

Monitoring of pain therapy in an Italian local health-care unit

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SIP
Societal Impact of Pain

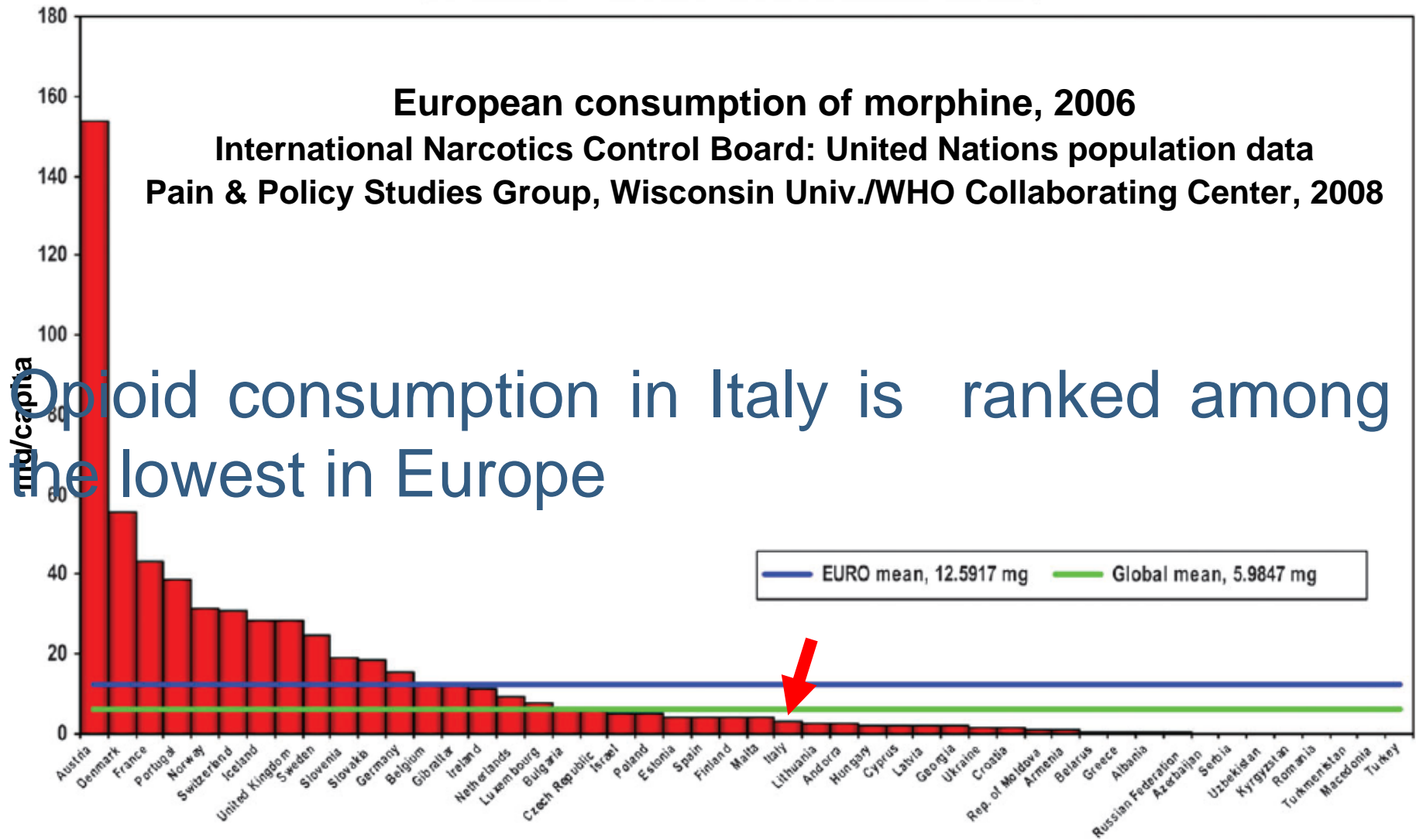
First EFIC[®] Symposium
Societal Impact of Pain

May 4th & 5th 2010
Hotel Dolce La Hulpe, Brussels

European consumption of morphine, 2006

International Narcotics Control Board: United Nations population data
Pain & Policy Studies Group, Wisconsin Univ./WHO Collaborating Center, 2008

Opioid consumption in Italy is ranked among the lowest in Europe



- **In 2009, the expense for opioid analgesics accounted for only 0.81% of the global pharmaceutical budget of the Italian Health Care Service, which is less than any drug class**
 - **Proton pump inhibitors account for 7.08% of the global drug expense in Italy, which is about 9,650 millions of euro**
- **In 2009, the consumption of opioid analgesics, expressed as DDD/1,000 inhabitants day, accounts for 0.27% of the global drug consumption**
 - **For comparison, proton pump inhibitors consumption, expressed as DDD/1,000 inhabitants day, accounts for 5.7% of the global drug consumption**

The use of NSAIDs in oncologic patients in Italy (2009)

- Italy ranked 1st in the use of NSAIDs in oncologic patients with a total expece of 1.98% of the global pharmaceutical budget and a consumption, expressed as DDD/1,000 inhabitants day, that accounts for 2.85% of the global drug consumption

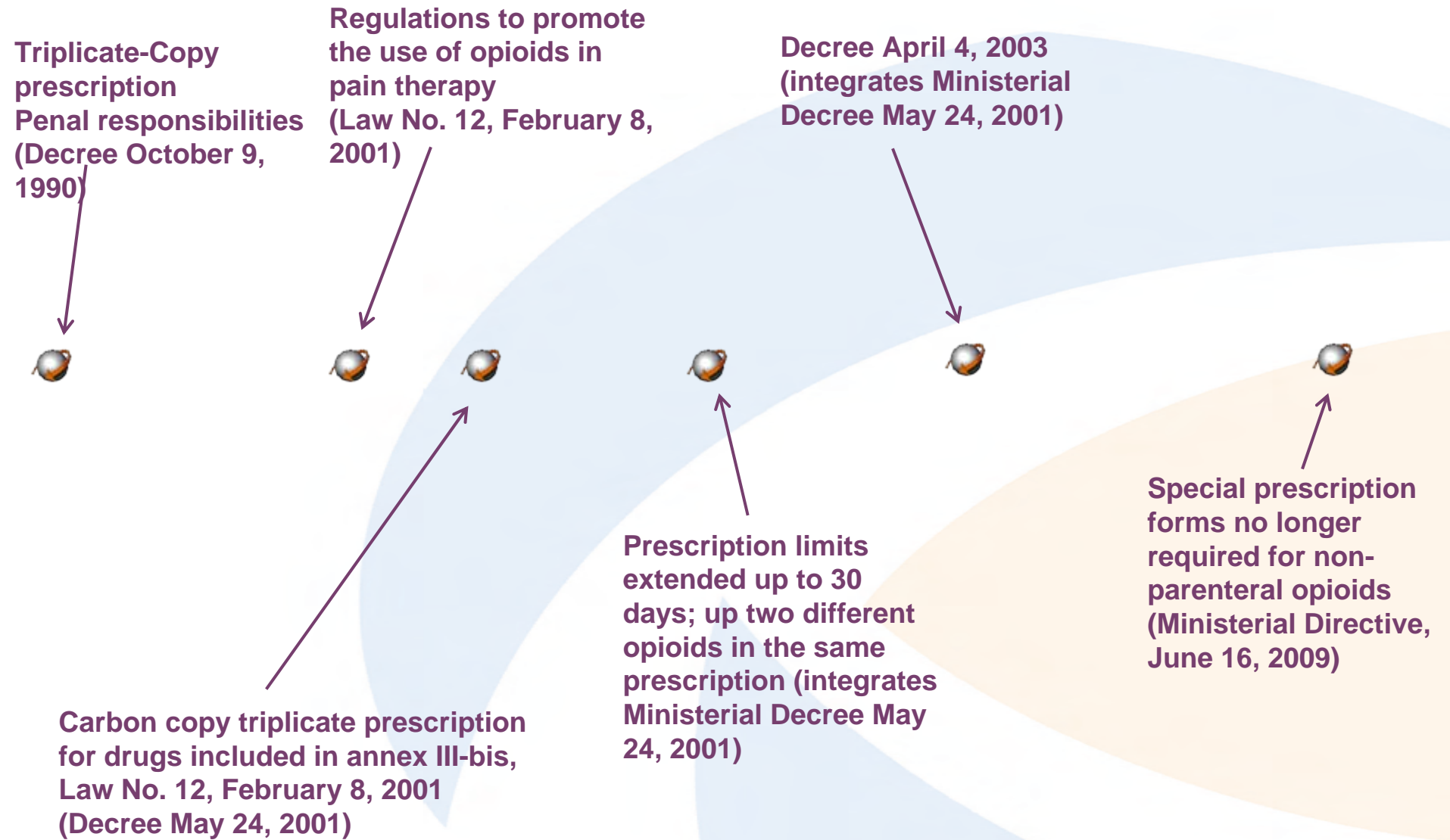
- 68% of the prescriptions for oncologic pain are for NSAIDs

