



IS CONTINUITY OF CARE AS IMPORTANT AS POLICY MAKERS THINK?

Evidence from a preference study in Portugal

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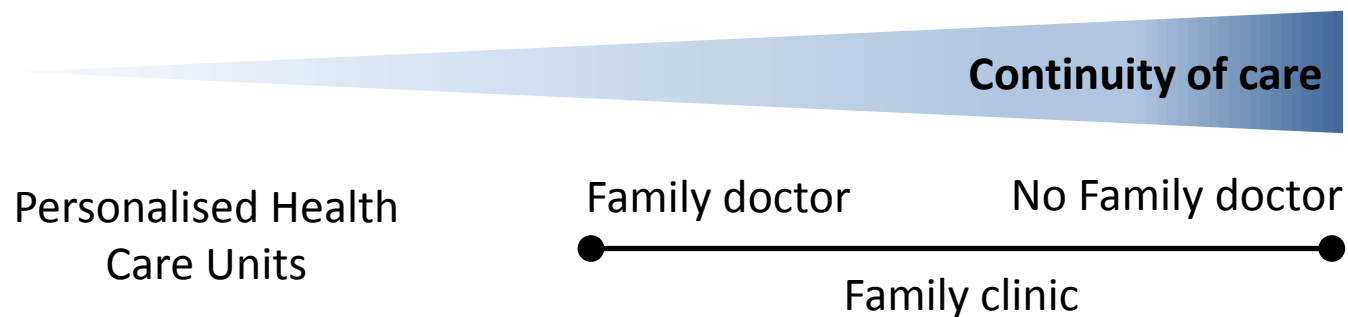
Background: continuity of care

- Continuity of care is considered a major concept in primary care
 - Management
 - Information
 - Patient-doctor relationship: longitudinal ongoing therapeutic relationship
- Evidence suggests that continuity of care improves
 - Quality of care
 - Efficacy of care
 - Patients' satisfaction (esp. vulnerable patients)
- There is little evidence about how patients' trade continuity of care with other primary care aspects

Background: case study

- Portugal 2005: public main reform of primary care (GP)
 - GPs manage patients' overall care
 - GPs serve as gatekeepers (similar to UK)
 - Creation of Family Health Unit with a family doctor
- Implementation of reform slowed down by scarce resources
 - 12% of the population still without family doctor
 - 56% of the population still not assigned to Family Health Units
 - Redirected to Personalised Health Care Units with lower level of continuity of care, autonomy, and quality of care

➤ There is an imbalance in continuity of primary care



Study objective and design

- **Objective:** to elicit public preferences for primary care aspects
- **Methods:** focus groups + **discrete choice experiment** (DCE)

Imagine you went to the pharmacy to make a screening blood pressure and their values are shown to be above. The pharmacist advised you to make an appointment. Aware that physicians A, B and C have been recommended to you, please compare the alternatives and indicate what would you choose:

	Doctor A	Doctor B	Doctor C
The waiting time for a consultation is15 days	...7 days	...2 days
The access to the GP is easy	yes	No	PRIVATE DOCTOR
The doctor has my clinical information and...	... is not my usual doctor	... is my usual doctor	<i>first four attributes</i>
The consultation length is...	... enough but the doctor does not care	... insufficient but the doctor cares	... <i>are fixed</i> the doctor cares
Cost of the consultation	"User fee"	"User fee"	30 Euros

I choose the doctor:

Doctor A

Doctor B

Doctor C

Study objective and design

- **Design:**
 - D-efficient with flat priors
 - 32 choice tasks
 - 3 blocks: 11 choice tasks, 11 choice tasks, 10 choice tasks
- **Sampling:**
 - Administered by paper
 - 2,520 invited to participate
 - Random assignment to one block
 - Cover letter + pre-paid envelope
 - Reminder after two weeks
 - Text message reminder after three weeks

Methods: specification, estimation, inference

- Random utility theory

$$p_{njt} = \frac{\exp(\boldsymbol{\beta}_n \mathbf{x}_{njt})}{\sum_{j \in [1;3]} \exp(\boldsymbol{\beta}_n \mathbf{x}_{njt})} \text{ with } \boldsymbol{\beta}_n \sim f(\beta_k | \bar{\beta}_k; \sigma_k)$$

