

## Rapport Activités du Collège – Rapport National 2020

**Rapport national du GNFB et du NBVN  
à la commande du Collège de médecins  
pour le centre de traitement de l'insuffisance rénale chronique**

**Janvier 2011 – Janvier 2020**

### **1. Prevalence of adults treated with renal replacement therapy in Belgium**

On January 1, 2020, 15 180 adults were treated with renal replacement therapy, either with dialysis or with a functioning renal transplant in Belgium [Table 1]. This corresponds to a prevalence of about 1 321 per million inhabitants (ppm). The number of patients with a functional renal transplant [44%] remains below that of dialysis patients [56%].

The prevalent number of dialysis patients continues to rise, following higher inflow and, probably, their better survival. For the first time, the total population of patients living with a kidney transplant levels off [*minus* 0.6%], probably to gradual lower transplant activity in the former years. Nevertheless, in all age-categories eligible for a successful transplantation, the number of patients living with a transplant supersedes that of the dialysis patients [Figure 1]. This observation confirms the continuous effort of all nephrologists to put eligible patients on the renal transplant waiting list and to opt for a less costly renal replacement therapy.

Among the dialysis patients, almost 50% is older than 75 years – note that this category is hardly eligible for a transplant. On the contrary, looking at the renal transplant population, one rarely gets older than 75 years. As such, it is important to consider these 2 categories of renal replacement therapy separately in the health policies.

With regard to peritoneal dialysis (PD), the absolute number is rather stable over the last years – about 620 patients; its decreasing *relative* contribution to the total renal replacement therapy creates *misinterpretation* about potential lesser interest. Today lesser patients in the need of renal replacement therapy are medically suitable, and many organizational and legal hurdles are present, such as poor patient housing, nursing shortage at residential care homes, no access for external PD nurses, etc.

More and more patients receive Low Care [alias *low cost*] hemodialysis at satellite or sub-unit dialysis settlements. Medical suitability for this type of hemodialysis might be overstretched following the new financial ruling, implemented by the government.

Home hemodialysis (1.8%) is feasible for only a highly selected patient group, with loss of financial benefit for the government if done more than 3 times a week. Self-care hemodialysis – without any nurse support – is occasionally asked for. The much higher nursing costs prohibit the expansion of hemodialysis done at night at the dialysis center.

### **2. Inflow of adults in renal replacement therapy**

Following a previous downward annual trend from 2009 till 2014, the number of patients starting with renal replacement therapy is increasing again, year after year, as of 2015 [Table 2].

Three observations are noted:

1. The introduction of renal care contracts ( *trajet de soin / zorgtraject* ) has boosted the interest of the general physicians for chronic renal failure and has led to an overall better renal care. This often (but not always) postpones the need of dialysis and/or extends the life expectancy of the renal patient.
2. Looking at the absolute numbers, the increase of new RRT patients is particularly present in the age group 65-74 years, followed by the age group  $\geq 85$  years.
3. The number of preemptive kidney transplants (i.e. transplantation without a prior dialysis period) in adults remains so low that it has no significant impact on the annual inflow of dialysis patients.

The current algorithm of the Eurotransplant allocation organization aiming for a deceased donor kidney transplantation is mainly driven by waiting time, however it was redefined in 1999 as the time the patient has been on dialysis. The chance to get a transplant before the start of dialysis is nearly "nil".

Therefore, one has to turn to kidney transplantation with a living kidney donor, related or non-related. The Ministry of Health could enhance this type of renal transplantation, by finalizing its initiatives to give the donors a better insurance coverage and work protection, particularly in case of donation-related issues.

### **3. Outflow of adults out of dialysis**

#### **3.1. Transplantation**

In 2019, the annual total kidney transplant activity with a kidney of a deceased donor dropped just below 400 transplants (*minus* 20% !). This regards mainly the kidney-alone transplantation, leading to a bigger waiting list. So, the chances to get a transplant within a reasonable waiting time might drop in the near future. [Table 3; source: Eurotransplant International]. See also section 6 – Forecast following the COVID-19 pandemic in 2020.