- The DDD/1,000 inhabitants for morphine in Italy was 0.8, one of the lowest in Europe
- WHO uses morphine consumption as one indicator of progress to improve cancer pain relief *(WHO, 1990)*
- 95% of Italian oncologic patients suffer for pain compared to 73% of European average *(EPIC, 2007)*

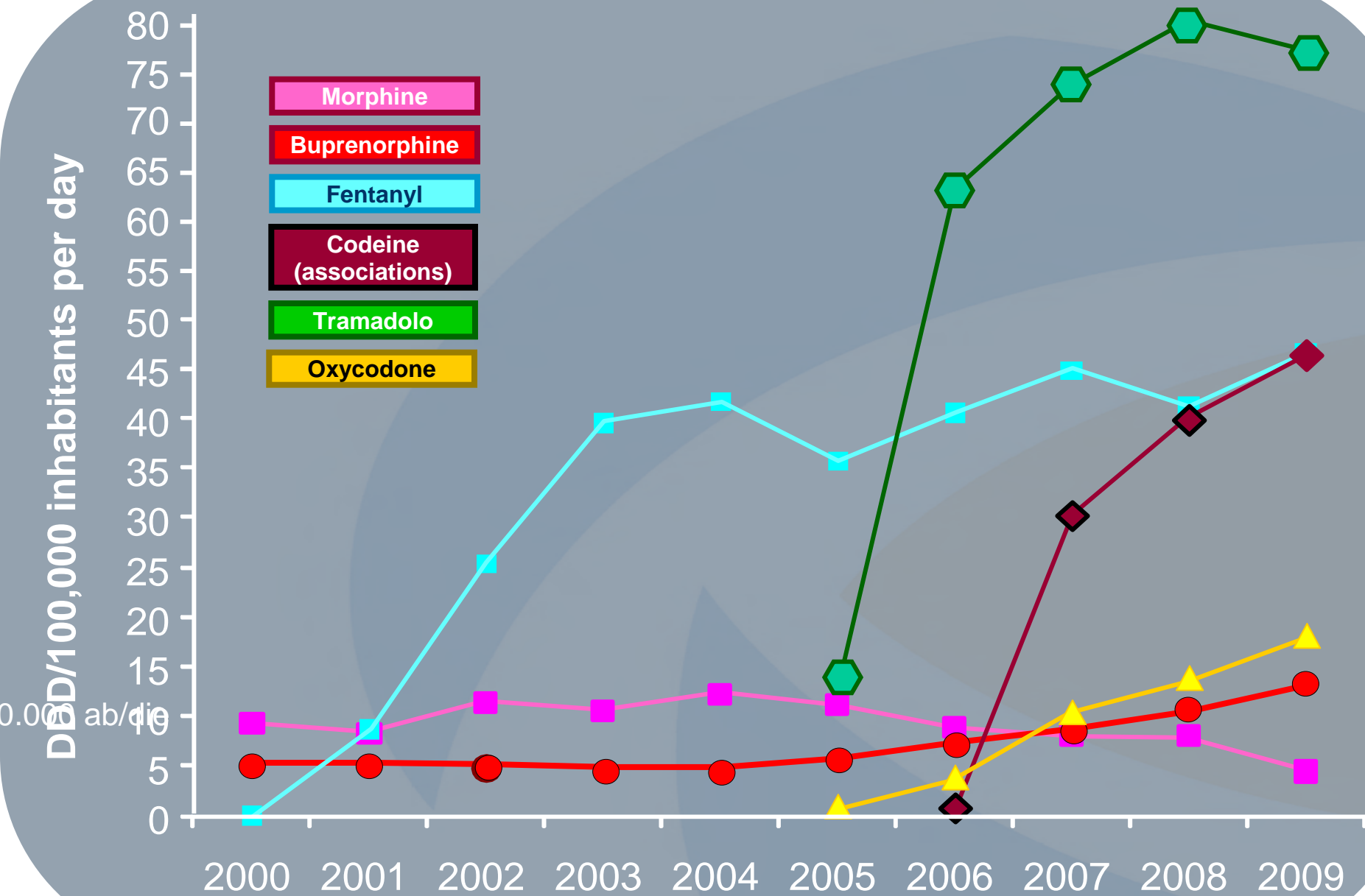
Possible factors for “opiophobia” in Italy

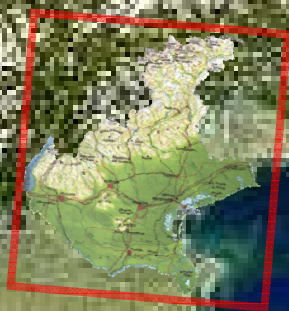
- **Patients’, relatives’, and medical professionals’ negative perception about opioid drugs**
- **Undergraduate and postgraduate medical education on pain and its treatment among physicians and other professionals**
- **Restrictive prescription regulations**

