

# HPV AND CERVICAL CANCER IN MOLODVA COST/BENEFIT ANALYSIS

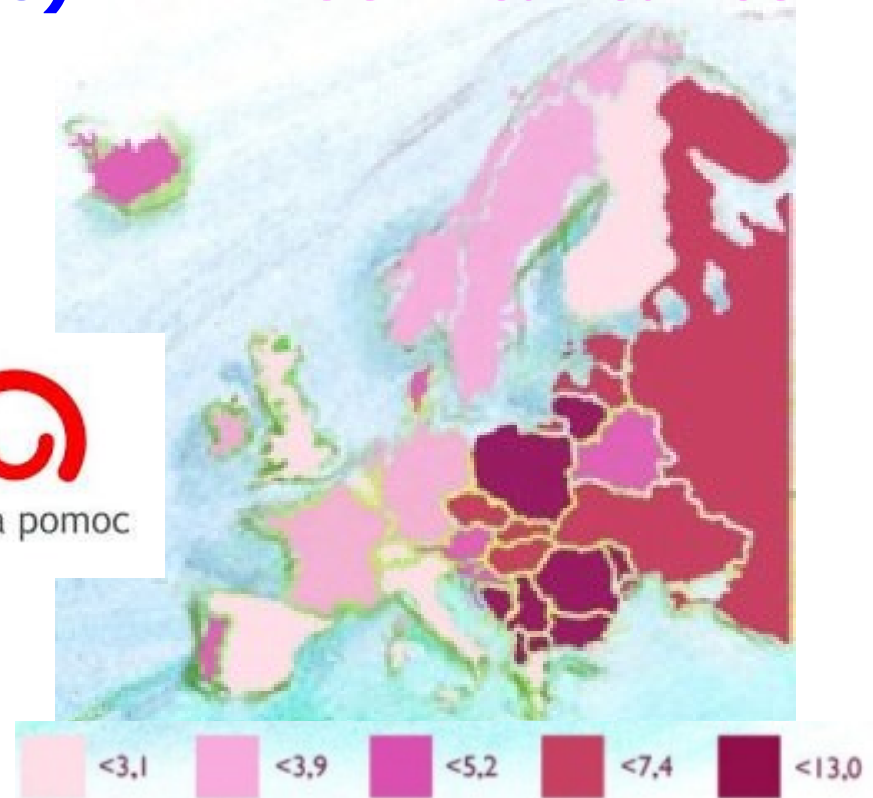


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- **HPV (sexually transmittable virus)** → **Cervical cancer**
- **Cervical cancer: first most common type of cancer in working age women in Moldova**
- **Control: a combination of vaccination and screening**
- **Scenarios: demographic change, increase of sexuality, screening freq.**



