

Empirical Evidence on The Role of Public Warnings on Physicians Drug Prescriptions Behavior

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- Example: new results on the increase of suicidal thinking in children reported in 2004 for selective serotonin reuptake inhibitors (SSRI)

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- Public health authority ANSM is in charge of drug authorization and regulation the use of prescription drugs gives usage conditions and recommendations to physicians

Information Release and Warnings

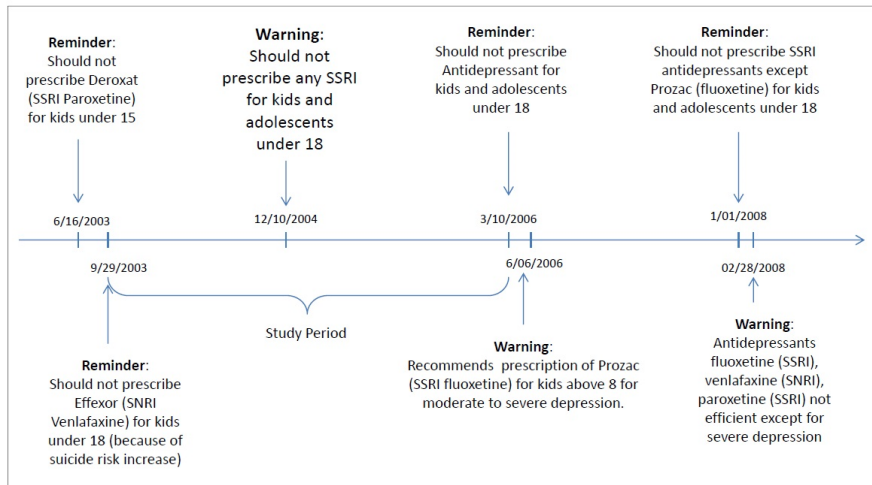


Figure 1: Timeline of Events on Antidepressants

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 - Choice probability of antidepressants with a Random Coefficient Logit Model (allow heterogeneity of decision makers)

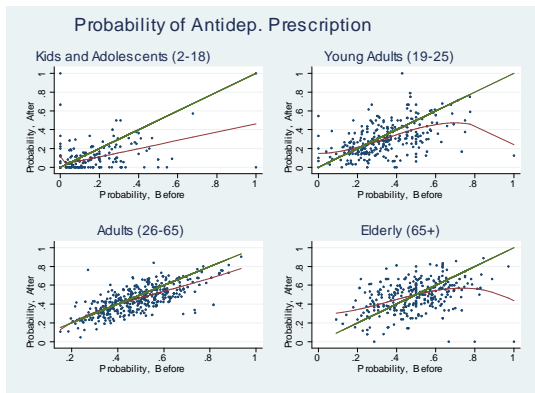
Antidepressant Prescriptions - Means

Table 1: Antidepressant Prescriptions Probabilities at Diagnosis

Antidep. Group	All Ages	Kids and Ado. (2-18)	Young Adults (19-25)	Adults (26-65)	Elderly (65+)
SSRI	29.4%	10.1%	23.8%	31.9%	29.1%
SNRI	5.5%	1.0%	4.1%	6.3%	4.6%
TCA	2.4%	1.1%	0.9%	2.4%	4.7%
Other	5.6%	1.7%	3.3%	5.4%	10.2%
None	57.1%	86.1%	67.9%	54%	51.4%
Patients	173,207	9,815	19,949	122,178	21,174

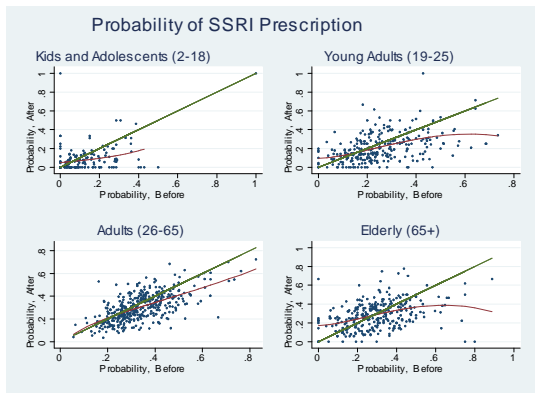
Antidepressant Prescriptions Changes

- Prescription probability for kids and adolescents decreases after warning for almost all physicians with initial prescription probability above 10 %. Much less changes for other age categories.



SSRI Prescriptions Changes

- Probabilities of SSRI prescriptions are lower for kids and adolescents than for other age groups. It decreases after warning, with heterogeneity.