- Cost fixed
 - Continuity of care normal distributed
 - Remaining attributes log-normal
 - Different constant + cost coefficient if additional insurance is present
- Maximise likelihood function

$$\mathcal{LL} = \sum_{n \in [1;N]} \ln \int_{\boldsymbol{\beta}} \prod_{t \in [1;T]} p_{njt}^* f(\boldsymbol{\beta} | \bar{\boldsymbol{\beta}}; \boldsymbol{\sigma}) d\boldsymbol{\beta}$$

- Simulated with 10,000 scrambled Sobol draws
- All inference based on 10 Mio random draws from $MVN(\boldsymbol{\theta}; \boldsymbol{\Sigma})$

Methods: policy analysis

- Marginal willingness-to-pay (WTP) as marginal rate of substitution

$$E[mWTP_k] = - \int_{\beta} \frac{\beta_k}{\beta_{consultation\ fee}} df(\beta | \bar{\beta}; \sigma)$$

- Policy evaluation

$$CV = - \frac{1}{\beta_{consultation\ fee}} \int_{\beta} \left\{ \begin{array}{l} \ln[\exp(v_{private}^0) + \exp(v_{public}^0)] \\ - \ln[\exp(v_{private}^1) + \exp(v_{public}^1)] \end{array} \right\} df(\beta | \bar{\beta}; \sigma)$$

- First health DCE to account for preference heterogeneity in welfare analysis
- Policy introduces continuity of care to public primary care
- Patients can choose between public (5€) and private (100€) GP

Methods: scenario analysis

- Scenario 1: Close to capacity limit

attributes	before policy		after policy	
	public GP	private GP	public GP	private GP
Waiting time	7	2	15	2
Easy access	yes	no	yes	no
Continuity	no	yes	yes	yes
Length	Enough time + GP cares	Enough time + GP cares	Rushed + GP cares	Enough time + GP cares
Cost	5	100	5	100

- Enforced policy results in allocative inefficiency

Methods: scenario analysis

- Scenario 2: Person centred care

attributes	before policy		after policy	
	public GP	private GP	public GP	private GP
Waiting time	7	2	7	2
Easy access	yes	no	yes	no
Continuity	no	yes	yes	yes
Length	Enough time + GP does not care	Enough time + GP cares	Enough time + GP cares	Enough time + GP cares
Cost	5	100	5	100

- Enforced policy improves patient-doctor relationship

Methods: scenario analysis

- Scenario 3: Improved allocation

attributes	before policy		after policy	
	public GP	private GP	public GP	private GP
Waiting time	15	2	7	2
Easy access	yes	no	yes	no
Continuity	no	yes	yes	yes
Length	Rushed + GP cares	Enough time + GP cares	Enough time + GP cares	Enough time + GP cares
Cost	5	100	5	100

- Enforced policy improves patient allocation mechanism

Methods: scenario analysis

- Scenario 4: Mixed perception

attributes	before policy		after policy	
	public GP	private GP	public GP	private GP
Waiting time	7	2	7	2
Easy access	yes	no	yes	no
Continuity	no	yes	yes	yes
Length				
40%	Enough time + GP cares	Enough time + GP cares	Rushed + GP cares	Enough time + GP cares
60%	Enough time + GP cares		Enough time + GP cares	
Cost	5	100	5	100