Mortality of cervical cancer



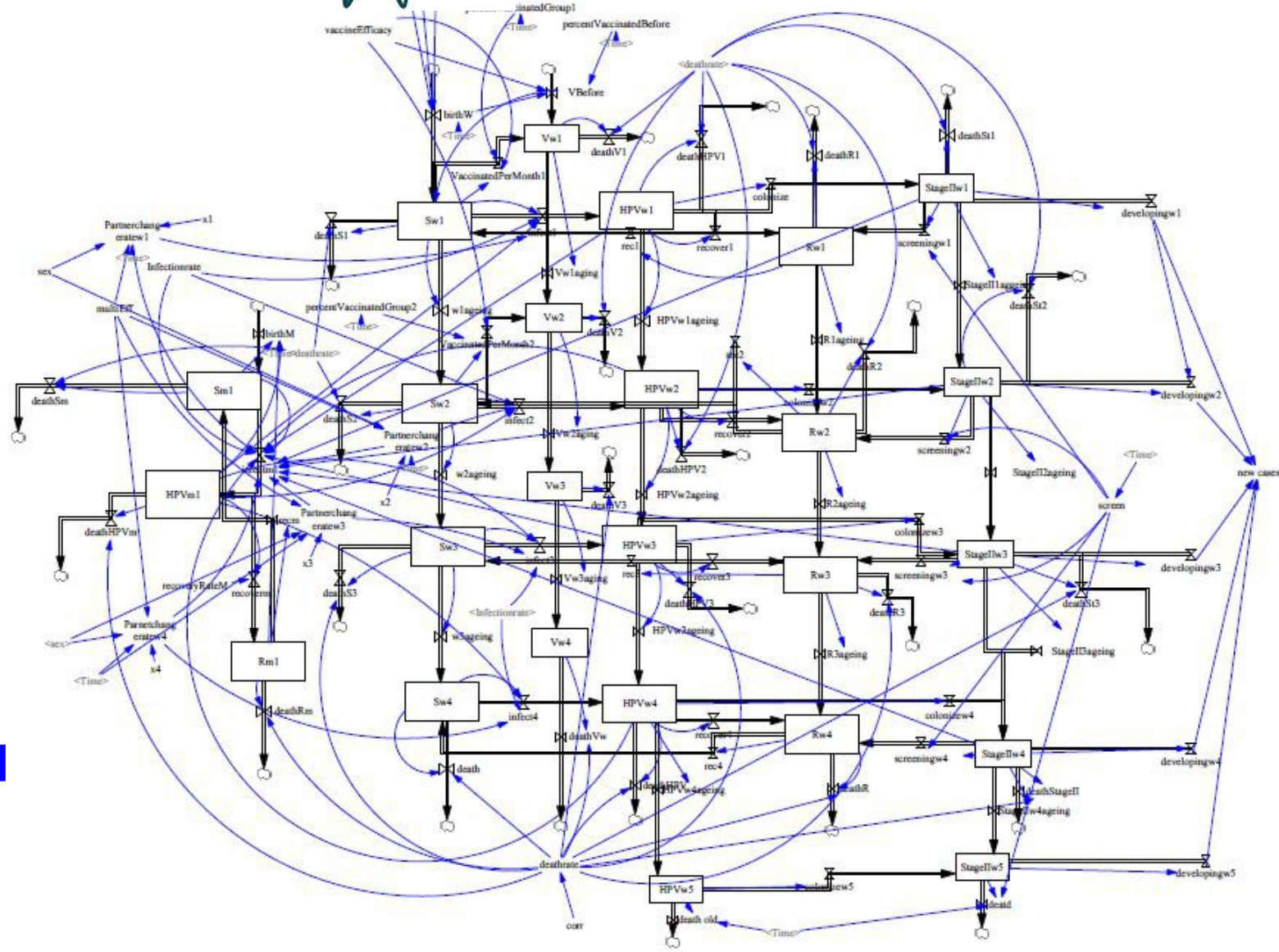
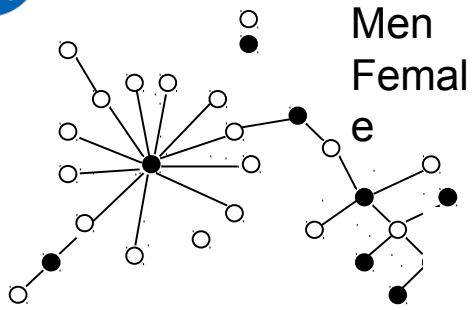
## My questions for next 15-20 years

- The optimal preventive guidelines: cervical **screening** practice, targeted vaccination and sexual education
  
- Costs of HPV vaccination, **screening**, treatment and preventive program.

