



#### 4.4. Proportion of adult diabetics (under insulin) with a convention, a pass/pre-care trajectory or a care trajectory (% of patients, 18+) (QC-4) & Proportion of adult diabetics (receiving only glucose-lowering drugs, excluding insulin) with a convention, a pass/pre-care trajectory or a care trajectory (% of patients, 50+) (QC-5)

##### 4.4.1. Documentation sheet

<b>Description</b>	<p>QC-4 Proportion of adult diabetics (under insulin) registered in a care trajectory, a convention or holding a diabetes pass/pre-care trajectory (% of patients, 18+)</p> <p>QC-5 Proportion of adult diabetics aged 50 years and older (receiving only glucose-lowering drugs, excluding insulin) registered in a care trajectory, a convention or holding a diabetes pass/pre-care trajectory (% of patients, 50+)</p>
<b>Calculation</b>	<p><b>QC-4 Proportion of adult diabetics (under insulin) registered in a care trajectory, a convention or holding a diabetes pass/pre-care trajectory (% of patients, 18+)</b></p> <ul style="list-style-type: none"> <li>• Numerator: number of diabetic patients (<math>\geq 18</math> years) under insulin registered in a care trajectory, a convention or holding a diabetes pass/pre-care trajectory</li> <li>• Denominator: number of patients (<math>\geq 18</math> years) under insulin with any type (I and II) diabetes identified through their drugs prescription.</li> </ul> <p><b>QC-5 Proportion of adult diabetics aged 50 years and older (receiving only glucose-lowering drugs, excluding insulin) registered in a care trajectory, a convention or holding a diabetes pass/pre-care trajectory (% of patients, 50+)</b></p> <ul style="list-style-type: none"> <li>• Numerator: number of diabetic patients (<math>\geq 50</math> years) receiving only glucose-lowering drugs registered in a care trajectory, a convention or holding a diabetes pass/pre-care trajectory</li> <li>• Denominator: number of patients (<math>\geq 50</math> years) receiving only glucose-lowering drugs with any type (I and II) diabetes identified through their drugs prescription.</li> </ul>
<b>Rationale</b>	<p>To optimize care provided to diabetic patients, several measures have been implemented in Belgium by the INAMI – RIZIV.</p> <ul style="list-style-type: none"> <li>• Diabetes pass/pre-care trajectory:             <ul style="list-style-type: none"> <li>○ Set up in Belgium in 2003. Removed and replaced by the pre-care trajectory for patients with type 2 diabetes since the 1<sup>st</sup> February 2016.</li> <li>○ Inclusion criteria: patients with diabetes type II under diet or oral antidiabetics; patients should have a global medical record followed by their general practitioner.</li> <li>○ Aims: to improve the education of patients and those around them (information on treatment, management of complications...), to stimulate the patients involvement through information on periodic examinations and to support the communication between the patient and various care providers.</li> <li>○ Advantages for patients: 2 consultations partially reimbursed by year with dieticians and 2 consultations partially reimbursed with podiatrist each year (only if the patient is at high risk of foot wound).</li> <li>○ Diabetes pass has been replaced by the pre-care trajectory for patients with type 2 diabetes in order to better manage patients with type 2 diabetes not registered in a care trajectory for chronic care or in a convention. Advantages for patients are almost the same: 2</li> </ul> </li> </ul>



consultations reimbursed by year with dieticians and 2 with podiatrist. Some patients<sup>m</sup> in the pre-care trajectory are eligible for reimbursement of consultations with specialist in diabetes for education (dieticians, pharmacist, nurses, physiotherapists...). A maximum of 4 consultations per patient per year is reimbursed.