Opioid normative evolution 2000-2009



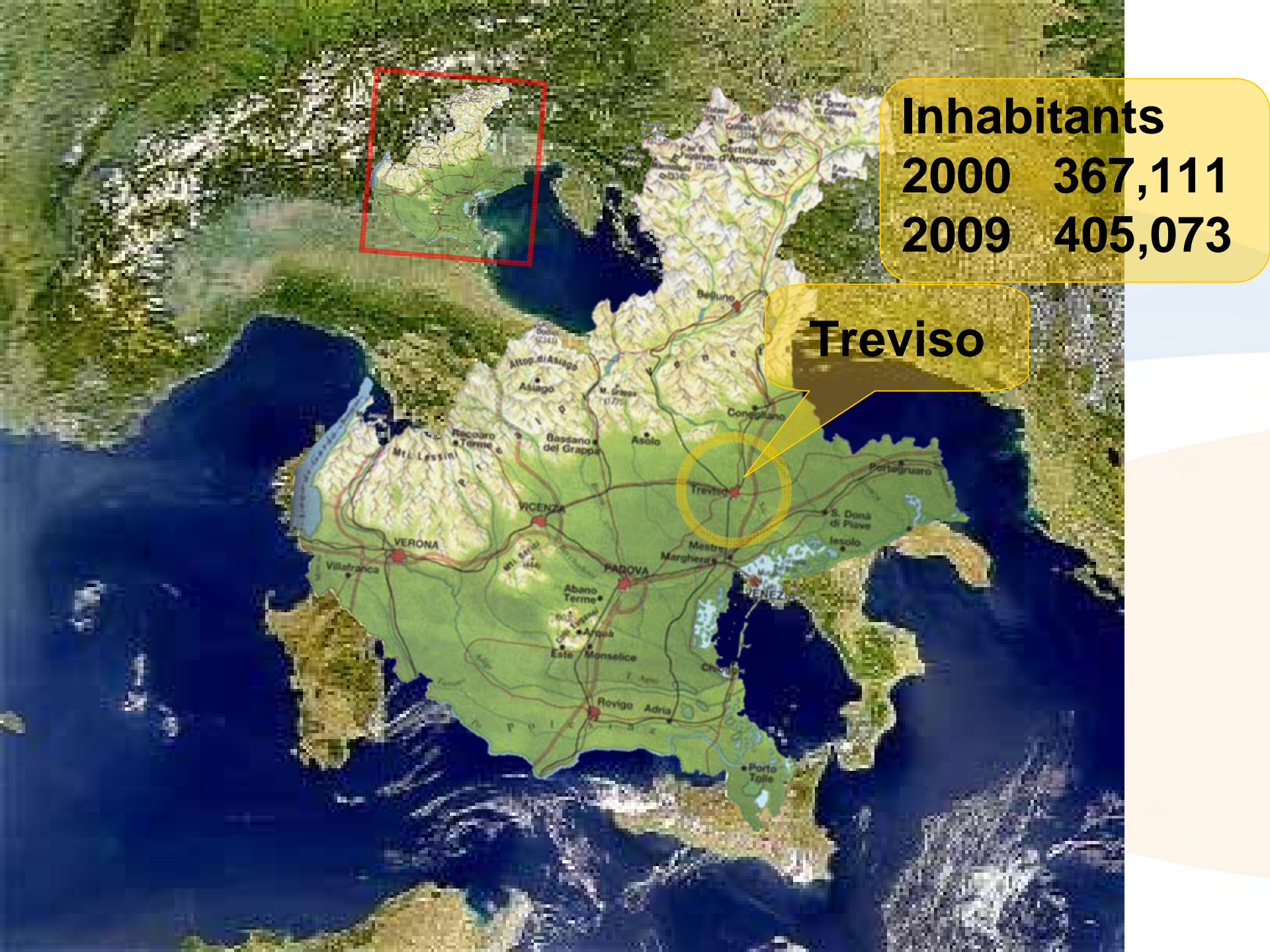
Opioid consumption in Italy from 2000 to 2009



