



11. APPROPRIATE FOLLOW-UP OF DIABETIC PATIENTS (QA-1, QA-2)

11.1. Documentation sheet

Description	Quality of diabetic patients follow-up based on different criteria
Calculation	<p>Numerator: Number of diabetic patients who received the five following tests in the past 15 months:</p> <ul style="list-style-type: none"> - at least two records of HbA1c - at least one record of lipid profile - at least one record of microalbuminuria - at least one record of serum creatinine - at least a consultation by an ophthalmologist <p>Denominator: number of patients with any type of diabetes identified through their drugs prescription.</p>
Rationale	<p>Diabetes is a chronic disease characterised by high levels of glucose in the blood. People with diabetes are at greater risk of developing cardiovascular diseases such as heart attack and stroke if the disease is left undiagnosed or poorly controlled. They also have higher risks of sight loss, foot and leg amputation, and renal failure. {OECD/EU, 2018 #162} In Belgium, diabetes prevalence is increasing over time, with 6.3% of the Belgian population having a known diabetes diagnosis in 2018. Because according to Sciensano more than one in three people with diabetes do not know they have the disease, the true prevalence of diabetes can therefore be estimated to around 10%. {Healthy Belgium, 2021 #534}</p> <p>All type 1 diabetic patients are on insulin while most type 2 diabetic patients may be on a treatment which may or may not include insulin; overall 5-10% of all diabetic patients are suffering from type 1 diabetes, while type 2 diabetes make out the majority of the other diabetics. The majority of the type 2 diabetics do not receive insulin.</p> <p>According to the RIZIV-INAMI 2019 feedback on GPs practice, in diabetics, it is recommended to measure at least twice a year the level of glycated haemoglobin (HbA1c), every 3 months the glycemia, and once a year the microalbuminuria and the lipid profile. It is also recommended that an ophthalmologist performs a dilated fundus examination once a year to detect ocular complications at an early stage. {RIZIV - INAMI, 2019 #532} These recommendations were then reviewed with experts to create an indicator permanently available in the Atlas of the IMA-AIM. After this review, the test on glycemia measurement was removed and the test on serum creatinine was added (as also recommended in the 2012 RIZIV-INAMI Performance report of GP practice) {Meeus, 2012 #152}.</p>
Primary data source	IMA data
Indicator source	KCE calculation
Technical definitions	<p>Numerator:</p> <ul style="list-style-type: none"> • Test 1 HbA1c: billing code 540750-540761, 571830-571841 (measure of glycated haemoglobin in haemolysate) at least twice over the period; • Test 2 Lipid profile: total cholesterol (billing codes: 540271-540282) AND HDL (billing codes: 540293-540304) AND triglycerides (billing codes: 541376-541380); OR LDL (billing codes: 542231-542242) at least once over the period;



- **Test 3 Albumin measurement:** billing codes to check microalbuminuria (543712-543723, 433554-433565) or total protein measurement (125532-125543) to check proteinuria, at least once over the period;
- **Test 4 Serum creatinine:** billing codes 540330-540341 at least once over the period;
- **Test 5 (ophthalmology):** ophthalmologist consultation (all billing codes of the article 14h OR billing codes: 102012, 102535 and specialist qualification code: 037, 370, 371, 374, 378 or 397) at least once over the period;

Denominator: Diabetics selected on Pharmanet: class ATC A10 drugs prescription.

Two distinct subgroups are considered :

- **Adult diabetics under insulin (ATC=A10A):** patients aged ≥ 18 years and A10A outpatient prescription >37.5 DDDs.
- **Adult diabetics receiving glucose-lowering drugs other than insulin (ATC=A10B) and almost no insulin (ATC=A10A):** patients aged 50 years and older and A10B outpatient prescription ≥ 270 DDDs per year and $0 \leq$ A10A outpatient prescription < 37.5 DDDs per year. 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.

Limitations

Patients with diabetes controlled with diet only are not identified.

It should also be noted that the selection of these tests was based on the 2019 RIZIV-INAMI feedback to the GPs concerning the quality of diabetic patients follow-up {RIZIV - INAMI, 2019 #532}, then reviewed by experts to be incorporate in the AIM-IMA atlas (see also the section on "rationale"). According to the 2018 guidelines of the American Diabetes Associations,{American Diabetes Association, 2018 #533} for diabetes type 1 patients (expected mainly in the "under insulin" subgroup), microalbuminuria and serum creatinine are nevertheless only recommended for diabetes duration over 5 years.^l Additionally, according to these guidelines, for some patients, ophthalmologic consultations are not needed on a yearly base.^m This must be kept in mind when assessing the performance based on the global indicator on all 5 tests. Results per test must also be considered.

