

## Appendix

**Table A1. Descriptive data (n = 334,721) based on unweighted data.**

Sample		N	(%)
<b>Gender</b> <sup>§</sup>	Male	159,251	(47.6%)
	Female	175,470	(52.4%)
<b>Migration background</b> <sup>§</sup>	Dutch-born	294,573	(88.0%)
	Western migration background	28,204	(8.4%)
	Non-western migration background	11,944	(3.6%)
<b>Marital status</b> <sup>*</sup>	Married/living together	224,234	(67.0%)
	Never married	35,899	(10.7%)
	Widowed	23,052	(6.9%)
	Divorced	31,356	(9.4%)
<b>Highest attained level of education</b> <sup>*</sup>	Primary school	19,061	(5.7%)
	Lower vocational education	102,886	(30.7%)
	Middle vocational/secondary	106,341	(31.8%)
	Higher vocational/university	106,433	(31.8%)
<b>Standardized household income quartile</b> <sup>§</sup>	0-25%	42,250	(12.6%)
	26-50%	84,243	(25.2%)
	51-75%	98,107	(29.3%)
	76-100%	110,121	(32.9%)
<b>Self-perceived income inadequacy</b> <sup>*</sup>	Inadequate. major concerns	9,490	(2.8%)
	Inadequate. some concerns	34,273	(10.2%)
	Adequate. minor concerns	115,299	(34.4%)
	Adequate. no concerns	175,659	(52.5%)
<b>Chronic disease</b> <sup>*</sup>	None	203,330	(60.7%)
	At least one	131,391	(39.3%)
<b>Self-rated health</b> <sup>*</sup>	Very (good)	247,707	(74.0%)
	Fair. (very) poor	87,104	(26.0%)
<b>Psychological distress</b> <sup>*</sup>	No. low or moderate risk	319,533	(95.5%)
	High	15,188	(4.5%)
<b>Physical activity</b> <sup>*</sup>	Insufficient	94,343	(28.2%)
	Sufficient	240,378	(71.8%)
<b>BMI</b> <sup>*</sup>	Underweight (<18.5)	4,200	(1.3%)
	Normal (18.5-25)	152,321	(45.5%)
	Overweight (25-30)	128,977	(38.5%)
	Obese (30>)	49,223	(14.7%)
<b>Alcohol consumption</b> <sup>*</sup>	Never	32,663	(9.8%)
	Moderate	275,392	(82.3%)
	Excessive	26,666	(8.0%)
<b>Smoking</b> <sup>*</sup>	Never smoked	135,642	(40.5%)
	Former smoker	144,994	(43.3%)
	Current smoker	54,085	(16.2%)
		<b>Mean</b>	<b>(sd)</b>
<b>Age</b> <sup>§</sup>		59.2	(16.9)
<b>Loneliness</b> <sup>*</sup>		2.8	(3.1)
<b>Mastery</b> <sup>*</sup>		26.7	(5.2)

§Registry data. \*Self-reported data (Health Survey 2016).

**Table A2. Missing data (n=457.150)**

<b>Variable</b>	<b>N</b>	<b>(%)</b>
<b>Region*</b>	0	(0)
<b>Age<sup>§</sup></b>	0	(0)
<b>Gender<sup>§</sup></b>	0	(0)
<b>Migration background<sup>§</sup></b>	0	(0)
<b>Marital state*</b>	11,192	(2.4)
<b>Highest attained level of education *</b>	31,422	(6.9)
<b>Standardized household income quartile<sup>§</sup></b>	737	(0.2)
<b>Income inadequacy*</b>	35,643	(7.8)
<b>Physical activity*</b>	33,488	(7.3)
<b>BMI*</b>	21,261	(4.7)
<b>Alcohol consumption*</b>	36,967	(8.1)
<b>Smoking*</b>	32,605	(7.1)
<b>Chronic disease*</b>	8,808	(1.9)
<b>Self-rated health*</b>	5,730	(1.3)
<b>Psychological distress*</b>	20,103	(4.4)
<b>Loneliness*</b>	36,364	(8.0)
<b>Mastery*</b>	36,612	(8.0)

§Registry data. \*Self-reported data (Health Survey 2016).

**Table A3. Incidence Rate Ratios per region for total healthcare costs compared to Zuid-Limburg. Results from Poisson regressions (n= 334,721).**

	IRR (95%CI)	Model 1	Model 2	Model 3a	Model 3b	Model 3c
Zuid-Limburg		1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Zuid-Holland-Zuid		0.78 (0.71-0.85)	0.82 (0.76-0.89)	0.91 (0.84-0.98)	0.89 (0.82-0.96)	0.84 (0.78-0.92)
Zeeland		0.91 (0.84-0.99)	0.90 (0.83-0.97)	0.94 (0.87-1.01)	0.97 (0.90-1.05)	0.92 (0.85-0.99)
Zaanstreek-Waterland		0.86 (0.80-0.93)	0.91 (0.85-0.98)	0.98 (0.92-1.05)	0.94 (0.88-1.00)	0.93 (0.87-0.99)
West-Brabant		0.89 (0.82-0.95)	0.92 (0.86-0.99)	0.96 (0.89-1.03)	1.01 (0.94-1.08)	0.94 (0.87-1.01)
Utrecht		0.79 (0.74-0.84)	0.92 (0.86-0.97)	0.99 (0.93-1.05)	0.96 (0.91-1.02)	0.94 (0.88-0.99)
Twente		0.89 (0.80-0.99)	0.96 (0.86-1.07)	1.06 (0.95-1.18)	1.00 (0.90-1.11)	0.97 (0.87-1.08)
Rotterdam-Rijnmond		0.90 (0.84-0.96)	0.94 (0.88-1.00)	1.01 (0.95-1.08)	0.97 (0.91-1.04)	0.96 (0.90-1.03)
Noord- en Oost-Gelderland		0.84 (0.79-0.90)	0.90 (0.84-0.95)	0.98 (0.92-1.05)	0.91 (0.85-0.97)	0.91 (0.85-0.97)
Limburg-Noord		0.93 (0.86-1.01)	0.95 (0.87-1.02)	0.99 (0.92-1.07)	0.98 (0.91-1.06)	0.97 (0.90-1.05)
Kennemerland		0.82 (0.76-0.88)	0.88 (0.82-0.95)	0.99 (0.92-1.06)	0.95 (0.88-1.01)	0.91 (0.85-0.98)
IJsselland		0.84 (0.77-0.91)	0.95 (0.87-1.03)	1.04 (0.96-1.12)	0.95 (0.88-1.03)	0.97 (0.89-1.05)
Hollands Noorden		0.77 (0.72-0.83)	0.82 (0.77-0.88)	0.90 (0.84-0.96)	0.87 (0.81-0.93)	0.84 (0.79-0.90)
Holland-Midden		0.80 (0.75-0.86)	0.89 (0.83-0.95)	0.97 (0.91-1.04)	0.90 (0.84-0.96)	0.90 (0.84-0.96)
Hart voor Brabant		0.85 (0.76-0.94)	0.90 (0.81-1.00)	0.95 (0.86-1.05)	0.97 (0.88-1.08)	0.92 (0.83-1.02)
Haaglanden		0.90 (0.83-0.97)	0.98 (0.91-1.05)	1.05 (0.98-1.13)	0.99 (0.92-1.06)	0.98 (0.91-1.06)
Groningen		0.81 (0.75-0.88)	0.88 (0.82-0.96)	0.96 (0.89-1.04)	0.89 (0.83-0.96)	0.92 (0.85-0.99)
Gooi en Vechtstreek		0.85 (0.77-0.94)	0.89 (0.81-0.98)	0.98 (0.89-1.07)	0.96 (0.87-1.05)	0.92 (0.83-1.01)
Gelderland-Zuid		0.87 (0.79-0.96)	0.97 (0.88-1.07)	1.05 (0.95-1.06)	1.01 (0.92-1.12)	0.98 (0.89-1.08)
Gelderland-Midden		0.82 (0.76-0.90)	0.90 (0.83-0.97)	0.98 (0.90-1.06)	0.91 (0.84-0.99)	0.91 (0.84-0.98)
Friesland		0.85 (0.78-0.91)	0.87 (0.80-0.94)	0.98 (0.91-1.06)	0.91 (0.85-0.99)	0.89 (0.83-0.97)
Flevoland		0.78 (0.69-0.87)	0.89 (0.80-0.99)	0.95 (0.85-1.06)	0.90 (0.81-1.00)	0.90 (0.81-1.01)
Drenthe		0.85 (0.77-0.95)	0.86 (0.78-0.96)	0.96 (0.87-1.06)	0.92 (0.83-1.02)	0.89 (0.80-0.99)
Brabant-Zuidoost		0.87 (0.81-0.93)	0.92 (0.86-0.99)	0.95 (0.89-1.02)	1.00 (0.93-1.06)	0.94 (0.88-0.99)
Amsterdam		0.86 (0.79-0.94)	0.99 (0.91-1.09)	1.10 (1.01-1.21)	1.06 (0.97-1.15)	1.03 (0.94-1.12)

**Tabel A3 continued.**

	IRR (95%CI)	Model 4	Model 5a	Model 5b	Model 5c	Model 6
Zuid-Limburg		1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Zuid-Holland-Zuid		0.93 (0.86-1.01)	0.93 (0.86-1.01)	0.93 (0.86-1.01)	0.93 (0.86-1.00)	0.92 (0.86-0.99)
Zeeland		0.99 (0.92-1.07)	1.02 (0.95-1.10)	1.00 (0.93-1.07)	0.99 (0.92-1.06)	1.02 (0.95-1.09)
Zaanstreek-Waterland		0.98 (0.92-1.05)	1.00 (0.93-1.07)	0.98 (0.92-1.05)	0.99 (0.93-1.06)	1.00 (0.93-1.06)
West-Brabant		1.03 (0.96-1.10)	1.04 (0.97-1.12)	1.03 (0.96-1.10)	1.02 (0.95-1.10)	1.04 (0.97-1.11)
Utrecht		1.00 (0.95-1.06)	1.02 (0.96-1.08)	1.00 (0.94-1.06)	1.01 (0.95-1.07)	1.01 (0.96-1.08)
Twente		1.06 (0.95-1.18)	1.09 (0.98-1.21)	1.06 (0.95-1.17)	1.06 (0.96-1.18)	1.08 (0.97-1.20)
Rotterdam-Rijnmond		1.02 (0.96-1.08)	1.02 (0.96-1.09)	1.02 (0.95-1.08)	1.02 (0.96-1.09)	1.02 (0.96-1.09)
Noord- en Oost-Gelderland		0.97 (0.91-1.03)	0.99 (0.93-1.05)	0.96 (0.91-1.03)	0.97 (0.91-1.03)	0.98 (0.92-1.04)
Limburg-Noord		1.01 (0.93-1.09)	1.02 (0.95-1.11)	1.01 (0.93-1.09)	1.01 (0.94-1.09)	1.03 (0.95-1.11)
Kennemerland		1.01 (0.94-1.08)	1.03 (0.96-1.10)	1.00 (0.94-1.08)	1.02 (0.95-1.09)	1.03 (0.96-1.10)
IJsselland		1.02 (0.94-1.10)	1.04 (0.96-1.12)	1.01 (0.94-1.09)	1.01 (0.94-1.09)	1.02 (0.95-1.10)
Hollands Noorden		0.91 (0.85-0.97)	0.93 (0.87-0.99)	0.91 (0.85-0.97)	0.92 (0.86-0.98)	0.93 (0.87-0.99)
Holland-Midden		0.96 (0.90-1.02)	0.98 (0.92-1.04)	0.95 (0.89-1.02)	0.94 (0.88-1.00)	0.95 (0.89-1.01)
Hart voor Brabant		1.00 (0.90-1.11)	1.02 (0.92-1.13)	1.00 (0.90-1.10)	1.00 (0.90-1.11)	1.02 (0.92-1.13)
Haaglanden		1.04 (0.96-1.12)	1.05 (0.98-1.13)	1.03 (0.96-1.11)	1.05 (0.97-1.13)	1.06 (0.98-1.14)
Groningen		0.96 (0.89-1.04)	0.98 (0.91-1.05)	0.96 (0.89-1.03)	0.97 (0.90-1.05)	0.98 (0.91-1.06)
Gooi en Vechtstreek		1.00 (0.91-1.10)	1.00 (0.91-1.10)	1.00 (0.91-1.09)	1.01 (0.92-1.11)	1.00 (0.91-1.10)
Gelderland-Zuid		1.06 (0.96-1.17)	1.07 (0.97-1.18)	1.06 (0.96-1.16)	1.06 (0.96-1.17)	1.06 (0.96-1.17)
Gelderland-Midden		0.97 (0.89-1.04)	0.98 (0.91-1.06)	0.96 (0.89-1.03)	0.97 (0.89-1.04)	0.97 (0.90-1.05)
Friesland		0.99 (0.91-1.06)	1.00 (0.93-1.08)	0.98 (0.91-1.06)	0.99 (0.92-1.06)	1.00 (0.93-1.07)
Flevoland		0.94 (0.85-1.05)	0.95 (0.85-1.05)	0.94 (0.85-1.04)	0.95 (0.85-1.06)	0.96 (0.86-1.06)
Drenthe		0.98 (0.89-1.08)	0.99 (0.89-1.09)	0.98 (0.88-1.08)	0.99 (0.89-1.09)	0.99 (0.89-1.09)
Brabant-Zuidoost		1.01 (0.95-1.17)	1.03 (0.97-1.10)	1.01 (0.94-1.07)	1.00 (0.94-1.07)	1.02 (0.96-1.09)
Amsterdam		1.12 (1.03-1.22)	1.14 (1.04-1.25)	1.12 (1.02-1.22)	1.13 (1.04-1.24)	1.14 (1.04-1.25)

IRR: Incidence Rate Ratio. CI: confidence interval. Model 1: region. Model 2: region, demographic factors, and SES. Model 3a: region, demographic factors, SES, and self-rated health. Model 3b: region, demographic factors, SES and chronic disease. Model 3c: region, demographic factors, SES and psychological distress. Model 4: region, demographic factors, SES, self-rated health, chronic disease, and psychological distress. Model 5a: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and lifestyle. Model 5b: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and loneliness. Model 5c: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and mastery. Model 6: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery.