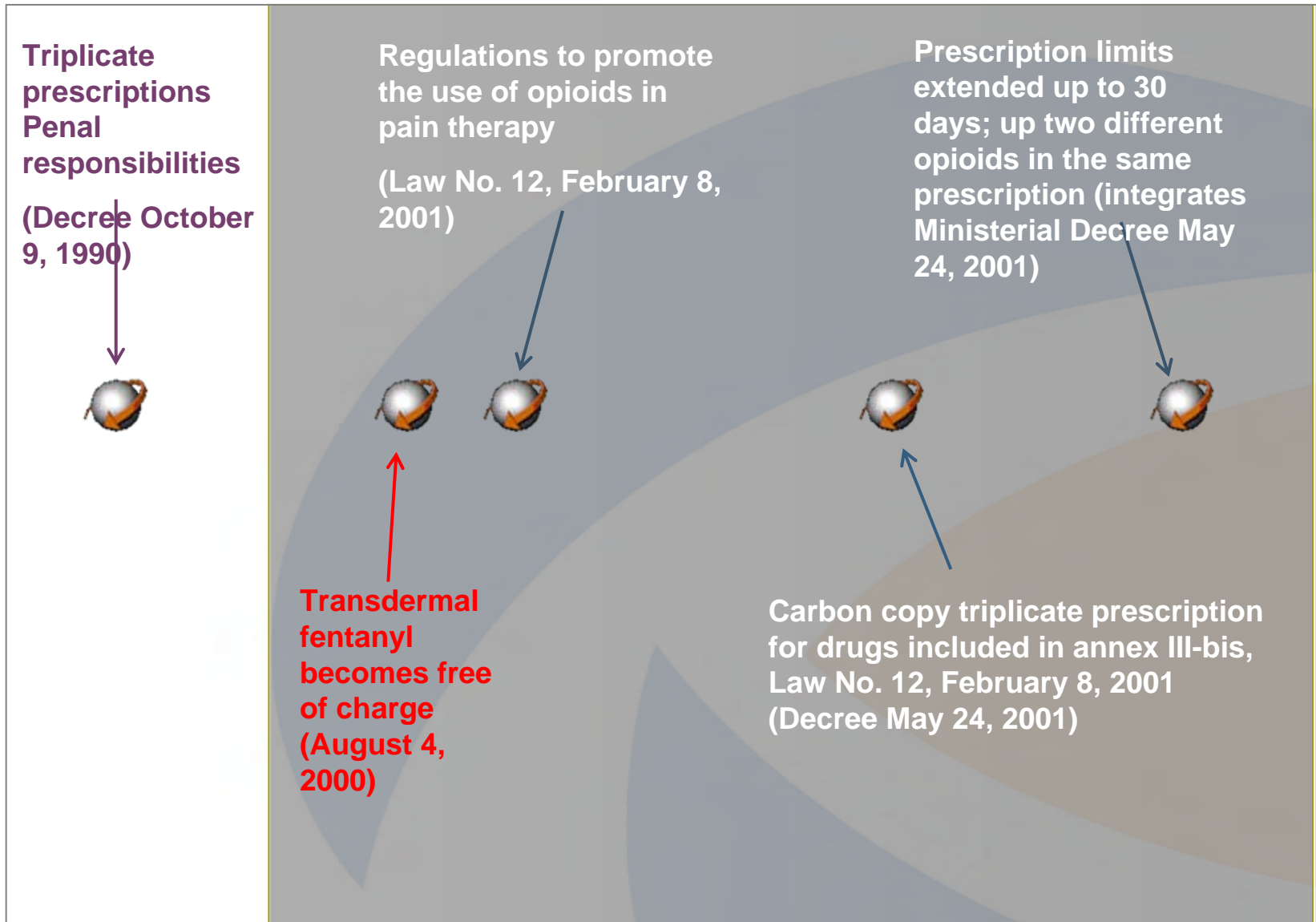


Inhabitants	
2000	367,111
2009	405,073

Treviso



Opioid normative evolution 2000-2003

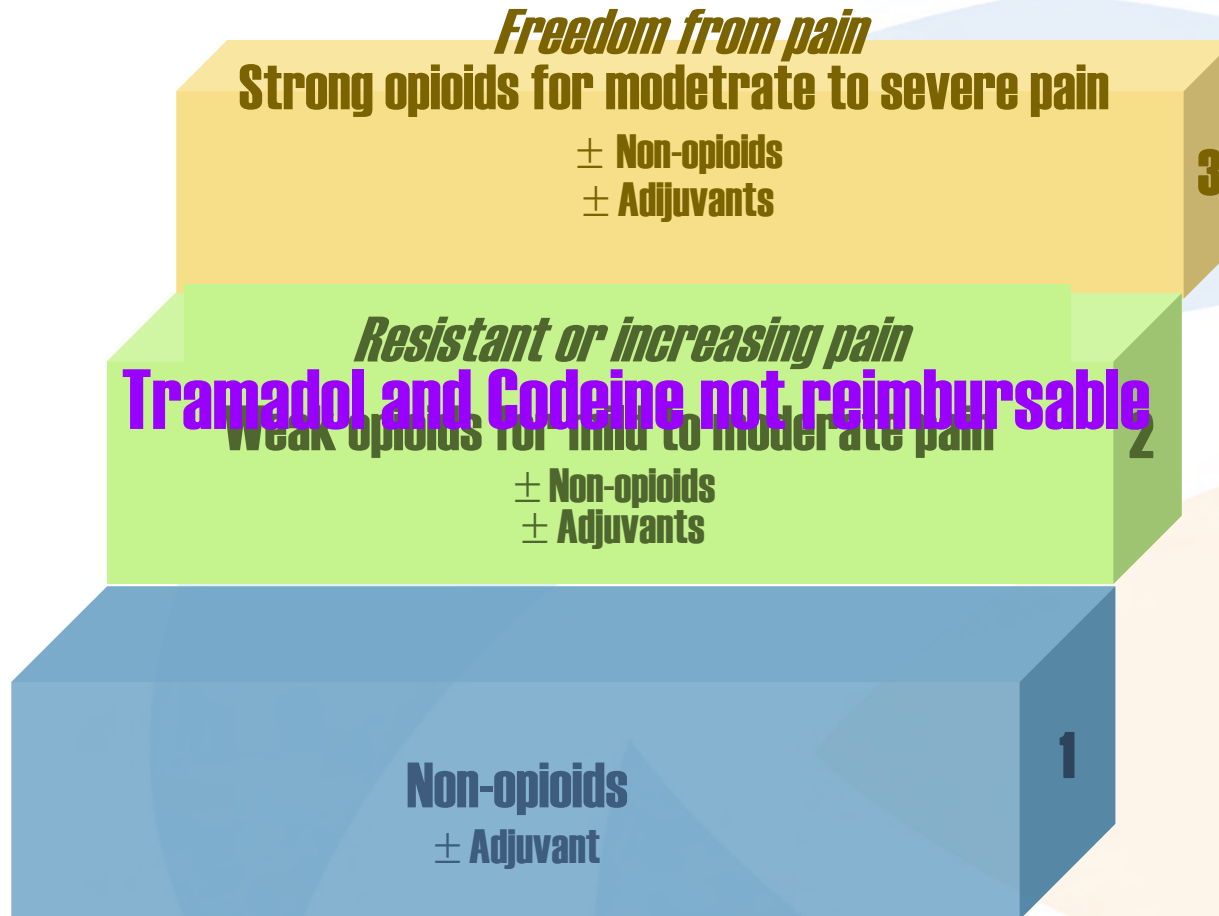


Opioid consumption in Treviso in 2000-2003

Period	Treviso	Italy
	DDD/100,000 Inhabitants per day	DDD/100,000 Inhabitants per day
January 2000 – January 2001	12	16
	Morphine 10	10
	Fentanyl 0	4
March 2001 – March 2002	46	45
	Morphine 12	10
	Fentanyl 30	32

Management of pain

(years 2000-2003)



The World Health Organization Ladder for Chronic Cancer Pain Management

Opioid prescription adequacy indicators

Defined Daily Dose (DDD)

The official opioid DDD values issued in 2002 by the WHO Collaborating Center for Drug Statistics Methodology were used

- 100 mg oral morphine
- 30 mg parenteral morphine
- 1.2 mg buprenorphine
- 0.6 (1.2) mg transdermal fentanyl

Received Daily Dose (RDD) The mean opioid dose (mg) actually received by a patient per day, calculated according to the following equation:

$$\text{RDD} = \frac{[(1^{\text{st}} \text{ received dose} \times \text{days}) + (2^{\text{st}} \text{ received dose} \times \text{days}) + (3^{\text{rd}} \text{ received dose} \times \text{days})]}{\text{length of therapy}}$$

WHO three-step analgesic ladder

FIRST STEP

NSAIDs and COXIB (2000-2003)

Active principle	RDD/DDD
Acetic ac. derivatives	2.3
Oxicams	1.2
Propionic ac. derivatives	3.0
COXIB	5.5
Other	2.7

Total number of incident oncologic patients: 734

Chinellato et al., 2004

WHO three-step analgesic ladder

THIRD STEP

Strong opioids (2000-2003)

Active principle	DDD (mg)	RDD/DDD
Morphine	100	0.6
Fentanyl	0.6	2
Buprenorphine	1.2	0.6

