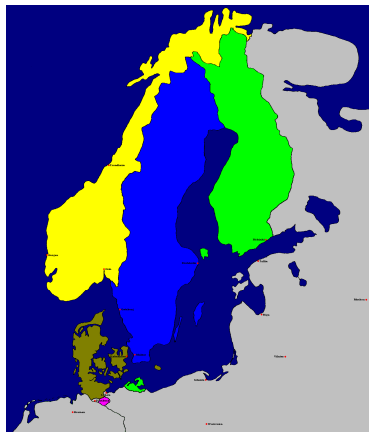


# The performance of a national OMT program with time. Did the benefits (mortality reduction) from the Norwegian program change during 1997-2009?



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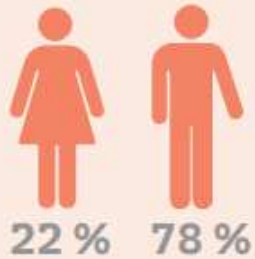
# Agenda

- ✓ Opioid use, OMT provision and Overdoses
- ✓ Norwegian national OMT program
- ✓ Program performance with time
- ✓ Interpretations

# Overdoses in Europe; on a rise

## DRUG-INDUCED DEATHS

### Characteristics



Mean age at death

38

Deaths with opioids present



### Age at death

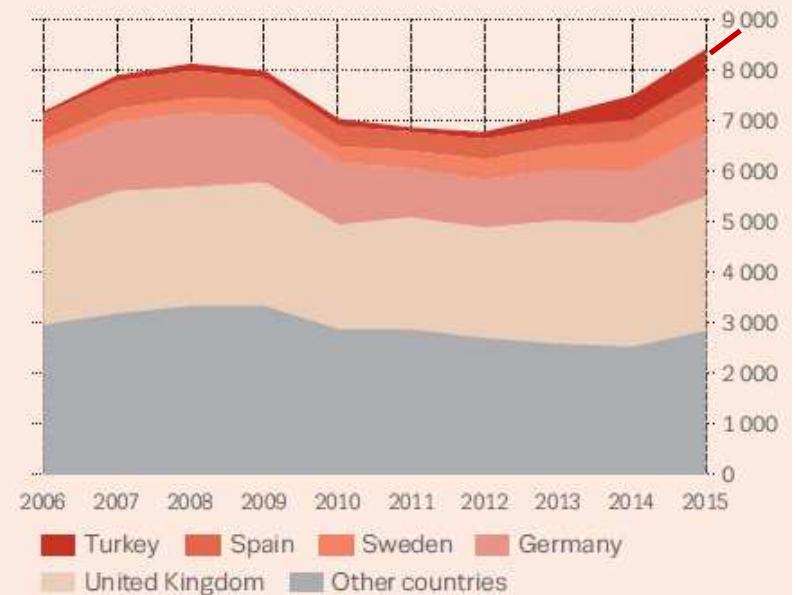


Number of deaths

7 585 EU

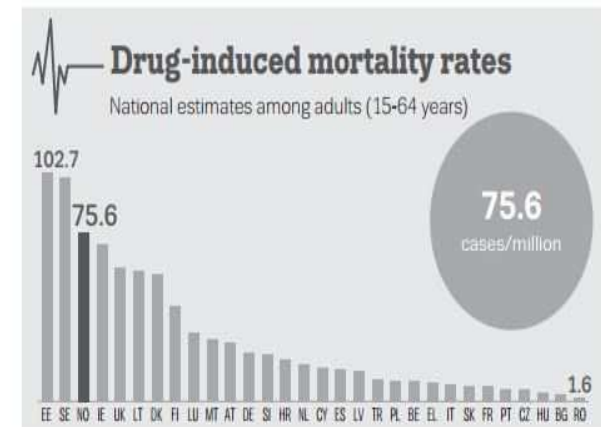
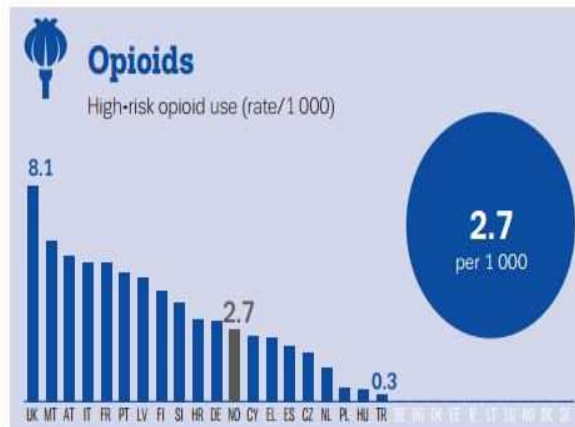
8 441 EU + 2