**Table A4. Incidence Rate Ratios per region for GP consult costs compared to Zuid-Limburg. Results from Zero-inflated negative binomial regressions (n= 334,721).**

IRR (95% CI)	Model 1		Model 2		Model 3a		Model 3b		Model 3c	
		Infl.		Infl.		Infl.		Infl.		Infl.
Zuid-Limburg	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Zuid-Holland-Zuid	0.82 (0.79-0.86)	1.14 (1.02-1.28)	0.85 (0.82-0.89)	1.13 (1.01-1.27)	0.89 (0.85-0.92)	1.10 (0.98-1.23)	0.87 (0.84-0.91)	1.10 (0.98-1.23)	0.87 (0.83-0.91)	1.12 (1.00-1.25)
Zeeland	0.81 (0.77-0.84)	1.18 (1.07-1.31)	0.81 (0.78-0.84)	1.22 (1.10-1.35)	0.83 (0.80-0.86)	1.21 (1.09-1.35)	0.83 (0.08-0.86)	1.19 (1.07-1.32)	0.82 (0.79-0.85)	1.22 (1.10-1.35)
Zaanstreek- Waterland	0.84 (0.81-0.87)	1.08 (0.99-1.19)	0.86 (0.83-0.89)	1.10 (1.00-1.21)	0.89 (0.86-0.92)	1.08 (0.98-1.18)	0.87 (0.84-0.90)	1.10 (1.00-1.20)	0.87 (0.84-0.90)	1.10 (1.00-1.21)
West-Brabant	0.76 (0.74-0.79)	1.13 (1.02-1.24)	0.80 (0.83-0.89)	1.13 (1.02-1.24)	0.81 (0.78-0.84)	1.12 (1.02-1.24)	0.82 (0.79-0.84)	1.09 (0.99-1.20)	0.80 (0.78-0.83)	1.13 (1.02-1.24)
Utrecht	0.79 (0.77-0.81)	1.29 (1.20-1.39)	0.85 (0.83-0.88)	1.21 (1.12-1.30)	0.87 (0.85-0.90)	1.18 (1.01-1.28)	0.86 (0.84-0.89)	1.19 (1.10-1.28)	0.86 (0.84-0.88)	1.20 (1.12-1.30)
Twente	0.74 (0.71-0.77)	1.50 (1.37-1.65)	0.78 (0.75-0.81)	1.46 (1.33-1.61)	0.81 (0.78-0.84)	1.42 (1.30-1.57)	0.79 (0.76-0.82)	1.45 (1.32-1.60)	0.79 (0.76-0.82)	1.47 (1.34-1.62)
Rotterdam- Rijnmond	0.87 (0.84-0.90)	2.11 (1.97-2.27)	0.87 (0.85-0.90)	2.21 (2.05-2.38)	0.90 (0.87-0.92)	2.18 (2.03-2.35)	0.88 (0.86-0.91)	2.22 (2.06-2.40)	0.88 (0.86-0.91)	2.20 (2.05-2.37)
Noord- en Oost- Gelderland	0.76 (0.74-0.79)	1.25 (1.14-1.36)	0.80 (0.77-0.82)	1.24 (1.14-1.35)	0.82 (0.80-0.85)	1.21 (1.11-1.31)	0.80 (0.77-0.82)	1.24 (1.14-1.36)	0.80 (0.77-0.82)	1.24 (1.14-1.35)
Limburg-Noord	0.88 (0.85-0.91)	1.04 (0.96-1.14)	0.89 (0.87-0.92)	1.05 (0.96-1.15)	0.92 (0.89-0.94)	1.04 (0.95-1.13)	0.91 (0.88-0.93)	1.04 (0.95-1.14)	0.90 (0.88-0.93)	1.05 (0.96-1.15)
Kennemerland	0.79 (0.76-0.82)	1.08 (0.99-1.18)	0.83 (0.81-0.86)	1.07 (0.98-1.17)	0.87 (0.84-0.90)	1.04 (0.95-1.14)	0.85 (0.82-0.88)	1.05 (0.96-1.15)	0.84 (0.81-0.87)	1.07 (0.97-1.17)
IJsselland	0.74 (0.71-0.78)	1.28 (1.15-1.43)	0.82 (0.78-0.85)	1.20 (1.08-1.34)	0.84 (0.81-0.88)	1.18 (1.06-1.32)	0.82 (0.78-0.85)	1.21 (1.09-1.35)	0.82 (0.79-0.86)	1.20 (1.08-1.34)
Hollands Noorden	0.78 (0.75-0.81)	1.25 (1.14-1.36)	0.80 (0.77-0.83)	1.25 (1.15-1.36)	0.83 (0.80-0.85)	1.22 (1.12-1.33)	0.81 (0.79-0.84)	1.22 (1.12-1.34)	0.81 (0.78-0.84)	1.25 (1.14-1.36)
Holland-Midden	0.79 (0.77-0.82)	1.22 (1.12-1.32)	0.83 (0.81-0.86)	1.17 (1.08-1.27)	0.91 (0.88-0.94)	1.14 (1.05-1.23)	0.83 (0.81-0.86)	1.18 (1.09-1.28)	0.84 (0.81-0.86)	1.17 (1.08-1.27)
Hart voor Brabant	0.85 (0.82-0.88)	1.10 (1.01-1.19)	0.89 (0.86-0.91)	1.07 (0.98-1.16)	0.88 (0.85-0.91)	1.06 (0.97-1.15)	0.91 (0.88-0.94)	1.04 (0.96-1.13)	0.89 (0.87-0.92)	1.07 (0.98-1.16)
Haaglanden	0.87 (0.83-0.90)	1.11 (1.11-1.13)	0.85 (0.82-0.89)	1.12 (1.11-1.13)	0.90 (0.87-0.93)	1.12 (1.11-1.13)	0.86 (0.83-0.89)	1.12 (1.12-1.13)	0.85 (0.82-0.88)	1.12 (1.11-1.13)
Groningen	0.85 (0.82-0.88)	1.38 (1.26-1.52)	0.88 (0.85-0.92)	1.31 (1.19-1.43)	0.90 (0.86-0.94)	1.28 (1.17-1.40)	0.88 (0.85-0.92)	1.32 (1.20-1.45)	0.90 (0.86-0.93)	1.29 (1.18-1.42)
Gooi en Vechtstreek	0.84 (0.81-0.88)	1.10 (0.97-1.25)	0.88 (0.84-0.92)	1.10 (0.97-1.25)	0.84 (0.81-0.88)	1.07 (0.95-1.21)	0.90 (0.86-0.94)	1.07 (0.95-1.21)	0.88 (0.84-0.92)	1.10 (0.97-1.24)
Gelderland-Zuid	0.85 (0.82-0.88)	1.25 (1.14-1.37)	0.89 (0.86-0.92)	1.19 (1.08-1.30)	0.91 (0.88-0.94)	1.16 (1.06-1.27)	0.90 (0.87-0.93)	1.17 (1.07-1.28)	0.89 (0.86-0.92)	1.19 (1.09-1.30)

Gelderland- Midden	0.83 (0.79-0.87)	1.33 (1.191-.48)	0.86 (0.83-0.90)	1.29 (1.16-1.44)	0.88 (0.85-0.92)	1.26 (1.13-1.40)	0.86 (0.83-0.90)	1.29 (1.16-1.44)	0.86 (0.83-0.90)	1.29 (1.16-1.44)
Friesland	0.80 (0.77-0.83)	1.31 (1.20-1.44)	0.81 (0.79-0.84)	1.32 (1.21-1.44)	0.84 (0.82-0.87)	1.28 (1.17-1.40)	0.82 (0.80-0.85)	1.30 (1.19-1.42)	0.82 (0.79-0.85)	1.31 (1.20-1.43)
Flevoland	0.84 (0.78-0.91)	0.98 (0.80-1.19)	0.92 (0.86-0.99)	0.93 (0.76-1.15)	0.95 (0.89-1.02)	0.91 (0.75-1.12)	0.92 (0.86-0.99)	0.93 (0.76-1.15)	0.93 (0.86-0.99)	0.93 (0.76-1.15)
Drenthe	0.83 (0.79-0.87)	1.11 (0.98-1.25)	0.85 (0.81-0.89)	1.14 (1.00-1.29)	0.88 (0.85-0.93)	1.10 (0.97-1.25)	0.87 (0.83-0.91)	1.12 (0.99-1.26)	0.86 (0.82-0.90)	1.13 (1.00-1.28)
Brabant-Zuidoost	0.79 (0.77-0.82)	1.21 (1.11-1.32)	0.82 (0.80-0.85)	1.18 (1.08-1.28)	0.84 (0.82-0.87)	1.18 (1.09-1.29)	0.84 (0.82-0.87)	1.15 (1.06-1.25)	0.83 (0.81-0.86)	1.18 (1.09-1.29)
Amsterdam	0.79 (0.76-0.82)	1.30 (1.18-1.43)	0.83 (0.80-0.86)	1.24 (1.12-1.36)	0.87 (0.84-0.90)	1.19 (1.08-1.32)	0.86 (0.82-0.89)	1.21 (1.10-1.33)	0.85 (0.82-0.88)	1.22 (1.11-1.35)

**Table A4 continued.**

IRR IRR (95%CI)	<u>Model 4</u>		<u>Model 5a</u>		<u>Model 5b</u>		<u>Model 5c</u>		<u>Model 6</u>	
		Infl.		Infl.		Infl.		Infl.		Infl.
Zuid-Limburg	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Zuid-Holland- Zuid	0.90 (0.86-0.93)	1.08 (0.97-1.21)	0.90 (0.86-0.93)	1.08 (0.97-1.21)	0.90 (0.86-0.94)	1.08 (0.97-1.21)	0.90 (0.86-0.93)	1.08 (0.97-1.21)	0.90 (0.86-0.93)	1.09 (0.97-1.22)
Zeeland	0.84 (0.81-0.87)	1.19 (1.07-1.32)	0.84 (0.81-0.87)	1.19 (1.08-1.33)	0.84 (0.81-0.87)	1.19 (1.07-1.32)	0.83 (0.80-0.86)	1.20 (1.08-1.33)	0.84 (0.80-0.87)	1.20 (1.08-1.33)
Zaanstreek- Waterland	0.89 (0.86-0.92)	1.08 (0.99-1.19)	0.89 (0.87-0.92)	1.09 (0.99-1.19)	0.90 (0.87-0.93)	1.08 (0.99-1.19)	0.89 (0.87-0.92)	1.08 (0.99-1.19)	0.90 (0.87-0.93)	1.09 (0.99-1.19)
West-Brabant	0.82 (0.79-0.85)	1.10 (0.99-1.21)	0.82 (0.79-0.85)	1.10 (1.00-1.21)	0.82 (0.79-0.85)	1.10 (0.99-1.21)	0.82 (0.79-0.85)	1.10 (1.00-1.21)	0.82 (0.79-0.85)	1.10 (1.00-1.21)
Utrecht	0.88 (0.85-0.90)	1.18 (1.09-1.27)	0.88 (0.86-0.90)	1.18 (1.10-1.27)	0.88 (0.86-0.90)	1.18 (1.09-1.27)	0.88 (0.86-0.90)	1.18 (1.09-1.27)	0.88 (0.86-0.91)	1.18 (1.10-1.27)
Twente	0.81 (0.78-0.84)	1.44 (1.31-1.59)	0.81 (0.79-0.84)	1.45 (1.32-1.60)	0.81 (0.78-0.84)	1.44 (1.31-1.59)	0.81 (0.78-0.84)	1.44 (1.31-1.59)	0.81 (0.79-0.84)	1.46 (1.32-1.60)
Rotterdam- Rijnmond	0.90 (0.88-0.93)	2.20 (2.04-2.37)	0.90 (0.88-0.93)	2.21 (2.05-2.38)	0.90 (0.88-0.93)	2.20 (2.04-2.37)	0.90 (0.88-0.93)	2.20 (2.04-2.37)	0.90 (0.88-0.93)	2.21 (2.05-2.39)
Noord- en Oost- Gelderland	0.81 (0.79-0.84)	1.23 (1.13-1.34)	0.82 (0.79-0.84)	1.24 (1.14-1.35)	0.82 (0.79-0.84)	1.23 (1.13-1.34)	0.81 (0.79-0.83)	1.23 (1.13-1.34)	0.81 (0.79-0.84)	1.24 (1.14-1.35)
Limburg-Noord	0.92 (0.90-0.95)	1.03 (0.95-1.13)	0.92 (0.90-0.95)	1.04 (0.95-1.13)	0.92 (0.90-0.95)	1.03 (0.95-1.13)	0.92 (0.90-0.95)	1.03 (0.95-1.13)	0.92 (0.90-0.95)	1.04 (0.95-1.14)
Kennemerland	0.87 (0.84-0.90)	1.04 (0.95-1.13)	0.87 (0.84-0.90)	1.04 (0.95-1.14)	0.87 (0.85-0.90)	1.04 (0.95-1.13)	0.87 (0.85-0.90)	1.03 (0.95-1.13)	0.88 (0.85-0.90)	1.04 (0.95-1.14)
IJsselland	0.83 (0.80-0.87)	1.20 (1.08-1.34)	0.84 (0.80-0.87)	1.21 (1.09-1.35)	0.84 (0.80-0.87)	1.20 (1.08-1.34)	0.83 (0.80-0.87)	1.20 (1.08-1.34)	0.84 (0.80-0.87)	1.22 (1.09-1.36)
Hollands Noorden	0.83 (0.81-0.86)	1.21 (1.11-1.33)	0.83 (0.81-0.86)	1.22 (1.12-1.33)	0.83 (0.81-0.86)	1.21 (1.11-1.33)	0.84 (0.81-0.86)	1.21 (1.11-1.32)	0.84 (0.81-0.87)	1.22 (1.12-1.33)
Holland-Midden	0.85 (0.83-0.88)	1.16 (1.07-1.26)	0.86 (0.83-0.88)	1.17 (1.08-1.26)	0.85 (0.83-0.88)	1.16 (1.07-1.26)	0.85 (0.82-0.87)	1.16 (1.07-1.26)	0.85 (0.83-0.87)	1.17 (1.08-1.27)
Hart voor Brabant	0.92 (0.89-0.94)	1.04 (0.96-1.13)	0.92 (0.89-0.95)	1.05 (0.96-1.14)	0.92 (0.89-0.95)	1.04 (0.96-1.13)	0.92 (0.89-0.94)	1.04 (0.96-1.13)	0.92 (0.90-0.95)	1.05 (0.97-1.14)
Haaglanden	0.87 (0.84-0.90)	1.12 (0.84-0.90)	0.87 (0.84-0.90)	1.12 (1.12-1.13)	0.87 (0.84-0.91)	1.12 (1.12-1.13)	0.87 (0.84-0.90)	1.12 (1.11-1.13)	0.87 (0.84-0.90)	1.12 (1.12-1.13)
Groningen	0.90 (0.87-0.94)	1.30 (1.18-1.42)	0.90 (0.87-0.94)	1.31 (1.19-1.44)	0.91 (0.87-0.94)	1.30 (1.18-1.42)	0.91 (0.87-0.94)	1.30 (1.18-1.42)	0.91 (0.87-0.94)	1.31 (1.19-1.44)
Gooi en Vechtstreek	0.91 (0.87-0.95)	1.06 (0.94-1.20)	0.91 (0.87-0.95)	1.06 (0.94-1.20)	0.91 (0.87-0.95)	1.06 (0.94-1.20)	0.91 (0.87-0.95)	1.06 (0.93-1.20)	0.92 (0.88-0.96)	1.06 (0.94-1.20)
Gelderland-Zuid	0.91 (0.88-0.94)	1.16 (1.06-1.27)	0.91 (0.88-0.94)	1.16 (1.06-1.27)	0.91 (0.88-0.94)	1.16 (1.06-1.27)	0.91 (0.88-0.94)	1.16 (1.06-1.27)	0.91 (0.88-0.94)	1.17 (1.07-1.27)