Review

Reviewed by Astrid Lavens, Sciensano, Scientist in Health services research (diabetes)

Dimensions

Appropriateness of care, and Continuity of Care

International

These indicators were selected in the early phases of the OECD quality indicators project {GREENFIELD, 2004 #405} but have been abandoned in the recent phases because of the poor availability of data in the majority of countries.{OECD, 2015 #380} Hence, there are no international comparison available for this indicator.

^l «At least once a year, assess urinary albumin (e.g., spot UACR) and eGFR in patients with type 1 diabetes with duration of ≥ 5 years, in all patients with type 2 diabetes, and in all patients with comorbid hypertension. B »{American Diabetes Association, 2018 #533}

^m «Adults with type 1 diabetes should have an initial dilated and comprehensive eye examination by an ophthalmologist or optometrist within 5 years after the onset of diabetes. B » ; « Patients with type 2 diabetes should have an initial dilated and comprehensive eye examination by an ophthalmologist or optometrist at the time of the diabetes diagnosis. B »; «If there is no evidence of retinopathy for one or more annual eye exam and glycemia is well controlled, then exams every 1–2 years may be considered. If any level of diabetic retinopathy is present, subsequent dilated retinal examinations should be repeated at least annually by an ophthalmologist or optometrist. If retinopathy is progressing or sight-threatening, then examinations will be required more frequently. B »{American Diabetes Association, 2018 #533}



11.2. Results

The composite endpoint of all five tests being evaluated as a quality indicator for follow-up of diabetes was only 43.2% in 2019 for adult diabetics under insulin (but improving since in 2009, it was 36.3%, see Figure 31) and 15.9% (also improving, since in 2009 it was 9.1%) for the adult diabetics receiving glucose-lowering drugs other than insulin. According to some experts, these low results can in part be explained by the fact that not all these five tests are recommended for every diabetic patient in some recent guidelines. In the 2018 ADA guidelines, {American Diabetes Association, 2018 #533} for patients with type 1 diabetes, microalbuminuria and serum creatinine are for example only recommended for diabetes duration over 5 years and the consultation to an ophthalmologist could be considered every two years for some patients. Results per test must therefore also be considered.

Recommendations for glycated haemoglobin (2x HbA1C), cholesterol level and serum creatinine measures were followed properly in adult diabetics under insulin (Figure 30): 84.1%, 92.4% and 97.4% of them were measured with these respective tests in the last 15 months (last results available for 2019). For the other tests, the proportions of patients with a yearly measurement were lower over the same period: i.e. check for microalbuminuria (62.5%) or proteinuria (31.2%), and ophthalmological consultations (66.7%). Nevertheless, as stated above, some guidelines

does not recommended these 3 latest tests yearly for some diabetic patients (especially type 1 diabetics with a diabetes duration inferior to 5 years).

Recommendations are followed less properly for adult diabetics receiving glucose-lowering drugs other than insulin (under oral antidiabetics or taking glucagon-like peptide-1 analogues) aged 50 and over: while serum creatinine is tested in 94.9% of these patients, cholesterol level in 90.1% of the patients, and glycated haemoglobin in 66.2% of them, the other tests are monitored in less than half of the patient population: microalbuminuria (29.6%) or proteinuria (14.2%), and ophthalmological consultation (48.6%). While the low rate concerning ophthalmological consultations can in part be explained by the fact that some guidelines considered a consultation every 2 years could be appropriate for some patients, the low rate of albumin measurements is less explained because the subgroup of adult diabetics receiving glucose-lowering drugs other than insulin mainly concerns type 2 diabetics, for which a yearly test is recommended.

Regional differences are small but for adult diabetics under insulin, results are slightly worst in Wallonia and for adult diabetics receiving glucose-lowering drugs other than insulin, a better follow-up is observed in Brussels (Figure 31). Some variation per district can also be observed (see Figure 32).



