

# Angiotensin II Reduces Intensive Care Unit Length of Stay Providing Cost Savings in the Treatment of Refractory Distributive Shock

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## Background

### Distributive shock (DS)

- During DS, blood pressure is life-threateningly low with poor blood supply to vital organs, resulting in high morbidity and mortality, and long intensive care unit (ICU) stays<sup>1</sup>
- DS which is refractory to standard of care (SoC) vasopressors (catecholamines/vasopressin) is associated with worse outcomes and increased hospital and ICU length of stay (LoS)<sup>2</sup>

### Angiotensin II (AngII)

- AngII is a novel vasopressor for refractory DS which uniquely targets the renin-angiotensin-aldosterone system, complementing the systems targeted by SoC vasopressors
- AngII (+SoC) rapidly raises blood pressure<sup>3</sup>

## Objective



- To estimate potential cost-savings and budget impact of adoption of AngII for refractory DS in Italy and France

## Results

Hospital costs contribute most of the total DS management costs in both Italy and France

	Overall population		≥2 prior vasopressors	
	Hospital costs	Vasopressor costs	Hospital costs	Vasopressor costs
Italy	94.8%	5.2%	93.3%	6.7%
France	99.9%	0.1%	99.8%	0.2%

AngII provides per patient cost savings in both Italy and France, driven by reduced ICU LoS and hospital costs, despite a modest increase in drug costs

		Overall population			≥2 prior vasopressors				
		Without AngII	With AngII	Incremental	Without AngII	With AngII	Incremental		
 Italy	Hospital costs	€43,394	€42,236	↓ €1,158	€43,394	€41,078	↓ €2,316		
	Vasopressor costs	€2,294	€3,196	↑ €903	€3,107	€3,912	↑ €806		
	Total	€45,688	€45,432	↓ €255 0.6%	€46,501	€44,990	↓ €1,511 3.2%		
 France	Hospital costs	€78,261	€76,309	↓ €1,953	€78,261	€74,356	↓ €3,906		
	Vasopressor costs	€91	€1,598	↑ €1,507	€121	€1,720	↑ €1,599		
	Total	€78,353	€77,907	↓ €446 0.6%	€78,382	€76,076	↓ €2,306 2.9%		
Shorter ICU stays drive lower hospitalisation costs with AngII+SoC vs SoC		17	vs	16	↓ 1 day	17	vs	15	↓ 2 days

