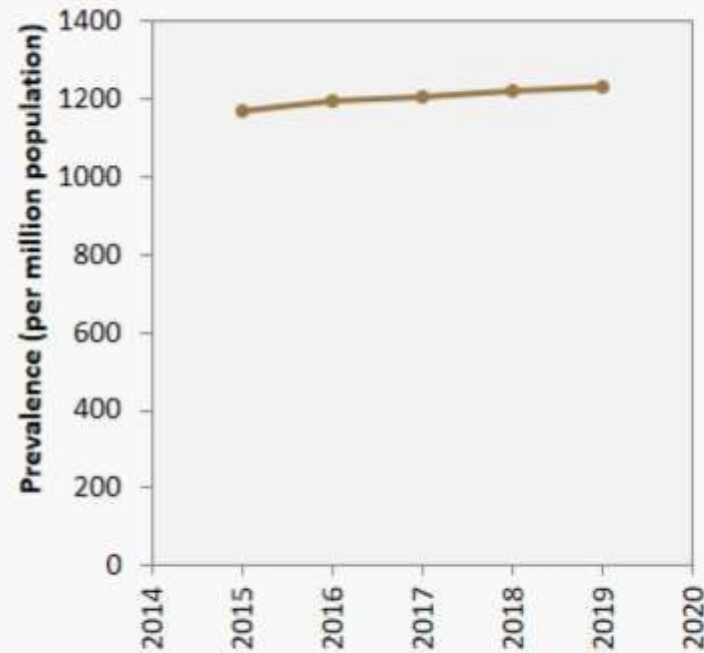
## Unadjusted prevalence over time

*all patients on RRT*



## Adjusted prevalence over time

*all patients on RRT*



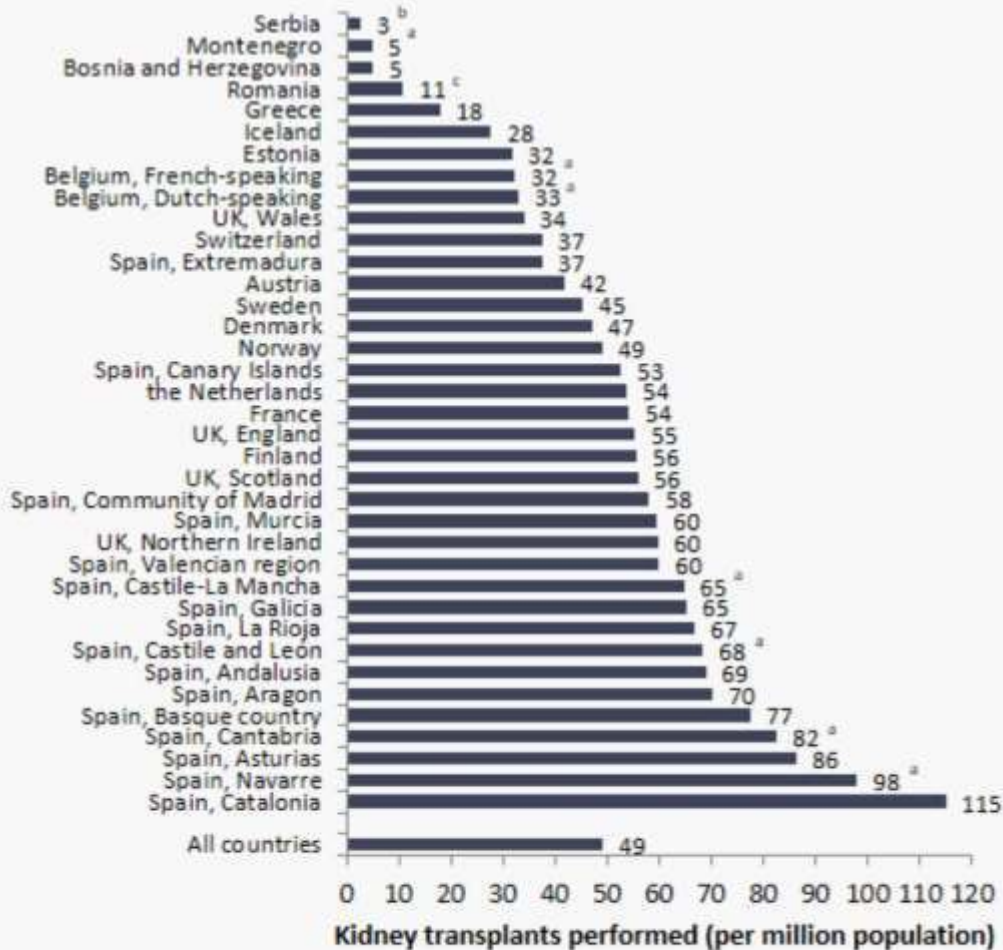


# Kidney transplants performed in 2019

by country

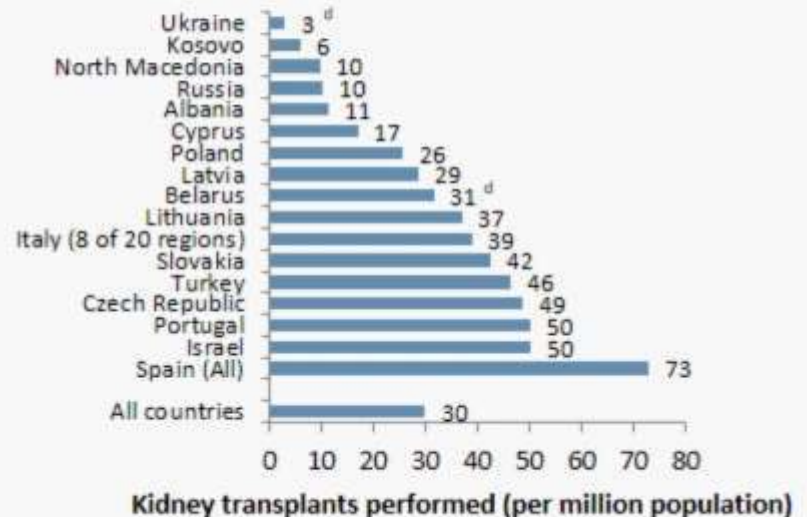
## Kidney transplants performed

renal registries providing individual patient data