Neither the dialysis centers nor the transplant centers can foretell transplantation. This depends of the national donation activity ( somewhat lower in 2019, in comparison to the previous years ) and, especially, on the donor kidney allocation program. The allocation is executed by Eurotransplant International organization serving Belgium, Luxembourg, Netherlands, Germany, Austria, Slovenia, Croatia, Hungary. The allocation program is dependent on blood type matching, tissue type matching (HLA-A,B,DR match), chance of a good tissue type HLA A, B, DR match, the donation activity at local as well as at international levels, and mainly the time patient has been on dialysis [ the so-called waiting-time ].

Thus even for dialysis centers with a "well-filled" kidney transplant waiting list, the number of patients who actually get a transplant always fluctuates (significantly) from year to year.

The number of patients on the active ET kidney transplant waiting list on January 1, 2020 was 914.

### 3.1. Deaths of dialysis patients

The absolute number of adult dialysis patients dying during a calendar year is nearly constant in the last years [Table 3]. The average annual number per 100 patient years amounts to 16.

Prematurely stop of the dialysis treatment accounts for 17% of all deaths and “competes” with the other relevant causes: infection (17%), cardiovascular causes (15%) and sudden death (14%).

## 4. Survival of adult dialysis patients

The patient survival of the Belgian dialysis population is quite good, taking into account its old and vulnerable population – there is a continuous improvement in survival, albeit minor, between the 3 cohorts studied (2006-2010, 2009-2013 & 2012-2016) [Figure 2; source: ERA-EDTA registry]. The median survival [Kaplan Meier analysis] of the total dialysis population is just above 4.0 years.

Many efforts are done to avoid the commencement of the dialysis in patients with a predicted poor outcome. The risk of dialysis and death over a period of 5-year can be estimated by prognostic scores such as Kidney Failure risk equation and Bansal score. Other scores are available to predict the initial survival after the start of dialysis, such as REIN score [France] or the aREIN score [NBVN]. All these tools can help to inform more correctly the nephrologists and their patients with moderated and severe chronic kidney disease about the risk and/or outcome of renal replacement therapy.

## 5. Survival of adult renal transplant patients

The survival of the kidney graft, following a transplantation at a Belgian transplant center, is excellent, also on the European level [Figure 3; source: ERA-EDTA registry]. As commonly known, the graft survival of a kidney transplanted from a living donor is significantly better than that from a deceased donor.

The same favorable results are obtained in patients, suffering from diabetes mellitus and diabetic nephropathy as cause of their end-stage renal disease [Figure 4; source: ERA-EDTA registry]. Due to the multisystem co-morbidity, renal care for these diabetic patients remains challenging.

## 6. Forecast: impact of the COVID-19 pandemic on the population on renal replacement therapy

It is anticipated that there will be a major impact of the COVID-19 pandemic on the RRT population.

1. There is a high mortality of the RRT patients upon hospitalization [25%], present in the first wave as well as in the second wave. In the first wave, excess mortality, however, was surprisingly absent in the dialysis population, in contrast to the general

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population. One supposes that the personal protection equipment and the efficient quarantine at the dialysis centers collaterally offered protection from other infections ( flu ).

2. Less patients might have been started their dialytic replacement therapy;
3. The kidney transplant activity was much lower in 2020, following a much lower donation activity and the temporary closure of the transplant centers (March – May 2020; October – November 2020).  
It is understandable that the intensive care units had to be reserved for the COVID-19 patients with severe respiratory insufficiency and/or multi-organ failure.  
The safety of kidney transplantation could not be guaranteed: absence of COVID-19 infection in donors could not be ruled out completely due to incubation time of the virus, transmission risk of COVID-19 infection was unknown, outcome of COVID-19 infection in the transplantation might be poor.

The national report 2021 will describe the effect of the COVID-19 pandemic on the RRT population in more detail.