Figure 30 – Proportion of diabetic patients getting the combination of five tests over 15 months, details per test in 2019 in Belgium

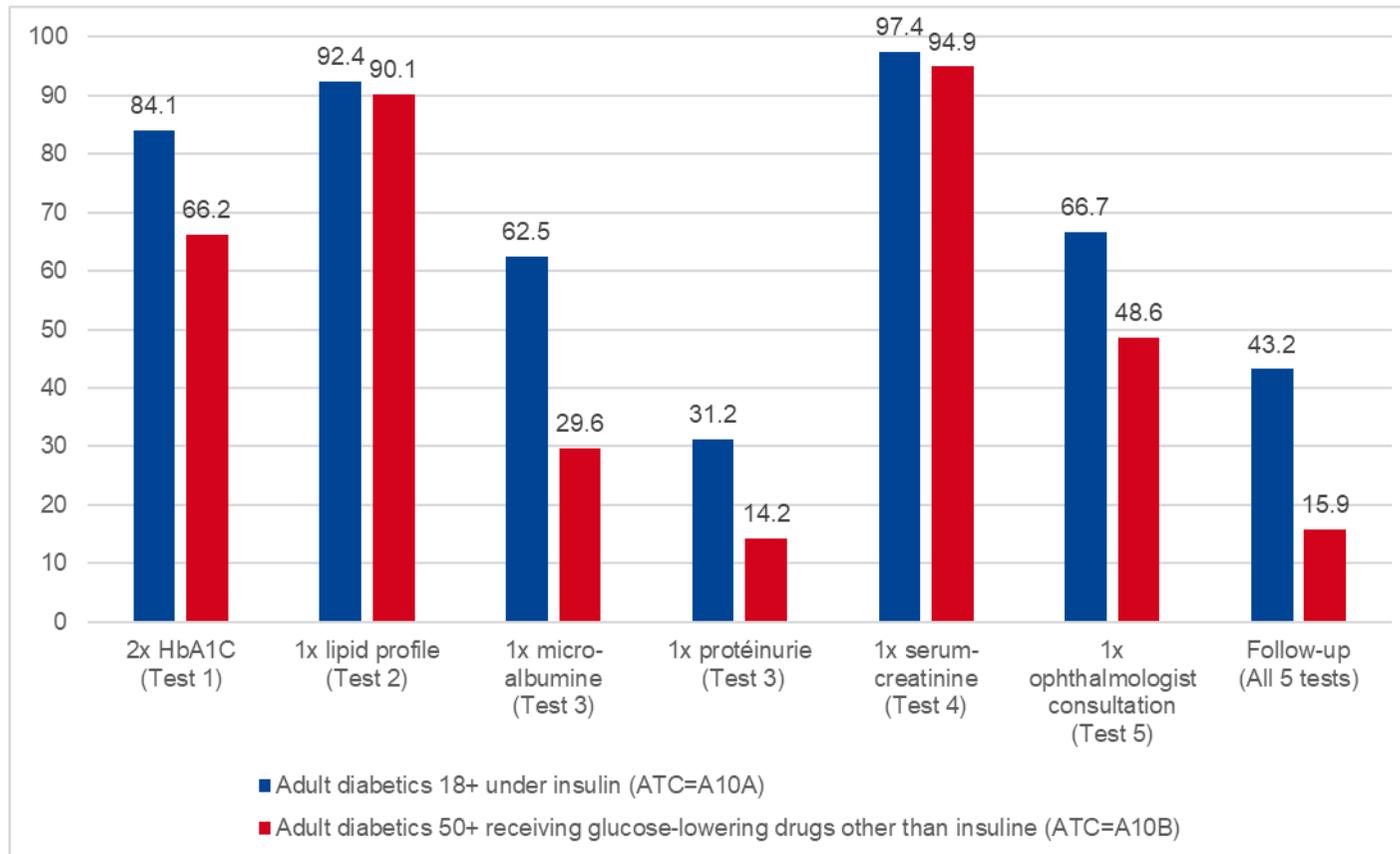
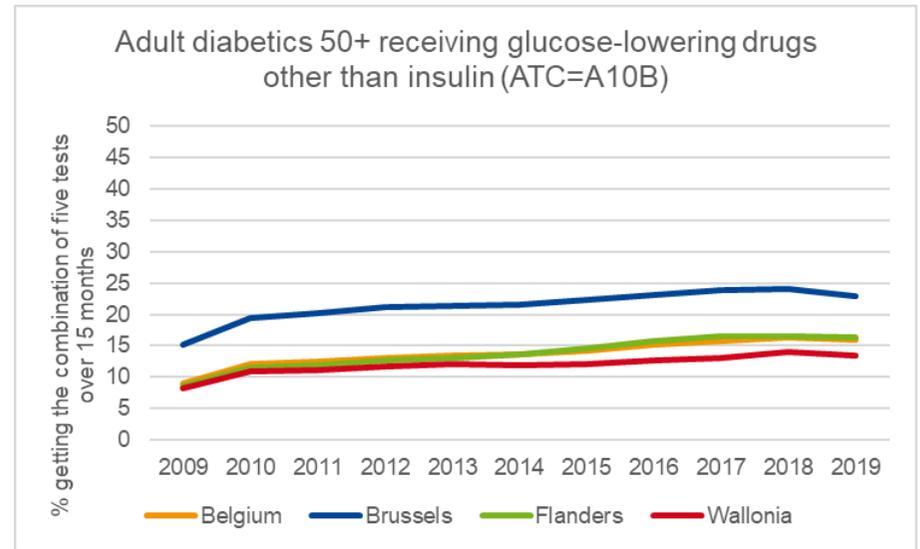
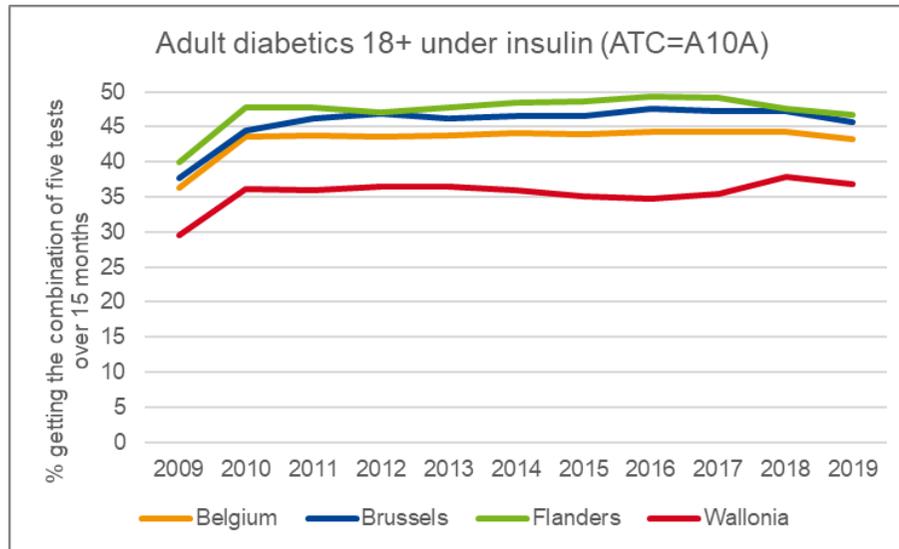