## Kidney transplants performed

renal registries providing aggregated data



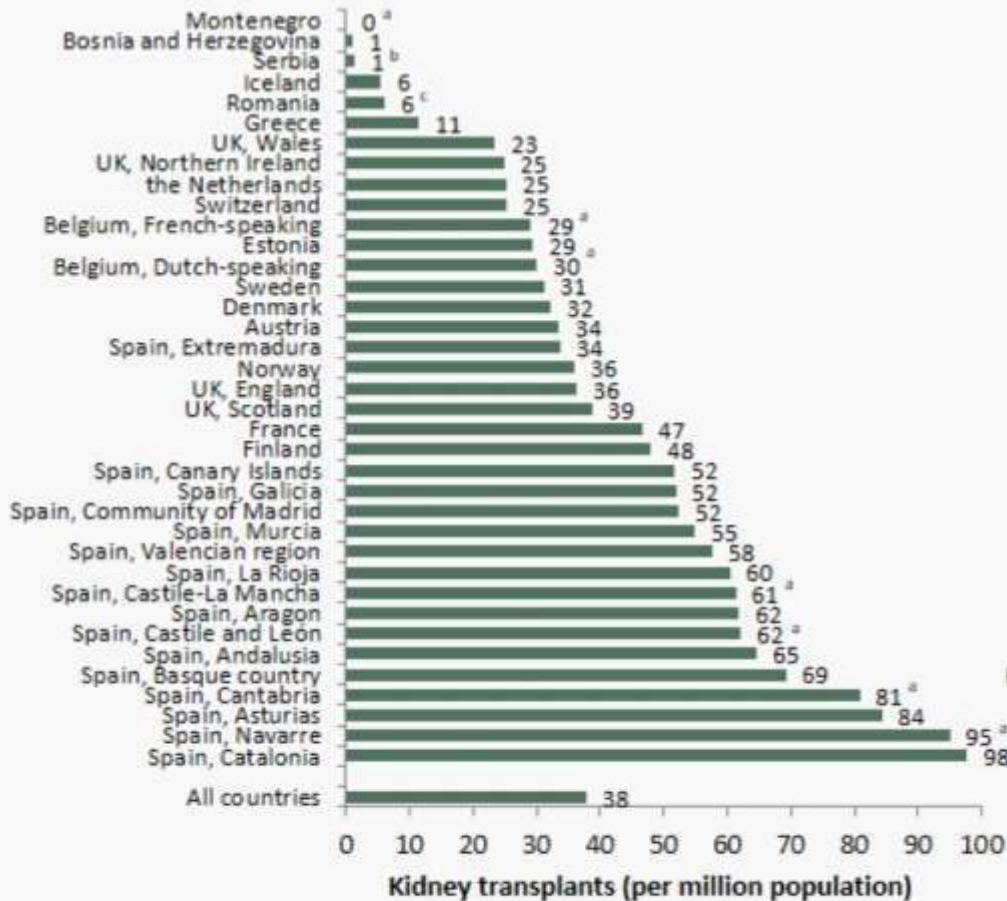
<sup>a</sup> patients younger than 20 years of age are not included; <sup>b,c</sup> transplant rates are underestimated by 15% (b), 30% (c); <sup>d</sup> patients younger than 18 years of age are not included