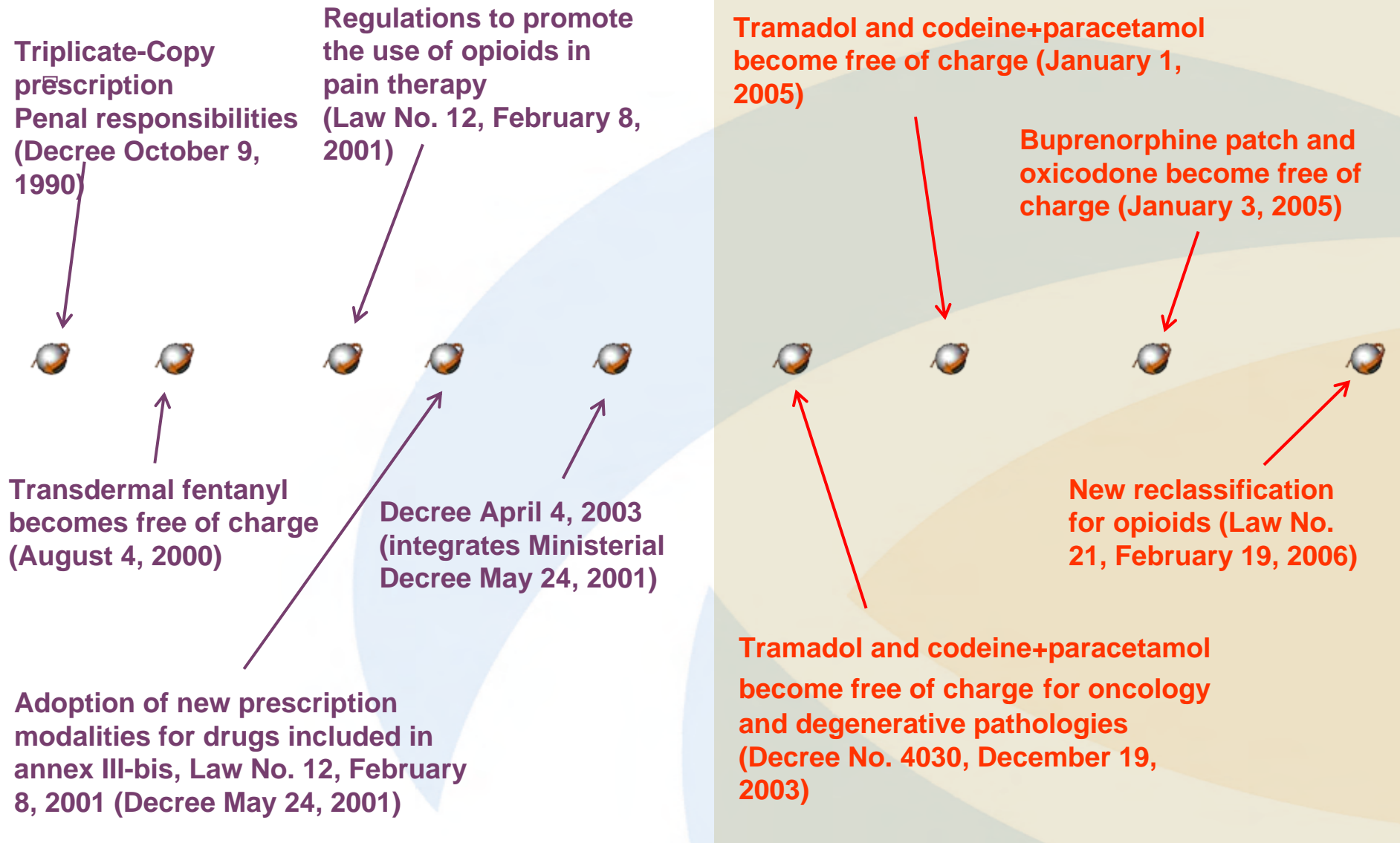
Total number of incident oncologic patients: 734

Association of NSAIDs/COXIBs and Strong Opioids THIRD STEP

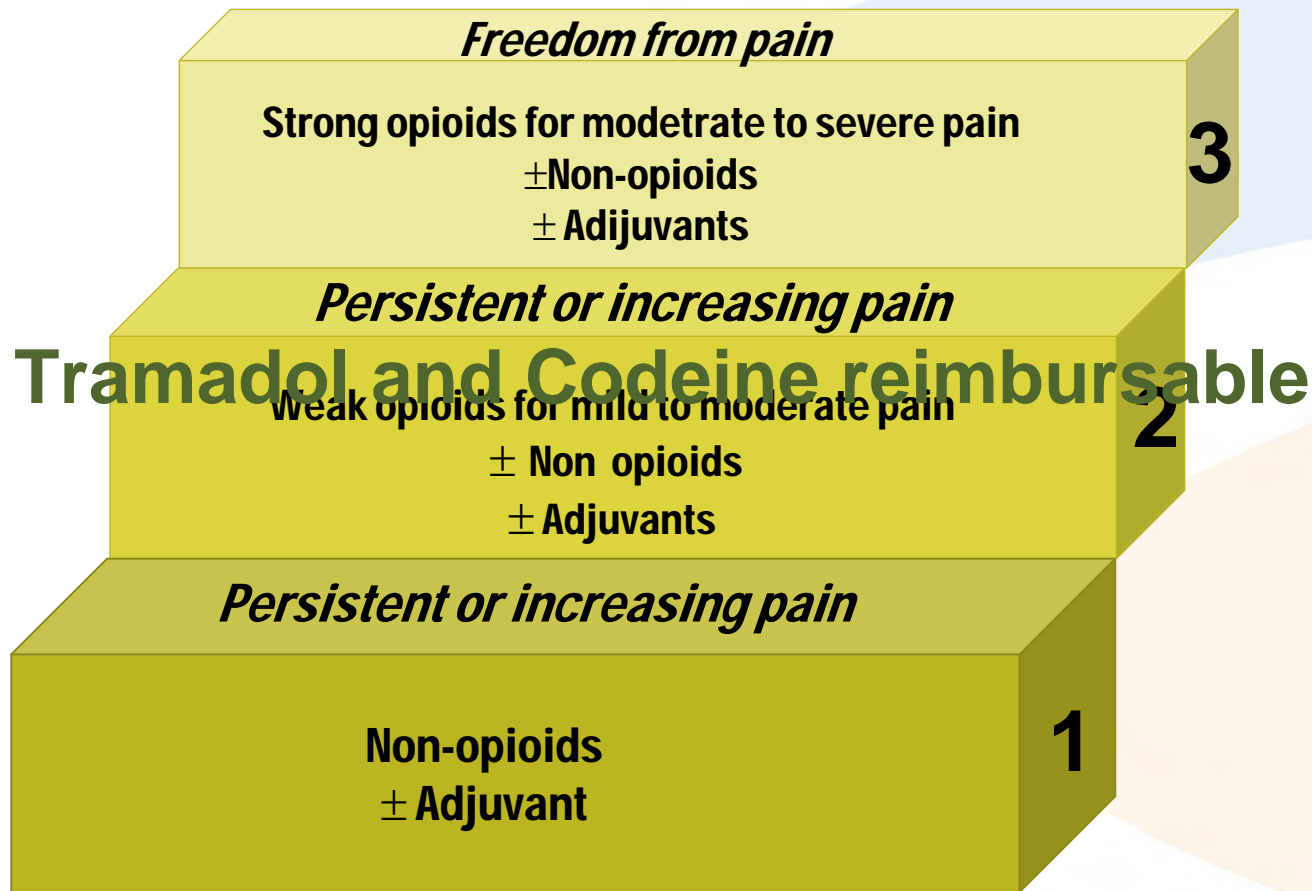
Active principle	RDD/DDD with opioid
Acetic ac. derivatives	4.6
Oxicams	1.1
Propionic ac. derivatives	4.0
COXIB	2.8
Other	6.5

Total number of incident oncologic patients: 734

Opioid normative evolution 2005-2008



Chronic severe cancer and non-cancer pain (2007-2008)



The World Health Organization Ladder for Chronic Cancer Pain Management

WHO three-step analgesic ladder

FIRST STEP

NSAIDs and/or COXIB (2007-2008)

Patients	Number (%)	Average duration of therapy (gg)	RDD/DDD
Oncologic	447 (61)	90	1.33
Non-oncologic	244 (63)	92	1.01

WHO three-step analgesic ladder

SECOND STEP

WEAK OPIOIDS (2007-2008)

	Patients	RDD	RDD/DDD
CODEINE (associations) (DDD: 90 mg)	Oncologic	0.015	0.16
	Non-oncologic	0.01	0.11
TRAMADOL (DDD: 300 mg)	Oncologic	0.11	0.40
	Non-oncologic	0.12	0.38