- Care trajectory for chronic care:
  - Set up in Belgium in September 2009 (modified in 2018).
  - Inclusion criteria: patients with diabetes type II under insulin or incretinomimetics or diabetes type 2 insufficiently controlled by oral antidiabetics; patient not be registered in a convention; patient should have a global medical record followed by their general practitioner and should undertake to consult their general practitioner at least twice by year and their endocrinologist at least one by year.
  - Aims: to improve follow-up and collaboration between patients, general practitioner and specialist physician.
  - Advantages for patients: all consultations totally reimbursed with general practitioner and endocrinologist; free access to consultations with nurses specialised in diabetes for education (information on lifestyle, treatments, follow-up); free self-control material only for those on injectable therapy (150 dipsticks/6 months, glucometer), 2 consultations partially reimbursed by year with dieticians and 2 consultations partially reimbursed by year with podiatrist (only if the patient is at high risk of foot wound).
  - Since the 1<sup>st</sup> May 2018, reimbursement rules for patients with type 2 diabetes in care trajectory has been modified. It affects consultations in diabetes for education, reimbursement of self-control material and reimbursement of consultations with specialists. Patients registered in a care trajectory for type 2 diabetes under insulin or under incretinomimetics are fully reimbursed for their self-control material. Each patient can benefit from 5 consultations in diabetes for education per year and once 5 supplementary consultations. At least one of them should be delivered at home. Mutualities do not pay lump sum fee for endocrinologists anymore when patients are also registered in a diabetes convention.
- Convention for diabetes self-management:
  - Set up in Belgium in 1986 (modified in 2008 and 2016).
  - Inclusion criteria: patients with type 1 or type 2 diabetes under at least 2 insulin injections by day and with a serious medical condition or patients with type 2 diabetes under at least 3 insulin injections by day; patients with gestational diabetes; patients aged more than 16 years old; ambulatory patients or hospitalized; patients with a global medical record followed by their general practitioner. Usually, patient with type 2 diabetes registered in a care trajectory are not followed in specialised hospital.
  - Aims: to organize a multidisciplinary management of diabetic patients in specialised hospital centers in order to support the education of patients and those around them, the patient's involvement in their periodic examinations and the communication between the patient and various care providers.
  - Advantages for patients: integration in a full revalidation process including free self-control material and multidisciplinary consultations. Since the application of the new convention the 1<sup>st</sup> July 2016, in addition to the usual standard equipment a new measuring equipment (sensor for self-monitoring of glucose) is reimbursed for patients with type 1 diabetes.

Because the registration in a diabetes pass/pre-care trajectory, care trajectory or convention is volunteer, the percentage of patients registered in at least one of the three systems of registration is an indicator of the patient's participation in this public investment.

<sup>m</sup> Inclusion criteria: patients with type 2 diabetes registered in the pre-care trajectory; patients with age 15-69 years and a cardiovascular risk defined as BMI>30 and/or having high blood pressure; GP's prescription for consultation for diabetes education.