On behalf of the college,  
Au nom du collège

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Table 1: Prevalence Renal Replacement Therapy [RRT] – on reference date January 1, from 2011 till 2020

<b>Prevalence</b>	31/12/2010	31/12/2011	31/12/2012	31/12/2013	31/12/2014	31/12/2015	31/12/2016	31/12/2017	31/12/2018	31/12/2019
<b>Adults</b>	1/01/2011	1/01/2012	1/01/2013	1/01/2014	1/01/2015	1/01/2016	1/01/2017	1/01/2018	1/01/2019	1/01/2020
<b>Total in RRT</b>	12575	12929	13264	13556	13859	14182	14490	14773	15021	15180
<b>Living with a transplant</b>	5218	5451	5640	5796	5939	6153	6351	6533	6686	6643
<b>Living on dialysis</b>	7357	7478	7624	7760	7920	8029	8139	8240	8335	8537
Peritoneal dialysis	683	650	635	630	632	621	616	622	614	628
Hemodialysis	6694	6828	6989	7130	7288	7408	7523	7618	7721	7917
low care	1875	1889	1946	2034	2144	2198	2393	2696	2757	2830
high care	4819	4939	5043	5096	5144	5210	5130	4922	4964	5087
ratio low care/high care	0,39	0,38	0,39	0,40	0,42	0,42	0,47	0,55	0,56	0,56
Annual evolution total RRT %	3,01%	2,82%	2,59%	2,20%	2,24%	2,33%	2,17%	1,95%	1,68%	1,06%
Annual evolution dialysis %	2,74%	1,64%	1,95%	1,78%	2,06%	1,38%	1,37%	1,24%	1,15%	2,42%
Annual evolution transplant %	3,41%	4,47%	3,47%	2,77%	2,47%	3,60%	3,22%	2,87%	2,34%	-0,64%
Population Belgium	10.951.266	11.035.948	11.099.554	11.150.516	11.209.044	11.267.910	11.322.088	11.376.070	11.413.203	11.492.641
Total RRT per million inhabitants	1148,3	1171,5	1195,0	1215,7	1236,4	1258,6	1279,8	1298,6	1316,1	1320,8
Dialysis per million inhabitants	671,8	677,6	686,9	695,9	706,6	712,6	718,9	724,3	730,3	742,8