Gelderland- Midden	0.88 (0.84-0.91)	1.28 (1.15-1.43)	0.88 (0.85-0.91)	1.29 (1.15-1.44)	0.88 (0.84-0.91)	1.28 (1.15-1.43)	0.87 (0.84-0.91)	1.28 (1.15-1.43)	0.88 (0.84-0.91)	1.29 (1.16-1.44)
Friesland	0.84 (0.82-0.87)	1.28 (1.17-1.40)	0.85 (0.82-0.87)	1.28 (1.18-1.40)	0.85 (0.82-0.87)	1.28 (1.17-1.40)	0.84 (0.82-0.87)	1.28 (1.17-1.40)	0.85 (0.82-0.87)	1.29 (1.18-1.41)
Flevoland	0.95 (0.88-1.01)	0.92 (0.75-1.13)	0.95 (0.88-1.01)	0.92 (0.75-1.14)	0.95 (0.88-1.01)	0.92 (0.75-1.13)	0.95 (0.88-1.01)	0.92 (0.75-1.13)	0.95 (0.89-1.02)	0.93 (0.75-1.14)
Drenthe	0.89 (0.85-0.93)	1.10 (0.97-1.25)	0.89 (0.85-0.93)	1.11 (0.98-1.25)	0.89 (0.86-0.93)	1.10 (0.97-1.25)	0.90 (0.86-0.94)	1.10 (0.97-1.24)	0.90 (0.86-0.93)	1.11 (0.98-1.25)
Brabant-Zuidoost	0.85 (0.82-0.87)	1.16 (1.07-1.27)	0.85 (0.83-0.88)	1.17 (1.07-1.27)	0.85 (0.83-0.88)	1.16 (1.07-1.27)	0.85 (0.82-0.87)	1.17 (1.07-1.27)	0.85 (0.83-0.88)	1.17 (1.07-1.27)
Amsterdam	0.88 (0.85-0.91)	1.19 (1.08-1.31)	0.88 (0.85-0.91)	1.21 (1.10-1.33)	0.88 (0.85-0.92)	1.19 (1.08-1.31)	0.88 (0.85-0.91)	1.19 (1.08-1.31)	0.89 (0.86-0.92)	1.21 (1.10-1.33)

IRR: Incidence Rate Ratio. CI: confidence interval. Model 1: region. Model 2: region, demographic factors, and SES. Model 3a: region, demographic factors, SES, and self-rated health. Model 3b: region, demographic factors, SES and chronic disease. Model 3c: region, demographic factors, SES and psychological distress. Model 4: region, demographic factors, SES, self-rated health, chronic disease, and psychological distress. Model 5a: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and lifestyle. Model 5b: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and loneliness. Model 5c: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and mastery. Model 6: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery.



**Table A5. Incidence Rate Ratios per region for mental healthcare costs compared to Zuid-Limburg. Results from Zero-inflated negative binomial regressions (n= 334,721).**

IRR (95% CI)	Model 1		Model 2		Model 3a		Model 3b		Model 3c	
		Infl.		Infl.		Infl.		Infl.		Infl.
Zuid-Limburg	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Zuid-Holland-Zuid	0.47 (0.36-0.62)	1.36 (1.09-1.68)	0.54 (0.41-0.70)	1.22 (0.98-1.53)	0.54 (0.42-0.70)	1.15 (0.92-1.44)	0.57 (0.42-0.76)	1.18 (0.94-1.47)	0.51 (0.40-0.65)	1.14 (0.91-1.42)
Zeeland	0.90 (0.64-1.28)	1.20 (0.98-1.46)	0.92 (0.68-1.26)	1.02 (0.83-1.24)	0.92 (0.68-1.24)	1.01 (0.82-1.24)	0.90 (0.67-1.21)	0.99 (0.81-1.22)	0.85 (0.64-1.13)	1.00 (0.81-1.22)
Zaanstreek- Waterland	0.73 (0.57-0.95)	1.19 (1.02-1.40)	0.75 (0.60-0.94)	1.10 (0.93-1.29)	0.76 (0.61-0.95)	1.04 (0.89-1.23)	0.74 (0.60-0.91)	1.09 (0.93-1.28)	0.71 (0.57-0.89)	1.06 (0.90-1.25)
West-Brabant	1.15 (0.84-1.58)	1.44 (1.20-1.72)	1.12 (0.86-1.45)	1.25 (1.04-1.50)	1.14 (0.87-1.49)	1.25 (1.04-1.50)	1.14 (0.88-1.46)	1.19 (0.99-1.43)	1.05 (0.80-1.39)	1.24 (1.03-1.49)
Utrecht	0.78 (0.64-0.95)	0.99 (0.88-1.12)	0.84 (0.70-1.00)	0.96 (0.84-1.09)	0.84 (0.71-1.00)	0.91 (0.80-1.04)	0.86 (0.72-1.02)	0.93 (0.82-1.06)	0.83 (0.69-1.00)	0.90 (0.79-1.03)
Twente	0.73 (0.55-0.96)	1.24 (1.00-1.54)	0.70 (0.54-0.91)	1.17 (0.94-1.44)	0.71 (0.56-0.89)	1.12 (0.90-1.39)	0.71 (0.56-0.90)	1.17 (0.95-1.45)	0.72 (0.55-0.94)	1.24 (1.01-1.53)
Rotterdam- Rijnmond	0.91 (0.69-1.19)	1.15 (1.01-1.32)	0.89 (0.72-1.11)	1.28 (1.11-1.47)	0.94 (0.75-1.18)	1.23 (1.07-1.42)	0.90 (0.73-1.11)	1.25 (1.08-1.43)	0.90 (0.71-1.15)	1.22 (1.06-1.41)
Noord- en Oost- Gelderland	0.86 (0.66-1.12)	1.49 (1.27-1.74)	0.93 (0.73-1.18)	1.24 (1.06-1.47)	0.91 (0.71-1.15)	1.19 (1.01-1.40)	0.96 (0.75-1.22)	1.28 (1.08-1.51)	0.93 (0.72-1.21)	1.26 (1.06-1.49)
Limburg-Noord	0.90 (0.66-1.22)	1.43 (1.23-1.67)	0.99 (0.74-1.34)	1.23 (1.06-1.44)	1.01 (0.73-1.40)	1.20 (1.02-1.40)	1.03 (0.75-1.42)	1.22 (1.04-1.43)	1.03 (0.74-1.43)	1.17 (0.99-1.37)
Kennemerland	0.78 (0.55-1.11)	1.09 (0.93-1.28)	0.80 (0.62-1.03)	1.01 (0.86-1.18)	0.80 (0.64-1.01)	0.94 (0.80-1.11)	0.81 (0.64-1.01)	0.97 (0.82-1.14)	0.77 (0.61-0.97)	0.96 (0.81-1.13)
IJsselland	0.76 (0.50-1.14)	1.19 (0.96-1.49)	0.79 (0.54-1.16)	1.06 (0.85-1.33)	0.77 (0.56-1.07)	1.03 (0.83-1.29)	0.78 (0.55-1.09)	1.08 (0.87-1.35)	0.76 (0.55-1.04)	1.05 (0.84-1.31)
Hollands Noorden	0.67 (0.52-0.86)	1.16 (0.99-1.35)	0.71 (0.56-0.90)	1.07 (0.92-1.26)	0.70 (0.56-0.87)	1.04 (0.89-1.22)	0.72 (0.57-0.91)	1.04 (0.88-1.21)	0.68 (0.54-0.86)	1.04 (0.89-1.22)
Holland-Midden	0.62 (0.50-0.77)	1.13 (0.98-1.30)	0.68 (0.55-0.82)	1.03 (0.89-1.19)	0.68 (0.56-0.81)	0.98 (0.85-1.14)	0.69 (0.57-0.83)	1.05 (0.91-1.22)	0.64 (0.52-0.78)	1.03 (0.89-1.20)
Hart voor Brabant	0.83 (0.58-1.17)	1.39 (1.20-1.61)	0.89 (0.65-1.23)	1.24 (1.07-1.44)	0.91 (0.67-1.25)	1.23 (1.05-1.43)	0.93 (0.68-1.29)	1.21 (1.03-1.41)	0.81 (0.61-1.07)	1.24 (1.06-1.45)
Haaglanden	0.75 (0.59-0.96)	0.86 (0.74-1.00)	0.77 (0.62-0.96)	0.94 (0.81-1.09)	0.82 (0.66-1.02)	0.90 (0.78-1.05)	0.78 (0.63-0.96)	0.95 (0.81-1.10)	0.77 (0.62-0.97)	0.96 (0.82-1.12)
Groningen	0.80 (0.63-1.03)	0.99 (0.84-1.17)	0.83 (0.66-1.03)	1.09 (0.92-1.30)	0.86 (0.68-1.08)	1.04 (0.88-1.24)	0.83 (0.67-1.03)	1.11 (0.93-1.32)	0.83 (0.66-1.05)	0.99 (0.83-1.17)
Gooi en Vechtstreek	0.70 (0.53-0.92)	1.23 (1.01-1.50)	0.74 (0.58-0.93)	1.11 (0.91-1.35)	0.74 (0.59-0.93)	1.06 (0.87-1.30)	0.77 (0.62-0.96)	1.08 (0.88-1.33)	0.70 (0.56-0.89)	1.08 (0.87-1.32)
Gelderland-Zuid	0.94 (0.60-1.46)	1.02 (0.87-1.19)	0.96 (0.67-1.39)	1.00 (0.86-1.17)	0.96 (0.70-1.32)	0.95 (0.81-1.11)	0.95 (0.69-1.31)	0.98 (0.83-1.15)	0.93 (0.68-1.27)	1.00 (0.85-1.18)

Gelderland- Midden	1.04 (0.73-1.48)	1.25 (1.02-1.52)	1.17 (0.78-1.76)	1.19 (0.97-1.45)	1.16 (0.81-1.67)	1.16 (0.94-1.42)	1.14 (0.80-1.64)	1.22 (0.99-1.49)	1.15 (0.72-1.84)	1.25 (1.01-1.55)
Friesland	0.74 (0.58-0.95)	1.29 (1.09-1.52)	0.78 (0.62-0.99)	1.21 (1.02-1.43)	0.79 (0.62-0.99)	1.13 (0.96-1.34)	0.77 (0.62-0.95)	1.19 (1.00-1.41)	0.76 (0.60-0.97)	1.15 (0.97-1.37)
Flevoland	0.71 (0.48-1.04)	1.42 (1.03-1.97)	0.77 (0.54-1.09)	1.40 (1.00-1.98)	0.79 (0.57-1.10)	1.37 (0.96-1.97)	0.78 (0.56-1.10)	1.45 (1.02-2.08)	0.74 (0.53-1.03)	1.46 (1.00-2.11)
Drenthe	0.95 (0.61-1.48)	1.20 (0.94-1.52)	0.93 (0.65-1.32)	1.09 (0.86-1.39)	0.93 (0.67-1.29)	1.03 (0.80-1.31)	0.94 (0.68-1.30)	1.05 (0.82-1.34)	0.90 (0.66-1.24)	1.03 (0.81-1.32)
Brabant-Zuidoost	0.89 (0.71-1.11)	1.44 (1.22-1.70)	0.98 (0.78-1.23)	1.28 (1.08-1.51)	1.03 (0.82-1.29)	1.31 (1.10-1.55)	1.05 (0.84-1.31)	1.24 (1.04-1.47)	0.98 (0.78-1.22)	1.32 (1.11-1.57)
Amsterdam	0.81 (0.64-1.02)	0.71 (0.61-0.83)	0.86 (0.70-1.07)	0.86 (0.73-1.00)	0.88 (0.72-1.08)	0.77 (0.65-0.90)	0.91 (0.74-1.11)	0.80 (0.68-0.94)	0.88 (0.71-1.09)	0.78 (0.66-0.92)