# Kidney transplants performed in 2019

*transplants from deceased donors by country*

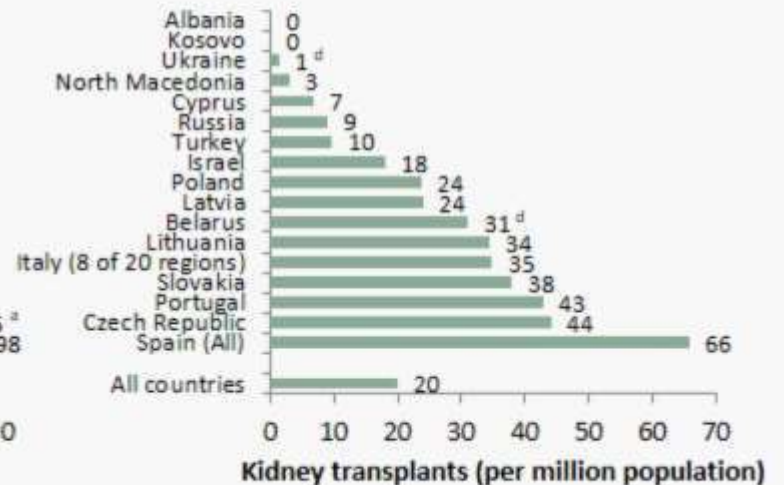
## Deceased donor transplant rate

*renal registries providing individual patient data*



## Deceased donor transplant rate

*renal registries providing aggregated data*



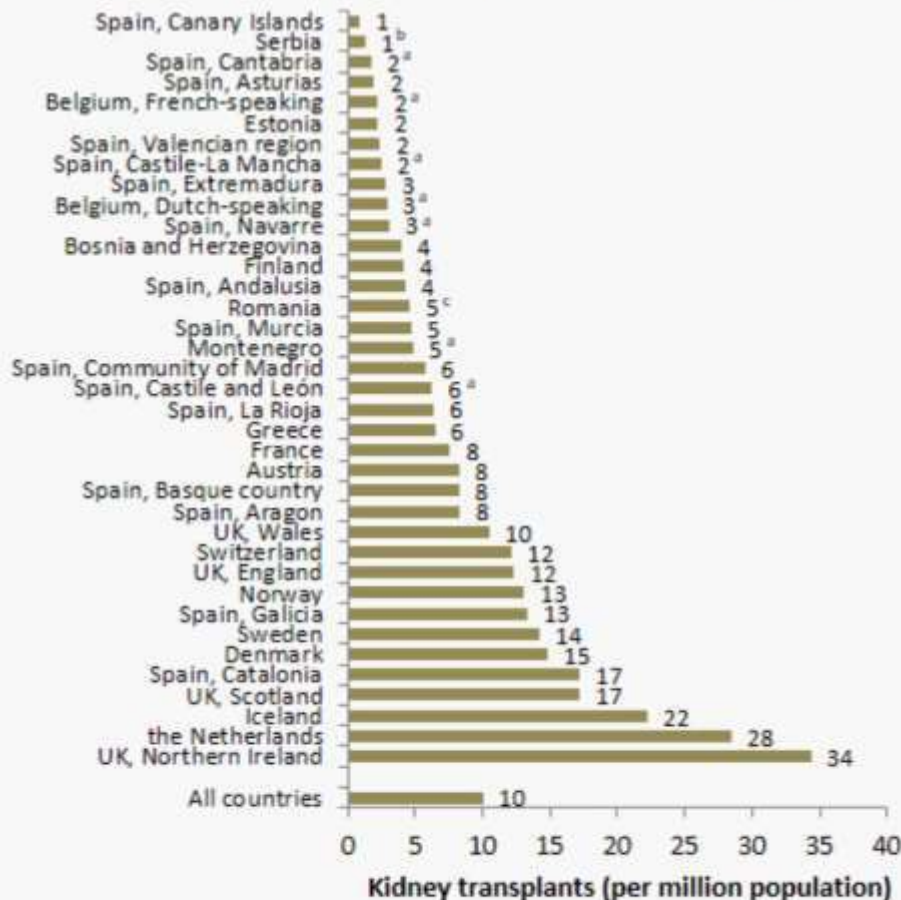
<sup>a</sup> patients younger than 20 years of age are not included; <sup>b,c</sup> transplant rates are underestimated by 16% (b), 30% (c); <sup>d</sup> patients younger than 18 years of age are not included

# Kidney transplants performed in 2019

*transplants from living donors by country*

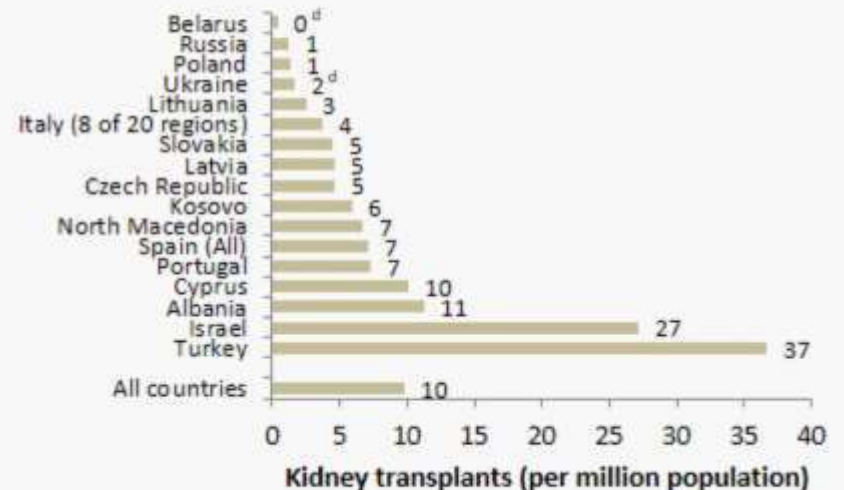
## Living donor transplant rate

*renal registries providing individual patient data*



## Living donor transplant rate

*renal registries providing aggregated data*

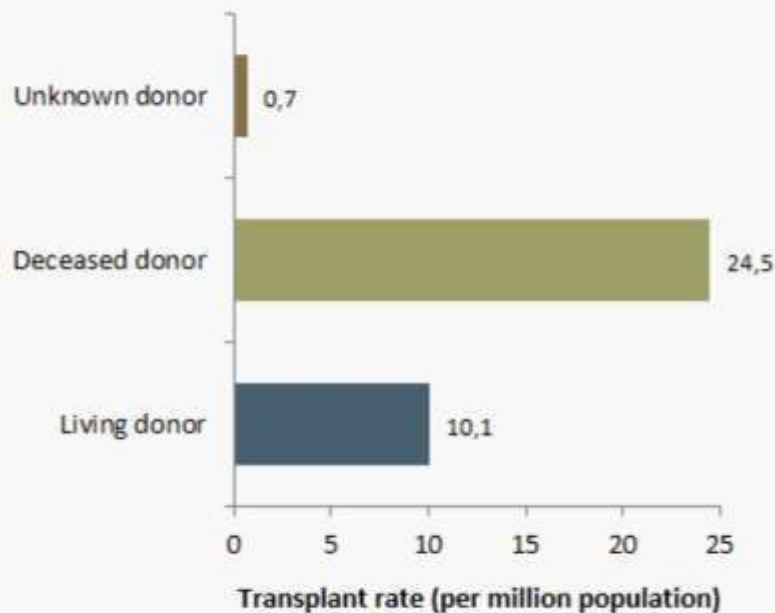


<sup>a</sup> patients younger than 20 years of age are not included; <sup>b,c</sup> transplant rates are underestimated by 12% (b), 30% (c); <sup>d</sup> patients younger than 18 years of age are not included