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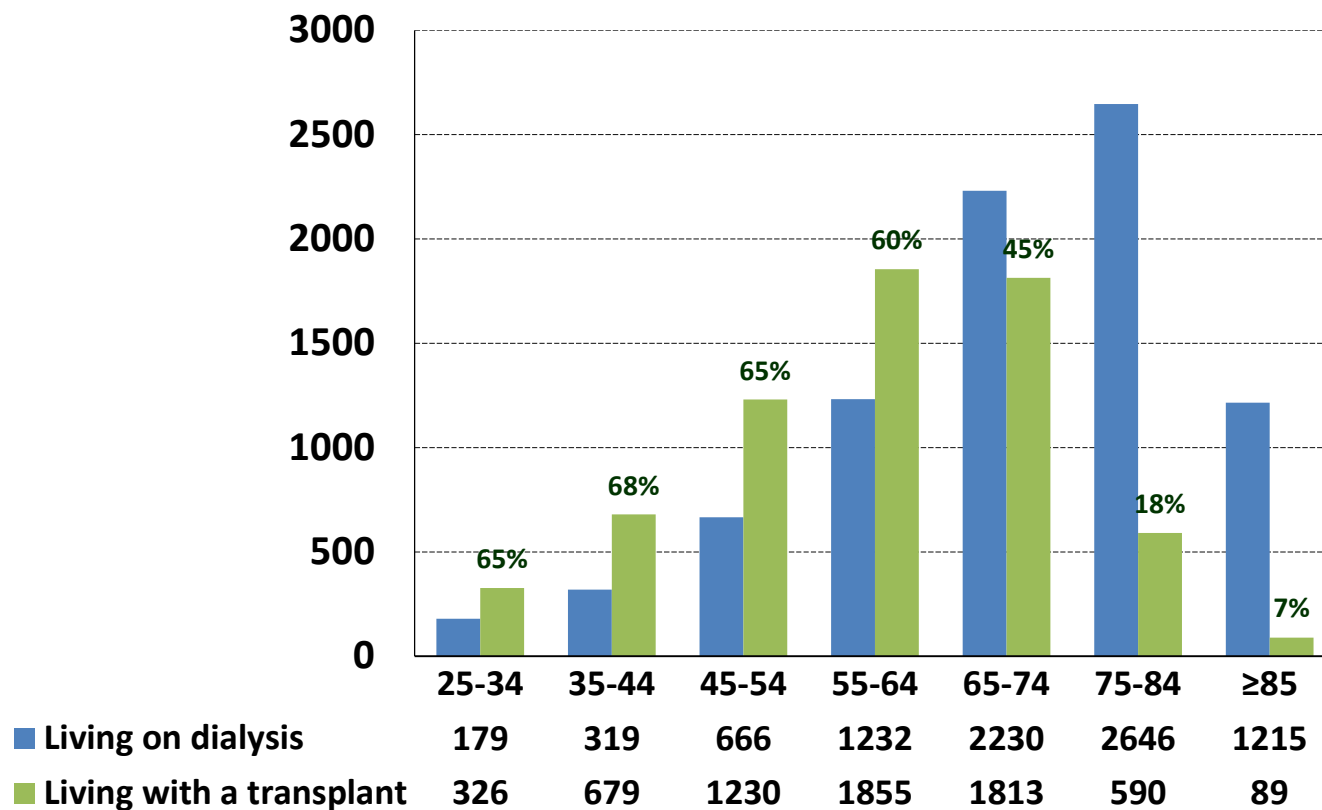
Table 2: Start renal replacement therapy (dialysis or transplantation), per calendar year, 2011 – 2019

<b><i>Inflow RRT</i></b>	[1-12] 2011	[1-12] 2012	[1-12] 2013	[1-12] 2014	[1-12] 2015	[1-12] 2016	[1-12] 2017	[1-12] 2018	[1-12] 2019
<b>Adults</b>									
<b>Inflow on dialysis</b>									
de novo = first episode RRT	1917	1986	1944	1881	1960	2008	2010	2043	2095
evolution de novo dialysis inflow %	-7,3%	3,6%	-2,1%	-3,2%	4,2%	2,4%	0,1%	1,6%	2,5%
<b>Inflow transplantation - preemptive</b>									
de novo = first episode RRT	51	61	46	48	43	58	58	40	38

Table 3: Renal transplantation and death, while on dialysis, per calendar year, 2011 – 2019

<b><i>Outflow from dialysis</i></b>	[1-12] 2011	[1-12] 2012	[1-12] 2013	[1-12] 2014	[1-12] 2015	[1-12] 2016	[1-12] 2017	[1-12] 2018	[1-12] 2019
<b>Adults</b>									
<b>Post-mortem donor Transplantation ( Source: Eurotransplant )</b>	461	476	454	433	485	462	490	502	398
									-20%
<b>Death while on dialysis</b>	1429	1452	1465	1395	1476	1560	1522	1540	1523
<i>Mortality per 100 patient years</i>	16,9	16,9	16,8	15,7	16,4	17,1	16,5	16,5	15,9