**Table A5 continued.**

IRR (95% CI)	<u>Model 4</u>		<u>Model 5a</u>		<u>Model 5b</u>		<u>Model 5c</u>		<u>Model 6</u>	
		Infl.		Infl.		Infl.		Infl.		Infl.
Zuid-Limburg	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Zuid-Holland-Zuid	0.54 (0.42-0.69)	1.10 (0.88-1.38)	0.53 (0.42-0.68)	1.11 (0.88-1.39)	0.54 (0.42-0.68)	1.08 (0.86-1.36)	0.54 (0.42-0.69)	1.11 (0.88-1.40)	0.53 (0.42-0.68)	1.10 (0.88-1.39)
Zeeland	0.86 (0.65-1.14)	0.96 (0.79-1.18)	0.86 (0.65-1.12)	0.96 (0.78-1.18)	0.85 (0.64-1.13)	0.98 (0.80-1.21)	0.85 (0.64-1.13)	0.99 (0.80-1.22)	0.85 (0.64-1.12)	1.00 (0.81-1.24)
Zaanstreek- Waterland	0.73 (0.59-0.90)	1.04 (0.88-1.23)	0.72 (0.58-0.88)	1.05 (0.89-1.24)	0.74 (0.59-0.91)	1.01 (0.85-1.19)	0.73 (0.59-0.90)	1.03 (0.87-1.22)	0.73 (0.59-0.90)	1.02 (0.86-1.21)
West-Brabant	1.09 (0.84-1.43)	1.20 (0.99-1.44)	1.11 (0.85-1.45)	1.19 (0.99-1.44)	1.07 (0.83-1.39)	1.19 (0.99-1.43)	1.10 (0.84-1.44)	1.19 (0.99-1.43)	1.10 (0.85-1.43)	1.19 (0.99-1.43)
Utrecht	0.85 (0.71-1.02)	0.87 (0.76-0.99)	0.85 (0.71-1.01)	0.88 (0.77-1.00)	0.86 (0.72-1.03)	0.85 (0.74-0.97)	0.86 (0.72-1.03)	0.86 (0.75-0.98)	0.86 (0.72-1.03)	0.85 (0.75-0.98)
Twente	0.72 (0.57-0.92)	1.19 (0.96-1.48)	0.73 (0.57-0.93)	1.20 (0.97-1.48)	0.73 (0.57-0.93)	1.15 (0.93-1.43)	0.72 (0.57-0.92)	1.17 (0.94-1.45)	0.73 (0.57-0.94)	1.16 (0.93-1.43)
Rotterdam- Rijnmond	0.93 (0.74-1.17)	1.20 (1.04-1.38)	0.93 (0.74-1.16)	1.20 (1.04-1.39)	0.93 (0.75-1.17)	1.17 (1.01-1.35)	0.94 (0.75-1.18)	1.17 (1.02-1.36)	0.93 (0.75-1.16)	1.16 (1.01-1.34)
Noord- en Oost- Gelderland	0.94 (0.73-1.22)	1.25 (1.05-1.48)	0.95 (0.73-1.24)	1.25 (1.06-1.48)	0.96 (0.74-1.26)	1.22 (1.03-1.45)	0.96 (0.74-1.25)	1.25 (1.05-1.48)	0.97 (0.74-1.28)	1.24 (1.05-1.47)
Limburg-Noord	1.06 (0.75-1.50)	1.16 (0.98-1.36)	1.06 (0.75-1.49)	1.16 (0.98-1.36)	1.06 (0.75-1.48)	1.16 (0.98-1.36)	1.06 (0.76-1.47)	1.15 (0.98-1.35)	1.05 (0.76-1.46)	1.16 (0.98-1.37)
Kennemerland	0.79 (0.63-0.98)	0.91 (0.77-1.08)	0.78 (0.63-0.96)	0.92 (0.78-1.09)	0.80 (0.64-1.00)	0.89 (0.75-1.05)	0.79 (0.64-0.98)	0.89 (0.75-1.05)	0.79 (0.64-0.97)	0.89 (0.75-1.05)
IJsselland	0.76 (0.57-1.02)	1.04 (0.84-1.30)	0.74 (0.57-0.97)	1.06 (0.85-1.32)	0.78 (0.58-1.05)	1.01 (0.81-1.26)	0.76 (0.56-1.02)	1.06 (0.85-1.33)	0.76 (0.58-0.99)	1.05 (0.84-1.32)
Hollands Noorden	0.69 (0.56-0.86)	1.01 (0.86-1.19)	0.69 (0.55-0.85)	1.02 (0.87-1.20)	0.70 (0.56-0.86)	0.99 (0.84-1.16)	0.70 (0.57-0.88)	1.00 (0.85-1.17)	0.70 (0.56-0.87)	0.99 (0.84-1.17)
Holland-Midden	0.65 (0.54-0.79)	1.02 (0.88-1.19)	0.65 (0.54-0.79)	1.02 (0.88-1.19)	0.66 (0.55-0.80)	1.00 (0.86-1.16)	0.66 (0.55-0.80)	1.05 (0.90-1.22)	0.66 (0.55-0.80)	1.03 (0.89-1.20)
Hart voor Brabant	0.87 (0.65-1.15)	1.19 (1.02-1.39)	0.86 (0.65-1.13)	1.19 (1.02-1.40)	0.88 (0.65-1.19)	1.17 (1.00-1.37)	0.84 (0.64-1.11)	1.18 (1.00-1.38)	0.86 (0.65-1.13)	1.17 (1.00-1.38)
Haaglanden	0.80 (0.64-0.99)	0.94 (0.80-1.10)	0.79 (0.64-0.98)	0.94 (0.80-1.11)	0.79 (0.64-0.98)	0.93 (0.79-1.09)	0.79 (0.64-0.98)	0.93 (0.79-1.09)	0.78 (0.63-0.97)	0.93 (0.79-1.09)
Groningen	0.85 (0.68-1.07)	0.98 (0.83-1.17)	0.85 (0.68-1.07)	0.99 (0.83-1.18)	0.85 (0.68-1.06)	0.95 (0.80-1.13)	0.86 (0.69-1.07)	0.96 (0.80-1.14)	0.85 (0.68-1.07)	0.95 (0.80-1.13)
Gooi en Vechtstreek	0.74 (0.60-0.91)	1.05 (0.85-1.29)	0.74 (0.60-0.92)	1.05 (0.85-1.30)	0.74 (0.60-0.91)	1.01 (0.81-1.24)	0.75 (0.60-0.93)	1.03 (0.83-1.28)	0.75 (0.60-0.92)	1.01 (0.81-1.25)
Gelderland-Zuid	0.94 (0.71-1.25)	0.96 (0.81-1.13)	0.91 (0.72-1.16)	0.96 (0.81-1.14)	0.93 (0.71-1.22)	0.93 (0.79-1.10)	0.95 (0.71-1.27)	0.96 (0.81-1.13)	0.91 (0.72-1.15)	0.95 (0.80-1.12)

Gelderland- Midden	1.13 (0.76-1.70)	1.23 (1.00-1.53)	1.14 (0.75-1.73)	1.25 (1.01-1.55)	1.16 (0.76-1.77)	1.22 (0.98-1.52)	1.14 (0.75-1.74)	1.24 (1.00-1.54)	1.17 (0.75-1.81)	1.25 (1.00-1.55)
Friesland	0.76 (0.61-0.95)	1.11 (0.93-1.32)	0.77 (0.62-0.97)	1.12 (0.94-1.33)	0.76 (0.61-0.95)	1.09 (0.92-1.30)	0.76 (0.61-0.96)	1.09 (0.92-1.30)	0.77 (0.62-0.96)	1.09 (0.92-1.30)
Flevoland	0.78 (0.55-1.09)	1.48 (1.01-2.19)	0.78 (0.55-1.11)	1.48 (1.00-2.18)	0.78 (0.55-1.09)	1.47 (0.99-2.17)	0.79 (0.55-1.13)	1.45 (0.99-2.12)	0.79 (0.55-1.13)	1.44 (0.98-2.12)
Drenthe	0.93 (0.69-1.25)	0.98 (0.77-1.25)	0.91 (0.67-1.24)	0.99 (0.77-1.26)	0.93 (0.68-1.26)	0.96 (0.75-1.23)	0.94 (0.69-1.26)	0.95 (0.74-1.22)	0.92 (0.67-1.26)	0.95 (0.75-1.22)
Brabant-Zuidoost	1.04 (0.83-1.29)	1.28 (1.07-1.52)	1.05 (0.84-1.31)	1.28 (1.07-1.52)	1.05 (0.84-1.31)	1.27 (1.06-1.52)	1.05 (0.85-1.31)	1.29 (1.08-1.54)	1.07 (0.86-1.33)	1.30 (1.08-1.55)
Amsterdam	0.91 (0.75-1.12)	0.71 (0.60-0.85)	0.90 (0.74-1.10)	0.73 (0.62-0.86)	0.93 (0.76-1.14)	0.69 (0.58-0.81)	0.92 (0.76-1.13)	0.69 (0.59-0.82)	0.92 (0.75-1.12)	0.70 (0.59-0.83)

IRR: Incidence Rate Ratio. CI: confidence interval. Model 1: region. Model 2: region, demographic factors, and SES. Model 3a: region, demographic factors, SES, and self-rated health. Model 3b: region, demographic factors, SES and chronic disease. Model 3c: region, demographic factors, SES and psychological distress. Model 4: region, demographic factors, SES, self-rated health, chronic disease, and psychological distress. Model 5a: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and lifestyle. Model 5b: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and loneliness. Model 5c: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and mastery. Model 6: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery.

**Table A6. Incidence Rate Ratios per region for pharmaceutical costs compared to Zuid-Limburg. Results from Zero-inflated negative binomial regressions (n= 334,721).**