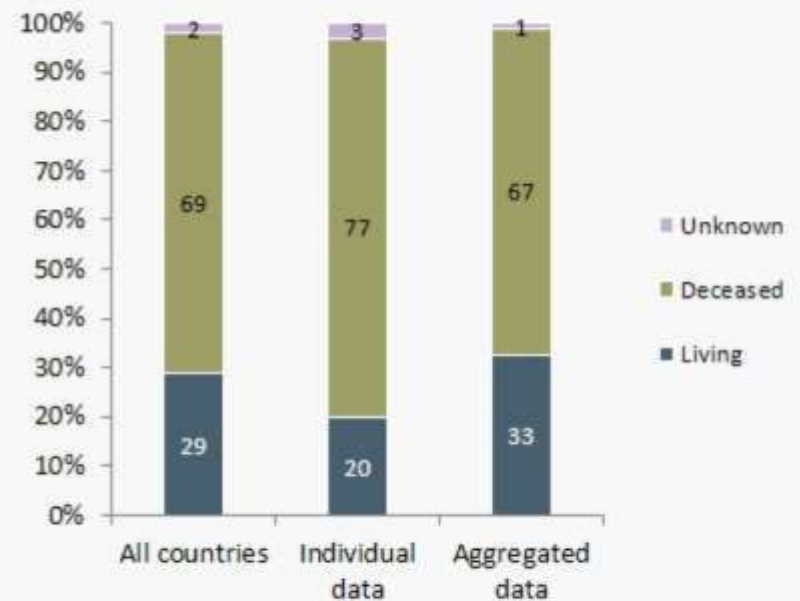
# Kidney transplants performed in 2019

*by donor type*

**Kidney transplants by donor type**  
*for all registries*



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



# Kidney transplants performed in 2019

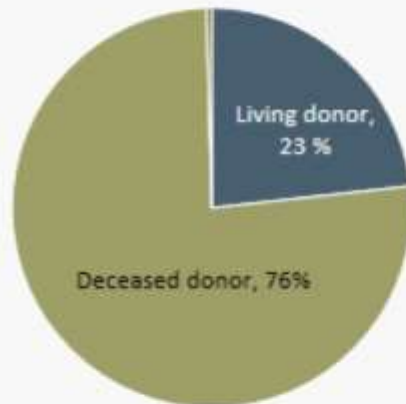
*by donor type*

## Kidney transplants by donor type

*patients from registries providing individual patient data only*

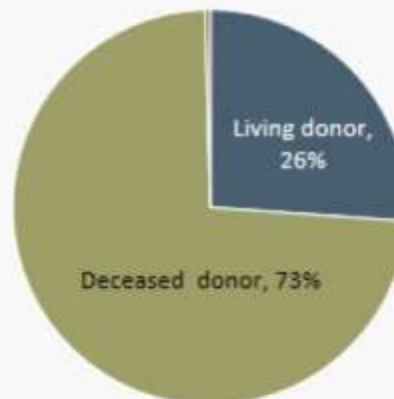
**all patients**

Donor type unknown, 0%



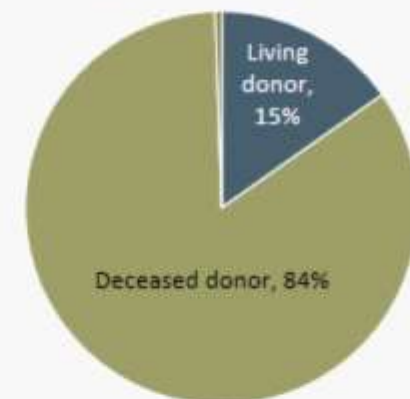
**patients younger than 65 years of age on transplantation**