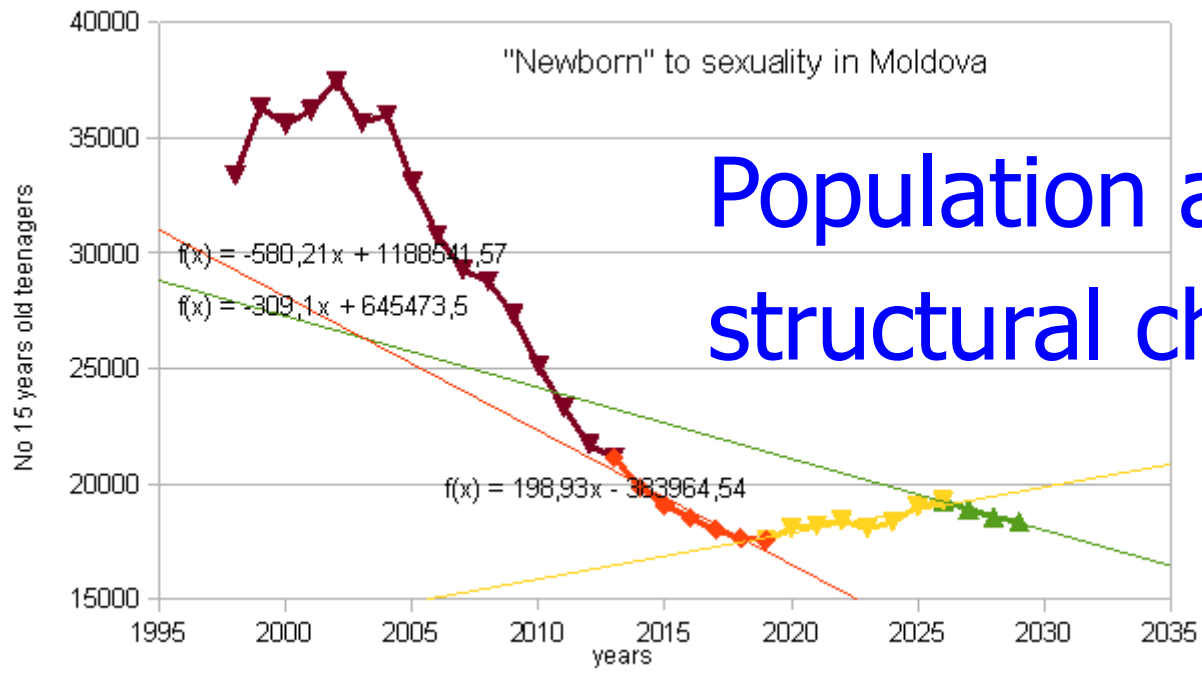




# Spread of HPV & Cancer development & living Moldovan society



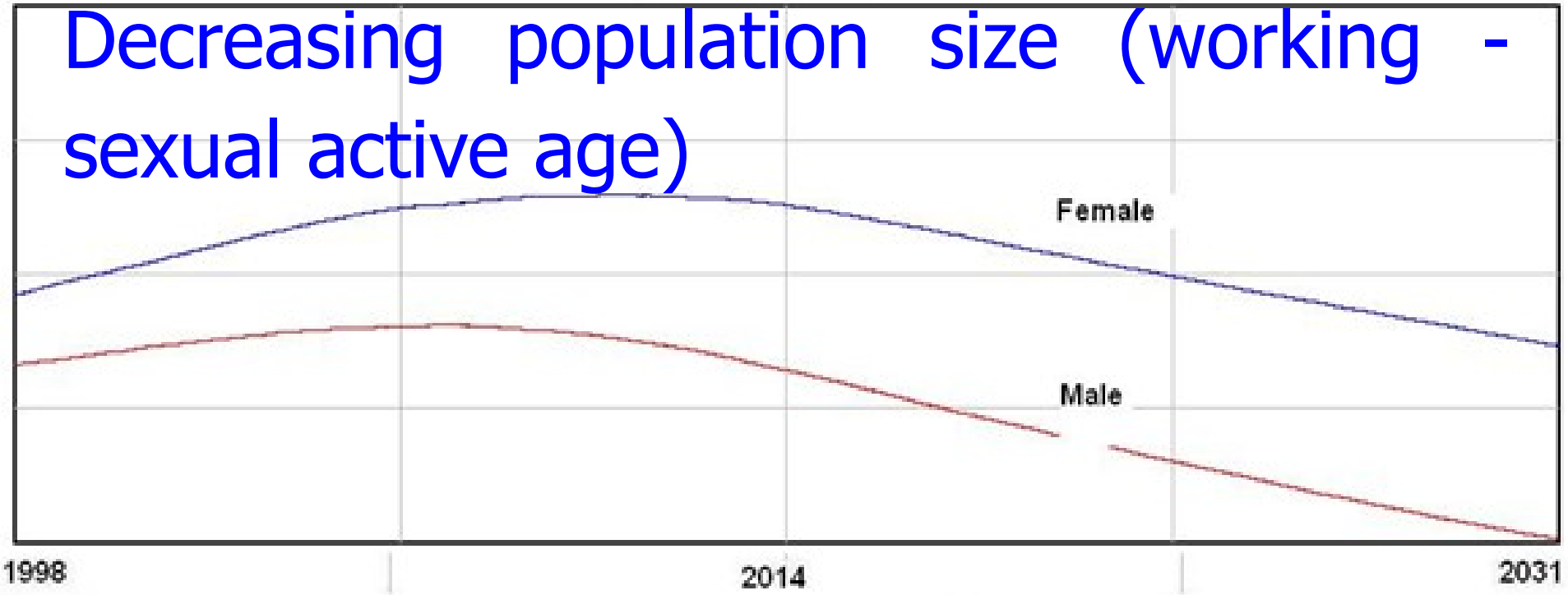
Set of differential and stochastic equations