IRR (95% CI)	Model 1		Model 2		Model 3a		Model 3b		Model 3c	
		Infl.		Infl.		Infl.		Infl.		Infl.
Zuid-Limburg	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Zuid-Holland- Zuid	1.12 (0.84-1.50)	1.23 (1.08-1.40)	1.17 (0.90-1.51)	1.19 (1.04-1.35)	1.18 (0.98-1.42)	1.12 (0.99-1.26)	1.19 (1.02-1.38)	1.11 (0.99-1.24)	1.20 (1.04-1.38)	1.09 (0.97-1.22)
Zeeland	1.05 (0.87-1.28)	1.09 (0.97-1.24)	1.11 (0.88-1.40)	1.17 (1.03-1.33)	1.15 (0.87-1.51)	1.16 (1.03-1.31)	1.31 (0.95-1.80)	1.13 (1.00-1.26)	1.30 (0.93-1.83)	1.13 (1.01-1.27)
Zaanstreek- Waterland	0.98 (0.87-1.11)	1.30 (1.18-1.44)	1.17 (0.97-1.40)	1.33 (1.20-1.48)	1.29 (1.03-1.63)	1.29 (1.16-1.42)	1.17 (0.95-1.44)	1.32 (1.20-1.45)	1.22 (0.98-1.51)	1.30 (1.18-1.43)
West-Brabant	1.03 (0.90-1.17)	1.16 (1.04-1.29)	1.21 (0.99-1.48)	1.15 (1.03-1.29)	1.20 (0.97-1.48)	1.14 (1.03-1.27)	1.20 (1.07-1.33)	1.07 (0.96-1.18)	1.18 (1.05-1.34)	1.08 (0.98-1.19)
Utrecht	0.88 (0.79-0.98)	1.63 (1.50-1.77)	1.00 (0.89-1.11)	1.38 (1.27-1.50)	1.04 (0.94-1.16)	1.33 (1.23-1.44)	1.04 (0.96-1.13)	1.33 (1.23-1.44)	1.06 (0.97-1.15)	1.32 (1.22-1.42)
Twente	0.83 (0.75-0.93)	1.35 (1.21-1.50)	0.88 (0.78-1.00)	1.26 (1.12-1.41)	0.95 (0.86-1.06)	1.22 (1.10-1.35)	0.96 (0.88-1.04)	1.25 (1.13-1.39)	0.98 (0.90-1.06)	1.24 (1.12-1.38)
Rotterdam- Rijnmond	1.10 (0.99-1.23)	1.23 (1.12-1.34)	1.23 (1.08-1.41)	1.19 (1.09-1.30)	1.27 (1.12-1.44)	1.15 (1.06-1.25)	1.18 (1.07-1.30)	1.16 (1.07-1.26)	1.20 (1.09-1.32)	1.15 (1.06-1.25)
Noord- en Oost- Gelderland	0.95 (0.84-1.06)	1.35 (1.23-1.49)	1.05 (0.92-1.19)	1.37 (1.24-1.51)	1.15 (1.00-1.32)	1.32 (1.20-1.44)	1.10 (0.94-1.29)	1.39 (1.27-1.52)	1.13 (0.97-1.32)	1.37 (1.25-1.50)
Limburg-Noord	0.94 (0.86-1.02)	1.06 (0.95-1.17)	0.92 (0.83-1.01)	1.09 (0.98-1.21)	0.95 (0.86-1.05)	1.07 (0.97-1.18)	0.98 (0.91-1.05)	1.08 (0.98-1.18)	0.98 (0.91-1.06)	1.07 (0.97-1.17)
Kennemerland	0.85 (0.76-0.94)	1.49 (1.35-1.65)	0.93 (0.82-1.06)	1.44 (1.30-1.59)	1.02 (0.89-1.17)	1.38 (1.25-1.51)	1.05 (0.91-1.21)	1.38 (1.26-1.52)	1.08 (0.94-1.24)	1.37 (1.25-1.50)
IJsselland	0.88 (0.75-1.04)	1.56 (1.39-1.75)	1.03 (0.81-1.29)	1.39 (1.23-1.57)	1.03 (0.89-1.19)	1.35 (1.21-1.51)	1.00 (0.87-1.14)	1.42 (1.27-1.58)	1.00 (0.89-1.12)	1.40 (1.26-1.56)
Hollands Noorden	1.02 (0.88-1.19)	1.70 (1.55-1.87)	1.22 (0.98-1.53)	1.74 (1.58-1.92)	1.14 (0.94-1.39)	1.65 (1.51-1.81)	1.19 (0.92-1.54)	1.64 (1.50-1.80)	1.11 (0.94-1.32)	1.62 (1.48-1.77)
Holland-Midden	0.99 (0.82-1.19)	1.45 (1.32-1.59)	1.05 (0.89-1.24)	1.32 (1.21-1.45)	1.06 (0.94-1.21)	1.27 (1.16-1.38)	0.98 (0.89-1.09)	1.34 (1.23-1.46)	0.99 (0.91-1.09)	1.32 (1.22-1.44)
Hart voor Brabant	0.97 (0.84-1.12)	1.34 (1.22-1.47)	1.06 (0.89-1.25)	1.28 (1.16-1.40)	1.03 (0.90-1.18)	1.26 (1.15-1.37)	1.08 (0.97-1.19)	1.22 (1.12-1.33)	1.06 (0.96-1.16)	1.22 (1.12-1.33)
Haaglanden	0.95 (0.85-1.06)	1.26 (1.13-1.39)	1.06 (0.93-1.21)	1.16 (1.04-1.28)	1.13 (0.99-1.28)	1.13 (1.02-1.24)	1.01 (0.93-1.10)	1.16 (1.06-1.28)	1.04 (0.96-1.13)	1.16 (1.05-1.27)
Groningen	0.91 (0.82-1.00)	1.53 (1.38-1.70)	1.00 (0.86-1.16)	1.37 (1.23-1.52)	1.05 (0.93-1.18)	1.32 (1.20-1.46)	0.98 (0.89-1.08)	1.39 (1.26-1.53)	1.00 (0.92-1.10)	1.38 (1.25-1.52)
Gooi en Vechtstreek	1.20 (0.81-1.76)	1.45 (1.26-1.66)	1.41 (0.81-2.47)	1.46 (1.27-1.67)	1.19 (0.88-1.63)	1.36 (1.20-1.53)	1.17 (0.84-1.62)	1.32 (1.17-1.49)	1.12 (0.86-1.45)	1.30 (1.15-1.47)
Gelderland-Zuid	0.99 (0.88-1.11)	1.53 (1.39-1.69)	1.11 (0.96-1.28)	1.38 (1.25-1.53)	1.14 (1.00-1.30)	1.33 (1.20-1.46)	1.07 (0.97-1.18)	1.33 (1.21-1.46)	1.09 (0.99-1.20)	1.32 (1.20-1.45)

Gelderland- Midden	0.97 (0.84-1.11)	1.51 (1.34-1.70)	0.98 (0.87-1.12)	1.39 (1.23-1.57)	1.04 (0.91-1.19)	1.34 (1.19-1.50)	0.97 (0.89-1.06)	1.40 (1.25-1.57)	0.98 (0.89-1.08)	1.38 (1.24-1.55)
Friesland	1.00 (0.86-1.17)	1.38 (1.25-1.53)	1.05 (0.88-1.25)	1.41 (1.27-1.56)	1.10 (0.95-1.27)	1.34 (1.21-1.47)	1.03 (0.92-1.15)	1.35 (1.23-1.48)	1.05 (0.94-1.17)	1.33 (1.21-1.46)
Flevoland	0.97 (0.77-1.23)	1.31 (1.05-1.64)	1.14 (0.86-1.51)	1.16 (0.92-1.47)	1.20 (0.85-1.68)	1.14 (0.92-1.41)	1.07 (0.89-1.27)	1.18 (0.95-1.45)	1.08 (0.89-1.32)	1.17 (0.95-1.43)
Drenthe	0.90 (0.75-1.08)	1.21 (1.05-1.39)	0.97 (0.76-1.23)	1.27 (1.09-1.47)	1.03 (0.87-1.22)	1.21 (1.05-1.39)	1.00 (0.87-1.15)	1.23 (1.08-1.40)	1.03 (0.91-1.17)	1.21 (1.06-1.38)
Brabant-Zuidoost	0.90 (0.82-0.98)	1.34 (1.21-1.47)	0.95 (0.85-1.07)	1.28 (1.16-1.41)	0.99 (0.87-1.12)	1.29 (1.17-1.41)	1.02 (0.94-1.12)	1.21 (1.11-1.33)	1.03 (0.92-1.14)	1.24 (1.13-1.35)
Amsterdam	1.26 (1.07-1.48)	1.78 (1.60-1.97)	1.33 (1.12-1.59)	1.44 (1.29-1.60)	1.46 (1.21-1.76)	1.35 (1.22-1.50)	1.24 (1.07-1.44)	1.34 (1.22-1.48)	1.30 (1.12-1.51)	1.32 (1.20-1.46)

**Table A6 continued.**

IRR (95%CI)	<u>Model 4</u>		<u>Model 5a</u>		<u>Model 5b</u>		<u>Model 5c</u>		<u>Model 6</u>	
		Infl.		Infl.		Infl.		Infl.		Infl.
Zuid-Limburg	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Zuid-Holland-Zuid	1.20 (1.04-1.38)	1.09 (0.97-1.22)	1.20 (1.04-1.38)	1.09 (0.97-1.23)	1.20 (1.04-1.38)	1.09 (0.97-1.23)	1.19 (1.04-1.35)	1.09 (0.97-1.22)	1.19 (1.04-1.36)	1.10 (0.98-1.23)
Zeeland	1.30 (0.93-1.83)	1.13 (1.01-1.27)	1.32 (0.94-1.85)	1.12 (1.00-1.26)	1.30 (0.93-1.82)	1.13 (1.01-1.27)	1.29 (0.92-1.81)	1.13 (1.01-1.27)	1.31 (0.93-1.84)	1.12 (1.00-1.26)
Zaanstreek- Waterland	1.22 (0.98-1.51)	1.30 (1.18-1.43)	1.22 (0.99-1.51)	1.30 (1.18-1.43)	1.22 (0.98-1.51)	1.31 (1.19-1.44)	1.22 (0.98-1.53)	1.30 (1.18-1.43)	1.22 (0.98-1.51)	1.31 (1.19-1.44)
West-Brabant	1.18 (1.05-1.34)	1.08 (0.98-1.19)	1.20 (1.06-1.35)	1.08 (0.97-1.19)	1.18 (1.05-1.34)	1.08 (0.98-1.19)	1.18 (1.04-1.33)	1.08 (0.98-1.19)	1.19 (1.05-1.34)	1.08 (0.98-1.19)
Utrecht	1.06 (0.97-1.15)	1.32 (1.22-1.42)	1.07 (0.98-1.16)	1.31 (1.21-1.41)	1.06 (0.97-1.15)	1.32 (1.23-1.43)	1.05 (0.97-1.14)	1.32 (1.22-1.42)	1.06 (0.97-1.15)	1.32 (1.22-1.42)
Twente	0.98 (0.90-1.06)	1.24 (1.12-1.38)	0.99 (0.91-1.07)	1.25 (1.13-1.38)	0.98 (0.90-1.06)	1.25 (1.13-1.39)	0.98 (0.90-1.06)	1.24 (1.12-1.38)	0.98 (0.91-1.06)	1.26 (1.13-1.39)
Rotterdam- Rijnmond	1.20 (1.09-1.32)	1.15 (1.06-1.25)	1.21 (1.09-1.33)	1.16 (1.07-1.26)	1.20 (1.09-1.32)	1.16 (1.06-1.25)	1.20 (1.09-1.32)	1.15 (1.06-1.25)	1.20 (1.09-1.32)	1.16 (1.07-1.26)
Noord- en Oost- Gelderland	1.13 (0.97-1.32)	1.37 (1.25-1.50)	1.14 (0.98-1.33)	1.38 (1.26-1.51)	1.13 (0.97-1.32)	1.38 (1.26-1.51)	1.13 (0.97-1.31)	1.37 (1.25-1.50)	1.13 (0.97-1.31)	1.39 (1.27-1.51)
Limburg-Noord	0.98 (0.91-1.06)	1.07 (0.97-1.17)	0.99 (0.92-1.07)	1.07 (0.97-1.17)	0.98 (0.91-1.06)	1.07 (0.97-1.17)	0.98 (0.91-1.06)	1.07 (0.97-1.17)	0.99 (0.91-1.07)	1.06 (0.97-1.17)
Kennemerland	1.08 (0.94-1.24)	1.37 (1.25-1.50)	1.09 (0.95-1.25)	1.37 (1.24-1.50)	1.08 (0.94-1.24)	1.37 (1.25-1.51)	1.08 (0.94-1.23)	1.37 (1.25-1.50)	1.08 (0.95-1.24)	1.37 (1.25-1.51)
IJsselland	1.00 (0.89-1.12)	1.40 (1.26-1.56)	1.01 (0.90-1.14)	1.41 (1.26-1.57)	1.00 (0.89-1.12)	1.41 (1.26-1.57)	0.99 (0.88-1.12)	1.40 (1.25-1.56)	1.01 (0.89-1.13)	1.42 (1.27-1.59)
Hollands Noorden	1.11 (0.94-1.32)	1.62 (1.48-1.77)	1.12 (0.94-1.34)	1.62 (1.48-1.77)	1.11 (0.94-1.32)	1.63 (1.49-1.78)	1.11 (0.94-1.33)	1.62 (1.48-1.77)	1.12 (0.94-1.34)	1.63 (1.49-1.78)
Holland-Midden	0.99 (0.91-1.09)	1.32 (1.22-1.44)	1.00 (0.92-1.10)	1.33 (1.22-1.44)	0.99 (0.91-1.09)	1.33 (1.22-1.44)	0.98 (0.90-1.07)	1.32 (1.21-1.44)	0.99 (0.90-1.08)	1.33 (1.23-1.45)
Hart voor Brabant	1.06 (0.96-1.16)	1.22 (1.12-1.33)	1.07 (0.97-1.17)	1.22 (1.12-1.32)	1.06 (0.96-1.16)	1.23 (1.13-1.34)	1.05 (0.96-1.16)	1.22 (1.12-1.33)	1.06 (0.97-1.17)	1.22 (1.12-1.33)
Haaglanden	1.04 (0.96-1.13)	1.16 (1.05-1.27)	1.05 (0.96-1.14)	1.15 (1.05-1.27)	1.04 (0.96-1.13)	1.16 (1.05-1.28)	1.04 (0.96-1.14)	1.16 (1.05-1.27)	1.05 (0.96-1.14)	1.16 (1.05-1.27)
Groningen	1.00 (0.92-1.10)	1.38 (1.25-1.52)	1.00 (0.92-1.10)	1.39 (1.26-1.53)	1.00 (0.92-1.10)	1.38 (1.25-1.52)	1.00 (0.91-1.10)	1.38 (1.25-1.52)	1.00 (0.91-1.09)	1.39 (1.26-1.53)
Gooi en Vechtstreek	1.12 (0.86-1.45)	1.30 (1.15-1.47)	1.14 (0.88-1.47)	1.28 (1.13-1.44)	1.12 (0.87-1.45)	1.31 (1.16-1.48)	1.14 (0.86-1.50)	1.30 (1.15-1.47)	1.15 (0.88-1.50)	1.29 (1.14-1.46)
Gelderland-Zuid	1.09 (0.99-1.20)	1.32 (1.20-1.45)	1.10 (0.99-1.21)	1.31 (1.19-1.44)	1.09 (0.99-1.20)	1.33 (1.21-1.46)	1.08 (0.98-1.19)	1.32 (1.20-1.45)	1.09 (0.99-1.20)	1.32 (1.20-1.45)

Gelderland- Midden	0.98 (0.89-1.08)	1.38 (1.24-1.55)	0.99 (0.90-1.09)	1.39 (1.24-1.56)	0.98 (0.89-1.08)	1.39 (1.24-1.56)	0.98 (0.89-1.07)	1.38 (1.23-1.55)	0.98 (0.89-1.08)	1.39 (1.24-1.56)
Friesland	1.05 (0.94-1.17)	1.33 (1.21-1.46)	1.06 (0.95-1.18)	1.33 (1.21-1.46)	1.05 (0.94-1.17)	1.33 (1.21-1.47)	1.05 (0.94-1.17)	1.33 (1.21-1.46)	1.06 (0.94-1.18)	1.33 (1.21-1.47)
Flevoland	1.08 (0.89-1.32)	1.17 (0.95-1.43)	1.09 (0.89-1.33)	1.17 (0.95-1.44)	1.08 (0.89-1.32)	1.17 (0.95-1.44)	1.08 (0.89-1.31)	1.17 (0.95-1.43)	1.08 (0.89-1.32)	1.18 (0.95-1.45)
Drenthe	1.03 (0.91-1.17)	1.21 (1.06-1.38)	1.04 (0.91-1.18)	1.23 (1.08-1.40)	1.03 (0.91-1.17)	1.22 (1.07-1.39)	1.03 (0.91-1.17)	1.21 (1.06-1.38)	1.03 (0.91-1.17)	1.23 (1.08-1.41)
Brabant-Zuidoost	1.03 (0.92-1.14)	1.24 (1.13-1.35)	1.04 (0.94-1.16)	1.22 (1.12-1.34)	1.03 (0.93-1.14)	1.24 (1.13-1.35)	1.02 (0.92-1.14)	1.23 (1.13-1.35)	1.04 (0.93-1.16)	1.23 (1.12-1.34)
Amsterdam	1.30 (1.12-1.51)	1.32 (1.20-1.46)	1.32 (1.13-1.53)	1.33 (1.21-1.47)	1.30 (1.12-1.51)	1.33 (1.20-1.47)	1.30 (1.12-1.50)	1.32 (1.20-1.46)	1.31 (1.13-1.53)	1.34 (1.21-1.48)

IRR: Incidence Rate Ratio. CI: confidence interval. Model 1: region. Model 2: region, demographic factors, and SES. Model 3a: region, demographic factors, SES, and self-rated health. Model 3b: region, demographic factors, SES and chronic disease. Model 3c: region, demographic factors, SES and psychological distress. Model 4: region, demographic factors, SES, self-rated health, chronic disease, and psychological distress. Model 5a: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and lifestyle. Model 5b: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and loneliness. Model 5c: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and mastery. Model 6: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery.