Donor type unknown, 0%



**patients aged 65 years or older on transplantation**

Donor type unknown, 1%

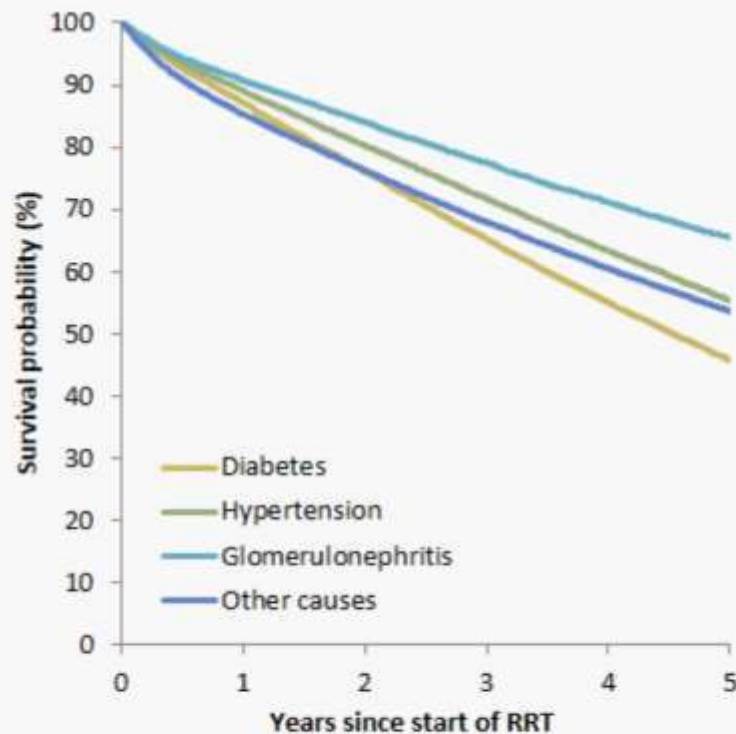


# Survival probability cohort 2010-2014

*by primary renal disease*

## 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).*

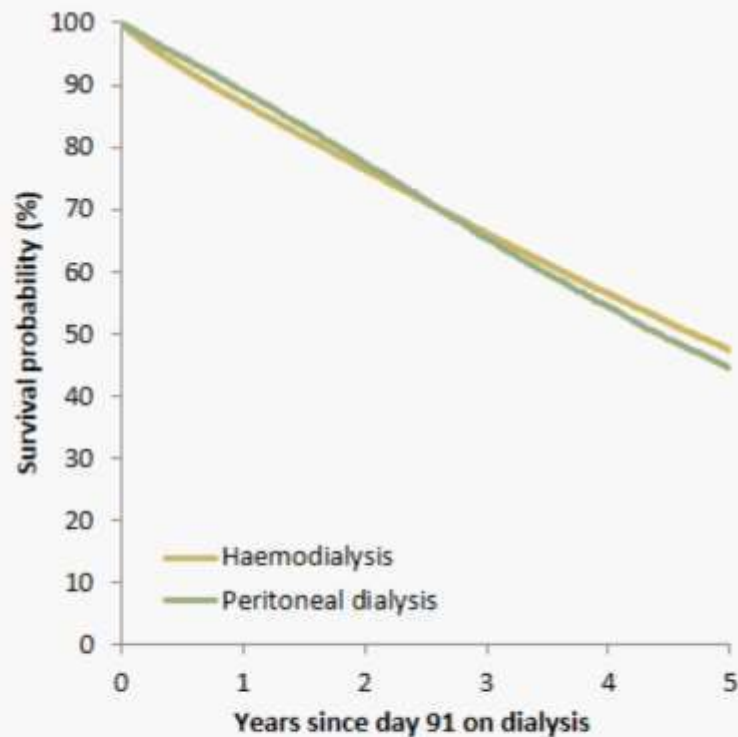
*Cox regression model was used to calculate survival probabilities.*

# Survival probability cohort 2010-2014

*by dialysis modality*

## 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).*

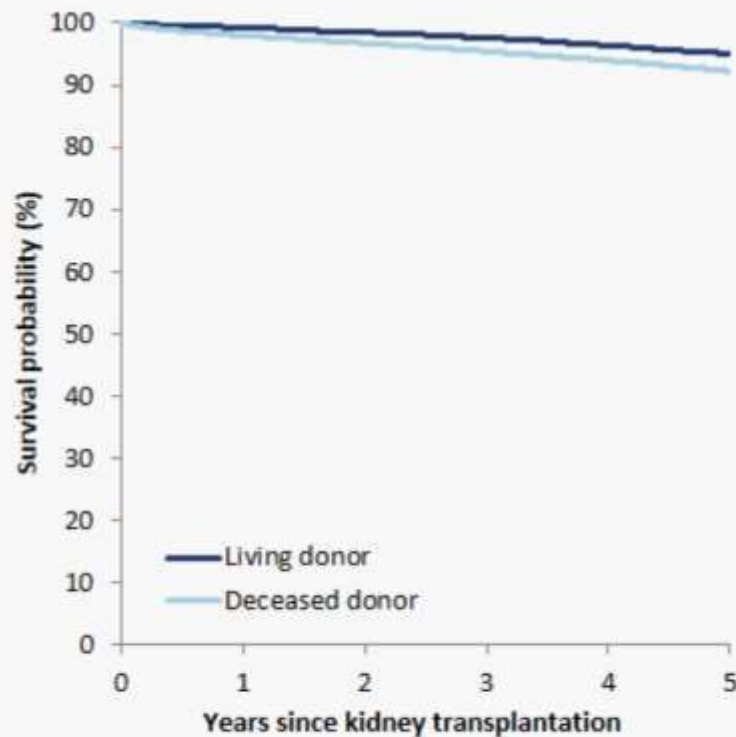
*Cox regression model was used to calculate survival probabilities.*

# Survival probability cohort 2010-2014

*by kidney donor*

## 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).*

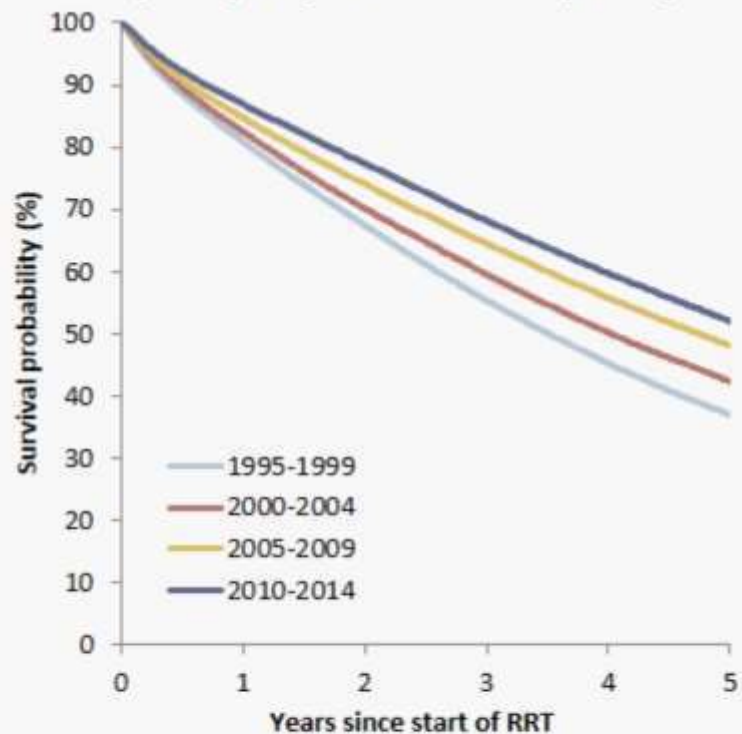
*Cox regression model was used to calculate survival probabilities.*



