



### Key points

- **Percentage of very preterm babies delivered in units without a NICU decreased in every Belgian region between 2011 and 2015.**
- **Brussels has the lowest proportion of very preterm babies delivered in units without a NICU (3.66% in 2015).**

### References

- [1] Zeitlin J, Mohangoo A, Delnorn M, Alexander S, Blondel B, Bouvier-Colle M, *et al.* European Perinatal Health Report. The health and care of pregnant women and babies in Europe in 2010. 2013.
- [2] Ozminkowski RJ, Wortman PM, Roloff DW. Inborn/outborn status and neonatal survival: A meta-analysis of non-randomized studies. *Statistics in medicine.* 1988;7(12):1207-21.
- [3] Larroque B, Ancel P-Y, Marret S, Marchand L, André M, Arnaud C, *et al.* Neurodevelopmental disabilities and special care of 5-year-old children born before 33 weeks of gestation (the EPIPAGE study): a longitudinal cohort study. *The Lancet.* 2008;371(9615):813-20.

## 14.8. Screening during pregnancy (MN-8)

### 14.8.1. Documentation sheet

<b>Description</b>	Proportion of women screened for hepatitis C during pregnancy. Proportion of women screened more than once for cytomegalovirus during pregnancy. Proportion of women screened more than once for toxoplasmosis during pregnancy.
<b>Calculation</b>	Numerator: number of women who have delivered in a given year, having had a Hepatitis C screening test within the 280 days before delivery; number of women who have delivered in a given year, having more than one cytomegalovirus screening test within the 280 days before delivery; number of women who have delivered in a given year, having more than one toxoplasmosis screening test within the 280 days before delivery. Denominator: total number of women who have delivered affiliated to a sickness fund. Distributions of the number of tests are also presented. Results are presented by region.
<b>Rationale</b>	For low-risk pregnancies, the KCE guideline <sup>1</sup> does not recommend to routinely offer to each pregnant woman hepatitis C testing; does not recommended routine screening in all pregnant women for toxoplasmosis infection, repeated at different periods of pregnancy, although a single serological test prior to or at the beginning of pregnancy can be useful; and does not recommend routine screening in all pregnant women for cytomegalovirus infection, although a single serological test preferably prior to pregnancy can be useful. In June 2017, the RIZIV – INAMI nomenclature has been updated in that direction: new nomenclature codes for toxoplasmosis test cannot be billed more than twice during pregnancy and new nomenclature codes for cytomegalovirus test can only be billed during pregnancy in case of clinical presumption of an acute infection with the cytomegalovirus.
<b>Data source</b>	IMA-AIM



<b>Technical definitions</b>	<p>Selection of women who delivered in a given year based on nomenclature codes for delivery: 422225,423500,422656,422671,423651,423673,423010,423021,424012,424023, 424093, 424104</p> <p>Identification of hepatitis C test: nomenclature code 551154-551165. When these nomenclature codes are recorded several times the same day, this is counted as a unique test.</p> <p>Identification of cytomegalovirus test: nomenclature code 551316-551320 and 551331-551342. When these nomenclature codes are recorded several times the same day, this is counted as a unique test.</p> <p>Identification of toxoplasmosis test: nomenclature code 551751-551762 and 551773-551784. When these nomenclature codes are recorded several times the same day, this is counted as a unique test.</p> <p>A distinction can be made between all deliveries and low-risk deliveries. Low risk deliveries are selected by excluding women younger than 18 or older than 40, women presenting pre-existing co-morbidities (diabetes, hypertension, thrombosis, coagulation disorders, asthma, rheumatoid arthritis, Crohn's disease, ulcerative colitis, HIV, chronic hepatitis B and C, multiple sclerosis, epilepsy, thyroid diseases, immunosuppression after organ transplantation, respiratory disorders, and neurological disorders) defined by the consumption within the 21 months before delivery of the following drugs (ATC codes A10A A10B (Defined daily dose or DDD&gt;30), C02-C03-C04-C07-C08-C09 (DDD&gt;180), B01A (DDD&gt;90), B02BD, N06A, R03AA-R03AB- R03AC-R03AH-R03AK-R03BA-R03DC01-R03DC03 (DDD&gt;80), L04AA11, L04AA12, L04AA13, L04AA17, A07EC01, A07EC02, J05AE, J05AF, J05AG, J05AX, L03AB04, L03AB05, L03AB10, J05AB04, L03AB07, L03AB08, L03AX13, N03, H03 (DDD&gt;90), L04AA01, L04AA05, L04AA06, L04AA1, R03 (DDD&gt;80), N03, N04, N05, N06-N07 (DDD&gt;90)), women with diabetes (presence of diabetes passport/convention within the 21 months before delivery, nomenclature codes 102852, 109594, 107015, 107052, 107030, 107074)), women having had at least one individual midwifery session dedicated to high-risk pregnancy within 280 days before delivery (nomenclature codes 422870, 428175, 428190, 422892, 428212, 428234, 422074) and women for who the presence of a paediatrician was necessary at the delivery due to the high-risk pregnancy (nomenclature codes 474515-474526)</p>
<b>Limitations</b>	<p>Deliveries: Deliveries are identified based on delivery nomenclature codes recorded in the IMA-AIM database including only persons covered by a Belgian sickness fund. Several reasons explain the non-coverage by a Belgian sickness fund: socio-economical vulnerability leading to a OCMW-CPAS coverage, the coverage of healthcare costs by international agreements for foreign patients, the absence of any coverage (uninsured patients), or the coverage of healthcare costs by other institutions such as FEDASIL for undocumented women, Ministry of Justice for women in prison, etc. According the 2016 MZG-RHM data, 2.2% of women who delivered in Flanders, 2.4% in Wallonia and 9.2% in Brussels were not covered by a Belgian sickness fund.</p> <p>Nomenclature: The currently available data (up to 2016) do not allow us to analyse the impact of the recent nomenclature changes (June 2017)</p>
<b>International comparability</b>	No
<b>Performance Dimension</b>	Quality (appropriateness)