**Table A7. Incidence Rate Ratios per region for specialized care costs compared to Zuid-Limburg. Results from Zero-inflated negative binomial regressions (n= 334,721).**

IRR (95% CI)	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3a</u>		<u>Model 3b</u>		<u>Model 3c</u>	
		Infl.		Infl.		Infl.		Infl.		Infl.
Zuid-Limburg	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Zuid-Holland-Zuid	0.83 (0.75-0.91)	1.15 (1.04-1.26)	0.83 (0.75-0.91)	1.12 (1.01-1.23)	0.92 (0.84-1.00)	1.07 (0.96-1.18)	0.91 (0.84-1.00)	1.07 (0.97-1.18)	0.84 (0.76-0.93)	1.11 (1.00-1.22)
Zeeland	0.88 (0.80-0.97)	1.01 (0.92-1.10)	0.87 (0.79-0.96)	1.09 (0.98-1.20)	0.92 (0.83-1.01)	1.08 (0.98-1.20)	0.95 (0.86-1.04)	1.04 (0.94-1.15)	0.88 (0.80-0.97)	1.09 (0.98-1.20)
Zaanstreek- Waterland	0.97 (0.88-1.07)	1.08 (1.00-1.17)	1.00 (0.91-1.10)	1.08 (0.99-1.18)	1.03 (0.95-1.12)	1.04 (0.96-1.13)	1.02 (0.94-1.10)	1.08 (0.99-1.17)	1.00 (0.91-1.10)	1.08 (0.99-1.17)
West-Brabant	0.88 (0.81-0.97)	1.02 (0.94-1.11)	0.92 (0.83-1.01)	1.02 (0.93-1.12)	0.93 (0.85-1.02)	1.01 (0.93-1.11)	0.95 (0.87-1.02)	0.95 (0.87-1.04)	0.92 (0.83-1.02)	1.02 (0.93-1.12)
Utrecht	0.90 (0.83-0.98)	1.32 (1.25-1.41)	0.97 (0.89-1.06)	1.16 (1.09-1.24)	1.03 (0.95-1.12)	1.13 (1.05-1.20)	1.02 (0.94-1.10)	1.13 (1.05-1.21)	0.98 (0.90-1.07)	1.16 (1.08-1.24)
Twente	1.02 (0.86-1.20)	1.13 (1.04-1.22)	1.05 (0.89-1.25)	1.05 (0.96-1.15)	1.07 (0.96-1.20)	1.01 (0.92-1.11)	1.03 (0.92-1.17)	1.04 (0.94-1.14)	1.07 (0.90-1.26)	1.06 (0.97-1.16)
Rotterdam- Rijnmond	0.95 (0.87-1.03)	1.10 (1.03-1.17)	1.03 (0.94-1.14)	1.04 (0.97-1.12)	1.09 (1.01-1.19)	1.01 (0.94-1.09)	1.06 (0.98-1.15)	1.03 (0.96-1.11)	1.04 (0.94-1.14)	1.03 (0.96-1.11)
Noord- en Oost- Gelderland	0.94 (0.86-1.02)	1.19 (1.11-1.28)	0.95 (0.87-1.04)	1.22 (1.13-1.31)	1.01 (0.94-1.10)	1.17 (1.09-1.27)	0.96 (0.88-1.03)	1.24 (1.15-1.34)	0.96 (0.87-1.05)	1.22 (1.13-1.32)
Limburg-Noord	0.99 (0.89-1.12)	0.96 (0.89-1.04)	1.03 (0.89-1.20)	1.00 (0.92-1.08)	1.07 (0.90-1.26)	0.97 (0.89-1.05)	1.02 (0.92-1.13)	0.97 (0.89-1.06)	1.04 (0.89-1.21)	0.99 (0.91-1.08)
Kennemerland	0.92 (0.84-1.02)	1.16 (1.08-1.26)	0.97 (0.87-1.07)	1.13 (1.04-1.23)	1.07 (0.96-1.19)	1.08 (1.00-1.18)	1.03 (0.95-1.12)	1.09 (1.00-1.19)	0.98 (0.88-1.09)	1.13 (1.04-1.22)
IJsselland	1.02 (0.92-1.14)	1.40 (1.28-1.53)	1.08 (0.97-1.20)	1.27 (1.15-1.40)	1.16 (1.05-1.29)	1.24 (1.13-1.37)	1.07 (0.97-1.17)	1.31 (1.18-1.44)	1.09 (0.97-1.21)	1.27 (1.15-1.40)
Hollands Noorden	0.88 (0.80-0.96)	1.31 (1.22-1.41)	0.89 (0.81-0.99)	1.35 (1.24-1.46)	0.92 (0.85-1.01)	1.31 (1.21-1.41)	0.92 (0.84-1.00)	1.31 (1.21-1.42)	0.90 (0.82-1.00)	1.34 (1.24-1.46)
Holland-Midden	0.92 (0.84-1.00)	1.23 (1.15-1.32)	0.96 (0.88-1.05)	1.17 (1.08-1.25)	1.00 (0.93-1.09)	1.12 (1.04-1.21)	0.94 (0.87-1.02)	1.19 (1.11-1.29)	0.96 (0.88-1.06)	1.17 (1.09-1.26)
Hart voor Brabant	0.94 (0.80-1.11)	1.07 (1.00-1.15)	1.03 (0.82-1.30)	1.03 (0.96-1.12)	1.13 (0.86-1.49)	1.03 (0.95-1.11)	1.02 (0.88-1.19)	0.99 (0.92-1.07)	1.05 (0.82-1.33)	1.03 (0.96-1.12)
Haaglanden	0.99 (0.89-1.10)	1.05 (0.98-1.14)	1.07 (0.96-1.19)	0.95 (0.88-1.04)	1.15 (1.03-1.29)	0.93 (0.85-1.01)	1.09 (0.99-1.19)	0.97 (0.89-1.05)	1.07 (0.96-1.20)	0.96 (0.88-1.05)
Groningen	0.93 (0.83-1.04)	1.41 (1.31-1.53)	0.98 (0.87-1.11)	1.28 (1.17-1.39)	1.02 (0.91-1.14)	1.24 (1.14-1.35)	0.98 (0.87-1.09)	1.31 (1.20-1.43)	1.00 (0.88-1.13)	1.27 (1.16-1.38)
Gooi en Vechtstreek	0.95 (0.85-1.07)	1.15 (1.04-1.27)	0.97 (0.85-1.10)	1.18 (1.06-1.31)	1.07 (0.94-1.22)	1.13 (1.02-1.26)	0.99 (0.90-1.10)	1.12 (1.01-1.25)	0.98 (0.86-1.10)	1.17 (1.06-1.30)
Gelderland-Zuid	1.02 (0.89-1.17)	1.38 (1.28-1.49)	1.10 (0.93-1.31)	1.28 (1.18-1.39)	1.14 (0.95-1.38)	1.23 (1.14-1.34)	1.06 (0.95-1.19)	1.25 (1.15-1.36)	1.09 (0.94-1.25)	1.28 (1.18-1.39)

Gelderland-Midden	0.88 (0.79-0.97)	1.22 (1.11-1.34)	0.90 (0.81-1.01)	1.15 (1.04-1.27)	0.98 (0.87-1.10)	1.11 (1.01-1.23)	0.94 (0.85-1.04)	1.17 (1.06-1.29)	0.91 (0.81-1.01)	1.16 (1.05-1.28)
Friesland	0.94 (0.84-1.05)	1.33 (1.24-1.44)	0.96 (0.84-1.10)	1.38 (1.27-1.50)	1.05 (0.92-1.21)	1.32 (1.22-1.43)	0.98 (0.89-1.09)	1.35 (1.24-1.47)	0.98 (0.85-1.12)	1.37 (1.27-1.49)
Flevoland	0.86 (0.74-0.99)	1.11 (0.94-1.31)	0.91 (0.79-1.05)	0.97 (0.80-1.18)	0.99 (0.85-1.15)	0.95 (0.78-1.15)	0.92 (0.80-1.06)	0.98 (0.81-1.20)	0.91 (0.79-1.05)	0.97 (0.80-1.18)
Drenthe	0.89 (0.77-1.04)	1.10 (0.99-1.23)	0.89 (0.76-1.03)	1.16 (1.03-1.30)	0.97 (0.86-1.10)	1.11 (0.99-1.24)	0.95 (0.84-1.08)	1.13 (1.00-1.27)	0.90 (0.77-1.05)	1.15 (1.02-1.29)
Brabant-Zuidoost	0.96 (0.88-1.05)	1.09 (1.01-1.17)	0.99 (0.89-1.10)	1.05 (0.97-1.14)	0.98 (0.90-1.06)	1.06 (0.98-1.14)	1.02 (0.94-1.11)	1.01 (0.93-1.09)	0.99 (0.89-1.10)	1.06 (0.98-1.14)
Amsterdam	0.93 (0.81-1.07)	1.33 (1.23-1.44)	1.08 (0.91-1.28)	1.10 (1.01-1.21)	1.10 (0.98-1.23)	1.04 (0.95-1.14)	1.10 (0.96-1.26)	1.05 (0.96-1.15)	1.06 (0.92-1.23)	1.09 (0.99-1.19)