*DDD values are the ones reported by WHO
Total number of incident patients: 1,115*

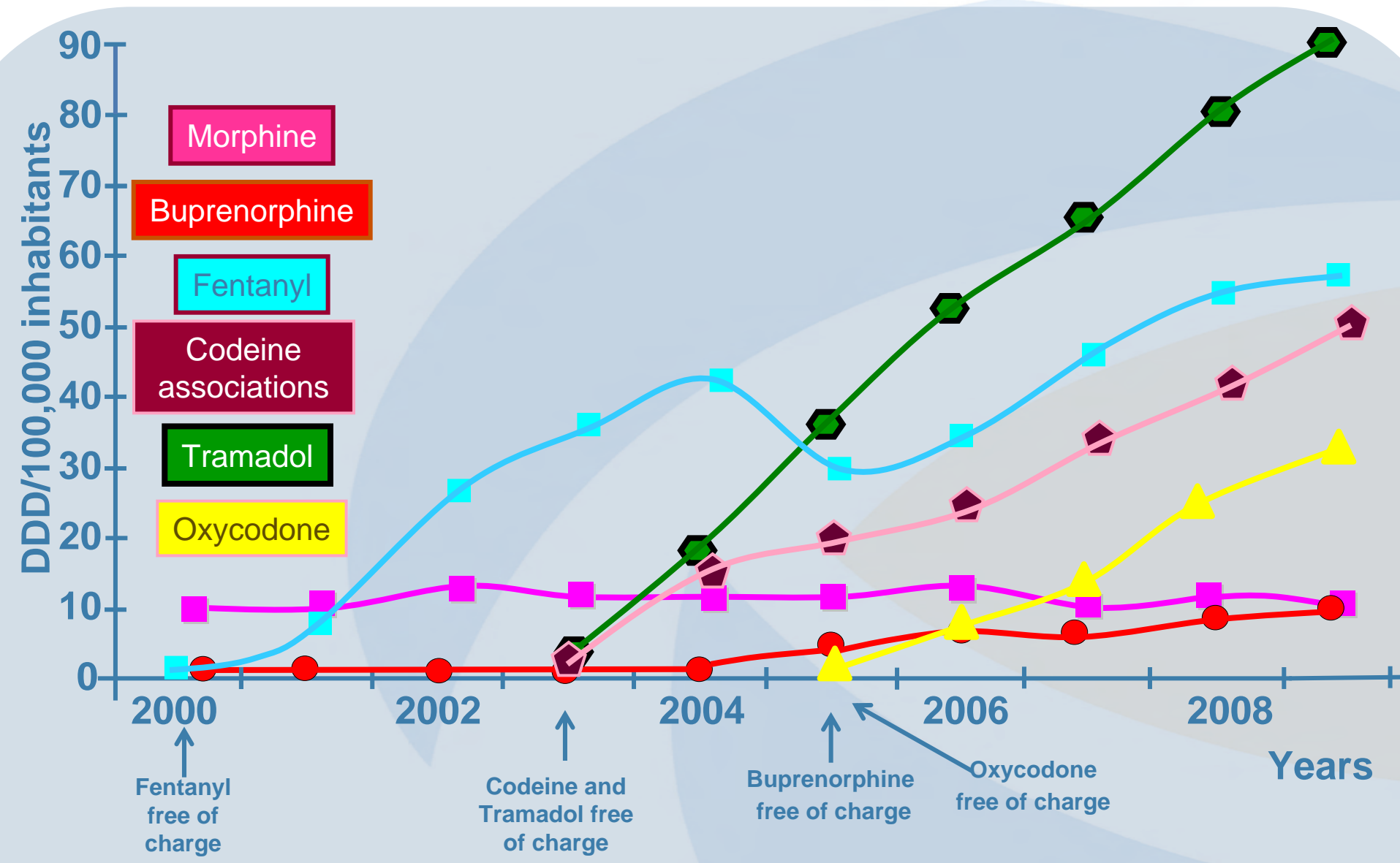
WHO three-step analgesic ladder

THIRD STEP

STRONG OPIOIDS (2007-2008)

	Patients	RDD	RDD/DDD
OXYCODONE + PARACETAMOL (120 mg)	Oncologic	31.54	0.26
	Non-oncologic	36.17	0.30
MORPHINE (100 mg)	Oncologic	50.94	0.51
	Non-oncologic	33.69	0.34
OXYCODONE (75 mg)	Oncologic	52.64	0.70
	Non-oncologic	45.87	0.61
FENTANYL (1.2 mg)	Oncologic	1.37	1.14
	Non-oncologic	1.11	0.93
BUPRENORPHINE (1.2 mg)	Oncologic	1.40	1.17
	Non-oncologic	1.36	1.14

Total consumption of opioids in Treviso (2000-2009)



Opioid consumption in Treviso in 2000-2009

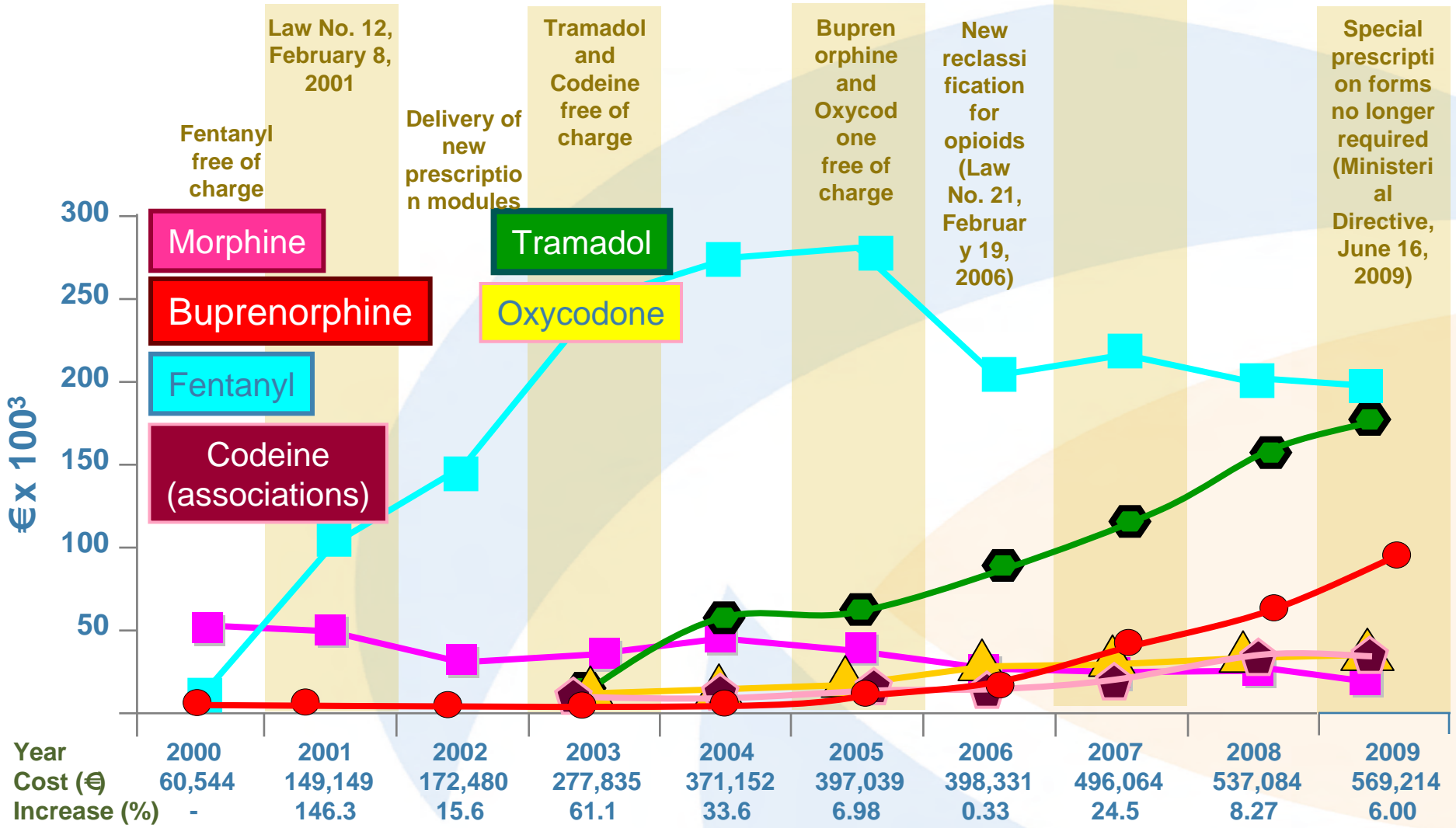
Year	Treviso DDD/100,000 Inhabitants per day	Italy DDD/100,000 Inhabitants per day	TV vs I [%]
2000	12	16	-25
2009	258	245	+5.3