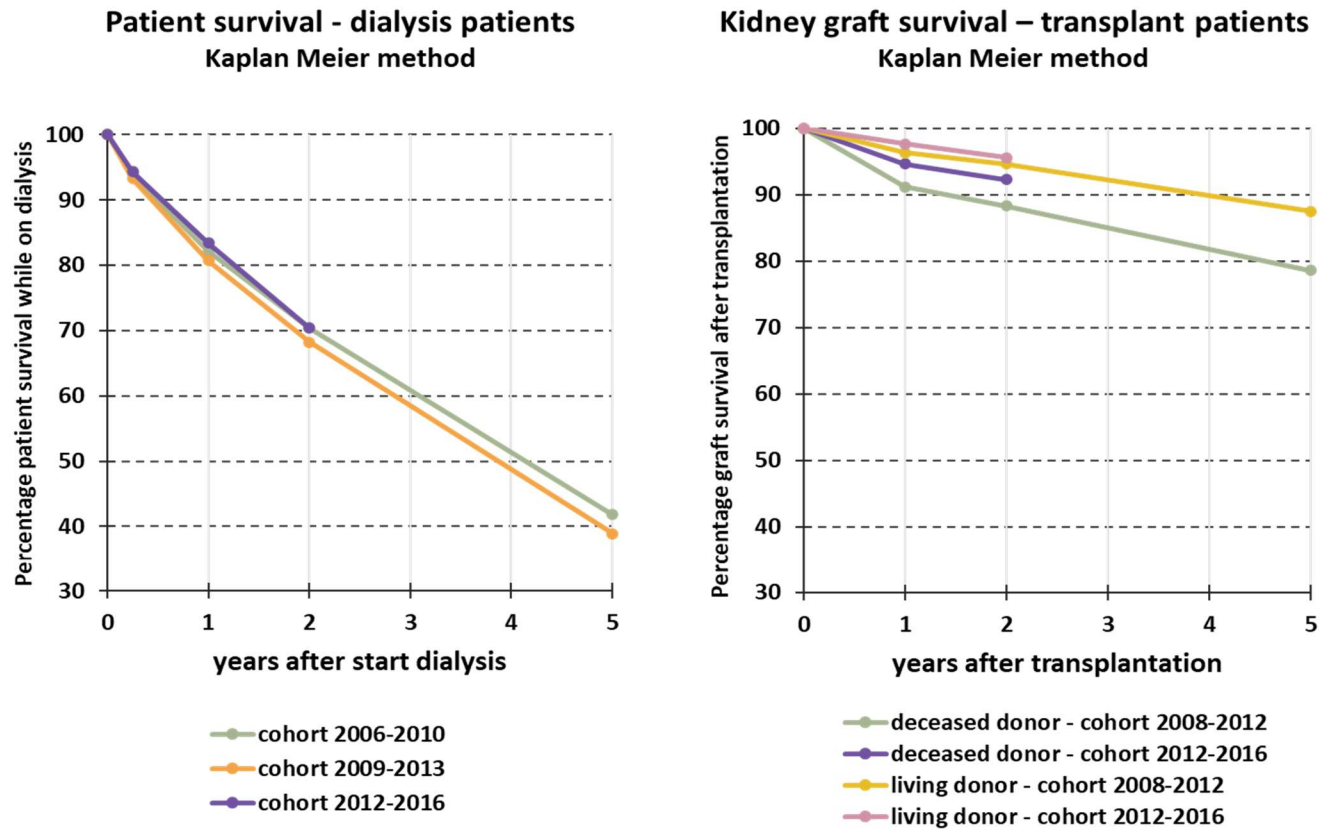
**Figure 1** Age distribution (years) of the prevalent RRT patients, comparing dialysis patients and transplant patients  
Date : 1 January, 2020



