



and its possible regulatory body

Estimation models and methods based on administrative data bases: **Heroin and cocaine incidence estimates in Spain.**

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Aim

- To estimate Spanish **heroin** use and **cocaine** use (relative) incidences.

Source of information

- Treatment Demand Indicator.
 - Collects data on new admissions to treatment (not all treatments in a point in time)
 - Considers as “new admission” if previous treatment more than 6 months previously
 - Ask subjects about that admission being their first approach to treatment for the stated principal drug of use (first treatment start).
- Covers all public treatment centres and those private with public financing.

Collection of information

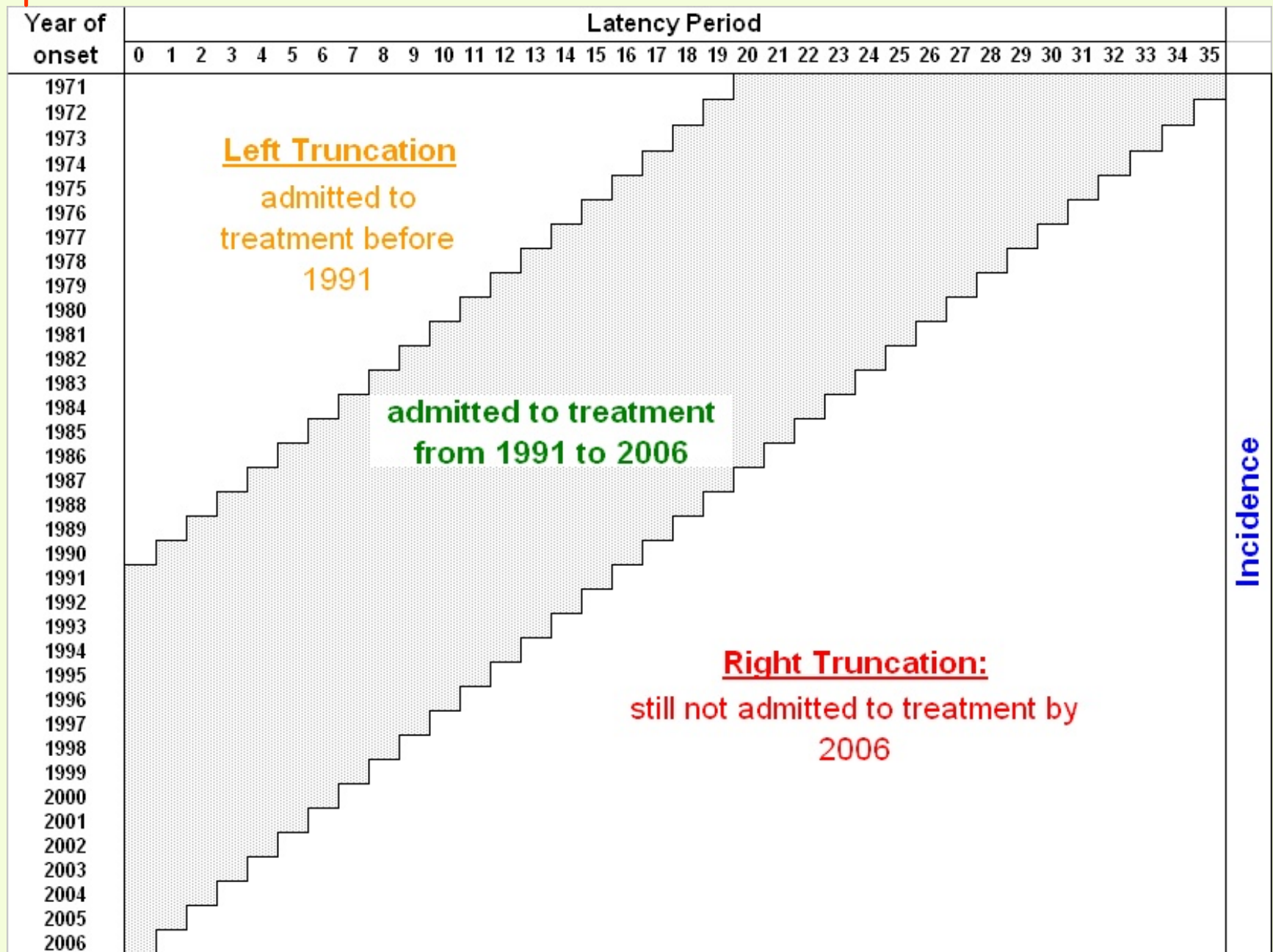
- At their first visit by
- Health professional
- Information extracted from routine data collection

Data from Spain

- New admissions to first treatment for heroin or cocaine use from 1991 to 2006.
- Restrictions:

	Heroin	Cocaine
Years of first use known	1971-2006	1978-2006
Age of first use	10-44 years	10-54 years
Age of first treatment	15-54 years	15-59 years
N	169.682	89.760

Spanish data.