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**Table A7 continued.**

IRR (95% CI)	Model 4		Model 5a		Model 5b		Model 5c		Model 6	
		Infl.		Infl.		Infl.		Infl.		Infl.
Zuid-Limburg	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Zuid-Holland-Zuid	0.95 (0.87-1.03)	1.05 (0.95-1.16)	0.95 (0.87-1.03)	1.05 (0.95-1.17)	0.95 (0.87-1.03)	1.05 (0.95-1.17)	0.95 (0.87-1.03)	1.05 (0.95-1.16)	0.94 (0.87-1.02)	1.06 (0.96-1.17)
Zeeland	0.95 (0.87-1.05)	1.05 (0.95-1.16)	0.97 (0.89-1.07)	1.05 (0.95-1.16)	0.96 (0.87-1.05)	1.05 (0.95-1.16)	0.94 (0.86-1.03)	1.05 (0.95-1.16)	0.96 (0.88-1.06)	1.05 (0.95-1.16)
Zaanstreek- Waterland	1.03 (0.95-1.12)	1.06 (0.97-1.15)	1.04 (0.97-1.13)	1.06 (0.97-1.16)	1.02 (0.95-1.11)	1.07 (0.98-1.16)	1.03 (0.96-1.12)	1.06 (0.97-1.15)	1.03 (0.96-1.11)	1.07 (0.98-1.17)
West-Brabant	0.94 (0.87-1.02)	0.97 (0.88-1.06)	0.95 (0.88-1.03)	0.97 (0.88-1.06)	0.94 (0.87-1.02)	0.97 (0.88-1.06)	0.94 (0.87-1.01)	0.96 (0.88-1.06)	0.94 (0.87-1.01)	0.97 (0.89-1.06)
Utrecht	1.05 (0.96-1.13)	1.12 (1.04-1.20)	1.05 (0.97-1.14)	1.12 (1.05-1.20)	1.04 (0.96-1.13)	1.12 (1.05-1.20)	1.04 (0.96-1.13)	1.12 (1.04-1.20)	1.04 (0.96-1.13)	1.13 (1.05-1.21)
Twente	1.05 (0.95-1.17)	1.02 (0.93-1.12)	1.07 (0.97-1.19)	1.03 (0.94-1.13)	1.05 (0.95-1.17)	1.03 (0.94-1.13)	1.05 (0.95-1.17)	1.02 (0.93-1.12)	1.06 (0.96-1.18)	1.04 (0.94-1.14)
Rotterdam- Rijnmond	1.09 (1.01-1.18)	1.02 (0.94-1.09)	1.10 (1.02-1.19)	1.02 (0.95-1.10)	1.09 (1.01-1.18)	1.02 (0.95-1.10)	1.09 (1.01-1.18)	1.02 (0.94-1.09)	1.09 (1.01-1.18)	1.02 (0.95-1.10)
Noord- en Oost- Gelderland	0.99 (0.92-1.07)	1.22 (1.13-1.32)	1.00 (0.93-1.08)	1.23 (1.13-1.33)	0.98 (0.91-1.06)	1.22 (1.13-1.33)	0.99 (0.92-1.06)	1.22 (1.12-1.32)	0.98 (0.91-1.05)	1.23 (1.14-1.34)
Limburg-Noord	1.05 (0.93-1.18)	0.96 (0.89-1.05)	1.06 (0.94-1.20)	0.97 (0.89-1.05)	1.04 (0.93-1.17)	0.96 (0.89-1.05)	1.04 (0.93-1.18)	0.96 (0.89-1.05)	1.05 (0.93-1.18)	0.97 (0.89-1.05)
Kennemerland	1.07 (0.98-1.17)	1.07 (0.99-1.17)	1.09 (0.99-1.19)	1.08 (1.00-1.18)	1.07 (0.98-1.17)	1.08 (0.99-1.17)	1.07 (0.98-1.17)	1.07 (0.99-1.17)	1.08 (0.99-1.18)	1.09 (1.00-1.18)
IJsselnd	1.12 (1.01-1.23)	1.29 (1.17-1.42)	1.12 (1.02-1.23)	1.30 (1.18-1.44)	1.11 (1.01-1.22)	1.30 (1.17-1.43)	1.11 (1.01-1.22)	1.29 (1.17-1.42)	1.1 (1.01-1.21)	1.31 (1.19-1.45)
Hollands Noorden	0.93 (0.86-1.01)	1.30 (1.20-1.41)	0.95 (0.87-1.03)	1.30 (1.20-1.41)	0.93 (0.86-1.00)	1.30 (1.20-1.41)	0.94 (0.87-1.02)	1.30 (1.20-1.41)	0.95 (0.88-1.03)	1.31 (1.21-1.42)
Holland-Midden	0.98 (0.91-1.05)	1.17 (1.08-1.26)	0.99 (0.92-1.06)	1.18 (1.09-1.27)	0.97 (0.90-1.05)	1.17 (1.09-1.26)	0.97 (0.90-1.04)	1.17 (1.08-1.26)	0.97 (0.90-1.04)	1.18 (1.10-1.27)
Hart voor Brabant	1.07 (0.89-1.30)	1.00 (0.92-1.08)	1.07 (0.90-1.26)	1.00 (0.92-1.08)	1.07 (0.89-1.29)	1.00 (0.93-1.08)	1.08 (0.88-1.32)	1.00 (0.92-1.08)	1.06 (0.89-1.26)	1.00 (0.93-1.08)
Haaglanden	1.13 (1.03-1.24)	0.95 (0.87-1.04)	1.15 (1.04-1.26)	0.96 (0.88-1.04)	1.13 (1.03-1.24)	0.96 (0.88-1.04)	1.13 (1.03-1.24)	0.95 (0.87-1.04)	1.15 (1.04-1.27)	0.96 (0.88-1.05)
Groningen	1.00 (0.90-1.12)	1.29 (1.19-1.41)	1.01 (0.91-1.13)	1.30 (1.20-1.42)	1.00 (0.89-1.11)	1.30 (1.19-1.42)	1.00 (0.90-1.12)	1.29 (1.19-1.41)	1.00 (0.90-1.11)	1.31 (1.20-1.43)
Gooi en Vechtstreek	1.04 (0.94-1.16)	1.11 (1.00-1.23)	1.05 (0.94-1.18)	1.10 (0.99-1.22)	1.03 (0.93-1.15)	1.12 (1.00-1.24)	1.05 (0.94-1.17)	1.11 (1.00-1.23)	1.04 (0.93-1.16)	1.11 (1.00-1.23)
Gelderland-Zuid	1.11 (0.96-1.27)	1.24 (1.14-1.35)	1.12 (0.97-1.30)	1.24 (1.14-1.34)	1.10 (0.96-1.26)	1.24 (1.14-1.35)	1.11 (0.96-1.27)	1.24 (1.14-1.34)	1.11 (0.96-1.30)	1.24 (1.14-1.35)
Gelderland-Midden	0.98	1.15	0.99	1.16	0.97	1.16	0.98	1.15	0.98	1.16

	(0,88-1,08)	(1,04-1,27)	(0,89-1,09)	(1,05-1,28)	(0,88-1,07)	(1,05-1,28)	(0,88-1,09)	(1,04-1,27)	(0,88-1,08)	(1,05-1,29)
Friesland	1,03	1,33	1,04	1,33	1,02	1,33	1,03	1,33	1,03	1,34
	(0,93-1,15)	(1,22-1,44)	(0,94-1,15)	(1,23-1,45)	(0,92-1,13)	(1,23-1,45)	(0,93-1,14)	(1,22-1,44)	(0,93-1,13)	(1,23-1,45)
Flevoland	0,96	0,97	0,97	0,97	0,96	0,97	0,97	0,97	0,97	0,98
	(0,83-1,11)	(0,79-1,18)	(0,84-1,11)	(0,80-1,19)	(0,83-1,11)	(0,80-1,19)	(0,84-1,12)	(0,79-1,18)	(0,83-1,12)	(0,80-1,19)
Drenthe	0,99	1,11	1,00	1,12	0,99	1,12	0,99	1,11	0,99	1,12
	(0,88-1,11)	(0,99-1,25)	(0,89-1,12)	(0,99-1,26)	(0,88-1,11)	(0,99-1,26)	(0,88-1,11)	(0,99-1,25)	(0,89-1,11)	(1,00-1,26)
Brabant-Zuidoost	1,01	1,02	1,03	1,02	1,00	1,03	1,00	1,02	1,01	1,02
	(0,93-1,09)	(0,94-1,11)	(0,95-1,11)	(0,94-1,11)	(0,93-1,08)	(0,95-1,11)	(0,92-1,08)	(0,94-1,11)	(0,93-1,09)	(0,95-1,11)
Amsterdam	1,12	1,03	1,14	1,04	1,11	1,03	1,12	1,03	1,13	1,05
	(1,00-1,25)	(0,94-1,13)	(1,01-1,27)	(0,95-1,14)	(0,99-1,25)	(0,94-1,13)	(1,00-1,25)	(0,94-1,13)	(1,00-1,27)	(0,96-1,15)

IRR: Incidence Rate Ratio. CI: confidence interval. Model 1: region. Model 2: region, demographic factors, and SES. Model 3a: region, demographic factors, SES, and self-rated health. Model 3b: region, demographic factors, SES and chronic disease. Model 3c: region, demographic factors, SES and psychological distress. Model 4: region, demographic factors, SES, self-rated health, chronic disease, and psychological distress. Model 5a: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and lifestyle. Model 5b: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and loneliness. Model 5c: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, and mastery. Model 6: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery.

**Table A8. Explanation of significant regional differences in GP consult costs by adding lifestyle, loneliness and mastery (model 4 compared to model 6).**

Region	Model 4		Model 6		Difference between model 4 and 6	Average number of citizens aged 19 or older in 2017*	Increase or decrease regional differences in costs
	marginal costs	Difference with ref	marginal costs	Difference with ref			
Zuid-Limburg	47,98	(ref)	€ 47,86	(ref)			
Zuid-Holland-Zuid	€ 42,61	€ 5,37	€ 42,41	€ 5,45	€ 0,08	334.140	€ 26.346,94
Zeeland	€ 39,21	€ 8,77	€ 38,99	€ 8,87	€ 0,10	306.222	€ 30.282,29
Zaanstreek-Waterland	€ 42,61	€ 5,37	€ 42,54	€ 5,32	€ -0,05	264.893	-€ 12.638,05
West-Brabant	€ 38,84	€ 9,14	€ 38,73	€ 9,13	€ -0,01	562.773	-€ 7.203,49
Utrecht	€ 41,16	€ 6,82	€ 41,23	€ 6,63	€ -0,19	666.844	-€ 127.840,66
Twente	€ 36,71	€ 11,27	€ 36,78	€ 11,08	€ -0,19	494.646	-€ 93.859,08
Rotterdam-Rijnmond	€ 37,55	€ 10,43	€ 37,57	€ 10,29	€ -0,14	1.033.491	-€ 148.636,68
Noord- en Oost-Gelderland	€ 37,92	€ 10,06	€ 37,82	€ 10,04	€ -0,02	649.777	-€ 13.002,04
Limburg-Noord	€ 44,02	€ 3,96	€ 43,97	€ 3,89	€ -0,07	421.842	-€ 29.621,75
Kennemerland	€ 41,58	€ 6,40	€ 41,72	€ 6,14	€ -0,26	421.650	-€ 109.430,82
IJsselland	€ 39,04	€ 8,94	€ 38,89	€ 8,97	€ 0,03	403.397	€ 11.258,81
Hollands Noorden	€ 38,80	€ 9,18	€ 39,01	€ 8,85	€ -0,33	518.725	-€ 170.183,30
Holland-Midden	€ 40,03	€ 7,95	€ 39,80	€ 8,06	€ 0,11	551.554	€ 61.277,65
Hart voor Brabant	€ 43,74	€ 4,24	€ 43,88	€ 3,98	€ -0,26	843.239	-€ 219.958,89
Haaglanden	€ 32,89	€ 15,09	€ 32,92	€ 14,94	€ -0,15	860.697	-€ 132.194,45
Groningen	€ 41,70	€ 6,28	€ 41,73	€ 6,13	€ -0,15	475.810	-€ 73.545,95
Gooi en Vechtstreek	€ 43,18	€ 4,80	€ 43,48	€ 4,37	€ -0,43	197.886	-€ 84.410,25
Gelderland-Zuid	€ 42,73	€ 5,25	€ 42,68	€ 5,18	€ -0,07	440.023	-€ 31.611,25
Gelderland-Midden	€ 40,59	€ 7,39	€ 40,45	€ 7,41	€ 0,02	537.356	€ 9.618,67
Friesland	€ 39,12	€ 8,86	€ 39,07	€ 8,78	€ -0,08	511.208	-€ 38.524,63
Flevoland	€ 42,20	€ 5,78	€ 42,25	€ 5,60	€ -0,18	391.288	-€ 69.023,20
Drenthe	€ 39,87	€ 8,11	€ 39,98	€ 7,88	€ -0,23	601.197	-€ 139.736,22
Brabant-Zuidoost	€ 41,20	€ 6,78	€ 41,36	€ 6,50	€ -0,28	847.533	-€ 239.097,53
Total							-€ 1.601.733,89

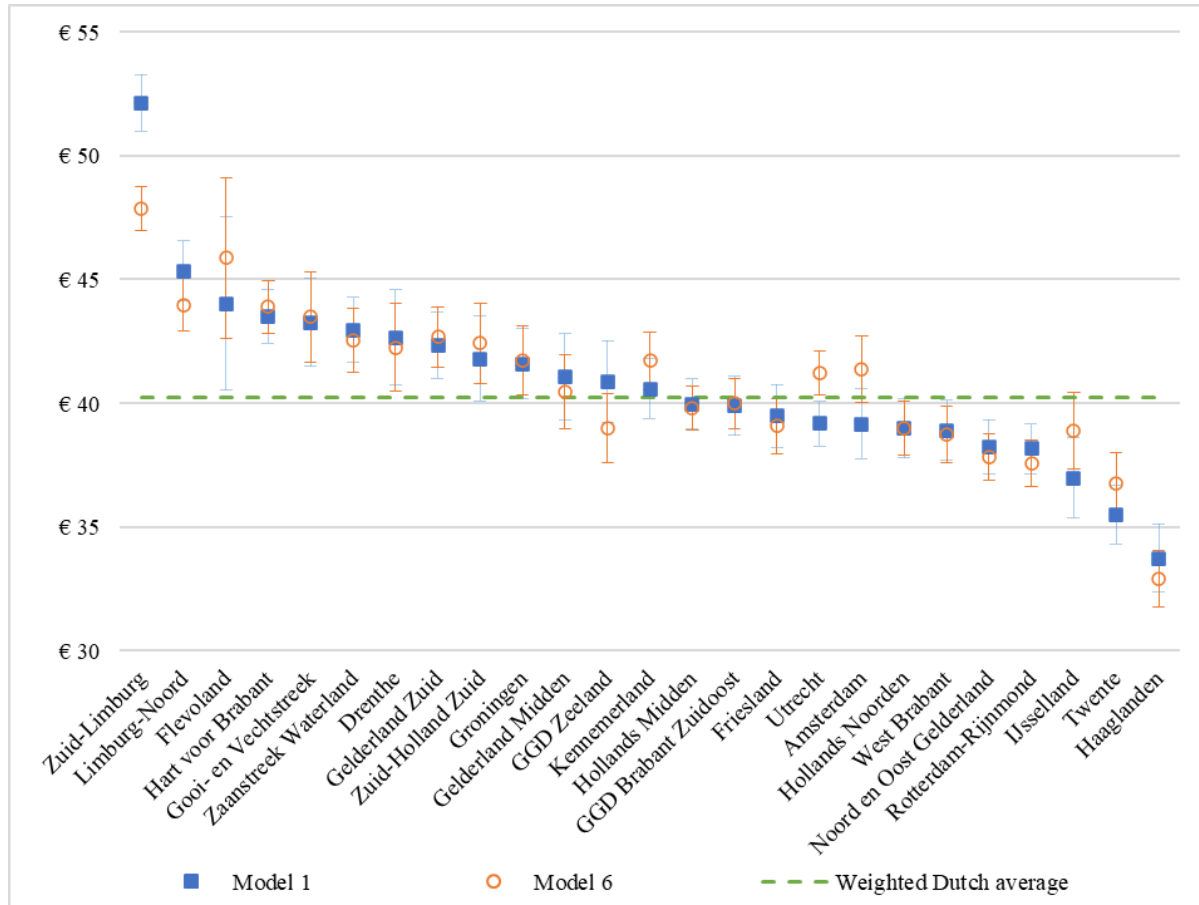
Model 4: region, demographic factors, SES, self-rated health, chronic disease and psychological distress. Model 6: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness and mastery. \* Based on data provided by Statistics Netherlands (opendata.cbs.nl)