➤ Difference in patients' perception

- 40% experience rushed care
- 60% experience consistent care

Results

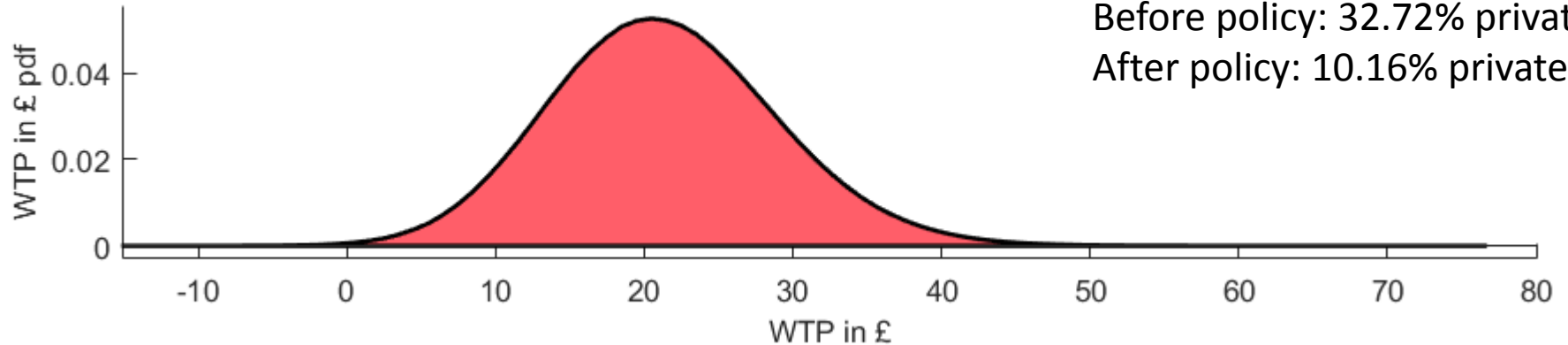
- 523 respondents (21% response rate)
- Respondents' characteristics
 - Female: 52%
 - Mean age: 45.24 (SD 12.97)
 - Chronic disease: 34%
 - General health: 4% very bad/bad, 39% reasonable, 48% good, 9% very good
- Model estimation
 - Observations: 15,609
 - LL0: -5699.80
 - LL: -3065.41
 - Adj. Mcfadden R²: 0.46

Results

	WTP no insurance	WTP add insurance
asc	-29.26 € [-163.91€; 105.38€]	26.65 € [-80.13€; 133.44€]
wait 2 days	27.65 € [7.31€; 73.87€]	18.84 € [4.98€; 50.33€]
wait 7 days	22.29 € [7.17€; 53.35€]	15.19 € [4.88€; 36.35€]
wait 15 days	15.01 € [5.85€; 31.95€]	10.23 € [3.98€; 21.77€]
Acess	6.94 € [4.52€; 10.21€]	4.73 € [3.08€; 6.96€]
Continuity of care	19.87 € [-16.84€; 56.58€]	13.54 € [-11.47€; 38.55€]
Enough time/doctor does not care	10.46 € [1.03€; 42.90€]	7.13 € [0.70€; 29.23€]
Rushed/doctor cares	66.90 € [17.46€; 179.94€]	45.58 € [11.90€; 122.61€]
Enough time/ doctor cares	70.95 € [27.66€; 150.95€]	48.35 € [18.85€; 102.86€]