\*ICU LoS from ATHOS-3

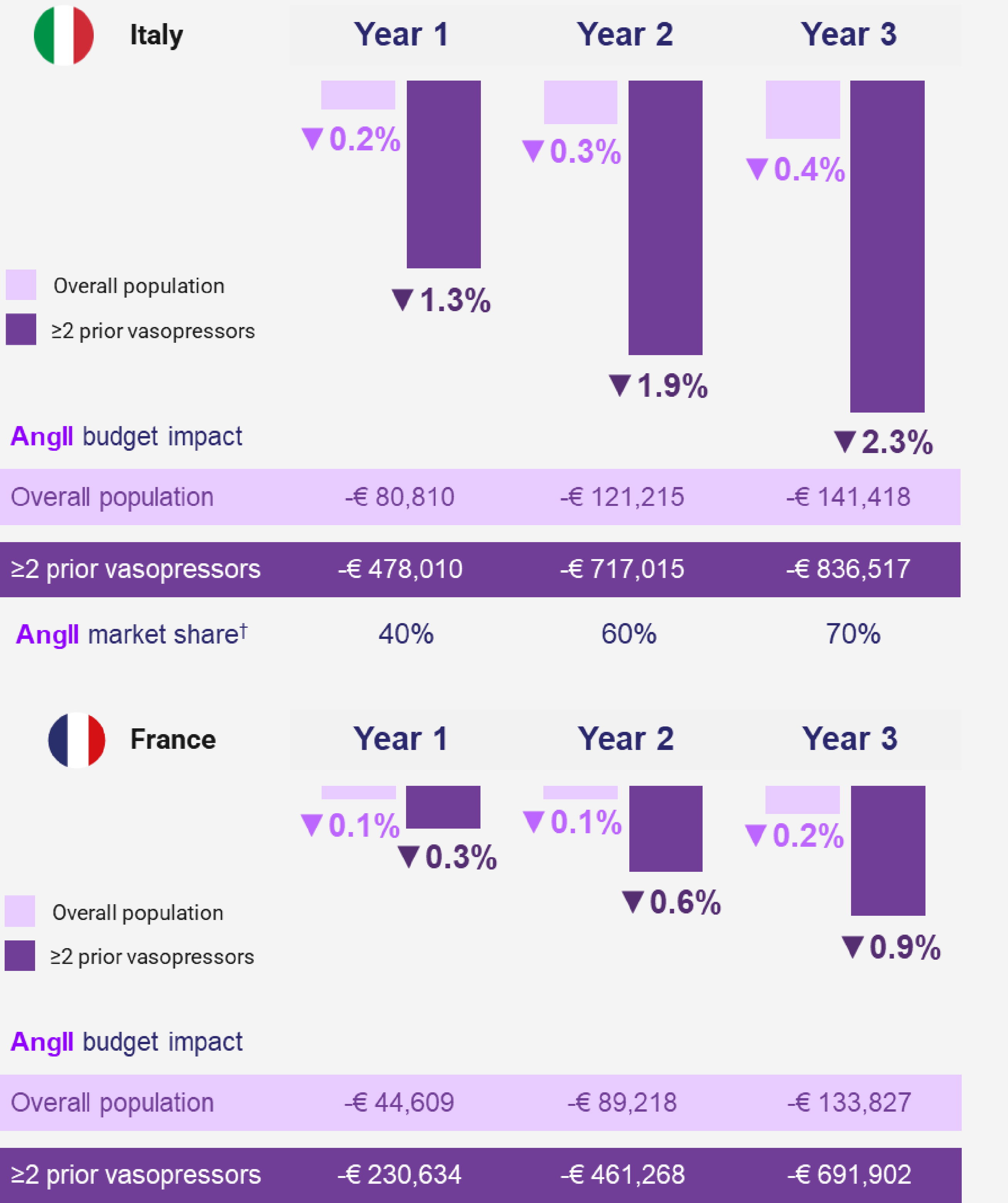
## Methods

- Budget impact model inputs:

Model perspective	National healthcare systems
Data sources	All clinical inputs were based on the ATHOS-3* trial (NCT02338843)
Italian cost data	<ul style="list-style-type: none"><li>AIFA, list prices available on website</li><li>Direct ICU cost analysis<sup>4</sup></li><li>Official hospital admission costs<sup>5</sup></li></ul>
French cost data	<ul style="list-style-type: none"><li>Norepinephrine: derived from tenders</li><li>Vasopressin: competitive intelligence (Commercial Team France)</li><li>Official hospital costs<sup>6</sup></li></ul>
Annual AngII eligible population	<ul style="list-style-type: none"><li>Italy: 791 patients</li><li>France: 1,000 patients</li></ul>

\*International randomised, double-blind, placebo-controlled trial comparing AngII+SoC (n=163) to placebo+SoC (n=158) in refractory DS after ≥1 vasopressor, and a subpopulation with ≥2 prior vasopressors (229/321 [71%])

Introduction of AngII results in budget savings in Italy and France which increase with projected increases in market share



†Proportion of patients treated with AngII (model assumption); AngII eligible populations: Italy (791 patients annually); France (1,000 patients annually)

## Conclusions

- AngII is an efficacious vasopressor for refractory DS which reduces ICU LoS and can reduce pressures on ICU resources
- This model for the Italian and French healthcare systems demonstrate that introduction of AngII can provide per patient cost savings and overall budget savings compared with SoC vasopressors

### Abbreviations

AngII – angiotensin II; DS – distributive shock; ICU – intensive care unit; LoS – length of stay; SoC – standard of care

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### References

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