Equianalgesic costs

	Approximate equianalgesic dose (mg)*	€
HYDROMORPHONE	25	5.0
MORPHINE	100	1.4
OXYCODONE	50	2.3
FENTANYL	0.25	1.5
BUPRENORPHINE	0.35	2.8

**Modified from Agency for Healthcare Policy and Research, 1992*

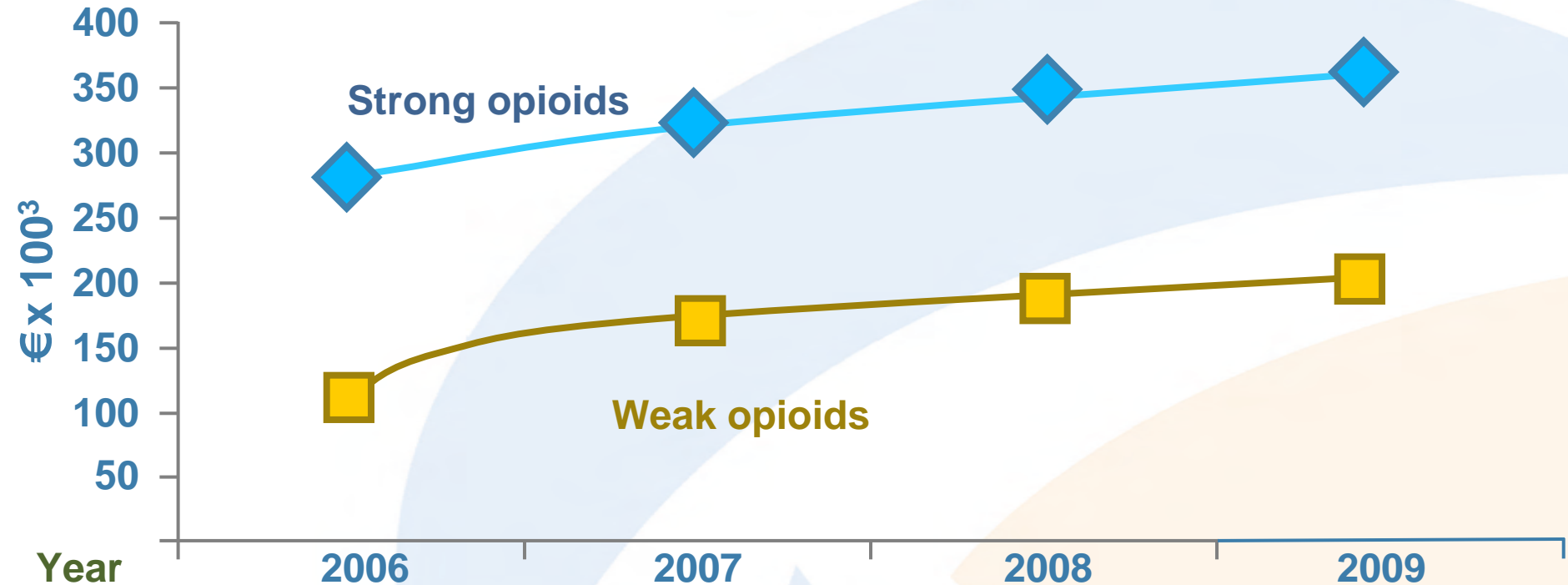
Opioid costs in Treviso (2000-2009)



Opioid costs in Treviso in 2000-2009

Year	Treviso €/procapita	Italy €/procapita	TV vs I [%]
2000	0.16	0.02	+725
2009	1.42	1.6	-12.4

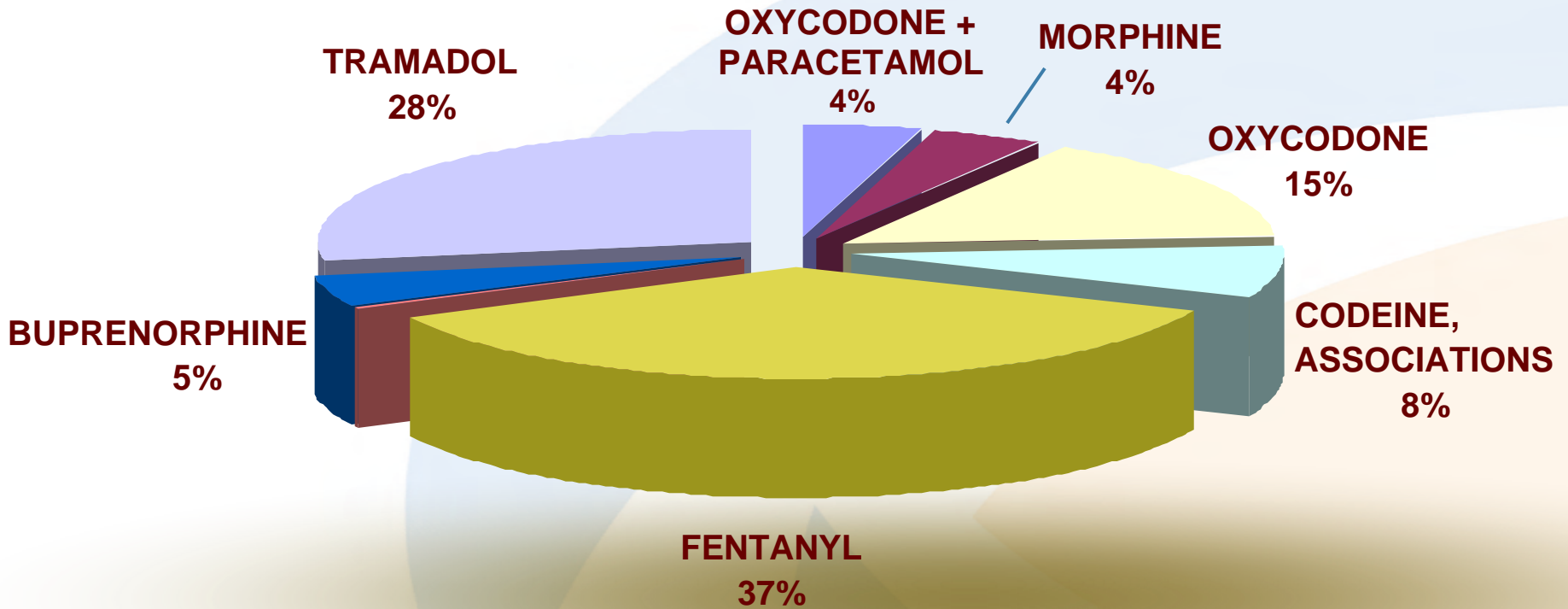
Costs for strong and weak opioids in Treviso (2006-2009)