Mixed Logit Results - Means of Marginal Effects

Depression		Mild			Severe		
		Prob. (%)		Change	Prob. (%)		Change
Prescription	Age group	Before	After		Before	After	
No Antidepressant							
	Kids (2-18)	70.6	72.8	+2.2%	14.3	15.9	+1.6%
	Young Adults	17.0	14.6	-2.3%	1.9	1.7	-0.2%
	Adults	17.9	15.0	-3.0%	2.3	1.9	-0.3%
	Elderly	15.9	11.1	-4.8%	1.2	0.8	-0.4%
SSRI							
	Kids (2-18)	16.7	14.2	-2.5%	47.5	43.2	-4.3%
	Young Adults	18.4	19.7	+1.3%	26.9	26.9	-0.1%
	Adults	20.1	18.4	-1.7%	26.9	23.6	-3.3%
	Elderly	20.4	20.9	+0.5%	24.2	23.8	-0.5%

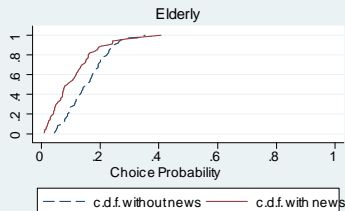
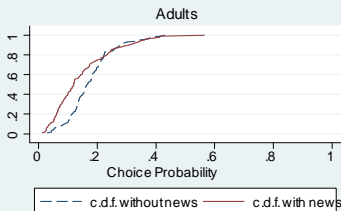
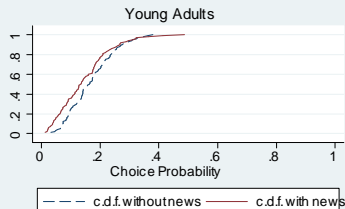
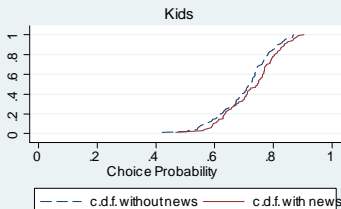
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Depression		Mild			Severe		
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Prescription	Age group	Before	After		Before	After	
SNRI	Kids (2-18)	3.3	3.7	+0.4%	10.6	12.4	+1.7%
	Young Adults	20.8	22.6	+1.8%	21.2	23.1	+1.9%
	Adults	20.4	22.9	+2.5%	22.3	24.6	+2.3%
	Elderly	21.9	22.5	+0.6%	27.0	26.2	-0.9%
TCA	Kids (2-18)	2.6	2.7	+0.1%	7.2	7.9	+0.7%
	Young Adults	21.1	21.7	+0.6%	21.5	22.3	+0.8%
	Adults	22.8	22.0	-0.8%	25.8	24.4	-1.4%
	Elderly	19.2	22.0	+2.8%	20.0	22.3	+2.3%
Other	Kids (2-18)	6.8	6.5	-0.2%	20.3	20.6	+0.2%
	Young Adults	22.7	21.3	-1.3%	28.5	26.1	-2.4%
	Adults	18.8	21.7	+2.9%	22.7	25.4	+2.8%
	Elderly	22.6	23.6	+0.9%	27.5	26.9	-0.6%

Change in c.d.f. of Predicted Probabilities

No Drug

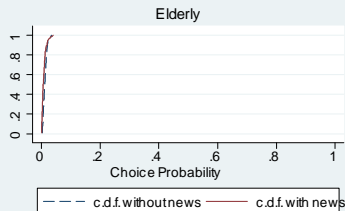
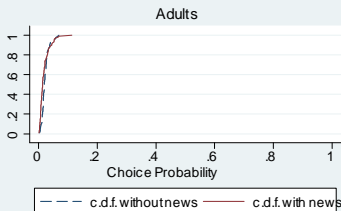
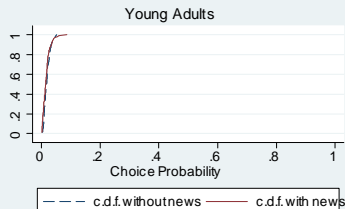
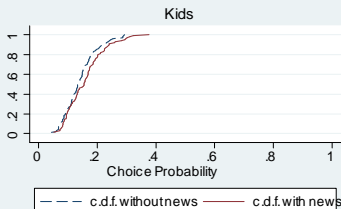
No Antidepressant - Mild Depression