### 14.8.2. Results

#### Screening for cytomegalovirus (CMV)

In 2016, 48.62% of the pregnant women were screened more than once for CMV in Belgium, it corresponds to an increase of 3.62 points of percentage with respect to 2010 (45%) or an average annual increase of 0.60 point of percentage between 2010 and 2016 (Table 145).

In 2016, Wallonia had the highest proportion of repeated CMV screening (56.25%), followed by Flanders (49.21%) and Brussels (29.52%) (Table 145). Median number of tests for CMV per pregnancy is also the highest in Wallonia (P50: 2 [P25-P75: 1-5]) in 2016 (Table 146).

Proportion of pregnant women screened more than once for CMV increased in Flanders (average annual of 1.47 point of percentage) and decreased in Brussels (-0.57 point of percentage) and Wallonia (-0.34 point of percentage) between 2010 and 2016. (Table 145, Figure 227)

Distribution of the number of CMV tests varies between Belgian regions. For instance, a higher proportion of pregnant women was screened between 3 and 7 times for CMV in Wallonia in 2016. Positive skewness of the distribution of the number of CMV tests is more pronounced in Brussels and Flanders than in Wallonia, also reflecting screening practice heterogeneity between regions Figure 127).

By stratifying the analysis by low risk deliveries versus all risk deliveries, no difference in the above conclusions was observed.

#### Screening for toxoplasmosis

In 2016, 74.16% of the women were screened more than once for toxoplasmosis in Belgium, it corresponds to an increase of 4.9 points of percentage from 2010 (69.29%) or an average annual increase of 0.82 point of percentage between 2010 and 2016 (Table 147). Wallonia had the highest proportion of pregnant women screened more than once for toxoplasmosis (77.70%), followed by Flanders (73.73%) and Brussels (68.55%) (Table 147).

In 2016, the median number of tests for toxoplasmosis per pregnancy equals to 2 [P25-P75: 1-3] in Flanders, 4 [P25-P75: 1-6] in Brussels and 5 [P25-P75: 2-7] in Wallonia (Table 148).

Overall, proportions of repeated screening for toxoplasmosis increased in every Belgian regions between 2010 and 2016. (Table 147, Figure 229).

Distribution of the number of toxoplasmosis tests varies widely between Belgian regions. In 2016 in Wallonia, pregnant women were screened most frequently 7 times for toxoplasmosis (15.19%), although in Flanders, pregnant women were screened most frequently 2 times (29.65%) and in Brussels 1 time (19.05%) (Figure 229).

By stratifying the analysis by low risk deliveries versus all risk deliveries, no difference in the above conclusions was observed.

#### Screening for hepatitis C

In 2016, 70.83% of the pregnant women were screened for hepatitis C in Belgium, it corresponds to an increase of 8.05 points of percentage from 2010 (62.78%) or an average annual increase of 1.34 point of percentage between 2010 and 2016. Brussels had the highest proportion of screened pregnant women for hepatitis C (82.34%), followed by Wallonia (79.82%) and Flanders (63.11%) in 2016. (Table 149)