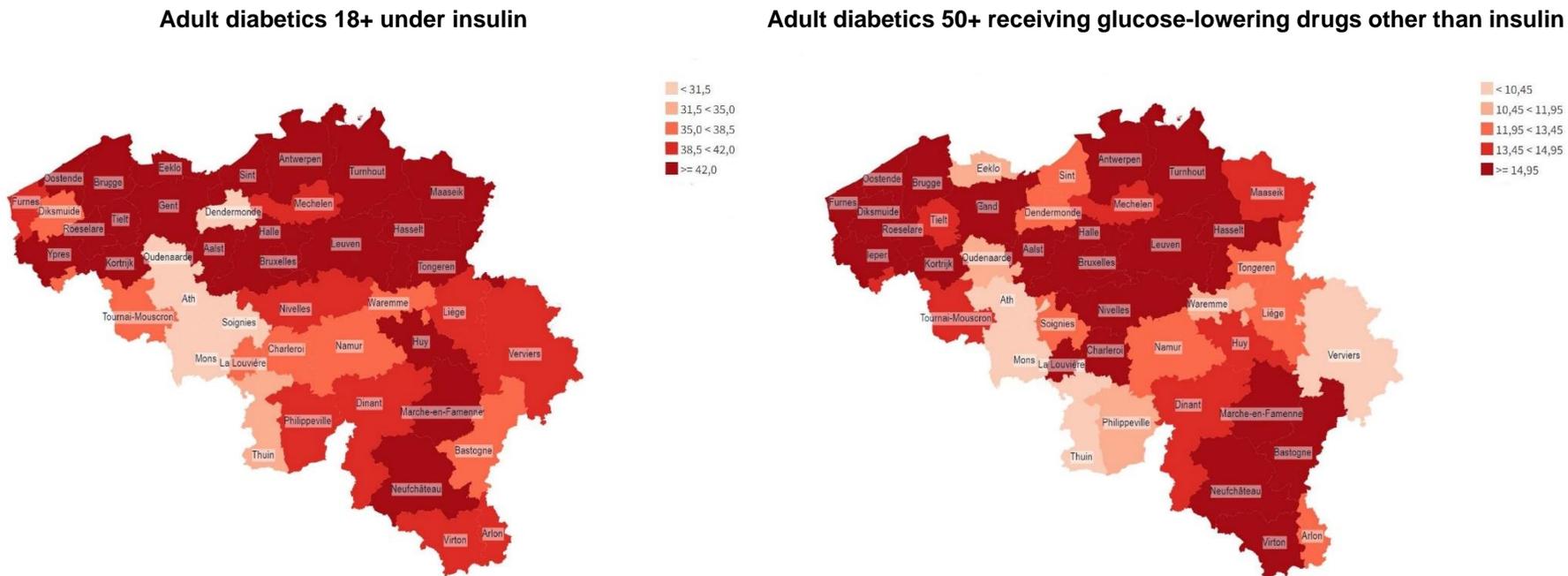
Figure 31 – Proportion of diabetic patients getting the combination of five tests over 15 months, details per region and per year (2009-2019)