Log-linear models.

1st year drug use	LP				Observed Incidence
	U.1	U.2	...	U.J	
U1.	?				f_{i.}
U2.					
...					
U _{i.}				?	

$$f_{ij} \sim \text{Poisson}(m_{ij})$$

$$\log(m_{ij}) = u + u_{i.} + u_{.j}, \text{ only observed cells}$$

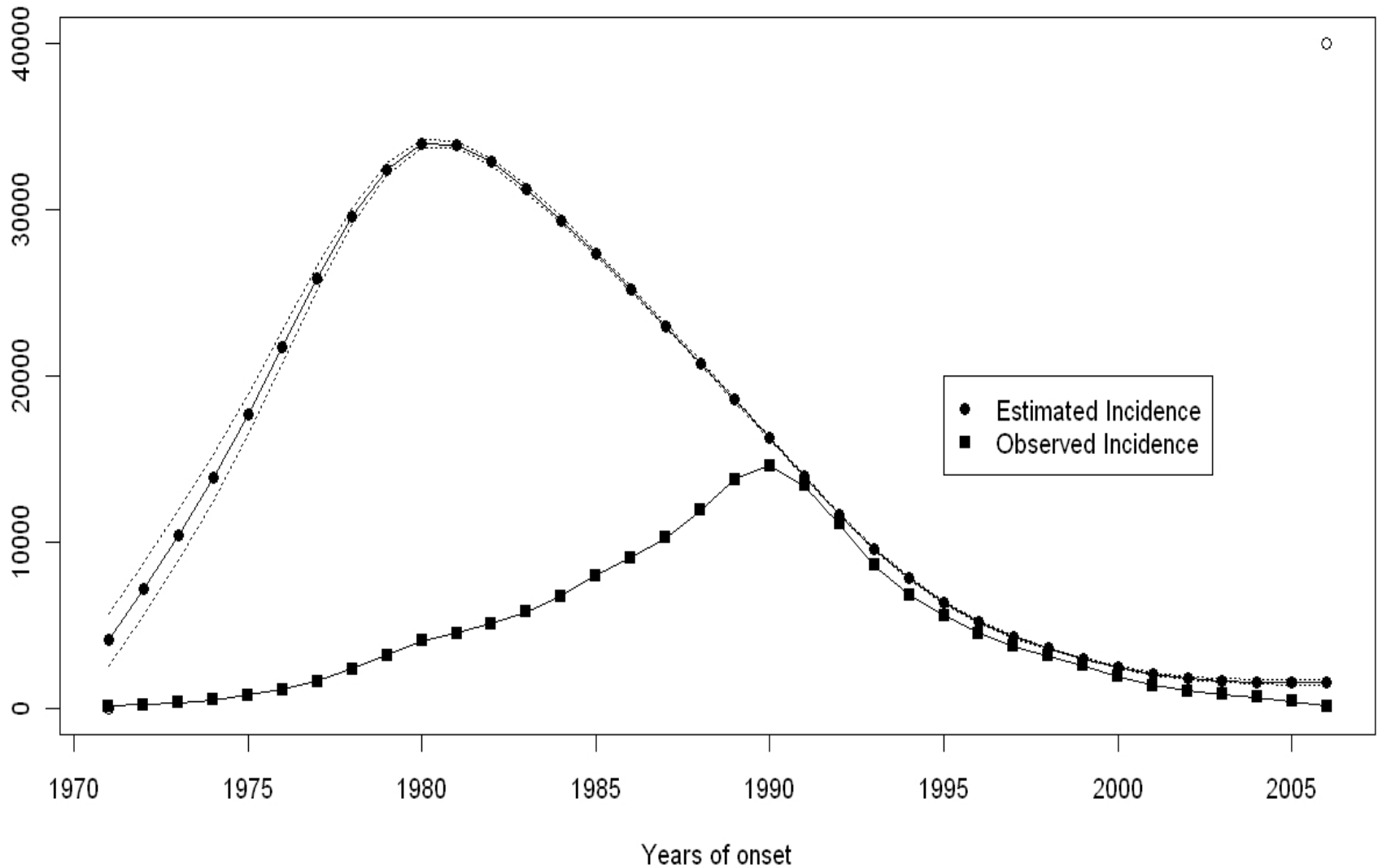
Quasi-independence*:

Independence is only assumed in the observed cells.

