A retrospective analysis of P4P indicators

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Context

In recent years, the French National Health Insurance and the Ministry of Health have introduced multiple reforms in recent years aiming at **improving quality of care for chronic diseases** and **encouraging prevention and cost-efficient prescriptions**. They include guidelines, academic detailing, financial incentives for the prescribing and dispensing of generic drugs as well as a P4P programme for GPs, national campaigns to reduce antibiotic overuse, etc.

Objectives

This study aims at analyzing the historical evolution of both quality and efficiency P4P indicators over a 10-year period before P4P schemes were introduced in France.

Data and methodology

Data were pooled from the **2000-2011 IMS-Health Permanent Surveys on Medical Prescriptions among French ambulatory care physicians**.

This survey contains information on pharmaceuticals prescribed as well as the diagnoses associated each time a new prescription is delivered.

Each quarter, approximately **850 French general practitioners and physicians** fill out a questionnaire concerning all patient visits over the 7 preceding days. Approximately 15% of the sample is renewed earch quarter.

All indicators are based on the average of all participating GPs' prescriptions as the calculation of the score at GP's level was not possible due to the small number of visits declared by some of them.

Results

Efficiency indicators

Indicators for **multiple-sourced PPI, statins and antidepressants prescriptions** show similar patterns, increasing stepwise at each patent expiration and remaining stable in between (Fig. 1, 2 & 4).

For the **broader antihypertensive class,** where a high number of products lost their patents between 2000 and 2011, the share of multiple-sourced products rises steadily (Fig. 3).

The **proportion of ACE inhibitors** among ACE inhibitors and ARBs decreases for most of the period, stabilizing around 40% after 2006 (Fig. 5).

Fig 1 **Evolution of multiple-sourced proton-pump inhibitors prescription** among all PPI prescriptions (in %), France 2002-2011

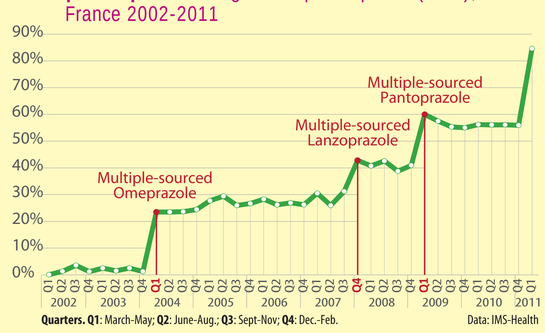


Fig 2 **Evolution of multiple-sourced statin prescription** among all statin prescriptions (in %), France 2002-2011

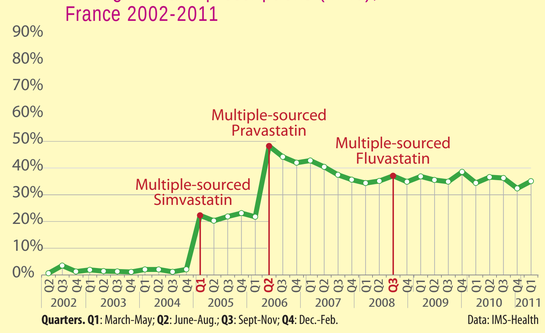


Fig 3 **Evolution of multiple-sourced antihypertensive treatment prescription** among all antihypertensive treatments (in %), France 2000-2011

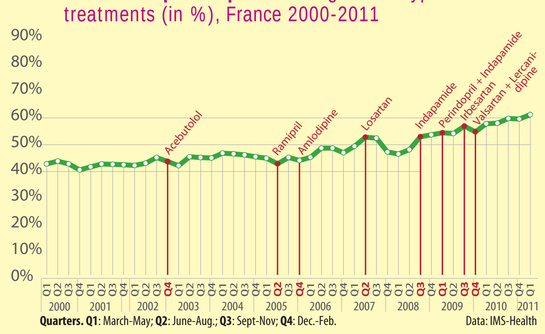


Fig 4 **Evolution of multiple-sourced antidepressant prescription** among all antidepressant prescriptions (in %), France 2000-2011

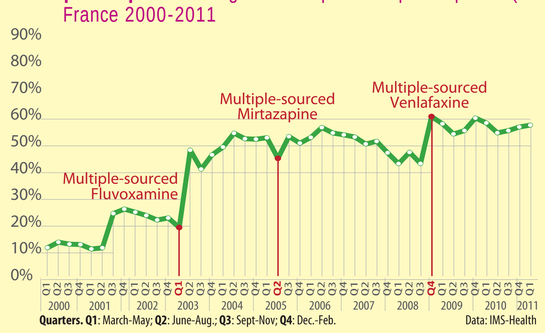
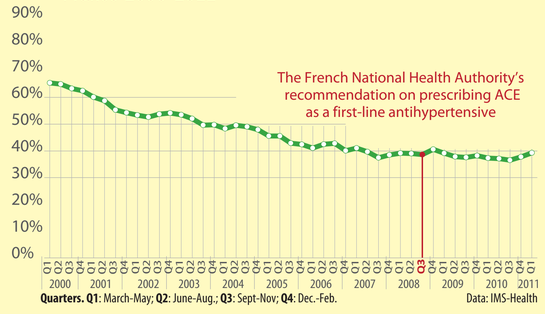


Fig 5 **Proportion of angiotensin-converting-enzyme (ACE) inhibitors** among ACE and ARBs (in %), France 2000-2011



Quality indicators

Tendencies for quality indicators vary according to the indicator.