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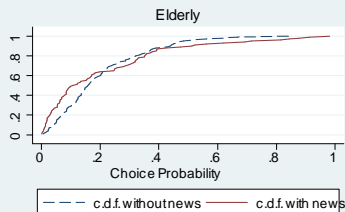
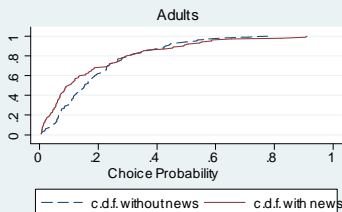
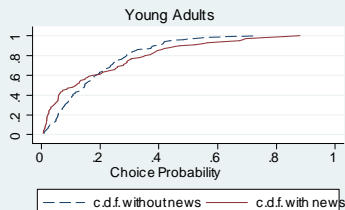
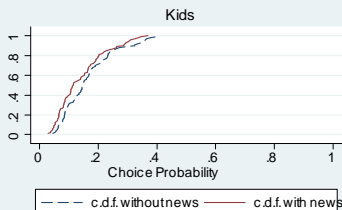
No Antidepressant - Severe Depression



Change in c.d.f. of Predicted Probabilities

SSRI

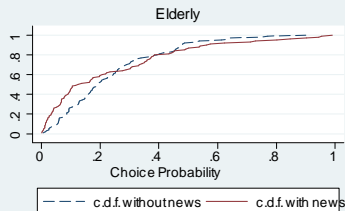
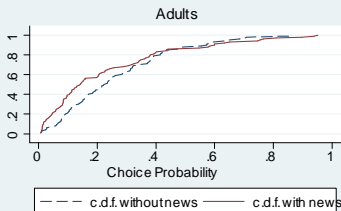
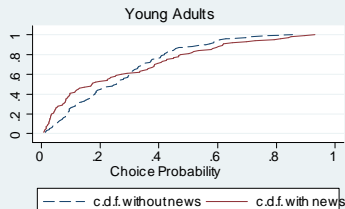
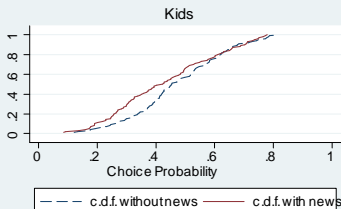
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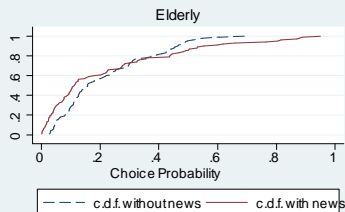
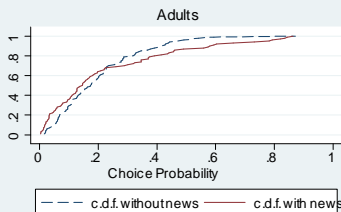
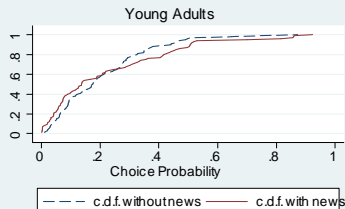
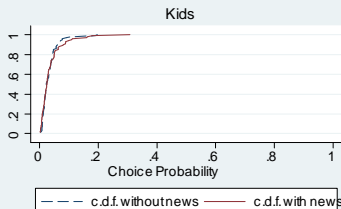
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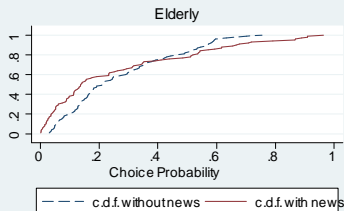
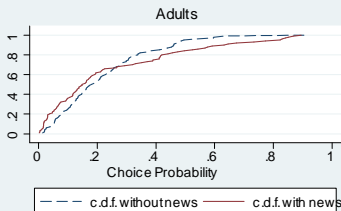
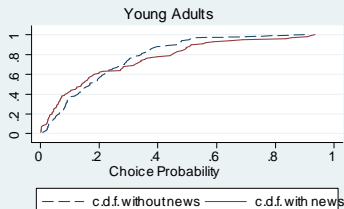
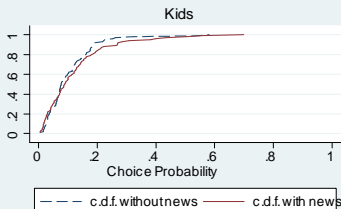
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- As warning does not recommend substitutes: different reactions substituting to other drugs or not.

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- Effect may depend on whether physicians are *Bayesian updating* (like in *Rheinberger and Hammitt*)