### Trends in overdose deaths

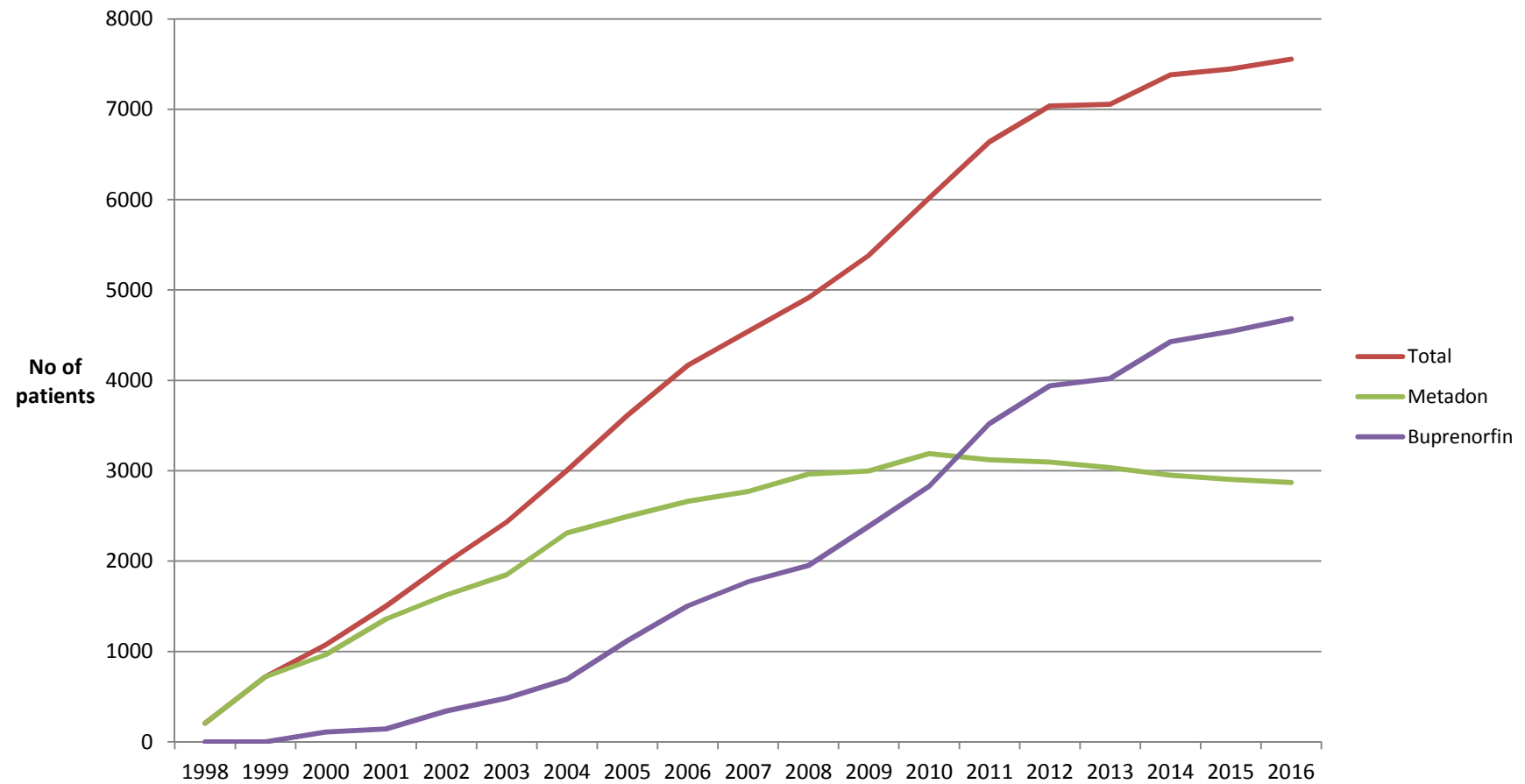


# Norway Characteristics (2015)

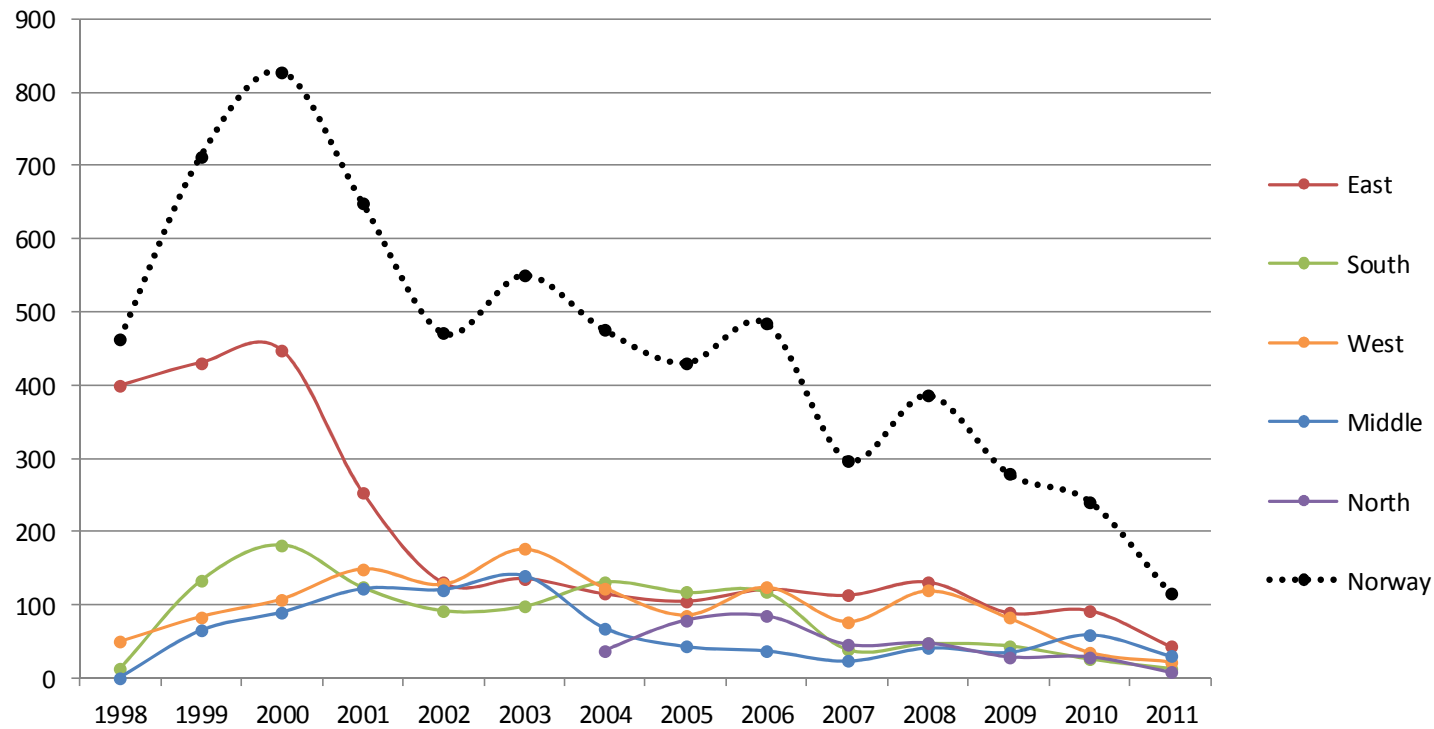
- ✓ Population 15-64
  - 3.340.000
- ✓ High-risk opioid users
  - 9000 (6700-14000)
- ✓ Patients in OMT
  - 7500
- ✓ Overdose deaths
  - 266 (2015)