<b>Primary source</b>	IMA data
<b>Indicator source</b>	KCE calculation
<b>Technical definitions</b>	<p>Two distinct groups of diabetics patients are considered (selection on Pharmanet: class ATC A10 drugs prescription)</p> <ul style="list-style-type: none"><li>• <b>Adult diabetics under insulin</b> (ATC=A10A): patients aged <math>\geq 18</math> years and A10A prescription <math>&gt;37.5</math> DDDs.</li><li>• <b>Adults diabetics receiving glucose-lowering drugs, excluding insulin</b> (ATC=A10B): patients aged 50 years and older and A10B prescription <math>\geq 270</math> DDDs (and <math>0 \leq A10A &lt; 37.5</math> DDDs). This group includes all oral antidiabetics but also incretin mimetic (GLP1-agoniste, code A10BJ) which is a non-insulin injectable solution. For this group of patients, an inferior age limitation was set at 50 years to be sure to discard people taking e.g. metformin to lose weight instead of stabilizing a diabetes.</li></ul> <p>For these 2 groups of diabetics patients (under insulin or receiving glucose-lowering drugs), we identified patients registered in at least one of the three systems of registration. Adult diabetics (under insulin or receiving glucose-lowering drugs) registered in a care trajectory, a convention or holding a diabetes pass/pre-care trajectory are identified through the following nomenclature code:</p> <ul style="list-style-type: none"><li>• <b>Diabetes pass/pre-care trajectory</b> : 102852, 109594</li><li>• <b>Diabetes care trajectory</b> : 107015, 107030, 107052, 107074.</li><li>• <b>Diabetes convention</b> : 770033, 770055, 770070, 771573, 771595, 772450, 773113, 773231, 773253, 773275, 773393, 773496, 773592, 774115, 774130, 774152, 775456, 775471, 794076, 788756, 788771, 788793, 788815, 788830, 788852, 788874, 788896, 788911, 788933, 788955, 785573, 785595, 785610, 785632, 785654, 785676, 785691, 785713, 785735, 785750, 785772, 785794, 785816, 785831, 785853, 785875, 785890, 785912, 785934, 785956, 789751, 789773, 789795, 789810, 789832, 789854, 789891, 789913, 789935</li></ul> <p><b>Long term care:</b> For long term care, definitions of the IMA-AIM have been used (<a href="http://atlas.aim-ima.be/base-de-donnees">http://atlas.aim-ima.be/base-de-donnees</a>, see statistics on care for the elderly).</p>
<b>Limitations</b>	Underestimated denominator (only diabetic with medication); process indicator (which provide no information on outcome); risk of misclassification, notably risk that some patients under insulin since a few days were considered as patients receiving only glucose-lowering drugs; risk of misclassification or omission of certain INAMI – RIZIV codes that refer to a pass/pre-care trajectory, care trajectory or convention.
<b>International comparability</b>	Not applicable
<b>Related indicators</b>	“Appropriate diabetes follow-up”
<b>Dimensions</b>	Continuity (Management/Coordination); Ambulatory care; Link specialist and GP; Chronic care



#### 4.4.2. Results

A total of 146 450 diabetic patients under insulin ( $\geq 18$  years) and a total of 208 524 diabetic patients receiving only glucose-lowering drugs, excluding insulin ( $\geq 50$  years) were identified in 2016 through their drugs prescription (see Table 23 and Table 24). This number does not consider the diabetic patients without medication (e.g. patients diagnosed with diabetes but only under diet or non-diagnosed patient). Globally, 89.9% of the identified **diabetic patients under insulin** have at least one registration in a diabetes care model (pass/pre-care trajectory, care trajectory or convention, see Table 23). A large majority of these patients registered in a diabetes care model has a convention (84.2%), while 22.3% and 4.5% had a care trajectory or a pass/pre-care trajectory respectively.<sup>n</sup> The proportion of **patients receiving only glucose-lowering drugs, excluding insulin** having at least one registration in a diabetes care model is only 20.2% (see Table 24). Half of them has a care trajectory (52.6%), while almost another half has a pass/pre-care trajectory (47.2%), and few (probably recently under insulin) have a convention (4.3%).<sup>o</sup>

#### Analysis by demographic characteristics and socio-economic status

- **Gender & Age group**

The proportion of **diabetic patients under insulin** with at least one registration in a diabetes care model is quite similar for men (90.5%) and women (89.3%). The same difference is present among **diabetic patients receiving only glucose-lowering drugs, excluding insulin** with at least one registration in a diabetes care model (20.5% for men and 19.7% for women, Table 23 and Table 24).

The proportion of **diabetic patients under insulin** with at least one registration in a diabetes care model is the highest in the 18-24 years (92.6%) and remains superior to 80% until 84 years. Afterwards, this proportion decrease continuously to reach 63.1% in the 95+ age group (Table 23). The proportion of **diabetic patients receiving only glucose-lowering drugs, excluding insulin** who have at least one registration in a diabetes care model decreases regularly from 21.8% in the first 50-74 age group to reach 9.4% in the 95+ age group (Table 24).

Among the 65 years old and plus, the proportion of diabetic patients with at least one registration in a diabetes care model is lower in institutions compared to home care and no long-term care, **both for patients under insulin and receiving only glucose-lowering drugs, excluding insulin** (see Table 23 and Table 24). This difference is particularly high for patients under insulin registered in care trajectory or convention.