# Population ageing and structural change

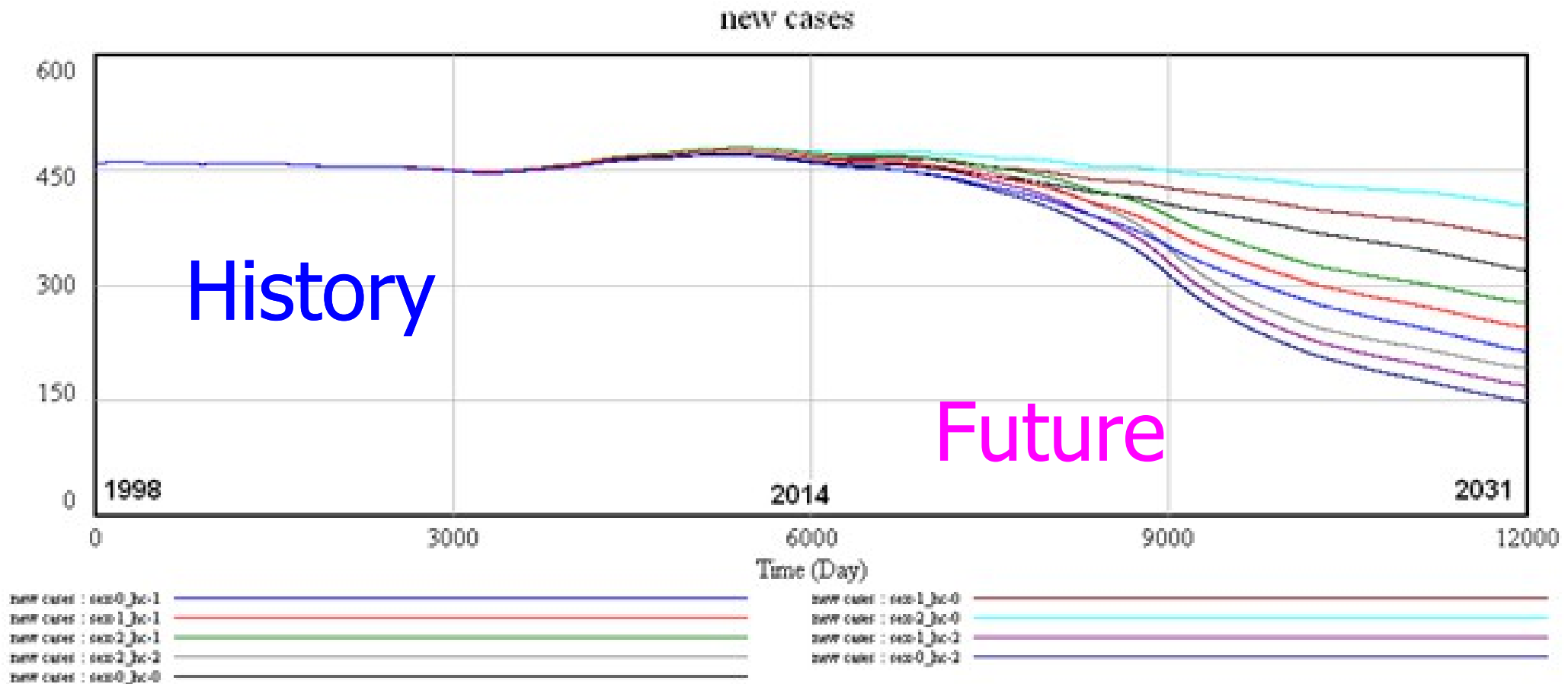
Population (15-65)