Between 2000 and 2011, the proportion of **visits with vasodilators prescriptions for patients aged 65+** dropped significantly from 13.5 to 3% (Fig. 6), whereas the **long half-life benzodiazepine prescriptions** decreased only from 6% to around 3.5%, indicating nevertheless an improvement of the quality for both indicators (Fig. 7).

For **antiplatelet prescription** however, the decreasing proportion of low-dose aspirin prescription indicates no improvement in quality (Fig. 8).

Finally, after a slight decline at the beginning of the period, **antibiotic prescriptions for patients aged 16-65** remains stable from 2002 onwards (Fig. 9).

Fig 6 **Evolution of the proportion of visits with vasodilator prescriptions for patients aged 65+** among all visits from patients aged 65+ (in %), France 2000-2011

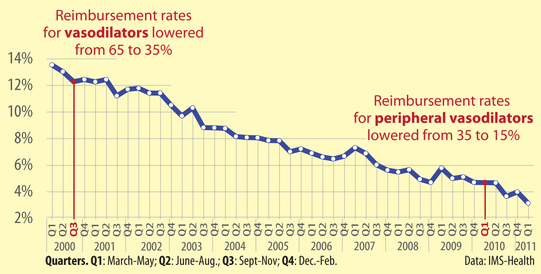


Fig 7 **Evolution of the proportion of visits with long half-life benzodiazepines for patients aged 65+** among all visits from patients aged 65+ (in %), France 2000-2011

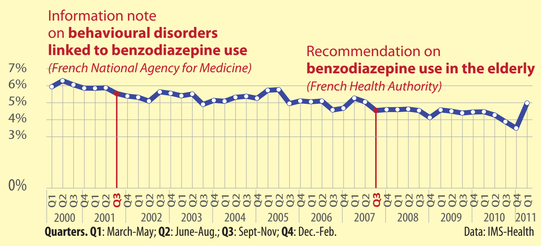
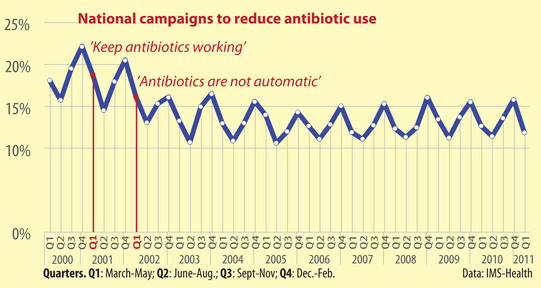


Fig 8 **Evolution of the proportion of visits with low-dose aspirin prescriptions** among all visits with anti-platelets agents (in %), France 2000-2011

Fig 9 **Evolution of the proportion of visits with antibiotic prescriptions for patients aged 16-65** among all patients aged 16-65 (in %), France 2000-2011



Discussion

For all efficiency indicators, multiple-sourced prescribing increases mainly over the period.
The **stepwise pattern of the increase** observed is likely to be explained by the arrival on the market of multiple-sourced molecules following patent expirations rather than by the policy reforms introduced, such as International Non-proprietary Name [INN] prescribing (2002), reference pricing scheme for some generic drugs groups [TFR] (2003), or academic detailing by Health Insurance medical representatives which benchmarks generic prescribing rates of private practice physicians against that of their local colleagues (2004).

Moreover, in the case of **statins**, multiple-sourced prescribing rate does not follow a linear pattern since decreases may follow previous increases, which shows a possible switch of prescription from multiple-sourced statins to patent-protected statins (Pichetti et al., 2013). This may be due to the influence of hospital drug prescriptions on ambulatory prescriptions (Gallini et al., 2013) or the frequency of visits of pharmaceutical representatives to physicians.

In the case of the **antihypertensive indicator**, the continuous inflow of multiple-sourced molecules on the market explains the gradual growth of the indicator. The proportion of **ACE inhibitors** among ACE inhibitors + ARBs decreases over the period, which is mainly explained by the growing market penetration of ARBs and the inflow of new ARBs on the market. ACE prescription rates were stabilized even before the French National Health Authority's recommendation to prescribe ACE first (October 2008), which prevents from linking the stabilization to the implementation of these guidelines.

Quality indicators evolution may be explained by the emergence of new guidelines. In the example of **antibiotics drugs**, first campaigns organized by National Public Health Insurance had a strong impact (Sabuncu et al. 2009) but this effect decreased over time especially for people over 16, which is in line with our observations. **Vasodilatators** were subjected to successive reevaluations of their medical benefit (Service Médical Rendu-SMR) between 2000 and 2006. Following these reevaluations the medical benefit of 6 vasodilators was stated as insufficient whereas 2 molecules were assigned little medical benefit. As a consequence, their reimbursement rates were lowered from 65 to 35% in September 2000, and from 35 to 15% in April 2010.

Among the 4 indicators we were able to analyze, **antiplatelet prescription** is the only one that does not show any sign of improvement over the period. This may be a sign of the great success of the new antiplatelet agents, supported by recent guidelines (2012) recommending aspirin as first-line treatment in primary prevention. A study conducted in the USA showed that more than 40% of the clopidogrel used have been prescribed to patients for whom the drug had no documented advantage over aspirin or no antiplatelet therapy (Choudhry et al. 2008).

Conclusion

Results from this analysis constitute a first step of P4P assessment and **a reference point allowing for the comparison of prescription trends after P4P implementation**.

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