

**Appendix 1.** Characteristics of physicians with any missing value and of those with complete data

	<b>Missing data group</b>	<b>Complete data group</b>
<b>Number of Physicians</b>	117	293
<b>Country (n, percentage)</b>		
Belgium	27 (23.1%)	46 (15.7%)
France	23 (19.7%)	55 (18.8%)
Germany	13 (11.1%)	25 (8.5%)
Ireland	6 (5.1%)	21 (7.2%)
Italy	3 (2.6%)	17 (5.8%)
The Netherlands	12 (10.3%)	46 (15.7%)
Sweden	19 (16.2%)	43 (14.7%)
The United Kingdom	14 (12.0%)	40 (13.7%)
<b>Age in years (mean <math>\pm</math>SD)</b>	51.6 $\pm$ 10.0	50.7 $\pm$ 9.4
<b>Primary care setting (n, percentage)</b>	107 (91.5%)	248 (84.6%)
<b>Number of patients seen per week (mean <math>\pm</math>SD)</b>	112 $\pm$ 87	126 $\pm$ 91
<b>Percentage of patients with T2DM (mean <math>\pm</math>SD)</b>	16 $\pm$ 20	19 $\pm$ 24
<b>T2DM education (n, percentage)</b>	58 (50%)	174 (59.4%)
<b>Physicians aware of T2DM guidelines (n, percentage)</b>	85 (75.2%)	293 (100%)
<b>Attitude towards T2DM guidelines (mean score <math>\pm</math>SD)</b>	63 $\pm$ 9	64 $\pm$ 9
<b>Physician reported HbA1c in guidelines (mmol/mol, mean <math>\pm</math>SD)</b>	48 $\pm$ 6	49 $\pm$ 5
<b>HbA1c level at which physicians would initiate insulin treatment in the 50-year old patient without comorbidities (mean <math>\pm</math>SD)</b>	60 $\pm$ 12	59 $\pm$ 9
<b>HbA1c level at which physicians would initiate insulin treatment in the 80-year old patient with comorbidities (mean <math>\pm</math>SD)</b>	62 $\pm$ 11	61 $\pm$ 9

Abbreviations: HbA1c = glycosylated haemoglobin; n = number; SD = standard deviation; T2DM = type 2 diabetes mellitus.

**Appendix 2.** Characteristics of Dutch physicians, data were collected in 2018. Values are reported as means with standard deviation, unless otherwise stated (complete case data).

	Participants original GUIDANCE study	New participants
Number of physicians	33	25
Age in years (median, IQR)	53 (10.8)	41 (10.5)
Percentage primary care	100%	100%
Number of patients per week (median, IQR)	80 (30)	85 (43)
Percentage T2DM of patients per week (median, IQR)	8.1 (7.3)	8.3 (9.3)
Percentage of physicians suggesting patients to follow diabetes education (yes/no)	97.0%	100%
Percentage physicians aware of T2DM guidelines (yes/no)	100%	100%
HbA1c level in mmol/mol to initiate insulin therapy in a 50-year old patient without comorbidities (vignette 1)	56.5 (5.4)	55.4 (4.7)
HbA1c level in mmol/mol to initiate insulin therapy in a 80-year old patient with comorbidities (vignette 2)	62.8 (5.6)	61.7 (6.4)

Abbreviations: HbA1c = glycosylated haemoglobin; IQR = interquartile range; T2DM = type 2 diabetes mellitus

**Appendix 3.** Results of the sensitivity analysis - linear mixed model for the association with initiating insulin in a 50-year old patient without comorbidities (vignette 1); beta ( $\beta$ ) expresses the difference in HbA<sub>1c</sub> level in mmol/mol

	$\beta$	95% CI	p-value
Age physician (per year increase)	0.01	-0.09 – 0.10	0.901
Secondary care (versus primary care)	-1.17	-5.15 – 2.81	0.565
Number of patients seen per week (per patient increase)	0.00	-0.01 – 0.01	0.616
Percentage patients with T2DM seen of all patients (per one % increase)	0.00	-0.05 – 0.06	0.879
Target HbA <sub>1c</sub> in guideline according to physician (per mmol/mol increase)	-0.12	-0.40 – 0.17	0.415
Guideline unawareness	0.83	-3.58 – 5.25	0.708
Physicians' attitude towards guidelines (per one point* increase)	-0.10	-0.20 – 0.01	0.073
Education by physician	-1.22	-3.06 – 0.63	0.197
Nurse / diabetes educator in care centre	0.52	-3.76 – 4.81	0.802

Abbreviations:  $\beta$  = regression coefficient; CI = confidence interval; NA = not applicable; T2DM = type 2 diabetes mellitus

Reference categories: guideline unawareness = aware of guidelines; education by physician = no; nurse / diabetes educator in care centre = no

\*on a 17-85 scale