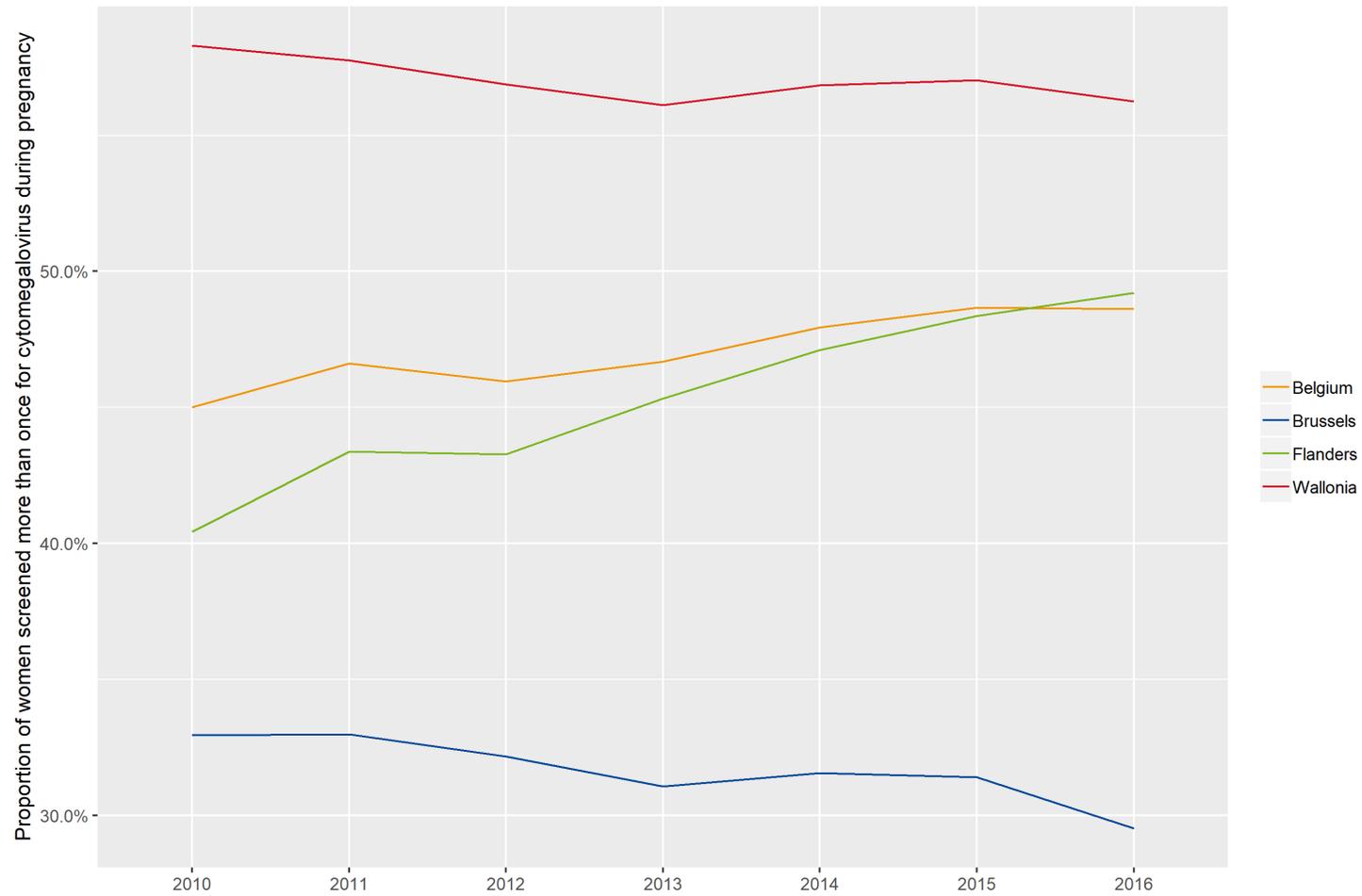
Overall, the proportion of pregnant women screened for hepatitis C increased in every Belgian regions between 2010 and 2016 (Figure 230).

The median number of tests for hepatitis C per pregnancy is the same across the regions and did not change between 2010 and 2016 (P50: 1 [P25-P75: 0-1]). Distribution of the number of hepatitis tests per pregnant woman varies between Belgian regions: not only Flanders has a lower proportion of women screened, at least once, for hepatitis C, but this region also had a lower proportion of repeated tests (Figure 231).

By stratifying the analysis by low risk deliveries versus all risk deliveries, no difference in the above conclusions was observed.



Figure 226 – Proportion of women screened more than once for cytomegalovirus during pregnancy, by region, 2010-2016



Data source: IMA-AIM; calculation: KCE


**Table 145 – Proportion of women screened more than once for cytomegalovirus during pregnancy, by region, 2010-2016**

	2010	2011	2012	2013	2014	2015	2016	Average annual difference 2010-2016
<b>Belgium</b>	45.00%	46.62%	45.96%	46.68%	47.93%	48.67%	48.62%	0.60%
<b>Brussels</b>	32.95%	32.98%	32.16%	31.06%	31.56%	31.4%	29.52%	-0.57%
<b>Flanders</b>	40.42%	43.38%	43.27%	45.33%	47.1%	48.36%	49.21%	1.47%
<b>Wallonia</b>	58.30%	57.76%	56.88%	56.11%	56.84%	57.02%	56.25%	-0.34%

