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**A Preliminary Approach to Cost Effectiveness of Opioid
Maintenance Therapy in France**

Pierre Kopp

1. *Context*

165,000 opio addicts

Easy acces to treatment

Nomadism

Resale

Injection (17% and 42%)

Table n° 1: Increase in number of patients treated with Subutex (1996-2004)

Year	Number of patients treated with Subutex*	Number of patients treated with Methadone**
1996	32.000	0
1998	60.000	8.000
2000	75.000	10.000
2004	85.000	8.000

Table n° 2 : Cost of maintenance therapy (2002)

	Subutex	Methadone	Total
Number of patients	85.000	15.000	100.000
Total Annual cost ME	145 ME	113 ME	258 ME
Unitary cost E	1.700	7575	

Table n° 3 : Percentage of social cost for drugs by type of action, France, 2000 (millions of Euros)

Social cost	2226,49
<u>Social cost in % of GNP (0,18%)</u>	

2. EVOLUTION OF A COHORT OF ADDICTS BETWEEN 1996 AND 2003

Evaluation of treatment efficacy

Markov model which simulates the route taken by problematic opiate consumers in France from 1996 to 2003.

We reproduce the trajectory of 165.000 addicts from 1996 until 2003, from hypotheses which describe the French situation.

2.1. Stages

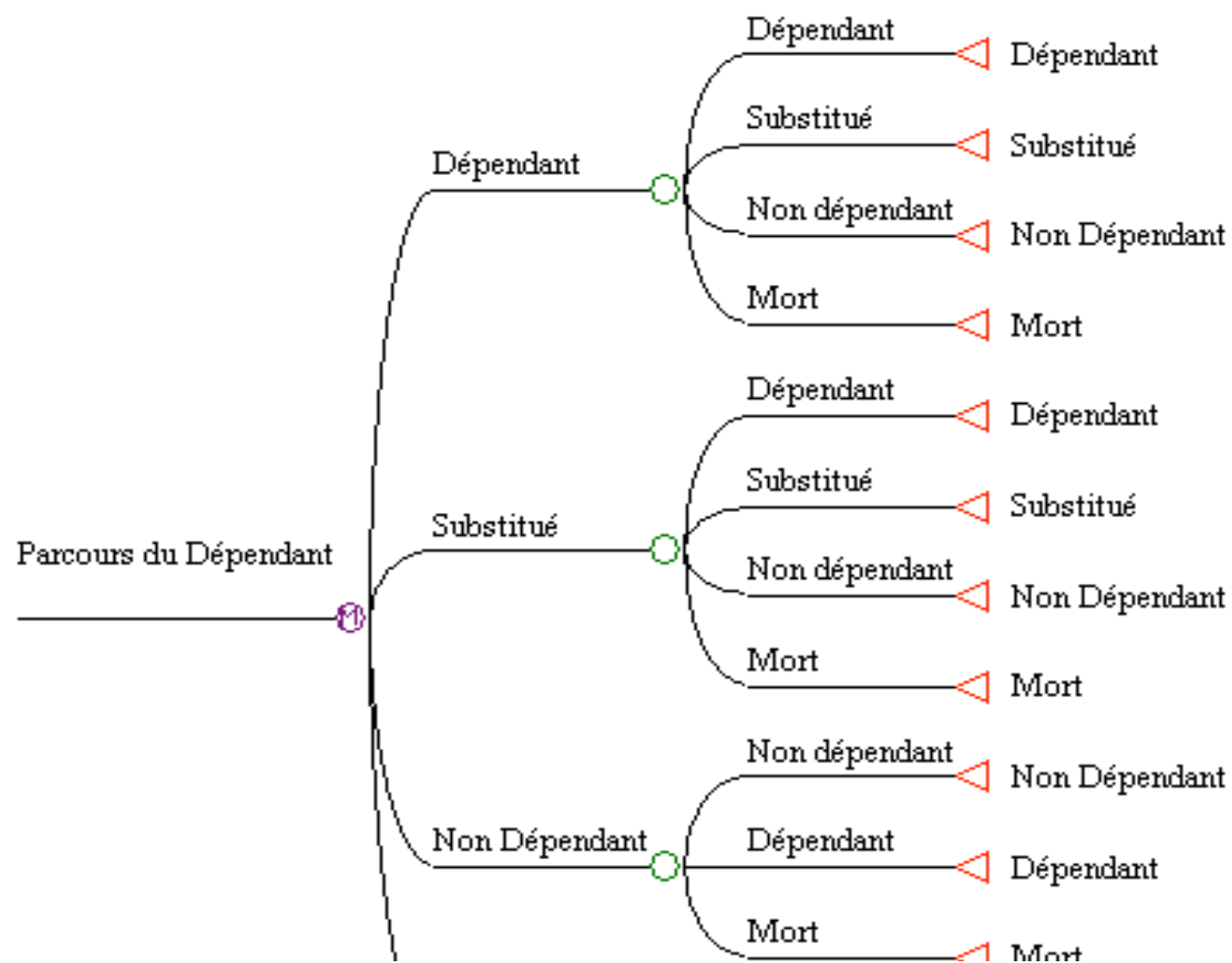
Four stages:

Dependent, problematic consumption and not benefiting from a replacement therapy.