- **Socio-economic status**

Adult patients (18 years or +) **under insulin** with entitlement to increased reimbursement have slightly less often a registration than patients without this financial support (88.8% vs 90.5%, see Table 23). However, the proportion of **diabetic patients receiving only glucose-lowering drugs, excluding insulin** with at least one registration in a diabetes care model is higher with entitlement to increased reimbursement (21.1%) than without increased reimbursement (19.8%, see Table 24).

<sup>n</sup> Total is not 100% since some patients have more than one registration in a diabetes care model.

<sup>o</sup> Total is not 100% since some patients have more than one registration in a diabetes care model.



**Table 23 – Proportion of diabetic patients under insulin with a diabetes pass/pre-care trajectory, a care trajectory or a convention, by patient characteristics (2016)**

<b>PATIENTS UNDER INSULIN (18 years or more)</b>							
		<b>Patients under insulin having a at least ONE OF THE THREE systems of registration</b>			<b>Patients under insulin having a PASS/PRE-CARE TRAJECTORY</b>	<b>Patients under insulin having a CARE TRAJECTORY</b>	<b>Patients under insulin having a CONVENTION</b>
		<b>Numerator</b>	<b>Denominator</b>	<b>Proportion</b>	<b>Proportion</b>	<b>Proportion</b>	<b>Proportion</b>
<b>Belgium</b>		131 654	146 450	<b>89.9%</b>	4.0%	20.0%	75.7%
<b>Region</b>	<b>Brussels</b>	12 903	14 990	<b>86.1%</b>	6.6%	12.1%	77.7%
	<b>Flanders</b>	75 189	82 319	<b>91.3%</b>	3.7%	24.9%	73.5%
	<b>Wallonia</b>	43 562	49 141	<b>88.6%</b>	3.7%	14.3%	78.9%
<b>Gender</b>	<b>Female</b>	62 660	70 200	<b>89.3%</b>	4.2%	20.6%	74.7%
	<b>Male</b>	68 994	76 250	<b>90.5%</b>	3.8%	19.6%	76.6%
<b>Age groups</b>	<b>18-24</b>	5 841	6 307	<b>92.6%</b>	1.5%	0.3%	92.4%
	<b>25-49</b>	20 832	22 931	<b>90.8%</b>	3.1%	6.5%	86.6%
	<b>50-74</b>	70 197	76 892	<b>91.3%</b>	4.4%	21.3%	76.1%
	<b>75-84</b>	25 774	28 935	<b>89.1%</b>	4.4%	28.6%	68.8%
	<b>85-94</b>	8 716	10 919	<b>79.8%</b>	3.9%	28.1%	59.6%
	<b>95+</b>	294	466	<b>63.1%</b>	2.1%	21.9%	46.4%
<b>Long term care (65 years or +)</b>	<b>Nursing care at home</b>	6 990	7 911	<b>88.4%</b>	3.6%	28.6%	68.7%
	<b>Institutions</b>	6 918	9 324	<b>74.2%</b>	3.5%	20.5%	59.4%
	<b>No LT care</b>	54 318	59 738	<b>90.9%</b>	4.5%	26.7%	71.8%
<b>Increased reimbursement (18 years or +)</b>	<b>No</b>	81 277	89 839	<b>90.5%</b>	3.4%	20.1%	76.1%
	<b>Yes</b>	47 361	53 357	<b>88.8%</b>	5.1%	21.1%	74.1%

Source: IMA data, KCE calculation



**Table 24 – Proportion of diabetic patients aged 50 years and older receiving only glucose-lowering drugs, excluding insulin with a diabetes pass/pre-care trajectory, a care trajectory or a convention, by patient characteristics (2016)**