# OMT patient numbers; with time



# Waiting lists for OMT; 1998-2011



# The Norwegian OMT system

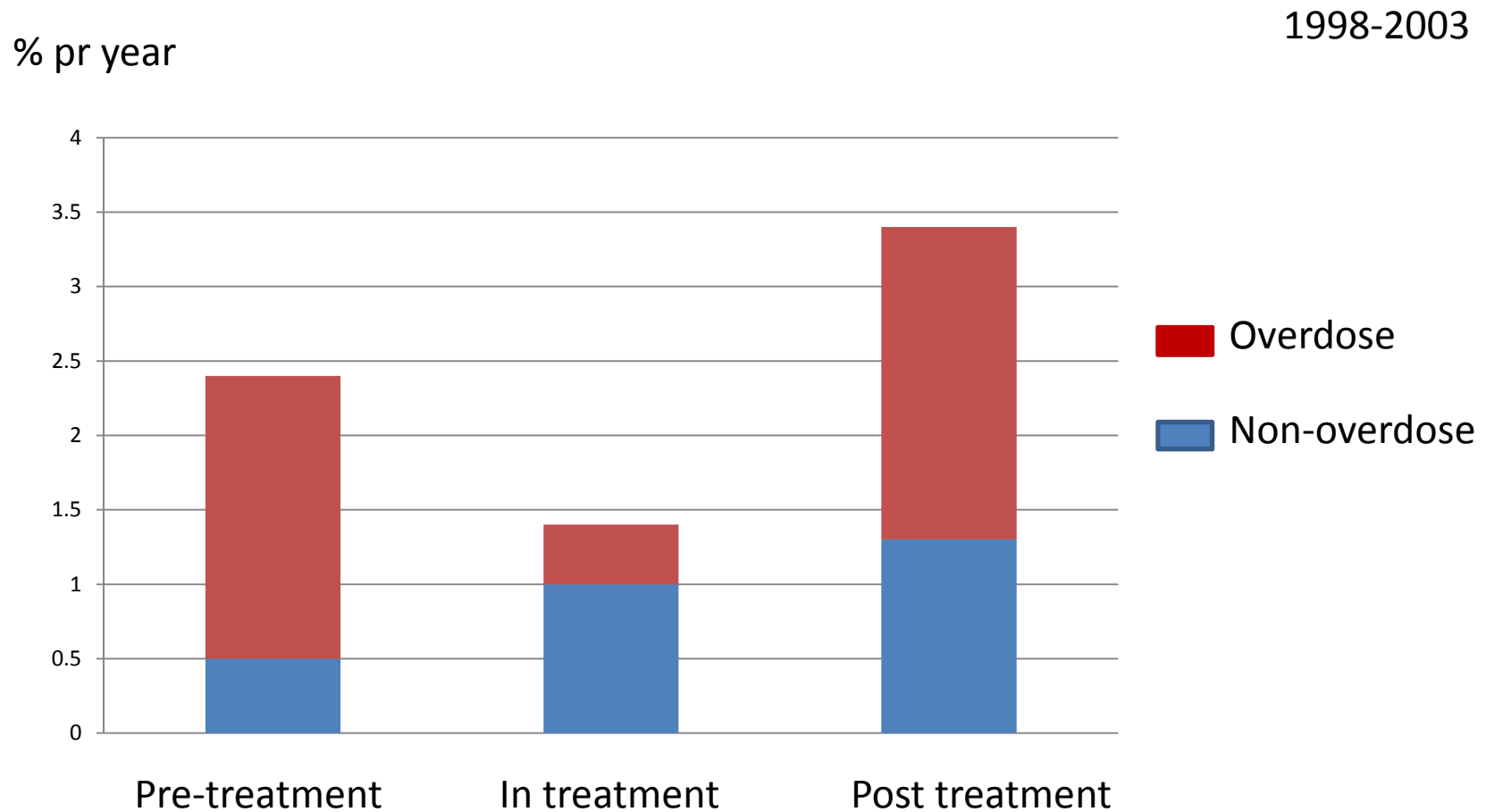
- ✓ From limited high threshold to widely available low-threshold system (1997-2017)
- ✓ One national system with treatment guideline
  - ✓ Medication by indication and patient centred
- ✓ Treatment initiations in specialist health care
  - ✓ Follow-up in primary care and municipality
  - ✓ 3-party responsibility; specialist hc, primary hc & social service

# OMT patients in 2016

- 7500+ patients in treatment
- Mean age 44.3 yrs, and 30% women
  - 8% below 30yrs, and more than 28% above 50yrs
  - 38% methadone, mean dose 93mg (15mg bup)
  - 28% prescribed benzo
- 77% private housing (rented or owned)
- 82% with no daily activity (education or work)
- 36% severe somatic health problems
- 20% severe depression, 28% anxiety symptom