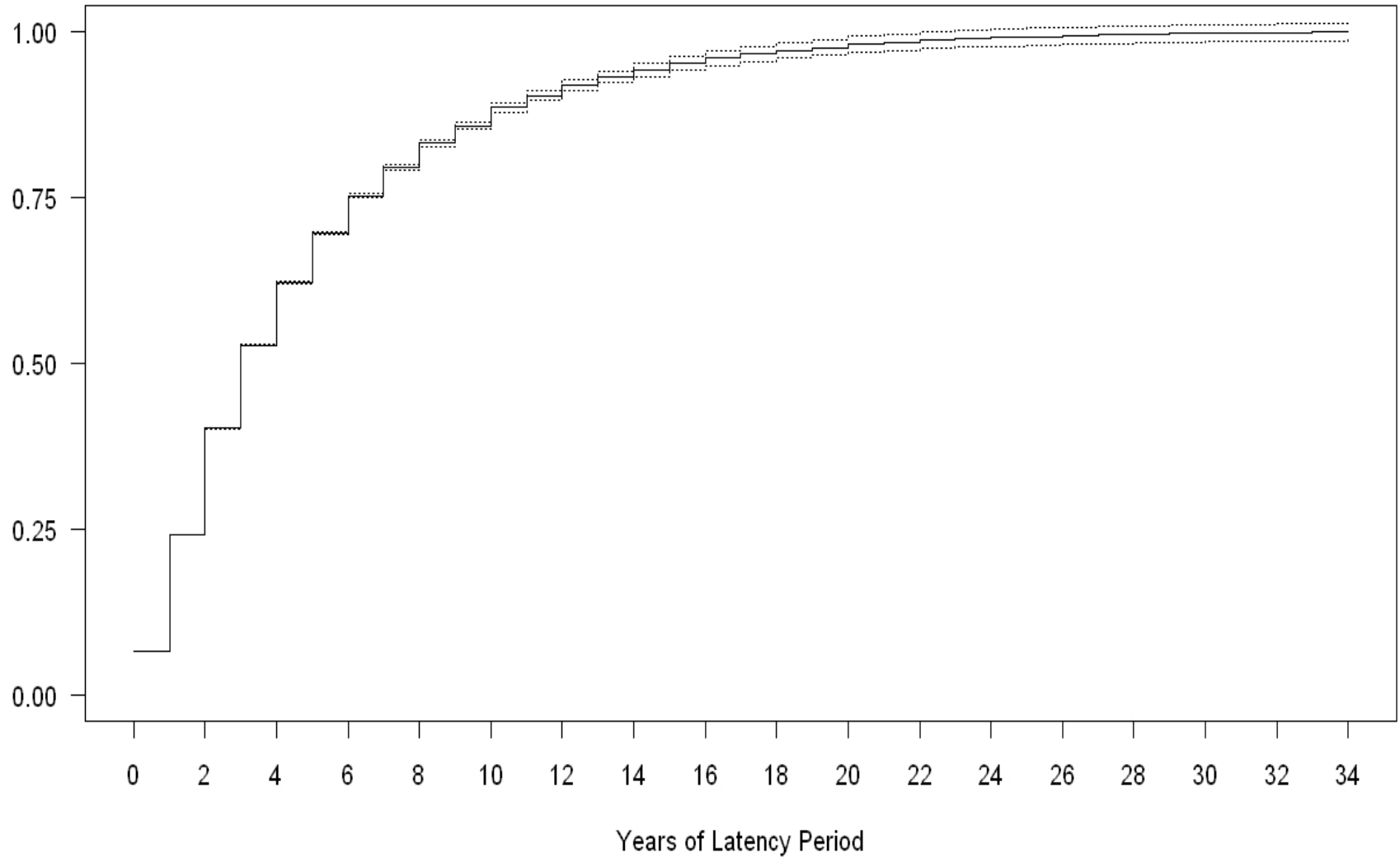
* McDonald, J. W. (1998). Quasi-independence. In P. Armitage and T. Colton (Eds.), Encyclopedia of Biostatistics, New York, NY, pp. 3637–3639. Wiley