Results: Scenario 1 – close to capacity

No additional insurance

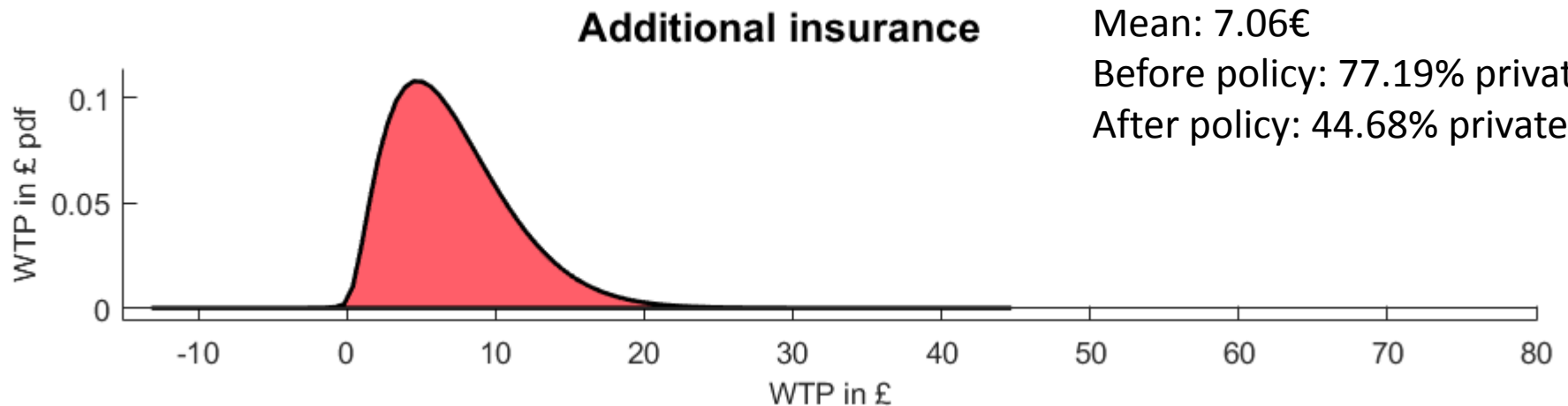


Mean: 21.43€

Before policy: 32.72% private

After policy: 10.16% private

Additional insurance



Mean: 7.06€

Before policy: 77.19% private

After policy: 44.68% private

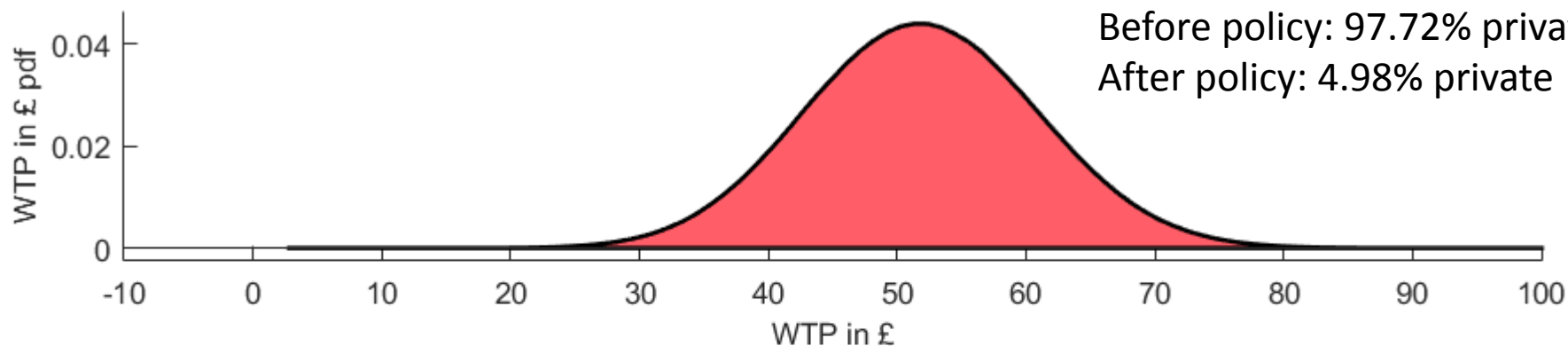
Results: Scenario 2 – person centred care