## Decreasing population size (working - sexual active age)





# Incidence of new cancer case estimated for historical data (1998-2012) and possible projections till 2031





## Screening guideline in Moldova since 2012:

Target group: >20 years old women

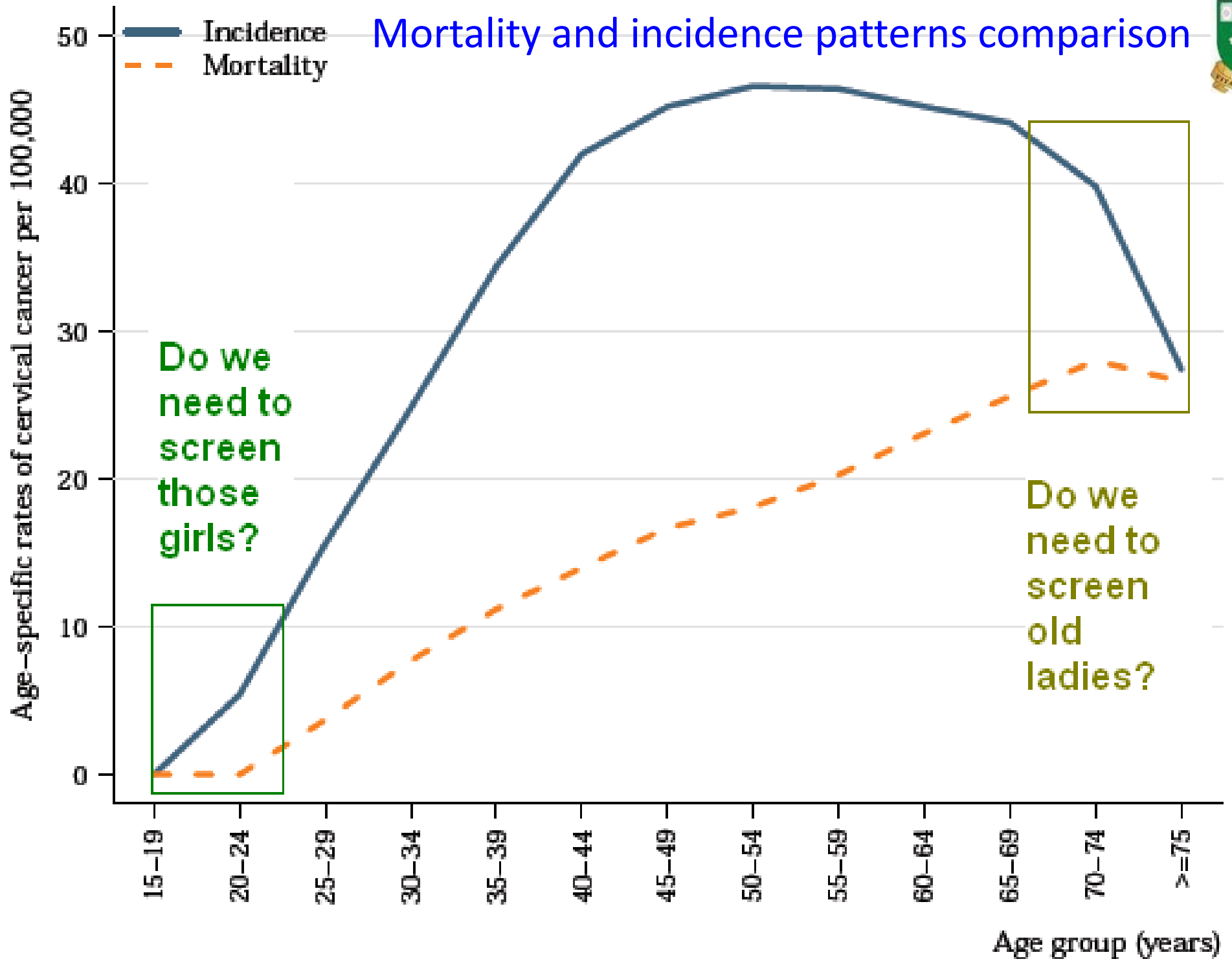
Frequency: every 2 years

It sounds great (better than in the world richest countries),  
**however**

Public health system in Moldova has no capacity to couple with official screening program, where more than 700k test suppose to be done yearly (currently it's 100k and in many sites it seems to be already overloaded). It's more than 3.5 M EUR yearly according to this theoretical program.

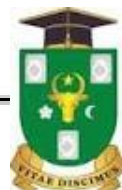


# Mortality and incidence patterns comparison



Do we need to screen those girls?

Do we need to screen old ladies?