RESULTS

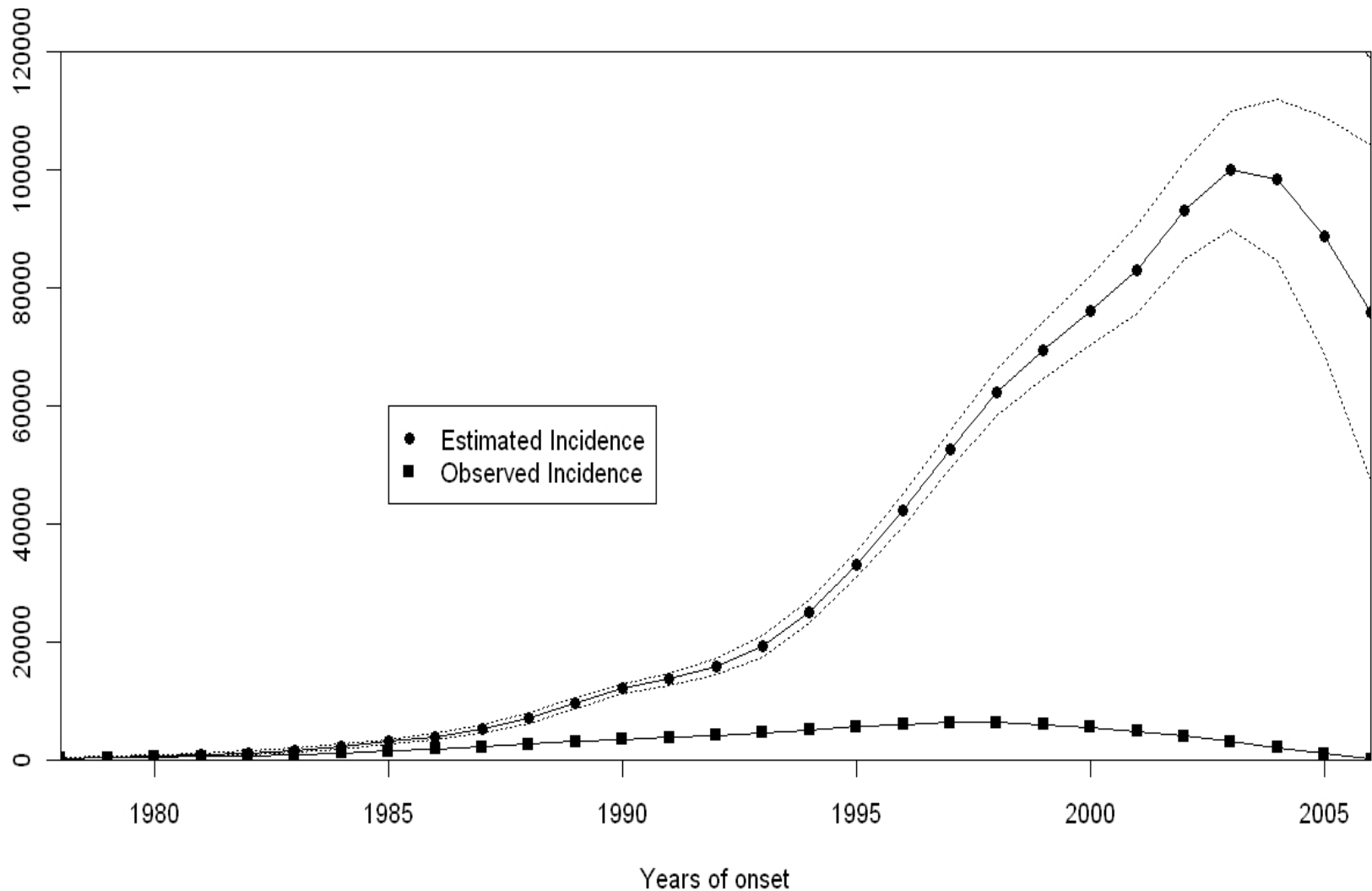
Heroin Use incidence, Spain



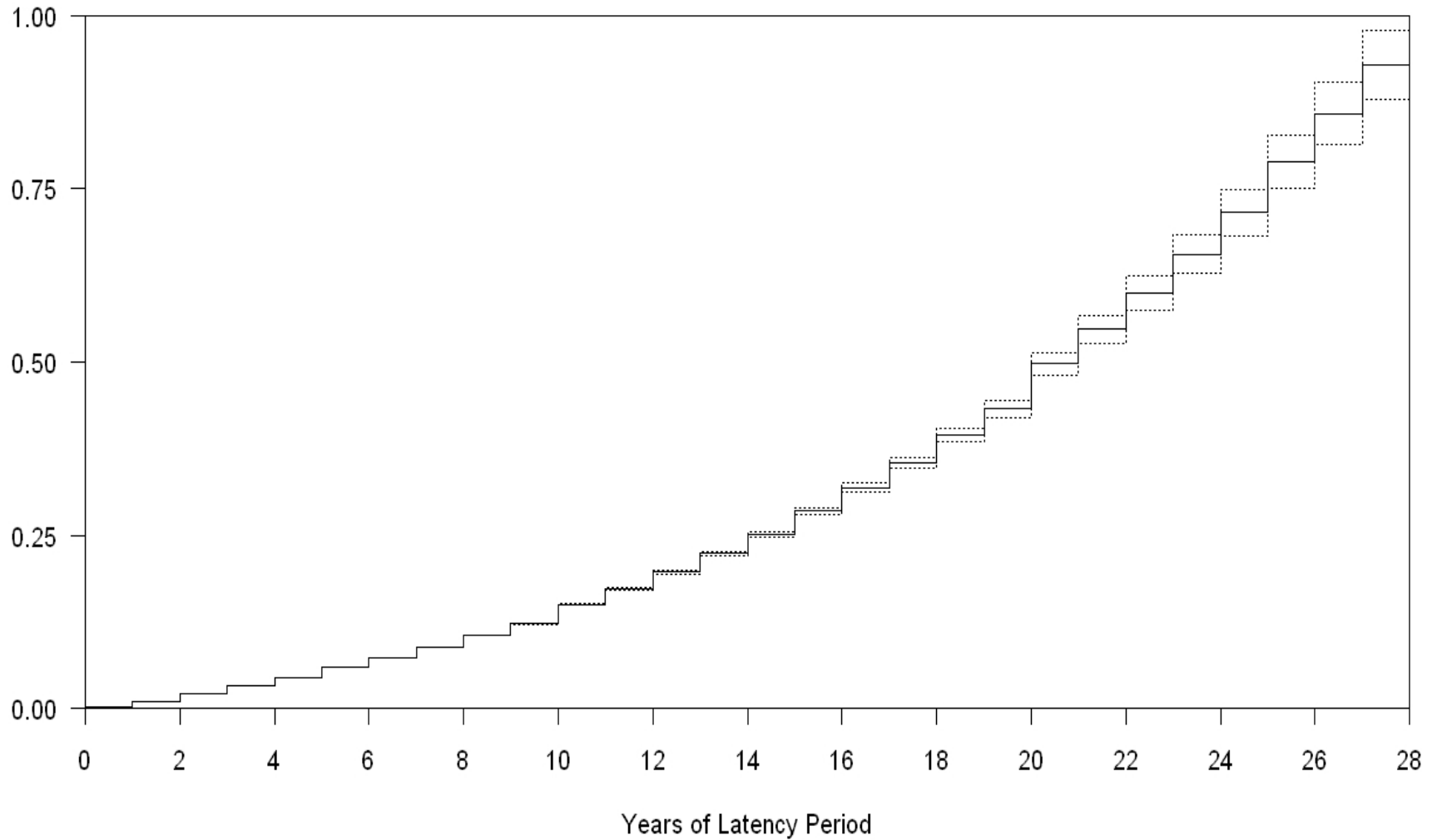
Latency Period for Heroin



Cocaine Use Incidence, Spain

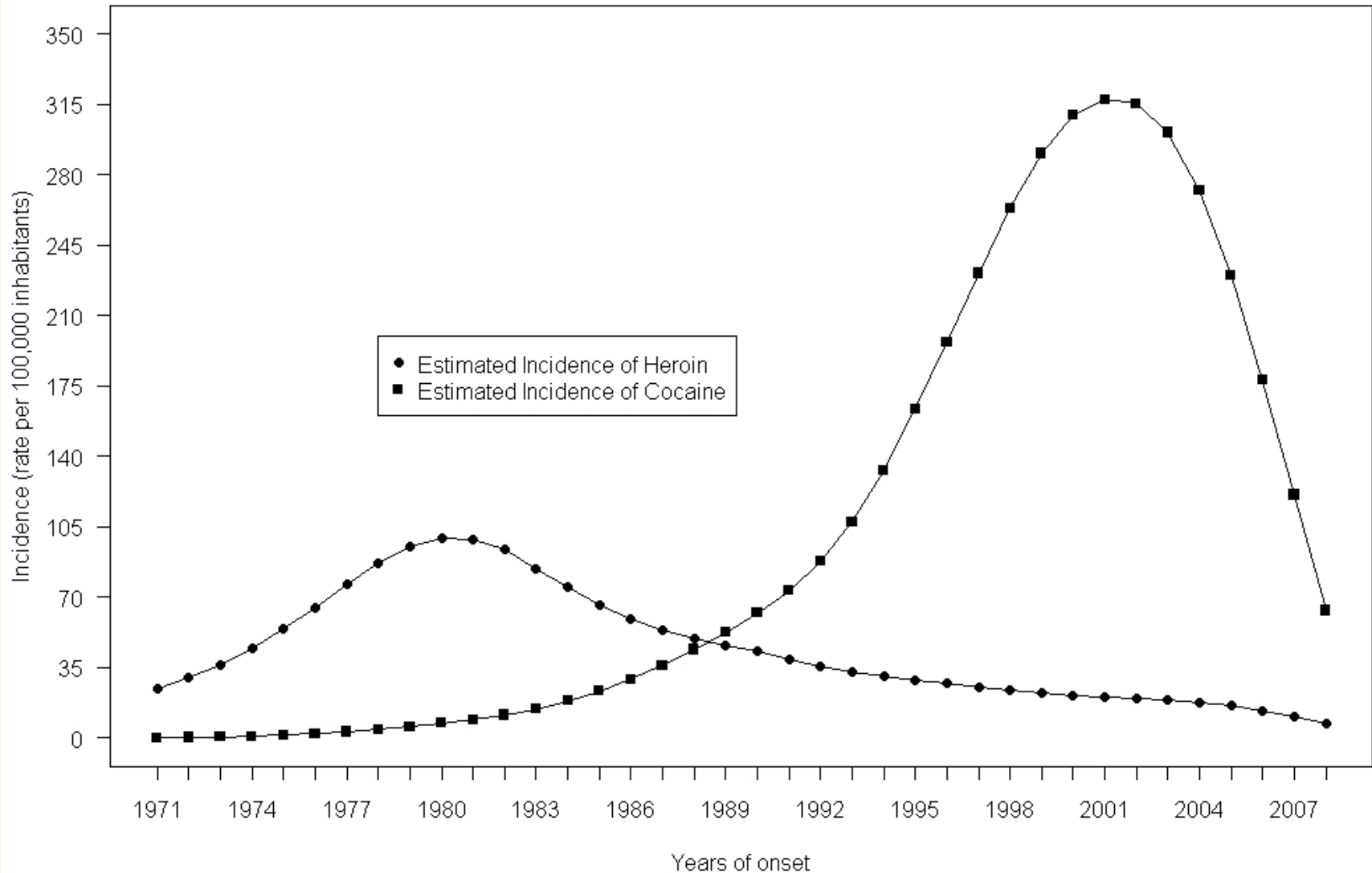


Latency Period for Cocaine.



Barcelona, 1971-2008.

Heroin and cocaine incidence trends



Limitations

- We are estimating **relative incidence** (of those that may start treatment for their drug use).
- Validity of information on year of 1st use and whether that admission is really the 1st treatment for that drug: **information bias?**
- Lack of stability in the LP
- For heroin change in treatment offer along the period

Future

- Need to explore possible differences in the LP distribution for other variables.
- Need to look more deeply into the data to understand what is happening and
- Explore other statistical methods.

GRAZIE! THANK YOU!



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