		Patients receiving only glucose-lowering drugs, excluding insulin having a at least ONE OF THE THREE systems of registration			Patients receiving only glucose-lowering drugs, excluding insulin having a PASS/PRE-CARE TRAJECTORY	Patients receiving only glucose-lowering drugs, excluding insulin having a CARE TRAJECTORY	Patients receiving only glucose-lowering drugs, excluding insulin having a CONVENTION
		Numerator	Denominator	Proportion	Proportion	Proportion	Proportion
<b>Belgium</b>		42 074	208 524	<b>20.2%</b>	9.5%	10.6%	0.9%
<b>Region</b>	<b>Brussels</b>	3 044	17 389	<b>17.5%</b>	10.0%	7.7%	0.7%
	<b>Flanders</b>	29 452	113 368	<b>26.0%</b>	12.2%	13.9%	1.0%
	<b>Wallonia</b>	9 578	77 767	<b>12.3%</b>	5.6%	6.5%	0.7%
<b>Gender (50 years or +)</b>	<b>Female</b>	18 253	92 501	<b>19.7%</b>	9.6%	10.2%	0.7%
	<b>Male</b>	23 821	116 023	<b>20.5%</b>	9.5%	10.9%	1.0%
<b>Age groups</b>	<b>00-24</b>	-	-	-	-	-	-
	<b>25-49</b>	-	-	-	-	-	-
	<b>50-74</b>	31 258	143 653	<b>21.8%</b>	9.6%	12.2%	0.9%
	<b>75-84</b>	8 862	49 154	<b>18.0%</b>	9.8%	8.1%	0.7%
	<b>85-94</b>	1 907	15 216	<b>12.5%</b>	8.1%	4.2%	0.6%
	<b>95+</b>	47	501	<b>9.4%</b>	6.6%	2.8%	0.0%
<b>Long term care (65 years or +)</b>	<b>Nursing care at home</b>	1 351	7 533	<b>17.9%</b>	8.0%	9.4%	1.6%
	<b>Institutions</b>	674	6 880	<b>9.8%</b>	5.3%	3.8%	0.9%
	<b>No LT care</b>	24 015	123 523	<b>19.4%</b>	9.9%	9.5%	0.7%
<b>Increased reimbursement (50 years or more)</b>	<b>No</b>	28 859	145 779	<b>19.8%</b>	9.1%	10.6%	0.8%
	<b>Yes</b>	13 215	62 745	<b>21.1%</b>	10.5%	10.5%	1.0%

Source: IMA data, KCE calculation



### Analysis by region and district/province

A difference was noticed between the three regions and the type of diabetes care model concerning **diabetic patients under insulin** (see Table 23). The use of care trajectory is clearly higher in Flanders (almost twice) compared with the two other regions. In Brussels, the use of diabetes pass/pre-care trajectory is higher (6.6%) compared with the two other regions (3.7% in Flanders and 3.7% in Wallonia).