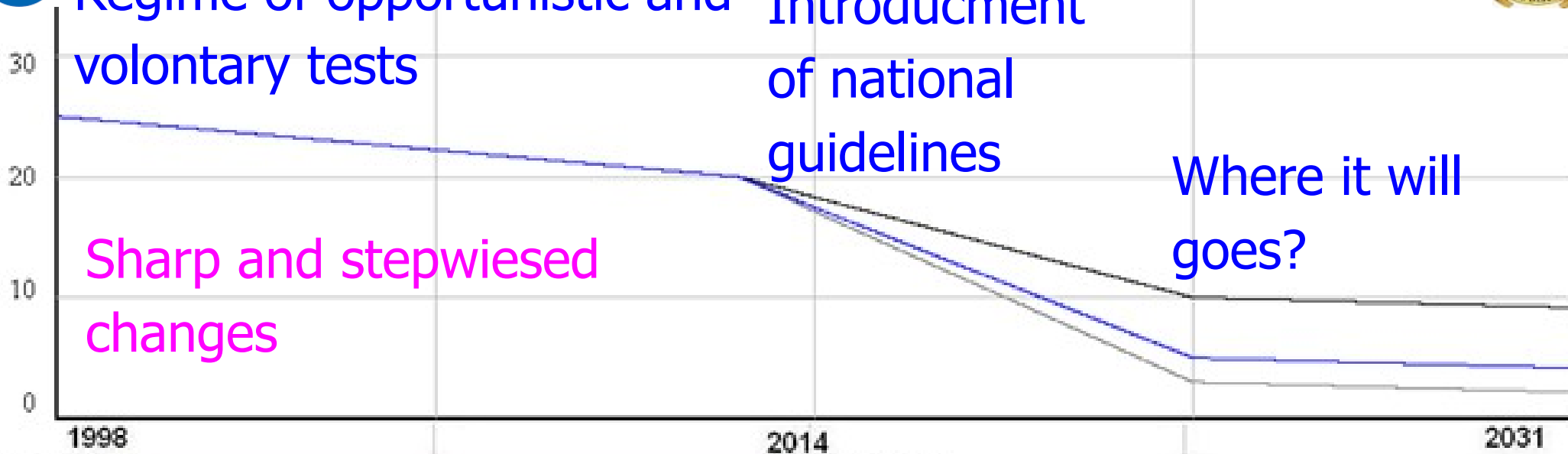


Regime of opportunistic and voluntary tests

Introducment of national guidelines

Where it will goes?

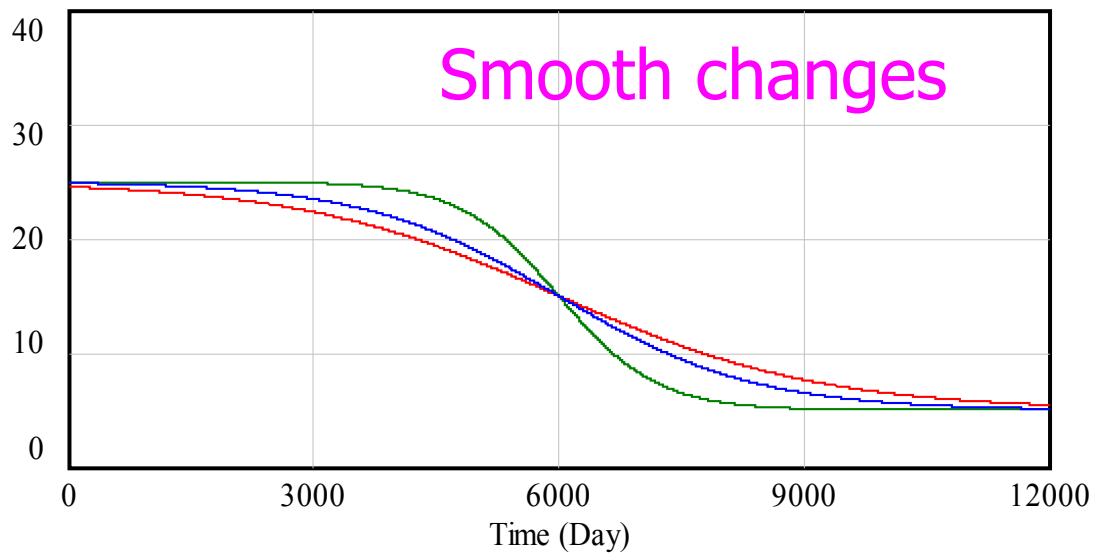
Sharp and stepwiesed changes



screen : sex-0\_hc-0  
 screen : sex-0\_hc-1

screen : sex-2\_hc-2  
 screen

Screening frequencies changes – Shortening interval time between tests



screen : sex-0\_hc-1\_scr1\_sig  
 screen : sex-0\_hc-1\_scr1\_sig2  
 screen : sex-0\_hc-1\_scr1\_sig0\_5