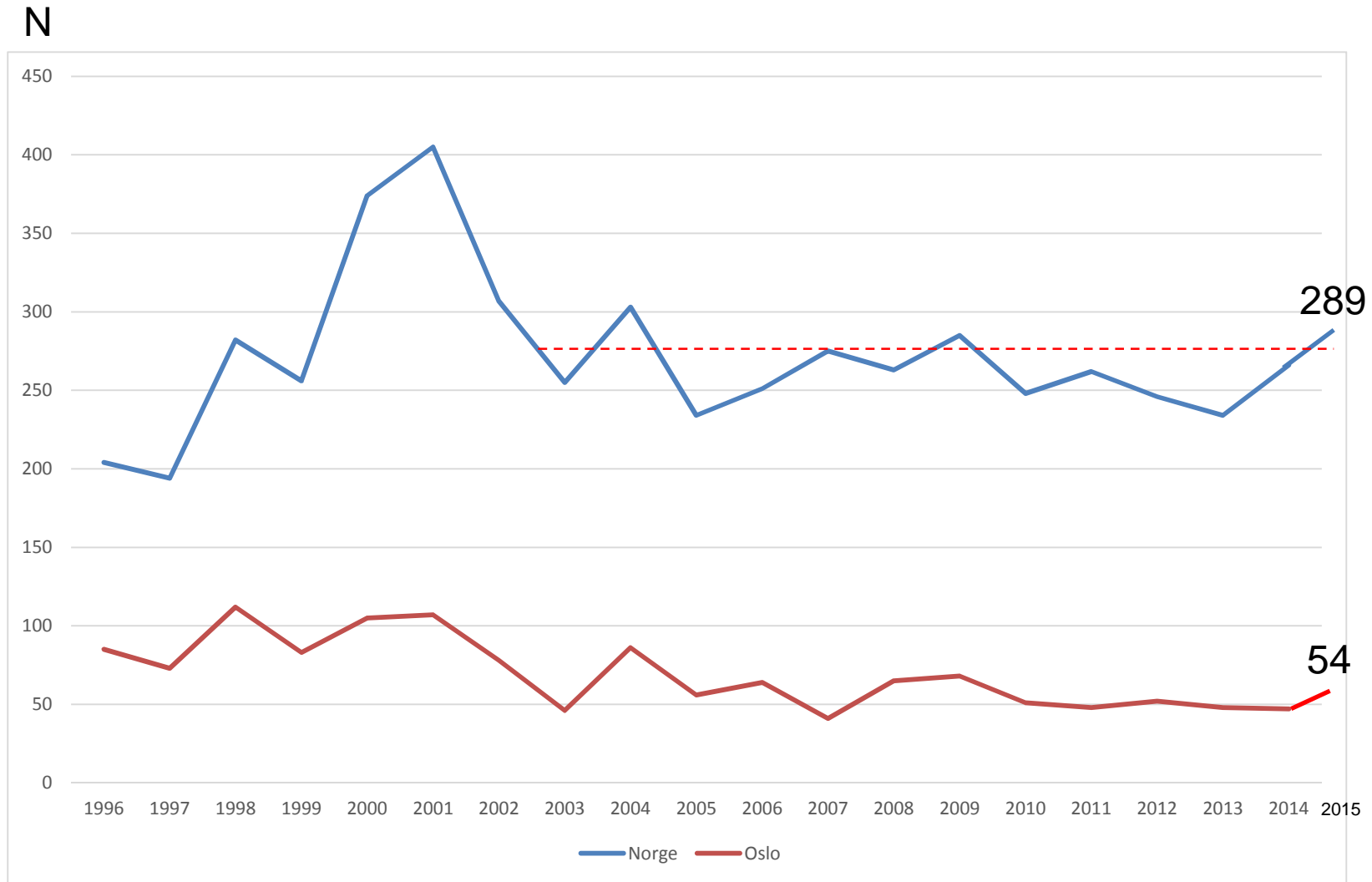


# Mortality before, during and after OMT in Norway

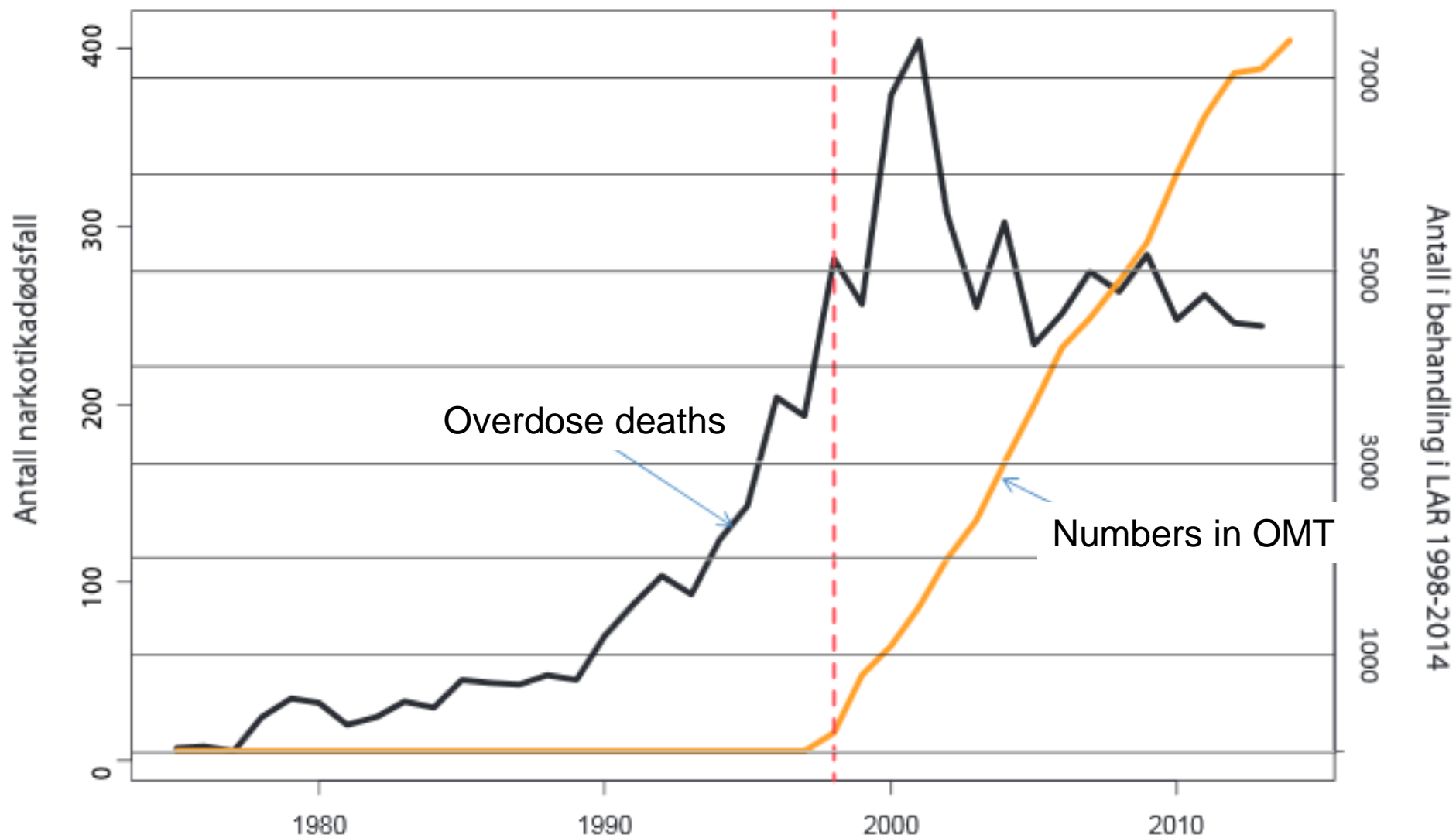


**Clausen T. et al. Drug and Alcohol Dependence, 2008,**  
Mortality prior to, during and after opioid maintenance treatment (OMT)

# Overdose deaths, Norway



# Overdose deaths and OMT; Norway



## The puzzle:

Why are overdose rates not decreasing more following large OMT expansions?

- Is OMT not reducing mortality anymore?
  - Is the system performing differently?
  - Is the patients' risk changing?
  - Is the target group changing?
  
- Other explanations?

# National OMT cohort study

- ✓ All patients included in OMT since initiation
  - 1997-2009
- ✓ Linkage with GMR data including 2010 data
- Examination of program performance by time period