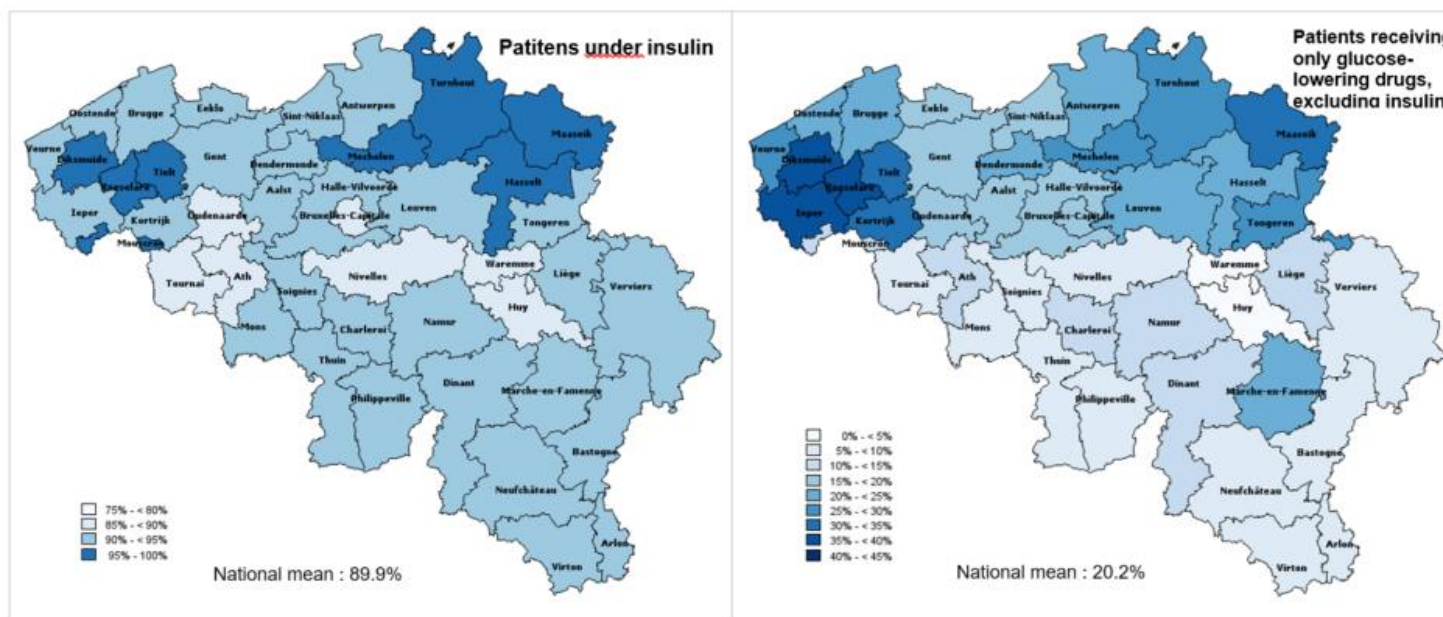
The proportion of **patients receiving only glucose-lowering drugs, excluding insulin** with at least one registration in a diabetes care model is higher in Flanders than in Brussels and Wallonia and this difference is found for the three type of registration (see Table 24).

### Maps with patient districts/provinces

An analysis by district shows that Waremmе has the lowest proportion of **diabetic patients under insulin** with at least one registration in a diabetes care model (83%) while Tielт and Diskmuide have the highest (94.3% and 94.9% respectively, see Figure 57).

For **patients receiving only glucose-lowering drugs, excluding insulin**, Waremmе is the district with the lowest proportion of patients with at least one registration in a diabetes care model (3.6%) while Roeselare, Diksmuide and Ieper have the highest (41.9%, 41.4% and 39.9% respectively, see Figure 57).

Figure 53 – Proportion of diabetic patients in a care trajectory, a convention or with a diabetes pass/pre-care trajectory, by patient district (2016)



Source: IMA data. KCE calculation.