Data source: IMA-AIM; calculation: KCE

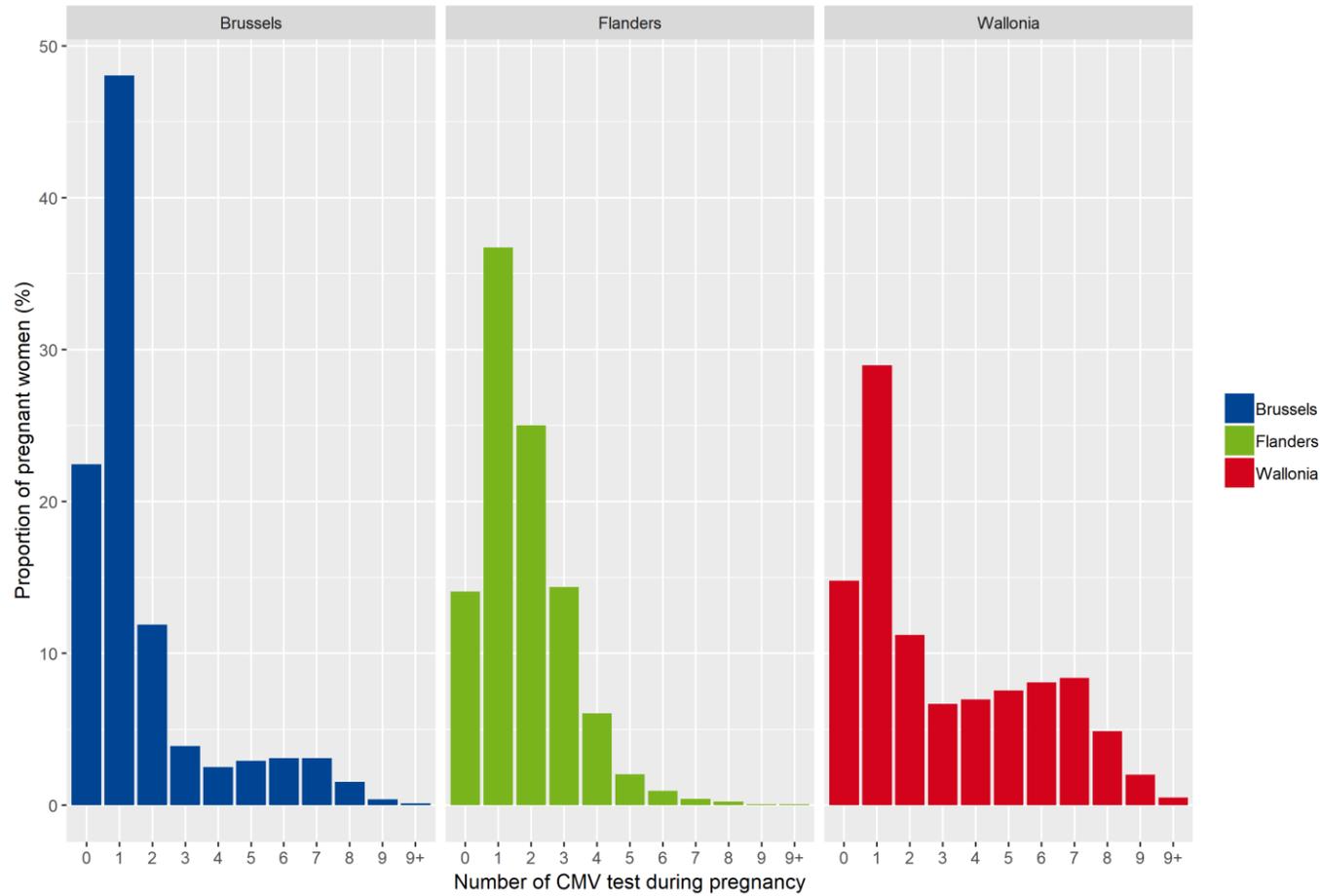
**Table 146 – Median [P25-P75] of the number of tests for cytomegalovirus during pregnancy, by region, 2010-2016**

	2010	2011	2012	2013	2014	2015	2016
<b>Belgium</b>	1 [1-3]	1 [1-3]	1 [1-3]	1 [1-3]	1 [1-3]	1 [1-3]	1 [1-3]
<b>Brussels</b>	1 [1-2]	1 [1-2]	1 [1-2]	1 [1-2]	1 [1-2]	1 [1-2]	1 [1-2]
<b>Flanders</b>	1 [1-2]	1 [1-2]	1 [1-2]	1 [1-2]	1 [1-2]	1 [1-2]	1 [1-2]
<b>Wallonia</b>	2 [1-5]	2 [1-5]	2 [1-5]	2 [1-5]	2 [1-5]	2 [1-5]	2 [1-5]