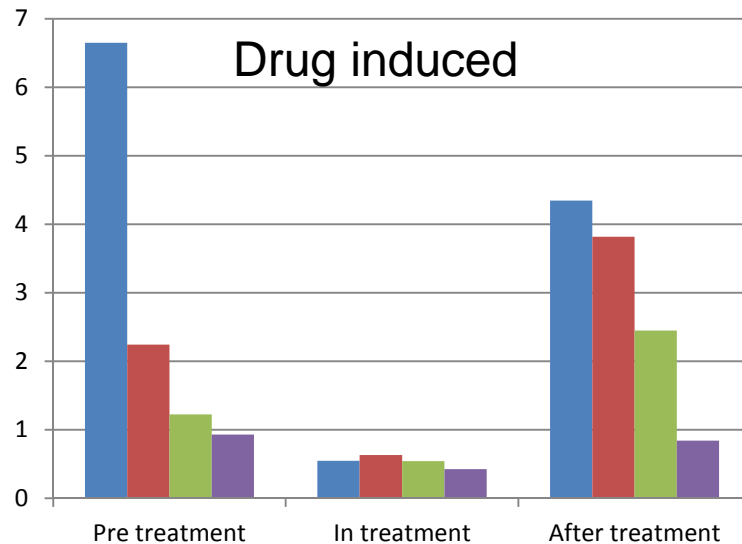
# Program activity and patients

Year	Treatment initiations (n)	Men %	Mean age at treatment initiation	% One year retention per year per treatment initiation
1997	23	61 %	38	100 %
1998	141	62 %	38	88 %
1999	565	67 %	38	85 %
2000	459	66 %	37	84 %
2001	590	70 %	37	83 %
2002	682	70 %	37	70 %
2003	665	70 %	37	80 %
2004	630	72 %	37	84 %
2005	703	70 %	37	85 %
2006	661	71 %	37	81 %
2007	663	64 %	37	73 %
2008	506	69 %	36	81 %
2009	634	74 %	37	NA

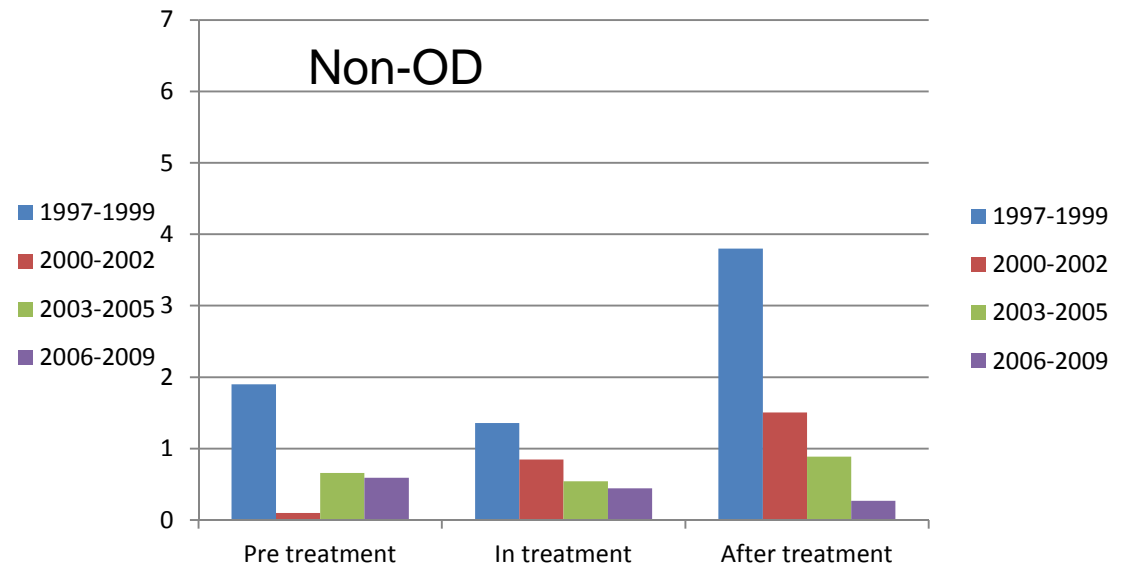
Since 1999, 5-600 new OMT inclusions annually; stable age and gender distribution  
High and stable 1-year retention;