Substituted, following a treatment with BHD or Methadone

Non dependent, meaning in remission.

Dead from causes directly or indirectly linked to opiate



2.2. Hypothesis (some...)

Probability of transition from the stage of ***substituted*** to ***Non dependent*** is 1,5 % every six months.

- American studies : every year 3,5% of individuals in maintenance therapy will successfully interrupt opiate consumption if treated with Methadone (Barnett et al 2001).
- If the treatment is based on Buprenorphine, the percentage falls to 2,78%.

*Transition from the **non dependent** stage to **deceased***

0,4% every six months.

Thier mortality rate is much lower than that of a non treated dependent consumer (1,2%), but higher than that of a substituted patient (0.3%).

Transition from Dependant/problematic to Non dependant

33 year study of a Californian cohort: 28,6% and 25% stopping after 12 years and 24 years (Hser et al. 1993) and similar rates after 33 years (Hser et al 2001).

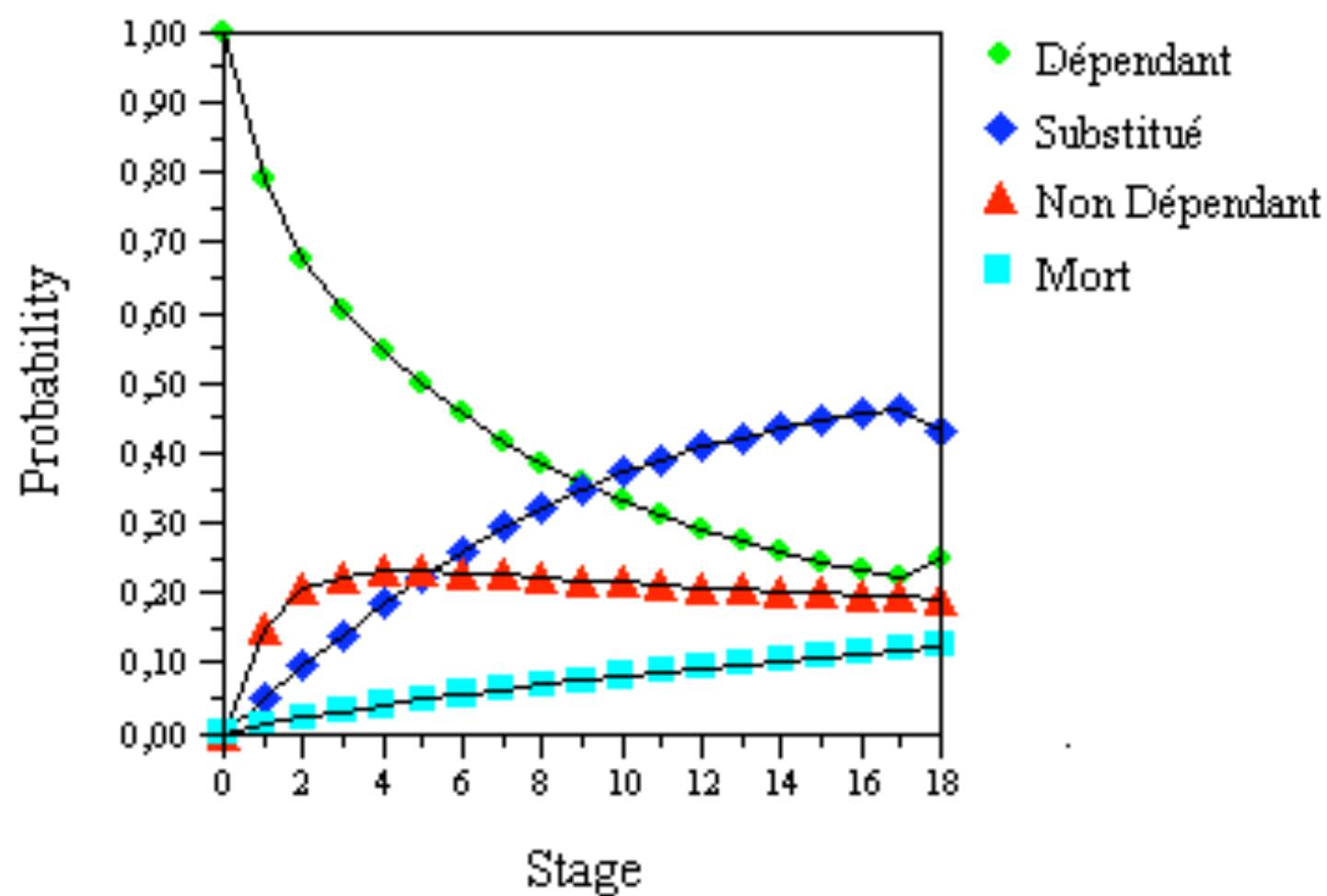
We have retained that the proportion of dependent individuals who become non dependent stabilize above 20% after the first years.