Data source: IMA-AIM; calculation: KCE



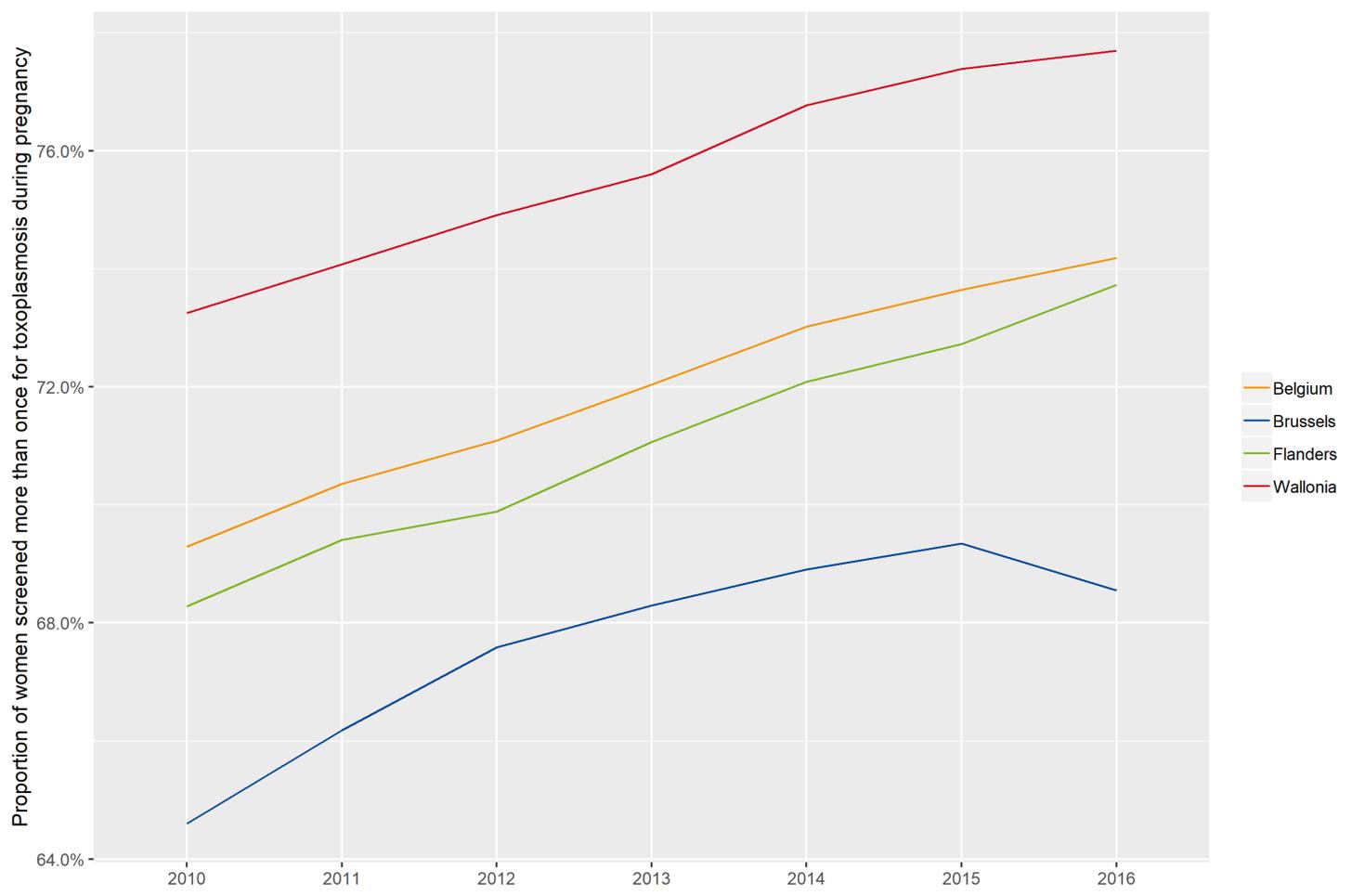
Figure 227 – Distribution of the number of cytomegalovirus screening during pregnancy, by region, 2016



Data source: IMA-AIM; calculation: KCE



Figure 228 – Proportion of women screened more than once for toxoplasmosis during pregnancy, by region, 2010-2016





Data source: IMA-AIM; calculation: KCE

**Table 147 – Proportion of women screened more than once for toxoplasmosis during pregnancy, by region, 2010-2016**

	2010	2011	2012	2013	2014	2015	2016	Average annual difference 2010-2016
<b>Belgium</b>	69.29%	70.36%	71.09%	72.04%	73.02%	73.65%	74.19%	0.82%
<b>Brussels</b>	64.60%	66.18%	67.59%	68.30%	68.91%	69.35%	68.55%	0.66%
<b>Flanders</b>	68.28%	69.41%	69.89%	71.07%	72.09%	72.73%	73.73%	0.91%
<b>Wallonia</b>	73.25%	74.08%	74.91%	75.61%	76.77%	77.39%	77.70%	0.74%