Year	2006	2007	2008	2009
Cost (€)	398,331 (+0.33%)*	496,064 (+24.5%)	537,084 (+8.3%)	569,214 (6.0%)
% of global drug expense	0.65	0.81	0.88	0.90

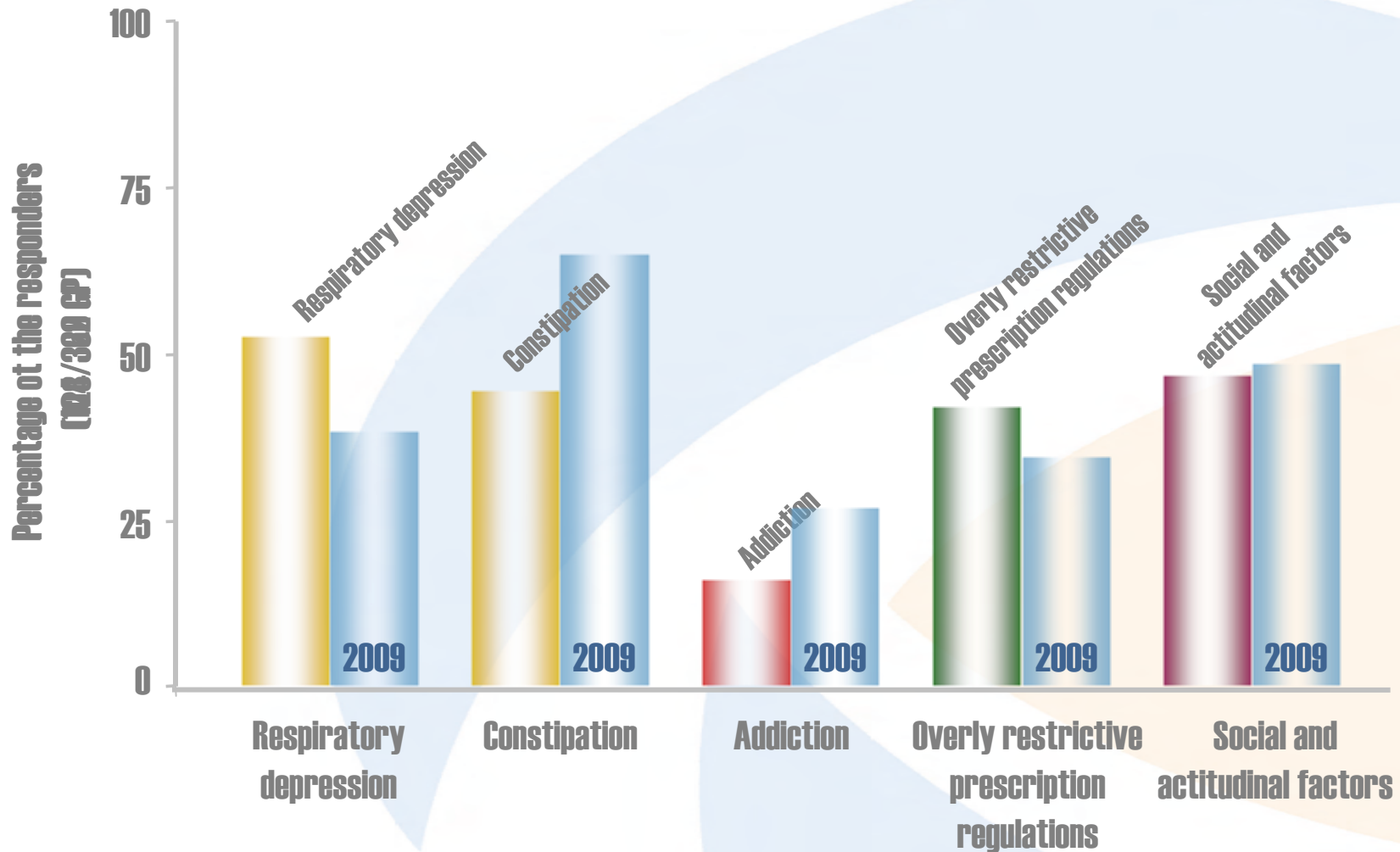
*Compared to 2005

Cost of opioids in Treviso (2008)



Factors influencing opioid prescribing pattern of General Practitioners of Treviso in 2001

answers to a questionnaire



Conclusion

Consumption and costs (2000-2009)

- **Both in Treviso and Italy opioid consumption is significantly increased**
 - **This is mainly due to inclusion of the opioid drugs in the reimbursable regimen by the INHS**
- **Compared to Italy, consumption of analgesic opioids in Treviso increased by 5.3%, whereas the expence decreased by 12.2%**

Conclusion

Adequacy of pain therapy (2000-2009)

- ✦ Both in Treviso and Italy the use of analgesic drugs is still inappropriate
 - The use of NSAIDs in Treviso is closer to WHO guidelines (Step I of Pain Ladder) than in Italy
- ✦ Both in Treviso and Italy, although average daily doses of weak opioids (tramadol and codein associations) are generally lower than the approved DDDs, they are the most prescribed analgesic opioids (Step II of Pain Ladder)
- ✦ Both in Treviso and Italy the use of transdermal preparation of strong opioids (fentanyl, buprenorphine) are **higher** than the approved DDDs, but the average daily doses of non-transdermal preparations (**morphine** and oxycodone) are generally **lower** than the approved DDDs (Step III of Pain Ladder)

Final considerations

Underuse and misuse of analgesic opioids

- **Despite the fact that new laws have facilitated the opioid prescription, in Italy opioids still remain underused**
- **Transdermal preparations of strong opioids are improperly preferred over non-transdermal preparations**
 - **Morphinophobia**
Everything but morphine
 - **Although they produce the same degree of analgesia, they cause a large increase in costs**
- **The appropriate use of analgesic opioids seems to be still influenced by pharmaceutical company pressure, misconception, beliefs, attitude about fear of adverse effects, and addiction**

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Canaletto, Padova, Porta Portello, National Gallery of Art, Washington (D.C.)