No additional insurance

Mean: 52.03€

Before policy: 97.72% private

After policy: 4.98% private

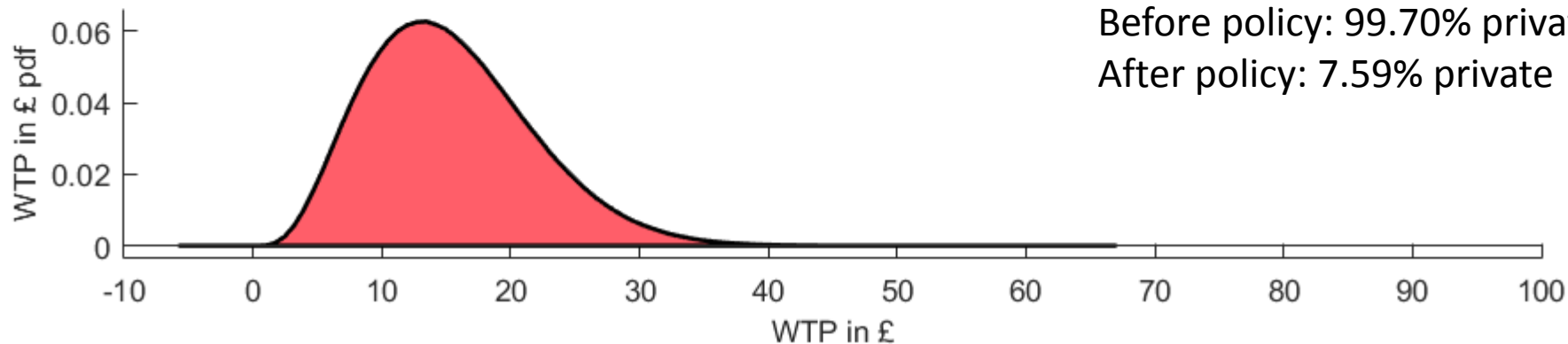


Additional insurance

Mean: 11.84€

Before policy: 99.70% private

After policy: 7.59% private



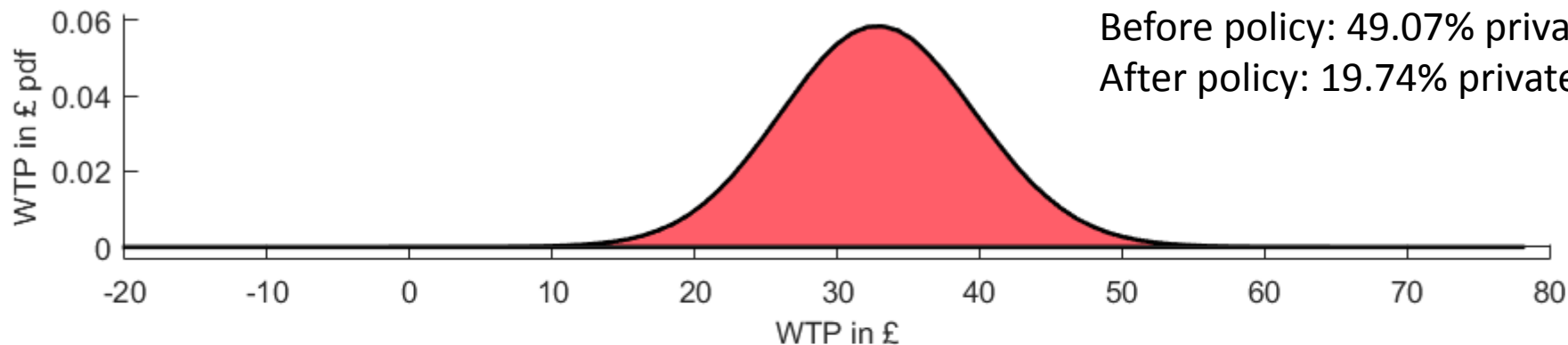
Results: Scenario 3 – improved allocation