This could be reproduced with a base incidence of 15% over six months increasing at each cycle by 1,5%.

2.4. Results

The objective is to model the evolution of a cohort of consumers dependent on opiates and arrive at a current prevalence for this cohort.

Markov Probability Analysis



It appears from our modeling of 6 years that the composition in 2004 of a cohort of addicts in 1996 is the following:

- 47% in maintenance treatment (BDH/MTD),
- 21% remain addicted, 12% are deceased,
- 19% are no longer addicted nor in treatment.

Good news, the model reproduces reality, so now let's use it !!!!!!!

3. TREATMENT EFFICACY

We modified our model in order to model the number of lives saved due to implementation of treatment and calculate the corresponding **cost-effectiveness**

By running this model in a world **without substitution treatment** over 16 cycles, the cumulative death probability rise from 11,5% to more or less 13,5%

- Over a period of 8 years from a cohort of 165.000 dependent consumers, between **2392 and 4570 lives** were saved thanks to treatment.
- 3.481 lives saved, for 1,6 milliard Euros spent
- Annual cost of between 336 000 and 668 000 Euros, or again between **11.200 and 22.266 Euros per year of life saved.**

4. Treatment and social cost

..... a broader picture but less sharp

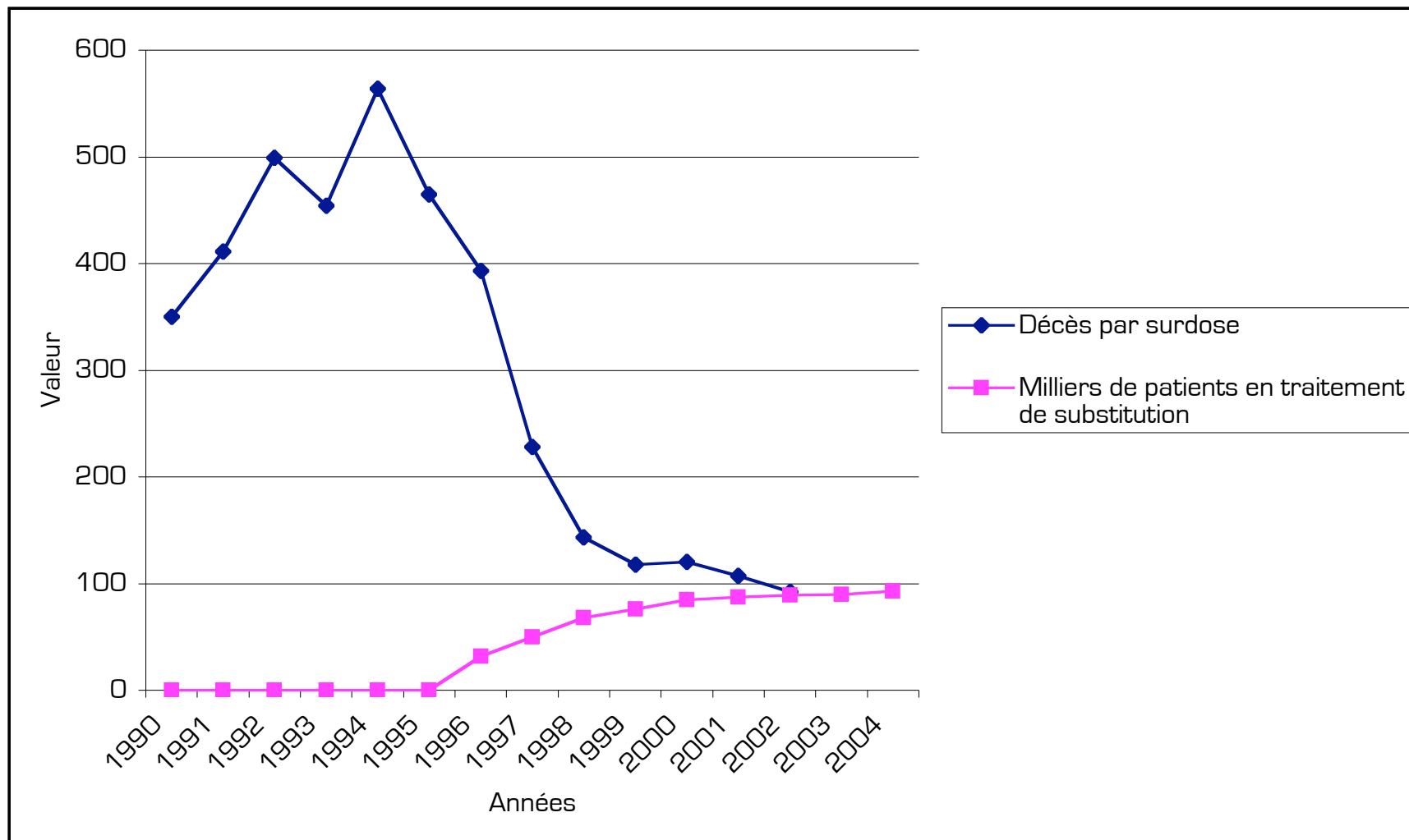
Treatment decrease the number of overdoses