# Patient survival on RRT *by cohort*

## Patient survival incident RRT patients

*adjusted for age, sex and cause of renal failure*



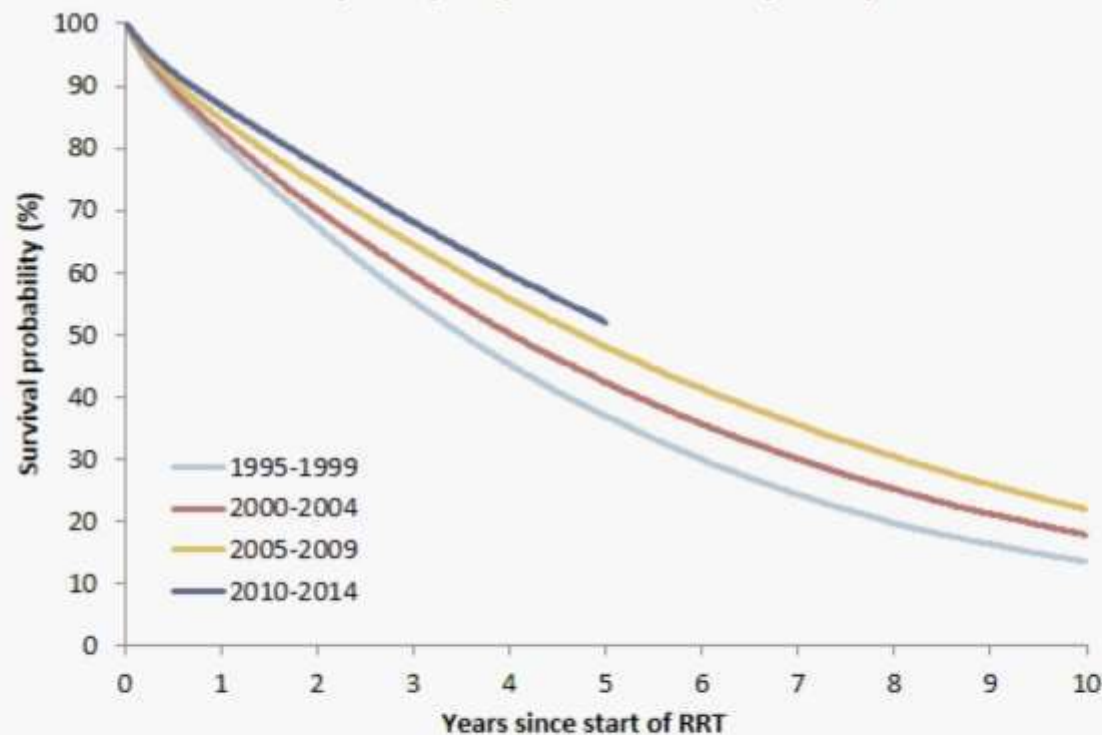
*Survival probabilities were adjusted for fixed values for age (67 years), sex (63% men), and the primary renal disease distribution (24% diabetes mellitus, 19% hypertension / renal vascular disease, 11% glomerulonephritis and 46% other primary renal diseases).*

*Cox regression model was used to calculate survival probabilities.*

# 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).*

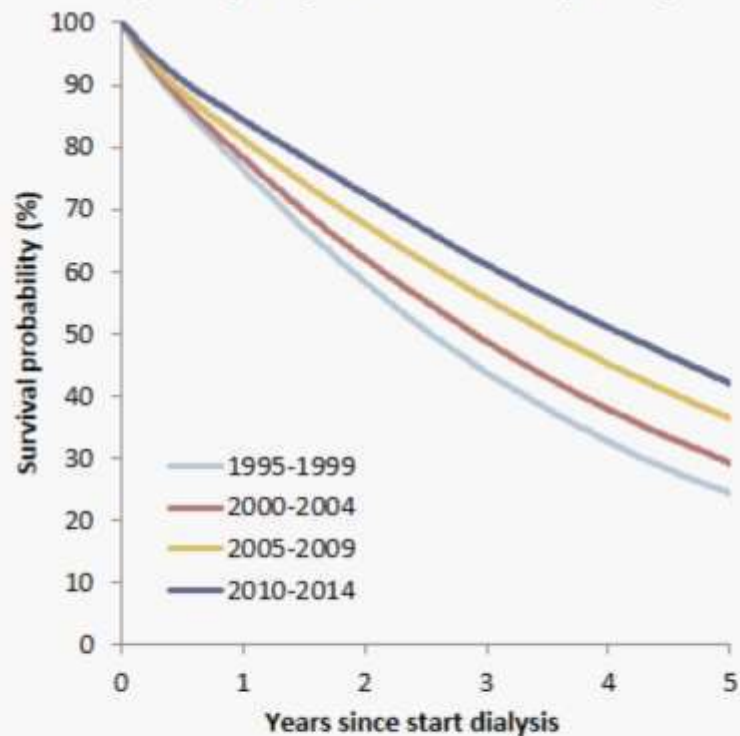
*Cox regression model was used to calculate survival probabilities.*

# 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).*

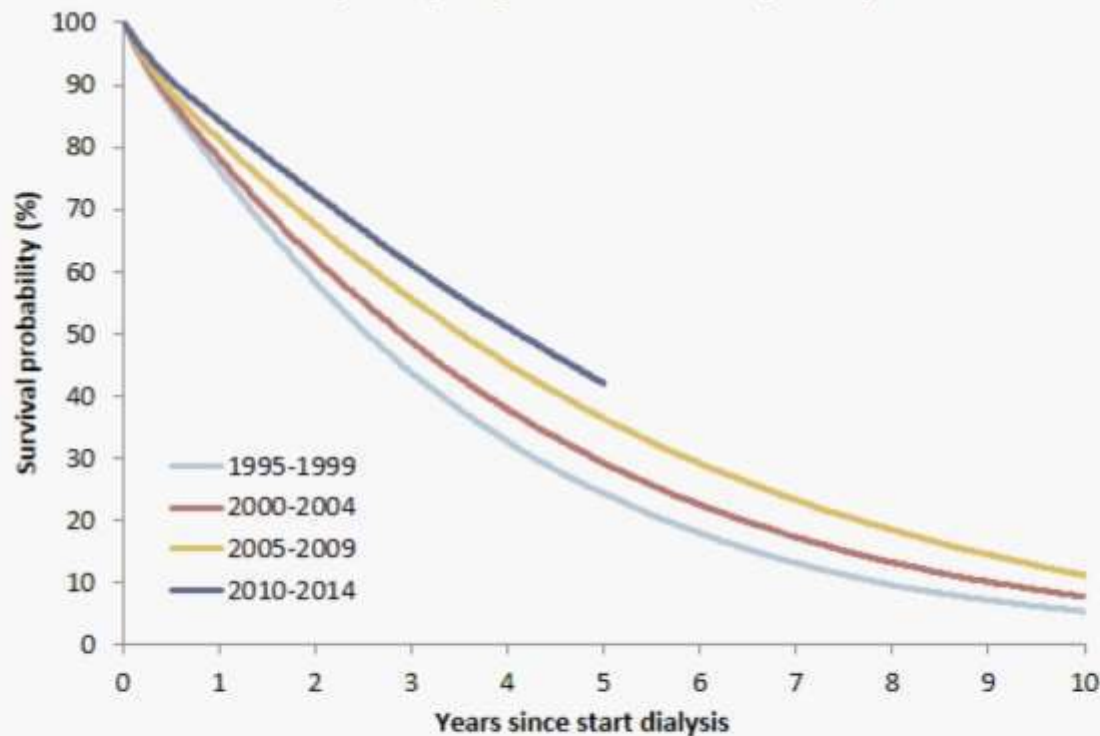
*Cox regression model was used to calculate survival probabilities.*