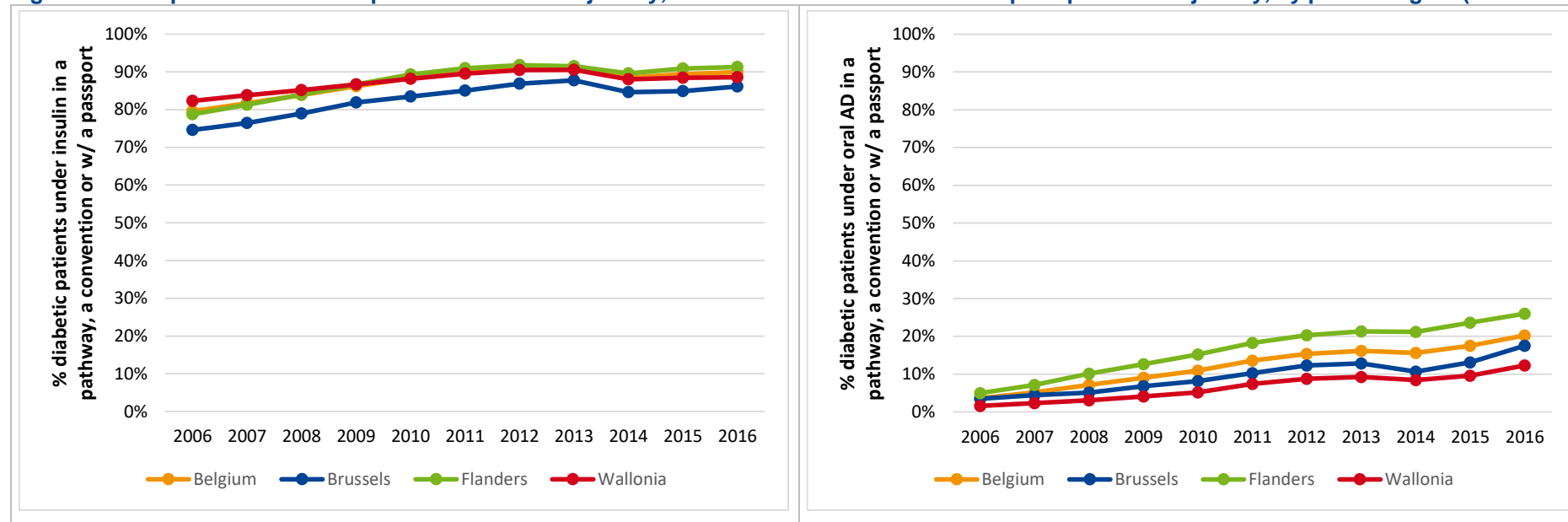


### Trend over time by region

The proportion of **diabetic patients under insulin** with at least one registration in a diabetes care model slightly increased between 2006 and 2013 to reach 90.8% (Figure 54). Since 2014, the proportion of **diabetic patients under insulin** with at least one registration in a diabetes care model is quite stable around 88-89%. Conventions which exist since 1986 are the kind of registration more often used. Addition of care trajectory, started in September 2009, allows to reach 20% of patients under insulin in 2016.

The proportion of diabetic patients **receiving only glucose-lowering drugs, excluding insulin** with at least one registration in a diabetes care model is low but slightly increases since 2006 (Figure 54). This increase is slightly higher in Flanders. Diabetic patients **receiving only glucose-lowering drugs, excluding insulin** with at least one registration in a diabetes care model are mainly concerned by diabetic pass/pre-care trajectory which are developed in 2003. The additional value of care trajectory is not negligible in this group since it reaches more than 50% of the patients with at least one registration in a diabetes care model in 2016.

**Figure 54 – Proportion of diabetic patients in a care trajectory, a convention or with a diabetes pass/pre-care trajectory, by patient region (2006-2016)**



Source: IMA data. KCE calculation.





### Key points

- The proportion of diabetic adults with at least one registration in a diabetes care trajectory, a diabetes convention or a diabetes pass/pre-care trajectory is relatively high among patient under insulin (89.9%). A large majority of patients under insulin registered in a diabetes care model have a convention (84%). In another way, a low proportion of patients receiving only glucose-lowering drugs, excluding insulin has at least one registration in a diabetes care model (20.2%), half having a care trajectory and almost another half a pass/pre-care trajectory.
  - The proportion of diabetic patients with at least one registration in a diabetes care model decrease with age after 85 years both for patients under insulin and adults receiving only glucose-lowering drugs, excluding insulin.
  - Among the 65 years old and plus, the proportion of diabetic patients with at least one registration in a diabetes care model is lower in institutions compared to home care and no long term care, both for patients under insulin and receiving only glucose-lowering drugs, excluding insulin.
- Patients under insulin with lower socio-economic level (measured by entitlement to increased reimbursement) have slightly less often a registration. Conversely, Patients receiving only glucose-lowering drugs, excluding insulin with lower socio-economic level have slightly more often a registration.
  - The proportion of patients with at least one registration in a diabetes care model is higher in Flanders for patients under insulin (91.3%) and especially for patients receiving only glucose-lowering drugs, excluding insulin (26%) compared with the two other regions (respectively 88.6% and 12.3% for Wallonia and 86.1% and 17.5% for Brussels).
  - A positive trends over time can be noticed for patients receiving only glucose-lowering drugs, excluding insulin. The proportion of patients under insulin is quite stable since 2014.