

Supplementary material for van Doorn-Klomberg AL, et al. Organizational determinants of high-quality routine diabetes care. *Scand J Prim Health Care* 2014;32:124–31.

### Supplementary Appendix 1. Creator of composite scores

Twelve organizational determinants were identified in this study. To create a composite measure out of these 12 determinants we transformed six measures into dichotomous measures. These determinants were nurse practitioner volume, patient awareness of the complaints procedure, use of the Electronic Patient Registry, consultation with partners, collaboration with partners, and use of patient leaflets. We based the division into two groups on the median score within our dataset. Since in several cases the median score equaled either the highest or lowest score, we looked at the average

to determine in which group the median score should be included. If the average was lower than the median, we coded all median or higher scores as 1 and the others as 0, and vice versa. For example, 61% of all practices scored 0 on the determinant consultation with partners, 24% scored 1 and 11% scored 2. We recoded this into “0” for all practices with a 0 score, and “1” for all other practices. The other six measures were already dichotomous and coded as 0 or 1. All 12 items were then combined into a sum score that indicated the extent of implementation of all determinants. This score could in theory vary between 0 (none of the determinants implemented) and 12 (all determinants implemented).

### Supplementary Appendix 2

Multilevel models (cluster measure = practice, data on patient level) on continuous outcomes of HbA1c, cholesterol, and blood pressure for separate determinants.

Parameter <sup>1</sup>	HbA1c (%)		Total cholesterol (mmol/l)		Systolic blood pressure (mm Hg)	
	Estimate (95% CI)	p-value	Estimate (95% CI)	p-value	Estimate (95% CI)	p-value
	n = 7281 patients		n = 7122 patients		n = 7320 patients	
Intercept	7.28 (6.84–7.72)	0.000	4.54 (4.08–5.00)	0.000	119.8 (112.3–127.3)	0.000
Volume of NP <sup>2</sup>	0.083 (–0.518–0.684)	0.786	–0.088 (–0.712–0.535)	0.780	–5.30 (–15.39–4.78)	0.301
Annual report	0.103 (0.009–0.197)	0.032	0.019 (–0.078–0.117)	0.703	–0.23 (–1.81–1.35)	0.774
Complaints procedure	–0.002 (–0.005–0.002)	0.409	0.001 (–0.003–0.005)	0.614	0.02 (–0.04–0.08)	0.521
Use of Electronic Patient Registry	–0.088 (–0.130–0.045)	0.000	0.007 (–0.037–0.051)	0.759	–0.56 (–1.27–0.15)	0.124
Diabetic clinic	0.327 (0.173–0.480)	0.000	0.056 (–0.103–0.214)	0.489	0.81 (–1.77–3.38)	0.538
Consultation partners	–0.013 (–0.048–0.023)	0.482	–0.003 (–0.040–0.034)	0.872	–0.41 (–1.00–0.19)	0.181
Collaboration partners	–0.042 (–0.109–0.025)	0.215	–0.006 (–0.075–0.063)	0.867	–0.13 (–1.26–0.99)	0.816
GP education	0.020 (–0.063–0.103)	0.639	–0.001 (–0.087–0.086)	0.991	–0.51 (–1.91–0.88)	0.470
Nurse education	–0.027 (–0.115–0.061)	0.542	–0.034 (–0.125–0.057)	0.464	–0.79 (–2.27–0.68)	0.292
Guidelines	0.152 (–0.093–0.397)	0.222	–0.008 (–0.261–0.245)	0.949	0.34 (–3.77–4.45)	0.870
Patient leaflets	0.053 (–0.031–0.138)	0.215	–0.012 (–0.100–0.075)	0.784	–1.07 (–2.49–0.345)	0.137
Reminder system	–0.005 (–0.113–0.103)	0.928	0.047 (–0.065–0.158)	0.410	–1.35 (–3.16–0.46)	0.144
Patient age	–0.002 (–0.004–0.000)	0.034	–0.001 (–0.003–0.001)	0.431	0.34 (0.31–0.37)	0.000
Patient gender	0.028 (–0.018–0.073)	0.230	–0.353 (–0.402–0.305)	0.000	–0.53 (–1.34–0.27)	0.195
Year data collection:						
2007	0.056 (–0.056–0.168)	0.325	–0.001 (–0.117–0.114)	0.986	2.69 (0.80–4.58)	0.005
2008	0.062 (–0.056–0.180)	0.299	–0.155 (–0.277–0.032)	0.014	2.53 (0.54–4.51)	0.013
2009	0.129 (–0.046–0.303)	0.148	–0.072 (–0.252–0.108)	0.431	2.15 (–0.78–5.08)	0.149
Practice type:						
Single-handed	0.045 (–0.072–0.163)	0.447	–0.042 (–0.164–0.080)	0.495	–1.51 (–3.49–0.46)	0.132
Health center	0.115 (–0.010–0.241)	0.070	0.133 (0.003–0.263)	0.045	0.00 (–2.10–2.10)	1.000

Notes: <sup>1</sup>Reference categories dichotomous measures: amount of nurse education below median, amount of general practitioner (GP) education below median, no diabetic clinic, practice does not produce an annual report, no reminder system available, patient gender male, data collection in 2006, practices with more than one GP that are not part of a health center. <sup>2</sup>NP = nurse practitioner.