No additional insurance

Mean: 35.57€

Before policy: 49.07% private

After policy: 19.74% private

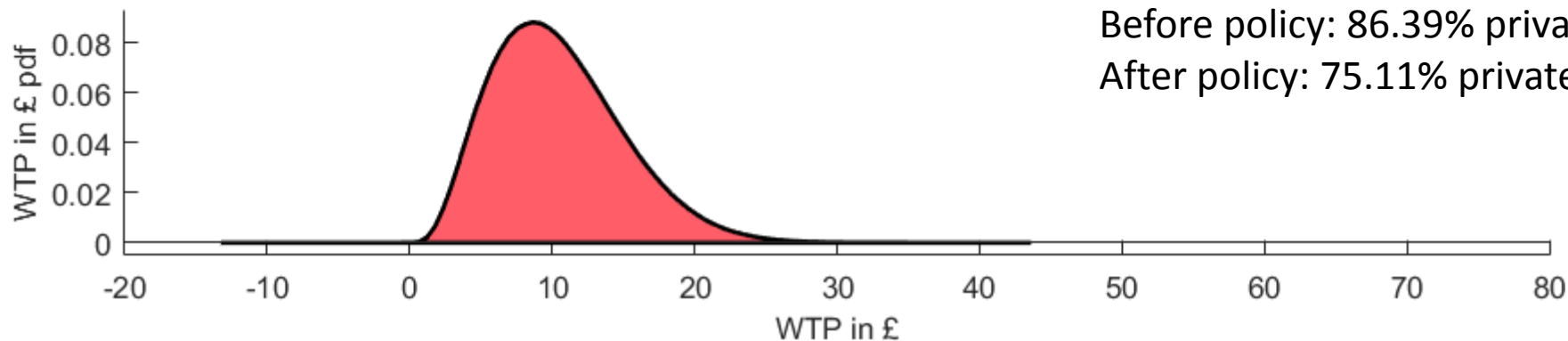


Additional insurance

Mean: 21.68€

Before policy: 86.39% private

After policy: 75.11% private



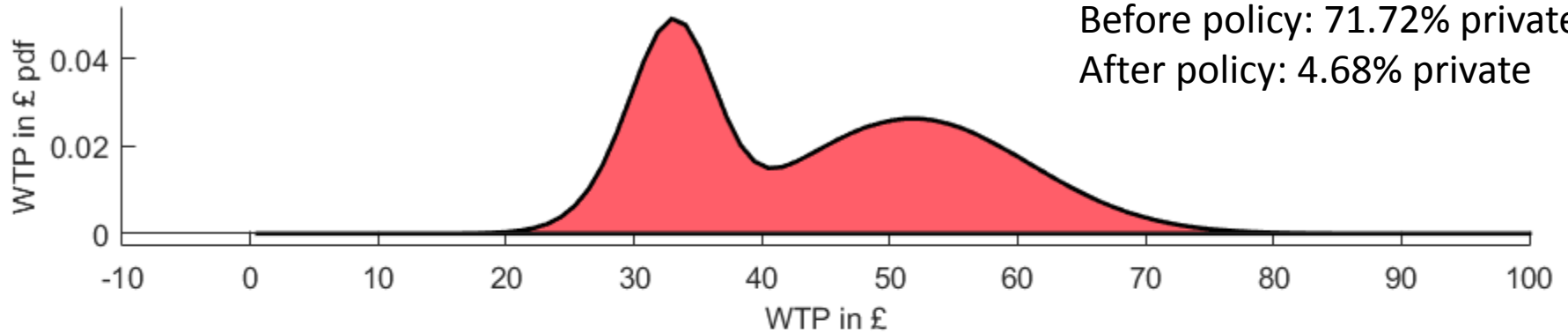
Results: Scenario 4 – mixed perception

No additional insurance

Mean: 44.32€

Before policy: 71.72% private

After policy: 4.68% private

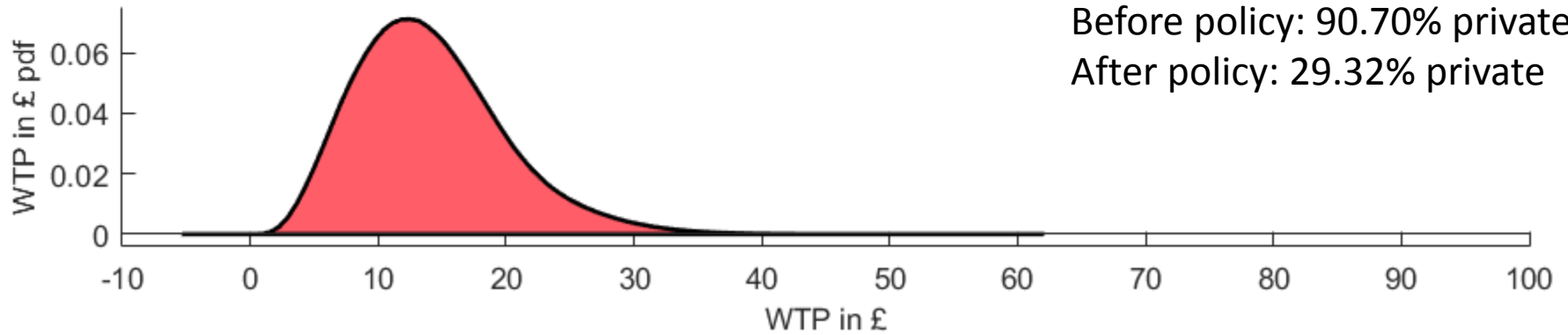


Additional insurance

Mean: 13.95€

Before policy: 90.70% private

After policy: 29.32% private



Conclusion

- Valuation of primary care characteristics
 - Person centred care is valued most
 - Continuity of care among the least important characteristics
 - People value how they are treated as persons rather than who they see
 - This may be different in a secondary care setting with specialists
- Policy analysis
 - Continuity of care has the largest welfare effect if it results in a better doctor-patient relationship
 - If that is the case, public GPs become more competitive compared to private
 - Larger valuation for patients without additional insurance, but larger switch from private to public for patients with additional insurance
 - Large degree of preference heterogeneity in the valuation of the policy

Thank you very much for your attention!



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