Data source: IMA-AIM; calculation: KCE

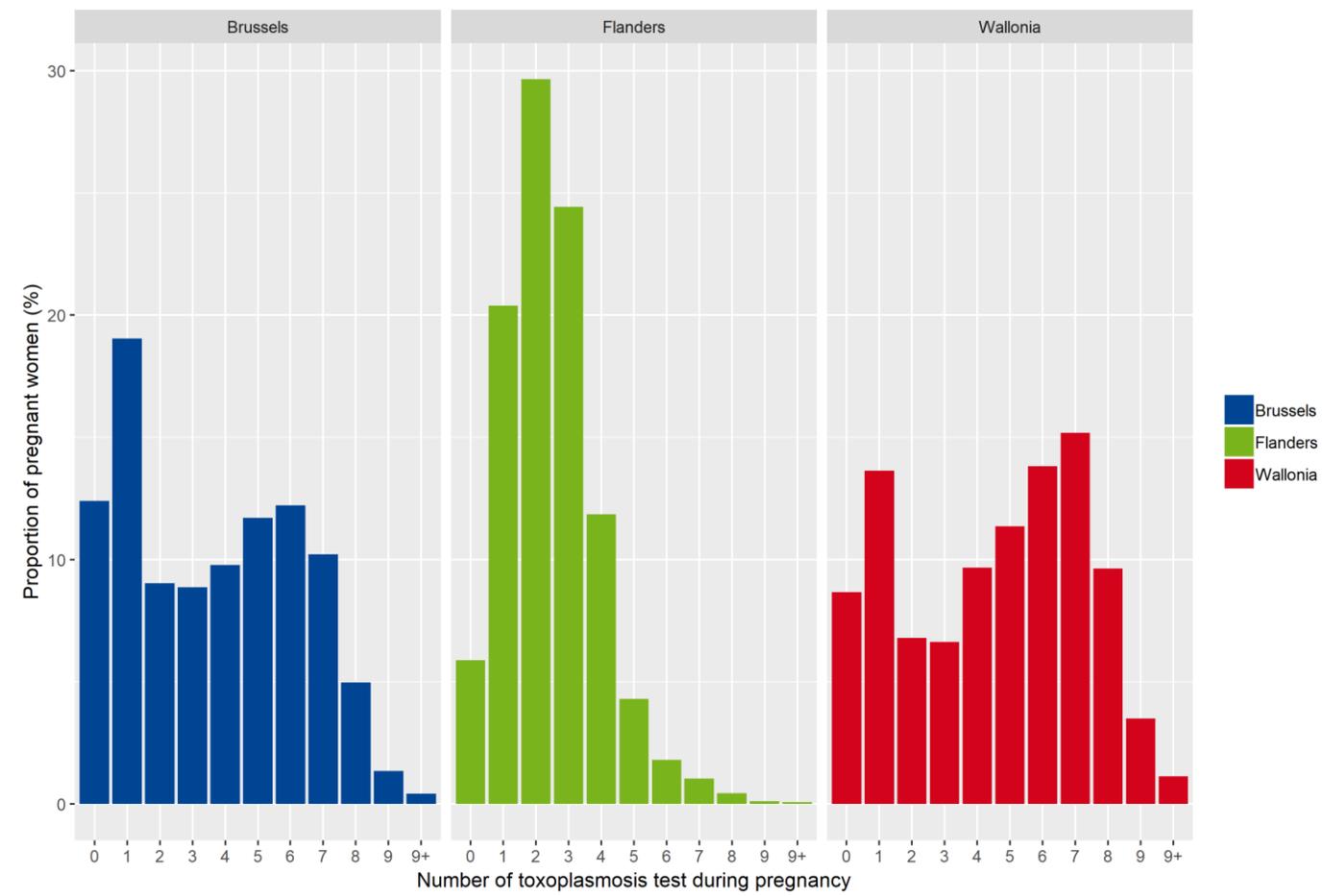
**Table 148 – Median [P25-P75] of the number of tests for toxoplasmosis during pregnancy, by region, 2010-2016**

	2010	2011	2012	2013	2014	2015	2016
<b>Belgium</b>	3 [1-4]	3 [1-5]	3 [1-5]	3 [1-5]	3 [1-5]	3 [1-5]	3 [1-5]
<b>Brussels</b>	3 [1-6]	3 [1-6]	4 [1-6]	4 [1-6]	4 [1-6]	4 [1-6]	4 [1-6]
<b>Flanders</b>	2 [1-3]	2 [1-3]	2 [1-3]	2 [1-3]	2 [1-3]	2 [1-3]	2 [1-3]
<b>Wallonia</b>	5 [1-7]	5 [1-7]	5 [1-7]	5 [2-7]	5 [2-7]	5 [2-7]	5 [2-7]