Treatment decrease the spread of HIV

Treatment decrease the number of violation of the law

Then, the social cost is decreasing.

Ok, but lot or a little ?

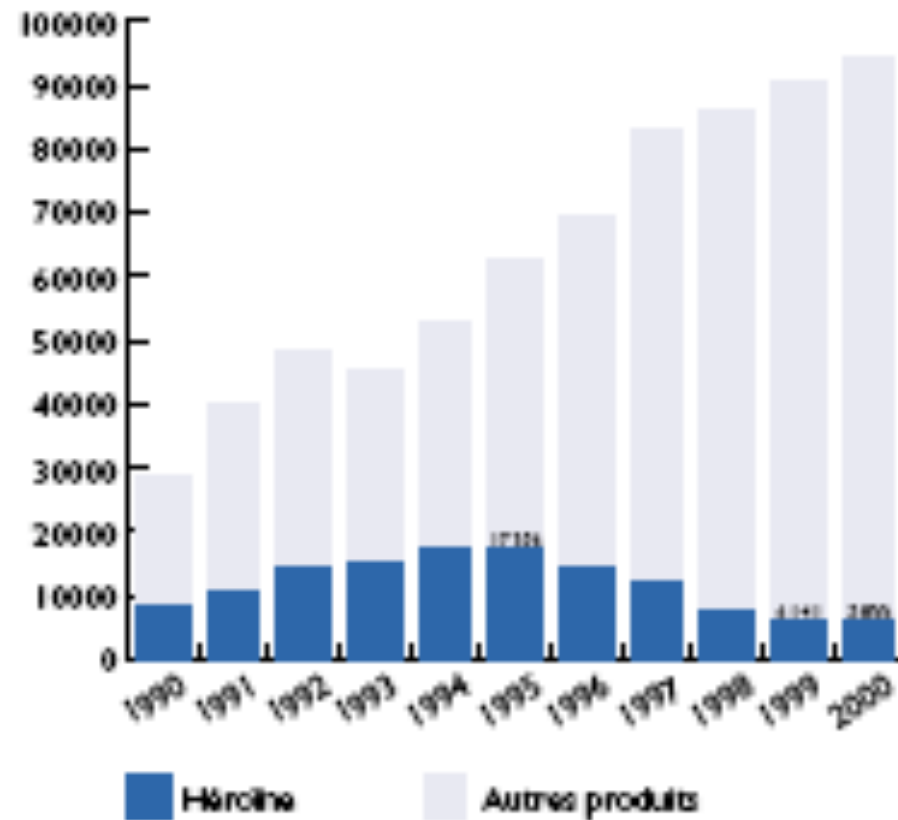


Overdose and treatment

- The trend starts before treatment is not the only factor
- 1997-2002: overdose decline from 228 to 97 (-125)

Violation of the law and treatment

*Interpellations pour usage ou usage-revente d'héroïne,
de 1990 à 2000*



Source : FNAIS, OCRTIS ©

	1997	Variation
1. direct cost of care of which: -	231,00	+383,00
Substitution	91,00	+243,00
-HIV	140,00	+140,00
3. direct cost of enforcing the law	498,19	-328,92
4. direct cost from loss of tax	178,12	-83,17
Of which : - HIV & overdose	62,93	-5,32
- Incarceration ILS	115,19	-77,85
5. indirect costs lost revenue and production loss	1175,48	-566,20
Of which : - HIV & overdose	251,65	-22,04
- Incarcerations ILS	557,20	-373,76
Social cost	2226,49	-595,28

If 50% of the cohort would have been in treatment in 1997, the social cost of drug would be 25% lower.