**Figure 2** Kaplan Meier survival – comparing different incident cohorts

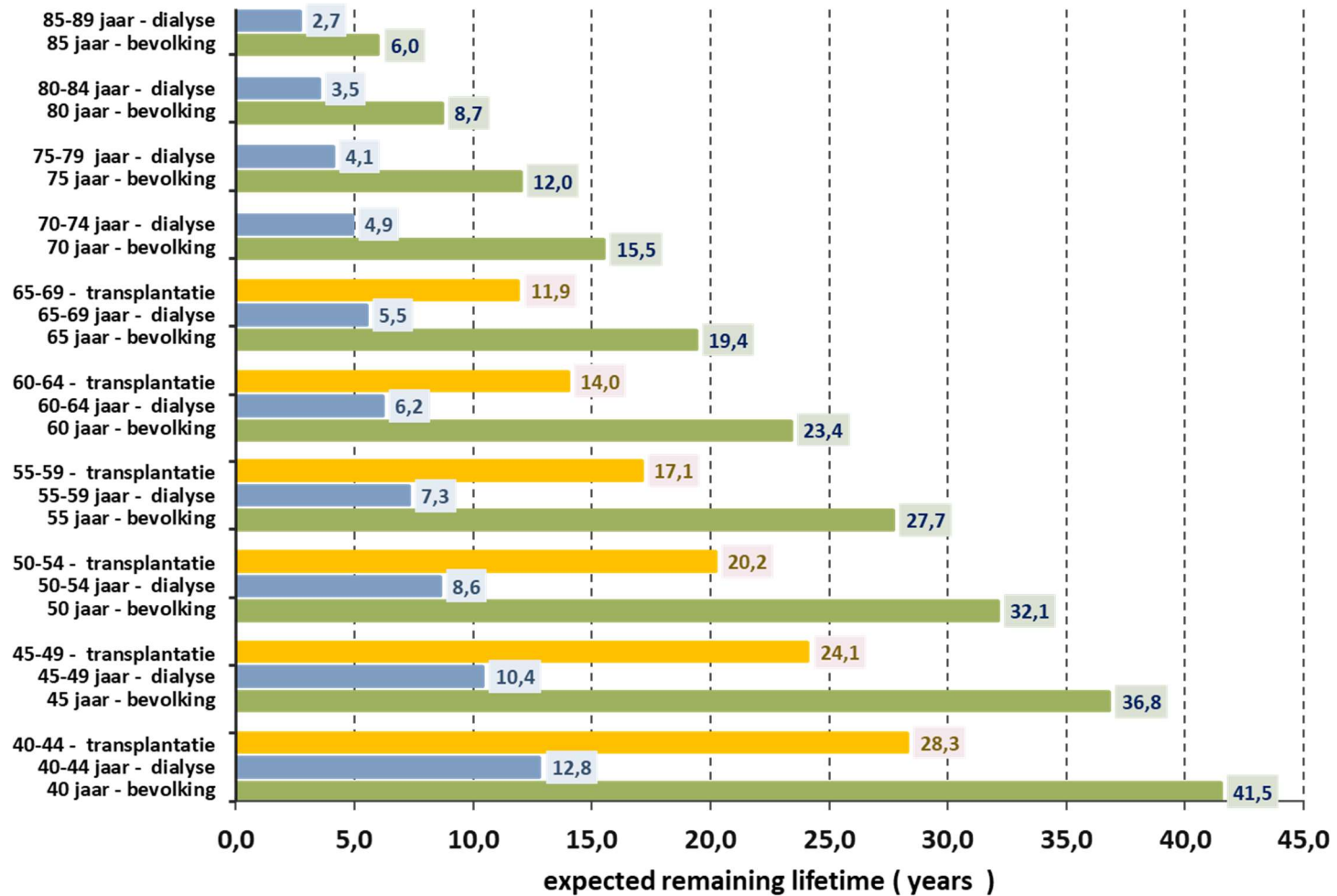
2A. Patient survival – adult dialysis population, Belgium

2B. Kidney graft survival – deceased and living donor - adult renal transplant population, Belgium





**Figure 3** Belgian general population, dialysis patients and patients living with a renal transplant  
Expected remaining lifetime (years) per age category – ERA-EDTA registry



**Figure 4** Kaplan Meier survival – comparing different incident cohorts of patients with diabetes mellitus [DM] and diabetic nephropathy

4A. Patient survival – adult dialysis population, Belgium

4B. Kidney graft survival (GS) and patient survival (PS) – adult renal transplant population, Belgium

