

# FREE BUT VALUABLE: THE ECONOMIC SIGNIFICANCE OF SERVICES PROVIDED BY PORTUGUESE PHARMACIES

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# Introduction

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- Besides dispensing medicines, pharmacies render other services including advice on health problems and on the best use of medicines; detecting problems in patients' medications; counseling on nutrition, etc.
- The majority of these services is free. Up to now, the volume of these services and their economic significance were unknown.
- This paper presents 2008 estimates for the volume of pharmacy interventions and their economic value in the Portuguese context

# Primary Sources of Information

The data came from two 2008 surveys carried out for this project.

- Pharmacies Survey, designed to estimate the volume and cost of the free interventions in community pharmacies in Portugal. It was necessary to collect information from the pharmacies about the type of the pharmacy interventions that are free of charge to the patient, the frequency, who has provided those acts and the time spent providing them.
- Consumers Survey. This survey intended to measure the value given by the population to the main pharmacy interventions that are free of charge to the patient (counseling/advice). In a general population survey, respondents answered a set of questions (choice experiments) designed to elicit their willingness to pay for a few typical services provided for free at community pharmacies.

# Pharmacies' Survey – Main results 1

	Interventions (million/year)			Time (thousands hours/year)		
	Technicians	Pharmacists	Total	Technicians	Pharmacists	Total
OTC	1.8	4.1	5.9	125	310	435
Rx	1.6	4.0	5.6	108	272	380
Tests	2.3	4.0	6.3	171	329	500
Global	13.4	25.4	38.8	916	1 883	2 799

- The results correspond to:
  - 3.7 pharmacy interventions per inhabitant in Portugal, similar to the figure of 4.0 interventions estimated for Spain in 2003
  - 399,900 working days, 1,666 working years
  - 62.3% of the work of a full-time staff member per pharmacy
  - 13.3% of the total working time per year of the staff (pharmacists and technicians)

# Pharmacies' Survey – Main results 2

	Labor Costs (€ million/year)		
	Technicians	Pharmacists	Total
OTC	2.2	6.2	8.4
Rx	1.9	5.5	7.4
Tests	3.0	6.6	9.7
Global	16.2	38.0	54.1

- **Costs - working hours: Pharmacist = €20.15 ; Technician = €17.68**
- **“Average” Pharmacy in Portugal 2006: Sales = €1 377 369 Gross income = €96 491**
- **Assuming an annual growth of 2% for the sales and income of pharmacies, the cost of these free interventions corresponds to:**
  - **1.2% of the sales,**
  - **20.2% of the gross income**

# Consumers' Survey

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- **Objective** – To estimate the value that consumers give to the services provided by pharmacies that are not subject to payment
- **Problem** – There is no market price for these services
- **Solution** – “Choice experiments” (method for elicitation preferences)

# Pharmacy Interventions Evaluated

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- Advice given about non-prescription medicines (OTC)
- Advice given about prescription-only medicines (Rx)
- Counseling about tests provided in the pharmacy (ex.: blood pressure, cholesterol test, glucose test)

# Estimating the willingness to pay

- Data from *choice experiment* were used to estimate conditional logit regressions. All model parameters were statistically significant.
- From parameter estimates we can get consumers' willingness to pay estimates for:
  - Different types and levels of services (advice);
  - Lower waiting time.



# Choice Card Example

Imagine that you have a problem that could be solved by an OTC, and that you have a choice of pharmacies that differ in a) the time you have to wait (0, 5 or 12 min) b) the price of the OTC (4€, 5€, 7€ e 10€) and the type of advice you get (none, basic (1 min) and extended (3 min)).

	Alternative A	Alternative B
<b>Your <u>price</u> of the medicine</b>	10 €	5 €
<b><u>Waiting</u> time</b>	12 minutes	5 minutes
<b><u>Advice</u></b>	Extended (3 min)	Basic (1 min)
<i>I prefer:</i>	<input type="checkbox"/>	<input type="checkbox"/>

# Conditional logit results - Clean Data

	Service		
	OTC	Rx	Tests
Price	-.193*** (.022)	-.167*** (.015)	-.179*** (.017)
Waiting Time	-.025*** (.009)	-.029*** (.009)	-.027*** (.007)
Basic Advice	.684*** (.099)	.812*** (.102)	.814*** (.111)
Extended Advice	1.218*** (.124)	1.042*** (.125)	1.174*** (.136)
N - Inquired	139	146	130
N - Choices	973	1022	910
Log-Likelihood	-596.16	-613.78	-545.88

Standard errors in parenthesis, \*10%, \*\*5%, \*\*\* 1% significance

# Consumers Survey – Value estimated for OTC

	All Data	“Clean” Data
Basic Advice	€4.92	€3.55
Extended Advice	€8.96	€6.31
Waiting time (by minute)	€0.12	€0.13

- “Clean” data results – exclude:
  - “Protest Answers” (people that have always chosen the cheapest option because they explicitly refused to assign any positive value to counseling)
  - People that have always chosen the option with extended advice, without considering the price
  - People that had difficulty in understanding the questions (according to the assessment of the inquirer)

# Consumers Survey – Value estimated for Rx

	All Data	“Clean” Data
Basic Advice	€4.68	€4.85
Extended Advice	€6.92	€6.23
Waiting time (by minute)	€0.09	€0.17

# Consumers Survey – Value of Tests

	All Data	“Clean” Data
Basic Advice	€6.26	€4.54
Extended Advice	€9.99	€6.55
Waiting time (by minute)	€0.12	€0.15

# Quantity, Costs and Value

- **After collecting the estimates on**
  - Annual volumes of the several pharmacy interventions
  - The unitary costs of those pharmacy interventions
  - The value given by consumers to those interventions
- **It is possible to estimate:**
  - The aggregate value: **€76.5 million** for the 3 major pharmacy interventions, using the unitary values of the “basic” counselling interventions
  - The **social welfare** generated by those services

# Aggregate Results

	Unit Cost €	Unit Value €	Unit Surplus €	Social Surplus M €
OTC	1.44 €	3.55 €	2.11 €	12.35
Rx	1.32 €	4.85 €	3.53 €	19.85
Tests	1.54 €	4.54 €	3.00 €	18.77

- **Gross aggregate value: 76,5 M € for the top 3 services**
- **Net aggregate value: €51 M. Monetary measure of society's welfare increment generated by these services**

# Main Results

- The study has estimated a total of 38.8 million of pharmacy interventions/year free of charge to the consumer, mostly advice and evaluation
- These interventions consume 2.8 million of working hours, about 13% of regular labor time for pharmacies
- The labor costs of these interventions supported by the pharmacies reaches €54 million, about 20% of the pharmacies' gross income.
- The net social benefit of these free services is €51 million.



# Conclusions

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- As pharmacies operate in a regulated market, it can be considered that pharmacies are indirectly remunerated by the legal profit margin, obtained mainly by the dispensing of medicines
- Therefore, it is necessary that the general public and the decision-makers understand the “implied exchange” that is at stake
- It is possible to speculate that in the future we will see contracts and “explicit pricing” for a growing proportion of the services provided in the pharmacies