Source: IMA-AIM data 2021



Figure 32 – Proportion of diabetic patients getting the combination of five tests over 15 months, details per districts in 2018 (2019 not available)



Source: IMA-AIM 2021



Key points

- The five tests selected to assess the quality of diabetes follow-up are performed for 43.2% of the adult diabetics under insulin; an improvement compared to 2009 can be observed.
- For adult diabetics receiving glucose-lowering drugs other than insulin, the coverage of the five tests combined is much lower, i.e. 15.9%. An improvement compared to 2009 is nevertheless also observed.
- Regional differences are small but for adult diabetics under insulin, results are slightly worst in Wallonia and for adult diabetics receiving glucose-lowering drugs other than insulin, a better follow-up is observed in Brussels.
- The low rates for the five tests combined can in part be explained by the fact that not all these five tests are recommended for every diabetics patients in some recent guidelines. In the 2018 ADA guidelines, {American Diabetes Association, 2018 #533} yearly microalbuminuria and serum creatinine measurements in patients with type 1 diabetes (i.e. mainly patients in the subgroup under insulin) are for example only recommended from diabetes duration over 5 years and consultations to an ophthalmologist could be considered every 2 years for some patients. Results per test must therefore also be considered.
- For adult diabetics under insulin the serum creatinine (97.4%), cholesterol measures (92.4%) and the glycated haemoglobin (84.1%) are very well covered while the annual consultations with an ophthalmologist (66.7%) and albumin measurements (microalbuminuria (62.5%) or proteinuria (31.2%)) are less frequent. Nevertheless, as stated above, some guidelines does not recommended these 3 latest tests yearly for some diabetic patients (especially type 1 diabetics with a diabetes duration inferior to 5 years).

- For adult diabetics receiving glucose-lowering drugs other than insulin, the serum creatinine (94.9%) and cholesterol measures (90.1%) are well covered, glycated haemoglobin are less frequent (twice yearly in 66.2% only) and albumin measurement and ophthalmological consultations are performed yearly in less than half of the patient population. While the low rate concerning ophthalmological consultation can in part be explained by the fact that some guidelines considered a consultation every 2 years was appropriate for some patients, the low rate of albumin measurement is less explained by these new guidelines because the subgroup of adult diabetics receiving glucose-lowering drugs other than insulin mainly concerns type 2 diabetics, for which a yearly test is recommended whatever the diabetes duration.

References

1. European Centre for Disease Prevention and Control. Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals. 2011-2012. Stockholm, 2015. Available from: <https://www.ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/healthcare-associated-infections-antimicrobial-use-PPS.pdf>
2. Vandael E, Catry B, Latour K. Point Prevalence Study of healthcare-associated infections and antimicrobial use in Belgian acute care hospitals: Results of the ECDC PPS 2017. Brussels, Belgium: Sciensano; 2018. 34p. Report Number: D/2018/14.440/37. Available from: <http://www.nsih.be/>
3. Suetens C, Latour K, Kärki T, Ricchizzi E, Kinross P, Moro ML, Jans B, Hopkins S, Hansen S, Lyytikäinen O, Reilly J, Deptula A, Zingg W, Plachouras D, Monnet DL, The Healthcare-Associated Infections Prevalence Study Group. Prevalence of healthcare-associated infections, estimated incidence and composite antimicrobial



resistance index in acute care hospitals and long-term care facilities: results from two European point prevalence surveys, 2016 to 2017. *Euro Surveill.* 2018;23(46). <https://doi.org/10.2807/1560-7917.ES.2018.23.46.1800516>.

4. De Pauw H, Uwineza A, Benhammadi N, Catry B. Resultaten van de 7de nationale campagne ter bevordering van de handhygiëne in ziekenhuizen. Brussels, Belgium: Wetenschappelijk Instituut Volksgezondheid; 2018. 49p. Available from: http://www.nsih.be/surv_hh/download/WIV-ISP%20Resultaten%20Nationaal%20HH%202016-2017.pdf