# Performance with time

CMRx100



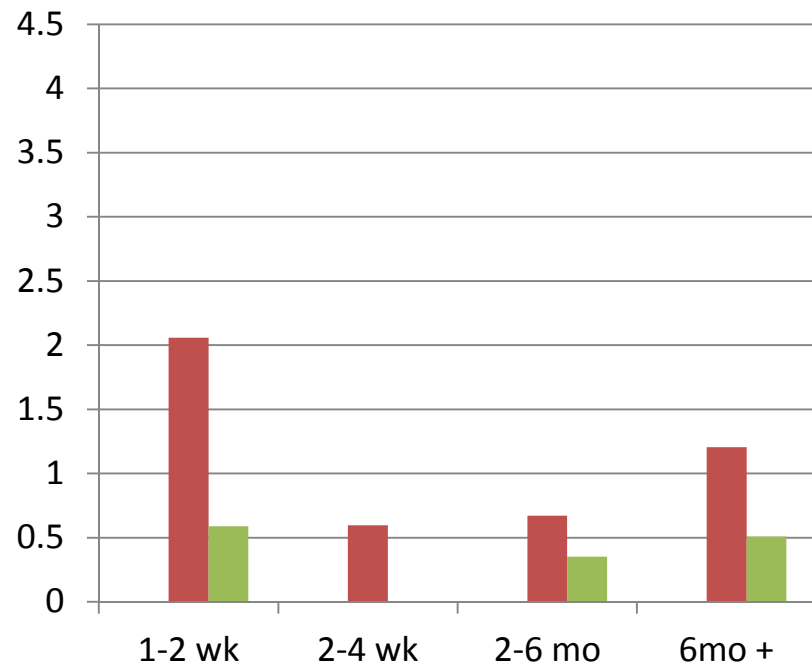
CMRx100



The initial years of the program the mortality both for overdose and non-OD were high  
Signs of lower comorbidity levels (Non-OD deaths) in more recent years  
In treatment overdose death rates low and stable  
Difference between «in treatment» and «outside treatment» level reduced with time  
Relatively less benefit in including new patients later compared with early in program

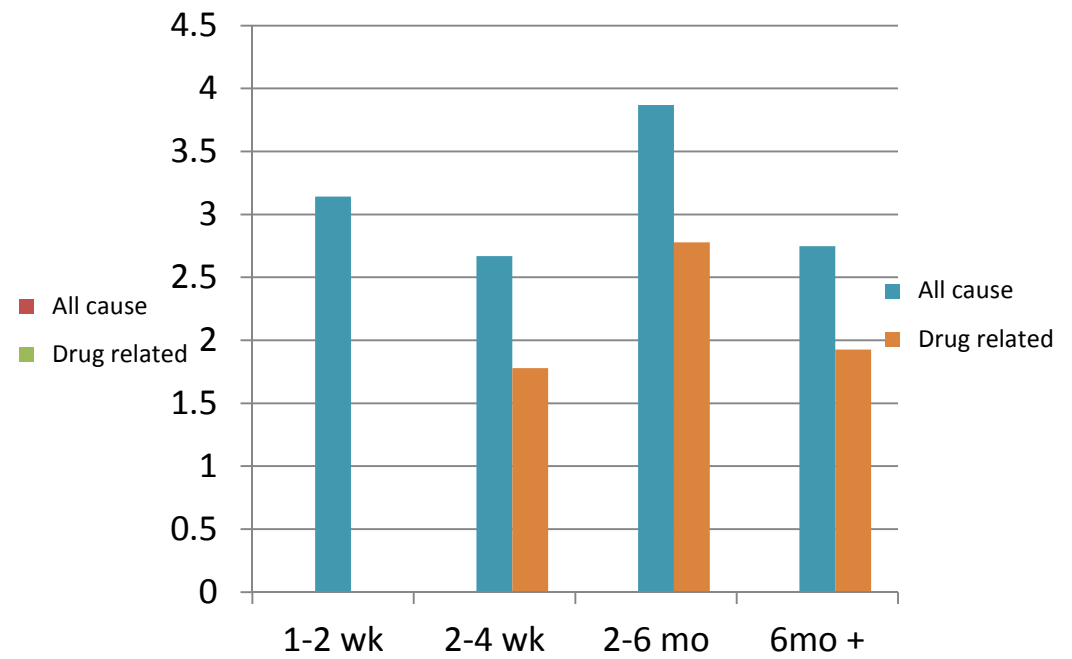
# Mortality during and after OMT

CMRx100



Following treatment entry

CMR x 100



After treatment termination



# Opioid using persons?



# Why so many overdoses?

Previous explanations:

- **Injection of heroin (85-90%)**
- **Polydrug use (Heroin-Benzodiazepines)**
- **Old and ageing user-population**

New information indicates:

- ✓ Lower mortality reduction benefit with healthier new treatment entrants, than early in program history
- ✓ Growing and new at-risk groups outside of treatment?
  - NPS opioids
  - Prescription opioids
- Need for new and targeted interventions?