Data source: IMA-AIM; calculation: KCE



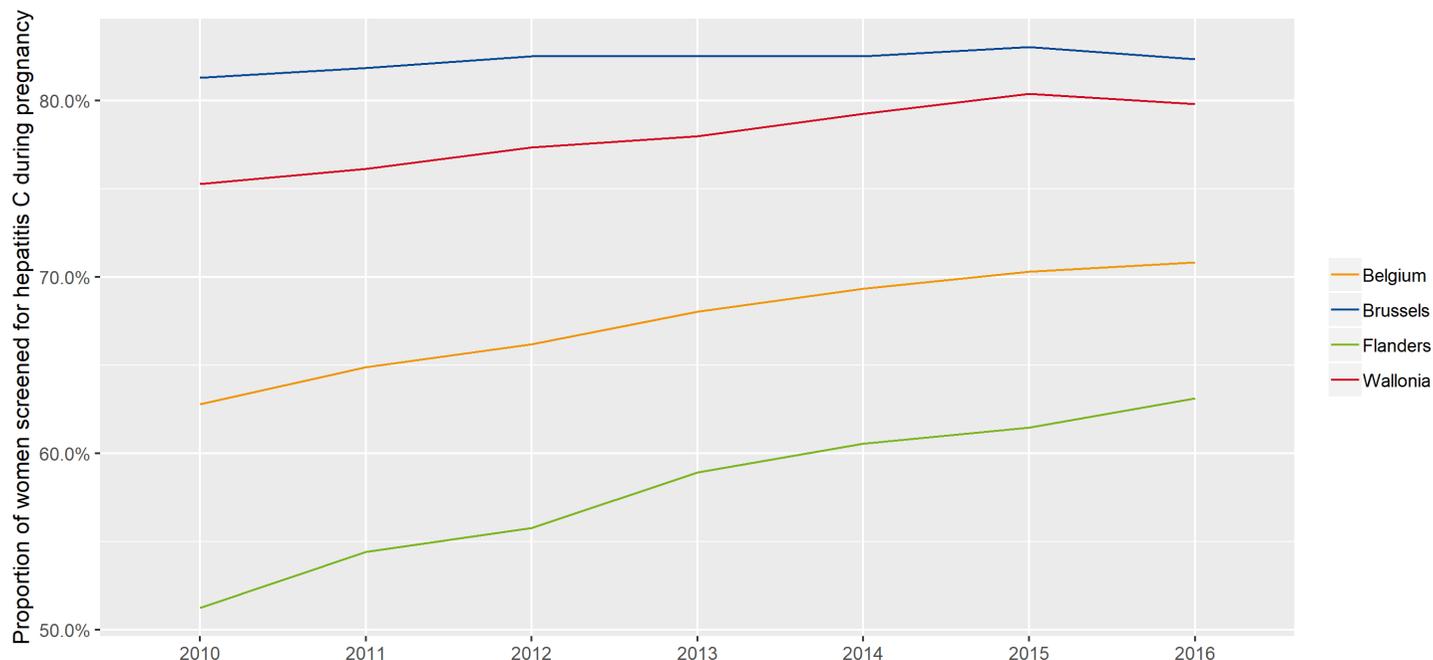
Figure 229 – Distribution of the number of toxoplasmosis screening during pregnancy, by region, 2016



Data source: IMA-AIM; calculation: KCE



Figure 230 – Proportion of women screened for hepatitis C during pregnancy, by region, 2010-2016