# Patient survival 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).*

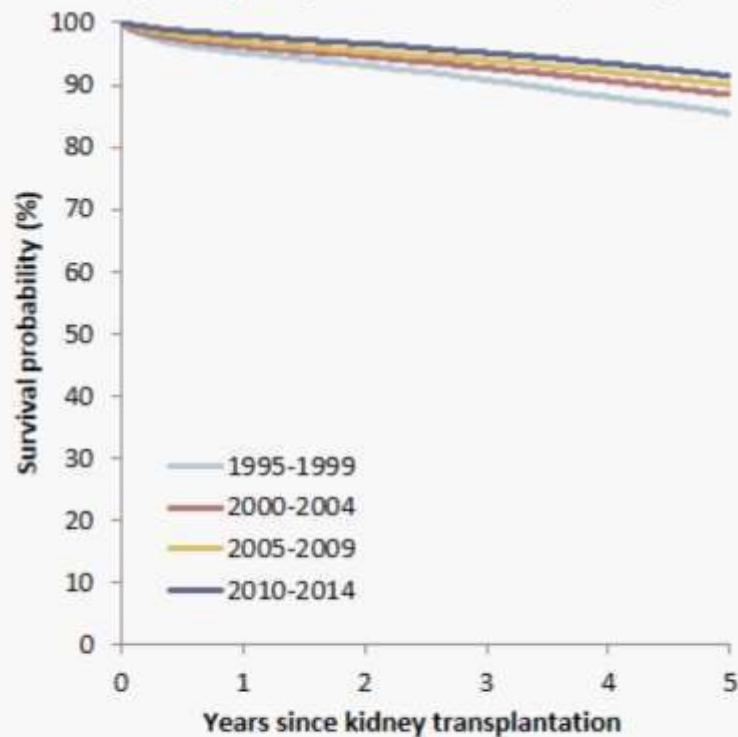
*Cox regression model was used to calculate survival probabilities.*

# Patient survival after kidney transplantation

*by cohort*

## Patient survival after first kidney transplantation

*adjusted for age, sex and cause of renal failure*



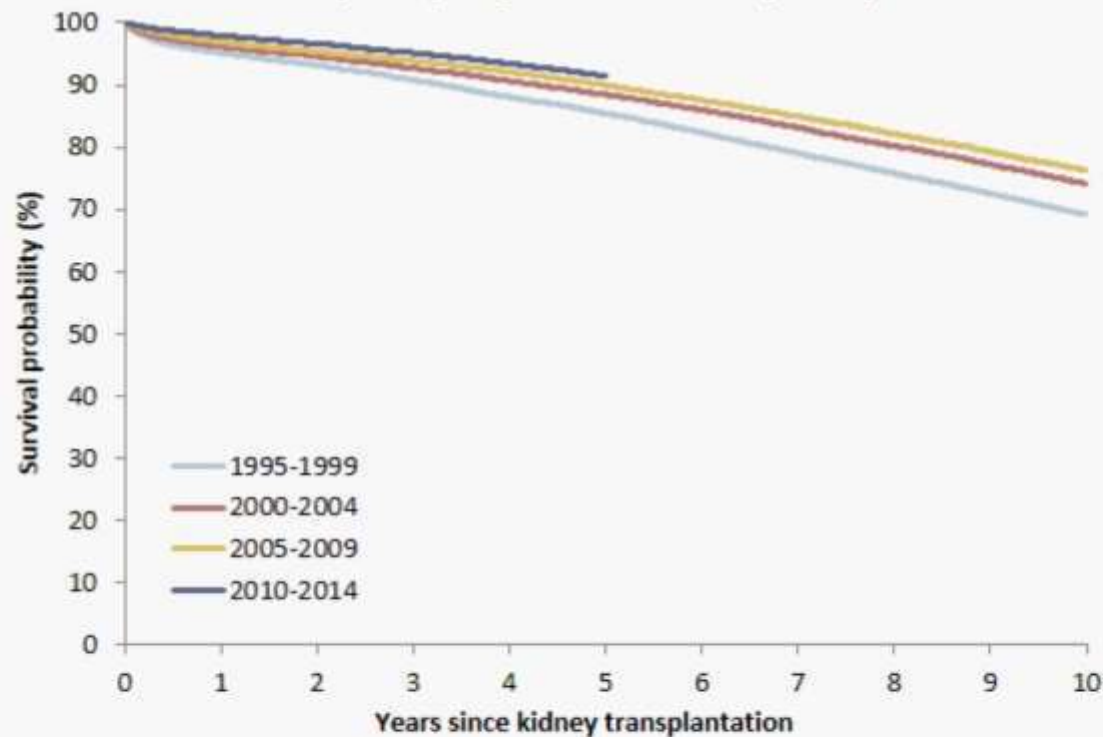
*Survival probabilities were adjusted for fixed values for age (50 years), sex (63% men), and the primary renal disease distribution (14% diabetes mellitus, 10% hypertension / renal vascular disease, 23% glomerulonephritis and 53% other primary renal diseases).*