**Table A9. Explanation of significant regional differences in mental healthcare costs by adding lifestyle, loneliness and mastery (model 4 compared to model 6).**

Region	Model 4		Model 6		Difference between model 4 and 6	Average number of citizens aged 19 or older in 2017*	Increase or decrease regional differences in costs
	marginal costs	Difference with ref	marginal costs	Difference with ref			
Zuid-Limburg	€ 215,39	(ref)	€ 212,84	(ref)			
Twente	€ 135,08	€ 80,31	€ 138,40	€ 74,44	-€ 5,87	494.646	-€ 2.903.572,02
Hollands Midden	€ 138,53	€ 76,86	€ 137,70	€ 75,14	-€ 1,72	551.554	-€ 948.672,88
Zuid-Holland-Zuid	€ 107,34	€ 108,05	€ 105,40	€ 107,44	-€ 0,61	334.140	-€ 203.825,40
Total							-€ 4.056.070,30

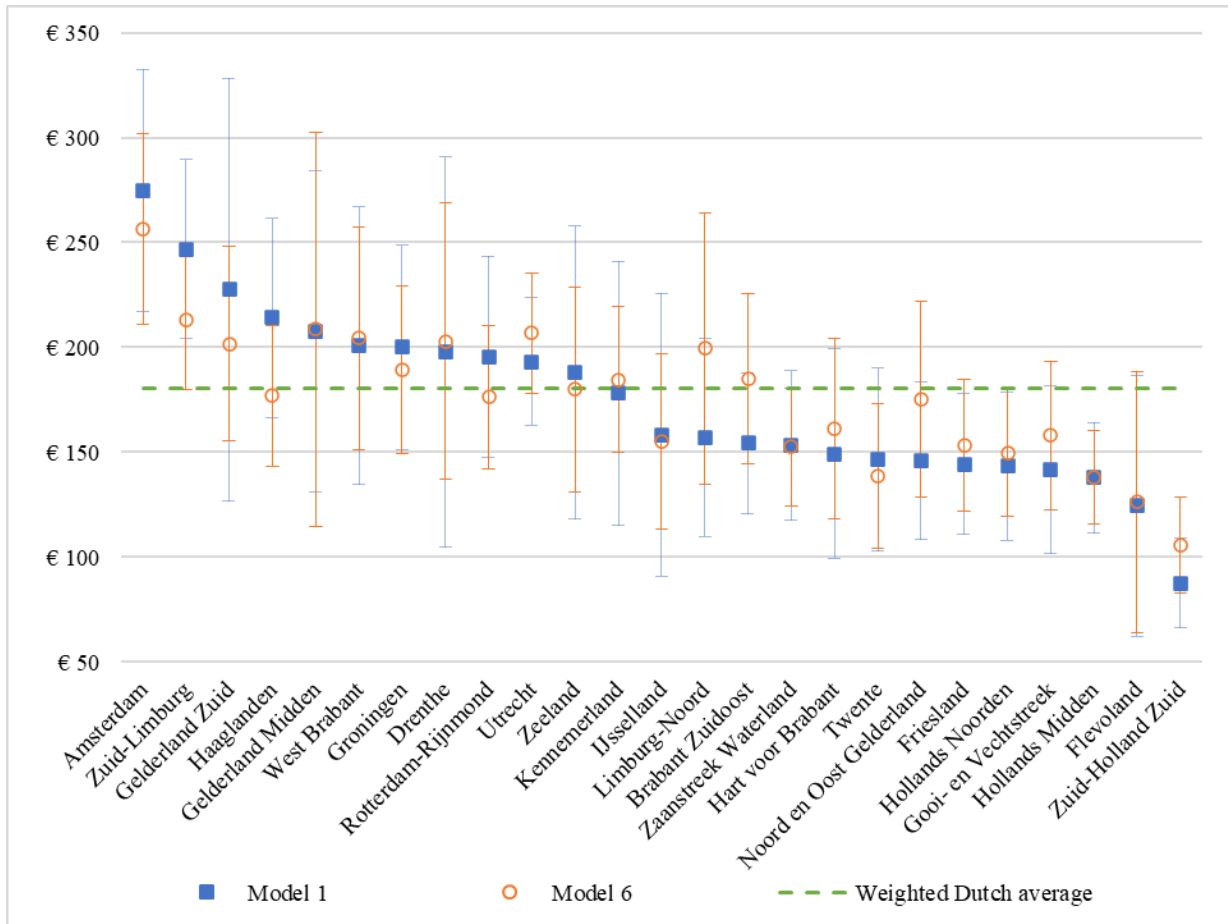
Model 4: region, demographic factors, SES, self-rated health, chronic disease and psychological distress. Model 6: region, demographic factors, SES, self-rated health, chronic disease, psychological distress, lifestyle, loneliness, and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness and mastery. \* Based on data provided by Statistics Netherlands (opendata.cbs.nl)

**Figure A1. Marginal costs of region for GP consult costs based on unadjusted (model 1) and fully adjusted costs (model 6).**



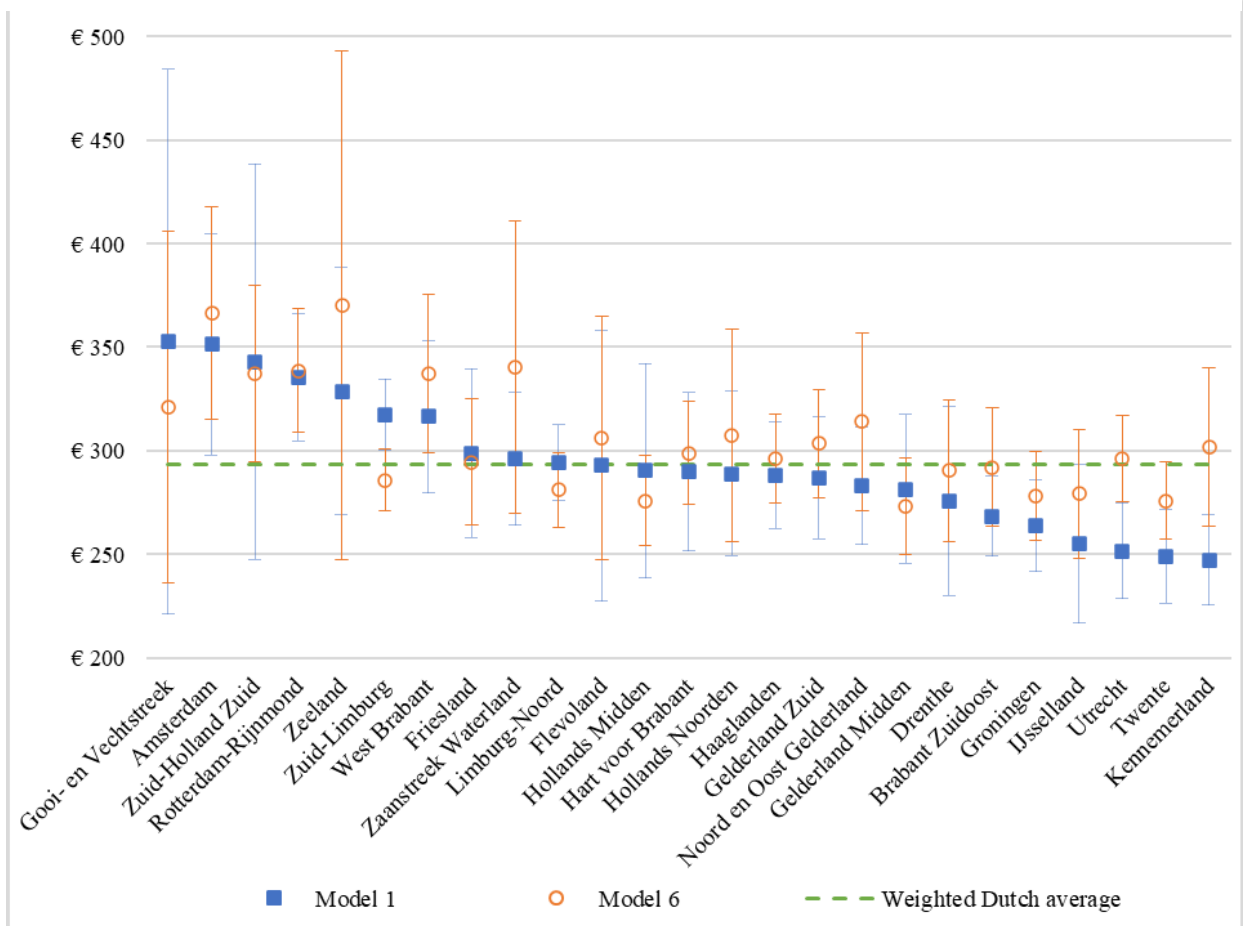
\* Model 1 is adjusted for region only. In model 6, the association of region and healthcare costs is adjusted demographic factors, SES, general and mental health, lifestyle, loneliness and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness and mastery.

**Figure A2. Marginal costs of region for mental healthcare costs based on unadjusted (model 1) and fully adjusted costs (model 6).**



\* Model 1 is adjusted for region only. In model 6, the association of region and healthcare costs is adjusted demographic factors, SES, general and mental health, lifestyle, loneliness and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness and mastery.

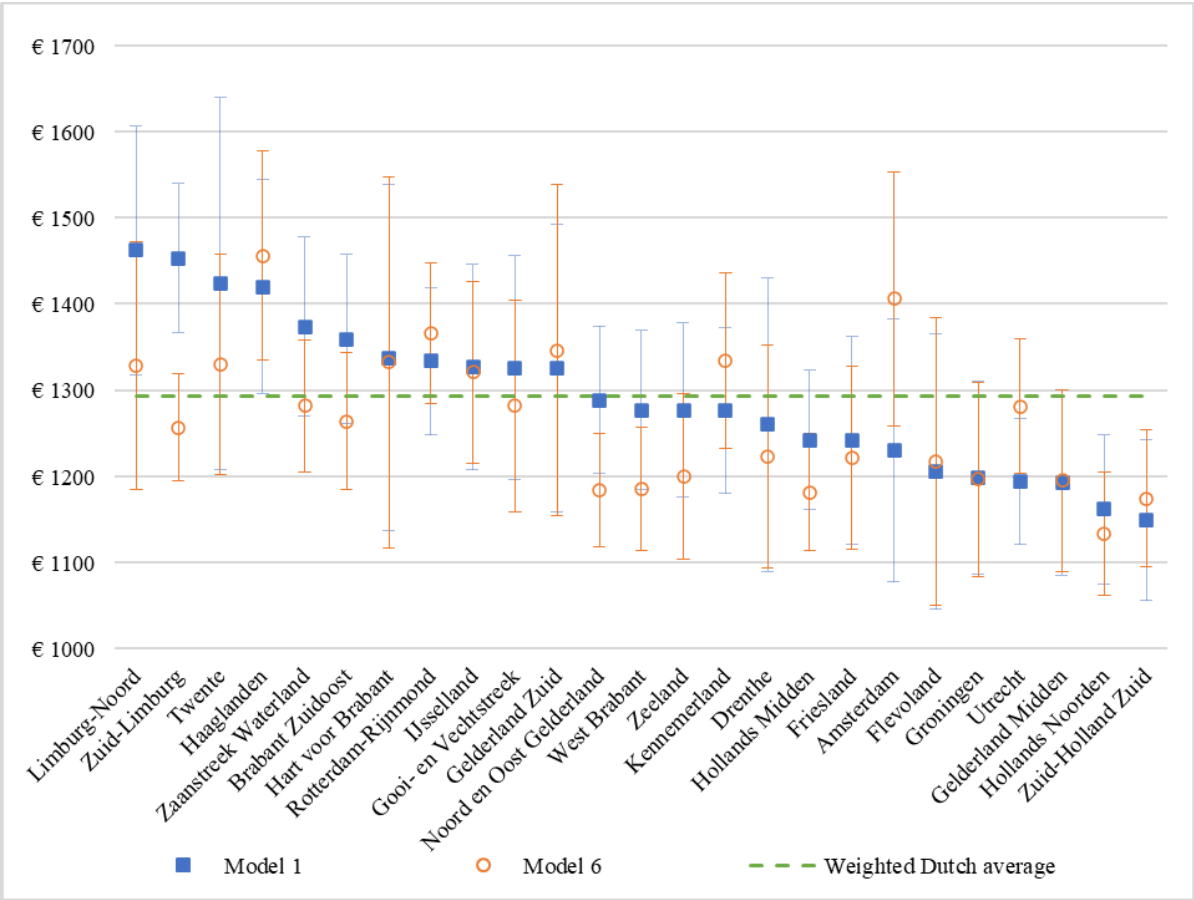
**Figure A3. Marginal costs of region for pharmaceutical costs based on unadjusted (model 1) and fully adjusted costs (model 6).**



\* Model 1 is adjusted for region only. In model 6, the association of region and healthcare costs is adjusted demographic factors, SES, general and mental health, lifestyle, loneliness and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness and mastery.



**Figure A4. Marginal costs of region for specialized care costs based on unadjusted (model 1) and fully adjusted costs (model 6).**



\* Model 1 is adjusted for region only. In model 6, the association of region and healthcare costs is adjusted demographic factors, SES, general and mental health, lifestyle, loneliness and mastery. Registry data: age, gender, migration background and household income. Self-reported data: marital status, education, income inadequacy, self-rated health, chronic disease, psychological distress, lifestyle, loneliness and mastery.