Data source: IMA-AIM; calculation: KCE

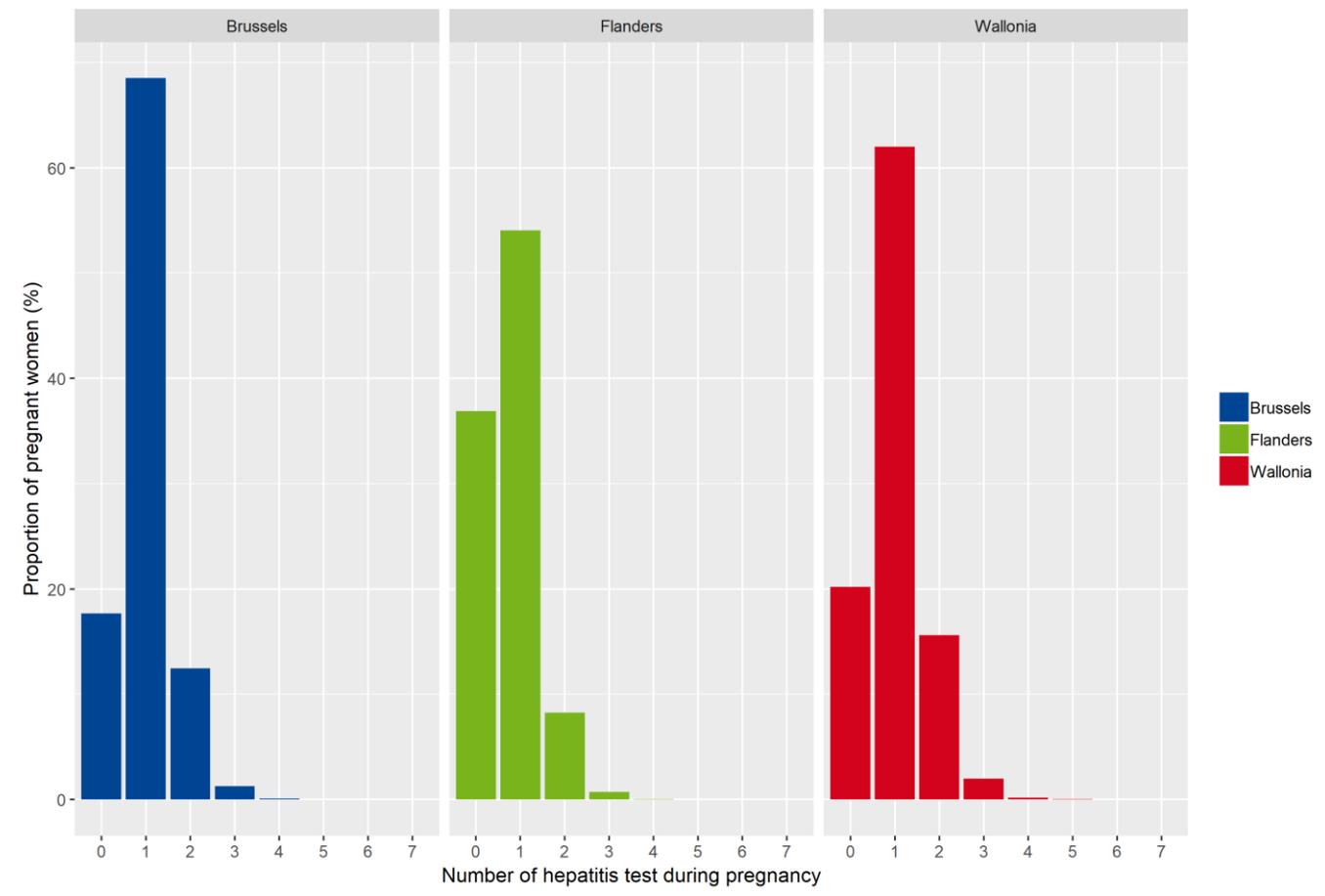
Table 149 – Proportion of women screened for hepatitis C during pregnancy, by region, 2010-2016

	2010	2011	2012	2013	2014	2015	2016	Average annual difference 2010-2016
<b>Belgium</b>	62.78%	64.90%	66.20%	68.05%	69.34%	70.30%	70.83%	1.34%
<b>Brussels</b>	81.31%	81.86%	82.53%	82.52%	82.53%	83.05%	82.34%	0.17%
<b>Flanders</b>	51.24%	54.41%	55.77%	58.92%	60.55%	61.46%	63.11%	1.98%
<b>Wallonia</b>	75.29%	76.13%	77.36%	77.99%	79.27%	80.38%	79.82%	0.75%

Data source: IMA-AIM; calculation: KCE



Figure 231 – Distribution of the number of hepatitis screening during pregnancy, by region, 2016



Data source: IMA-AIM; calculation: KCE



### Key points

- In 2016, 48.62% of the pregnant women were screened at least twice for cytomegalovirus (CMV) while guideline does not recommend more than one of these tests
- In 2016, 74.16% of the pregnant women were screened at least twice for toxoplasmosis while guideline does not recommend more than one of these tests
- In 2016, 70.83% of the pregnant women were screened for hepatitis C, while guideline does not recommend to routinely offer this test to each pregnant woman
- Overall, proportions of pregnant women screened for hepatitis C and pregnant women screened at least twice for toxoplasmosis increased in every Belgian regions between 2010 and 2016.

- Proportion of pregnant women screened at least twice for CMV increased in Flanders (average annual increase of 1.47 point of percentage) and decreased in Brussels (-0.57 point of percentage) and Wallonia (-0.34 point of percentage) between 2010 and 2016.
- It exists important variations of screening practices between regions but heterogeneity is particularly pronounced for toxoplasmosis screening.

### References

- [1] Gyselaers W, Jonckheer P, Ahmadzai N, Ansari M, Carville S, Dworzynski K, *et al.* What are the recommended clinical assessment and screening tests during pregnancy? Good Clinical Practice (GCP). Brussels: Belgian Health Care Knowledge Centre (KCE); 2015 30/06/2015. KCE Reports 248