*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*

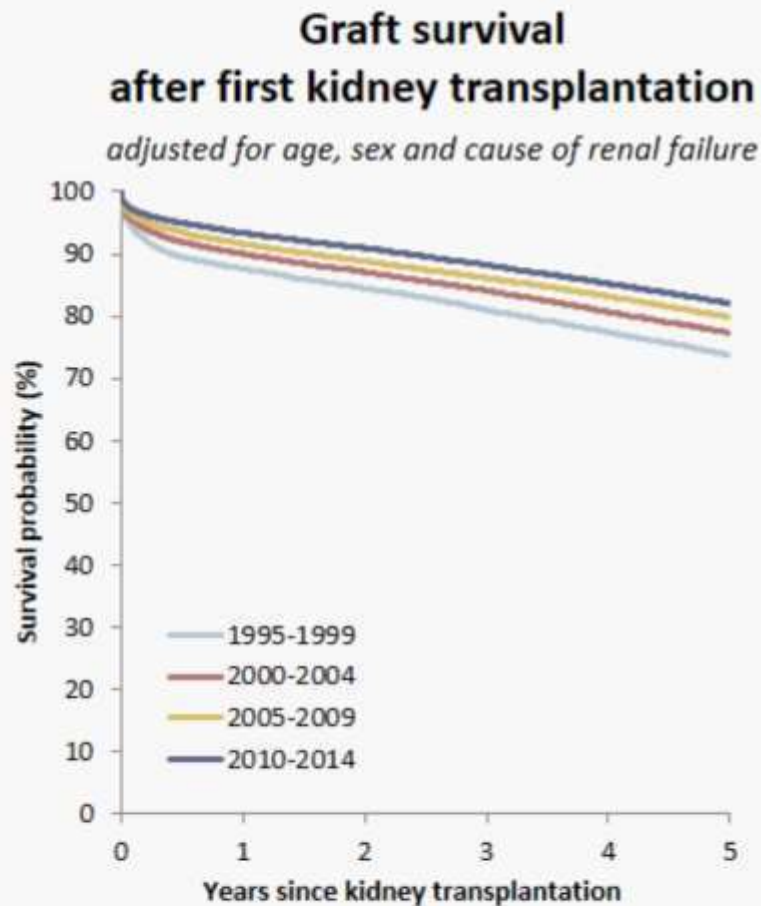


*Survival probabilities were adjusted for fixed values for age (50 years), sex (63% men), and the primary renal disease distribution (14% diabetes mellitus, 10% hypertension / renal vascular disease, 23% glomerulonephritis and 53% other primary renal diseases).*

*Cox regression model was used to calculate survival probabilities.*

# Graft survival after kidney transplantation

*by cohort*



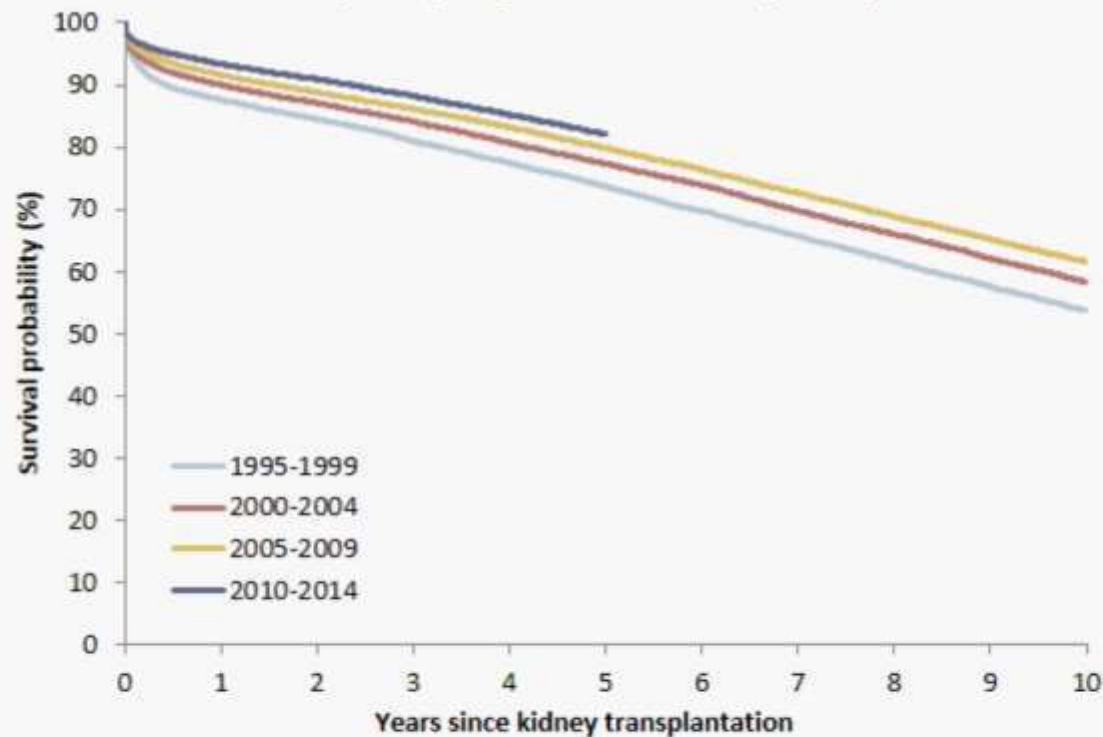
*Survival probabilities were adjusted for fixed values for age (50 years), sex (63% men), and the primary renal disease distribution (14% diabetes mellitus, 10% hypertension / renal vascular disease, 23% glomerulonephritis and 53% other primary renal diseases).*

*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.*