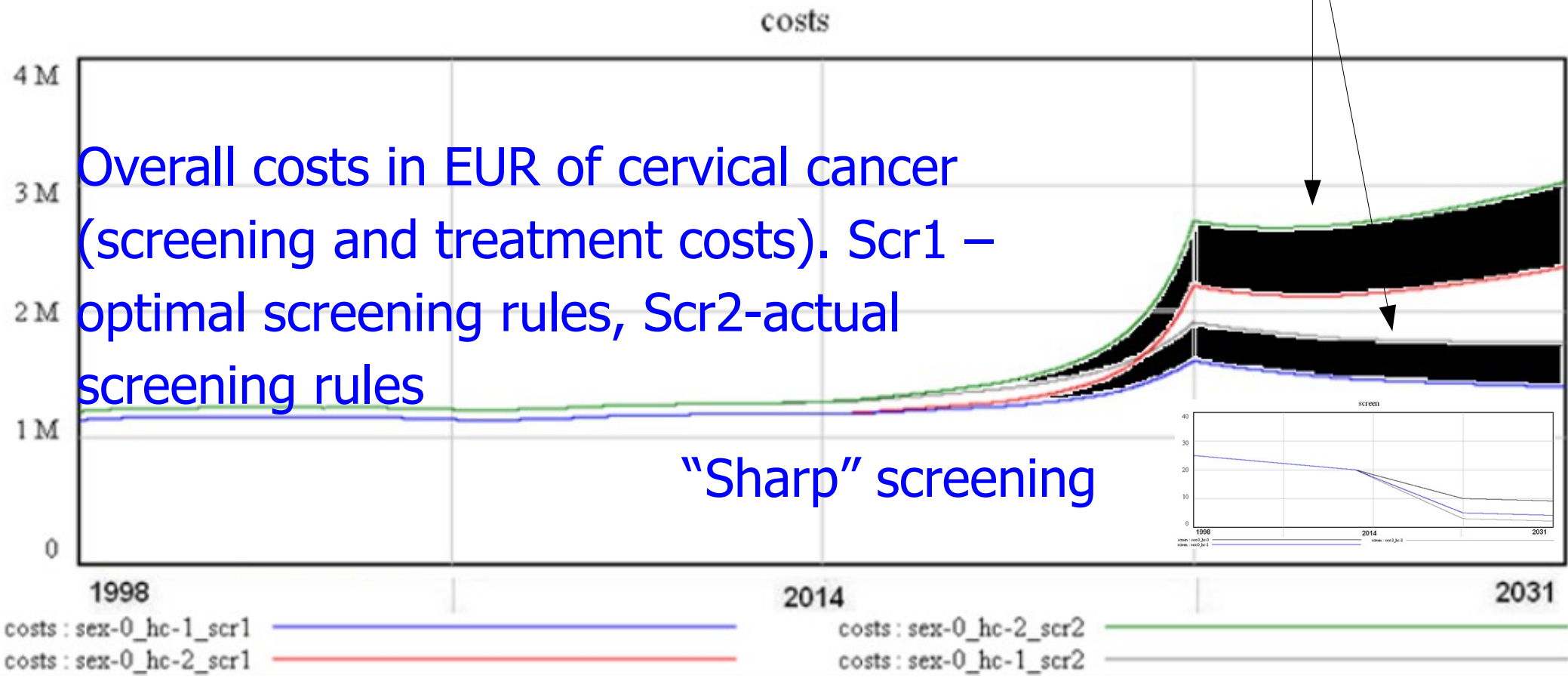
# We examine overall cancer costs for:

- current screening program +20 (scr2)
- **25-64 (scr1)**

Net gain

100-300k EUR yearly

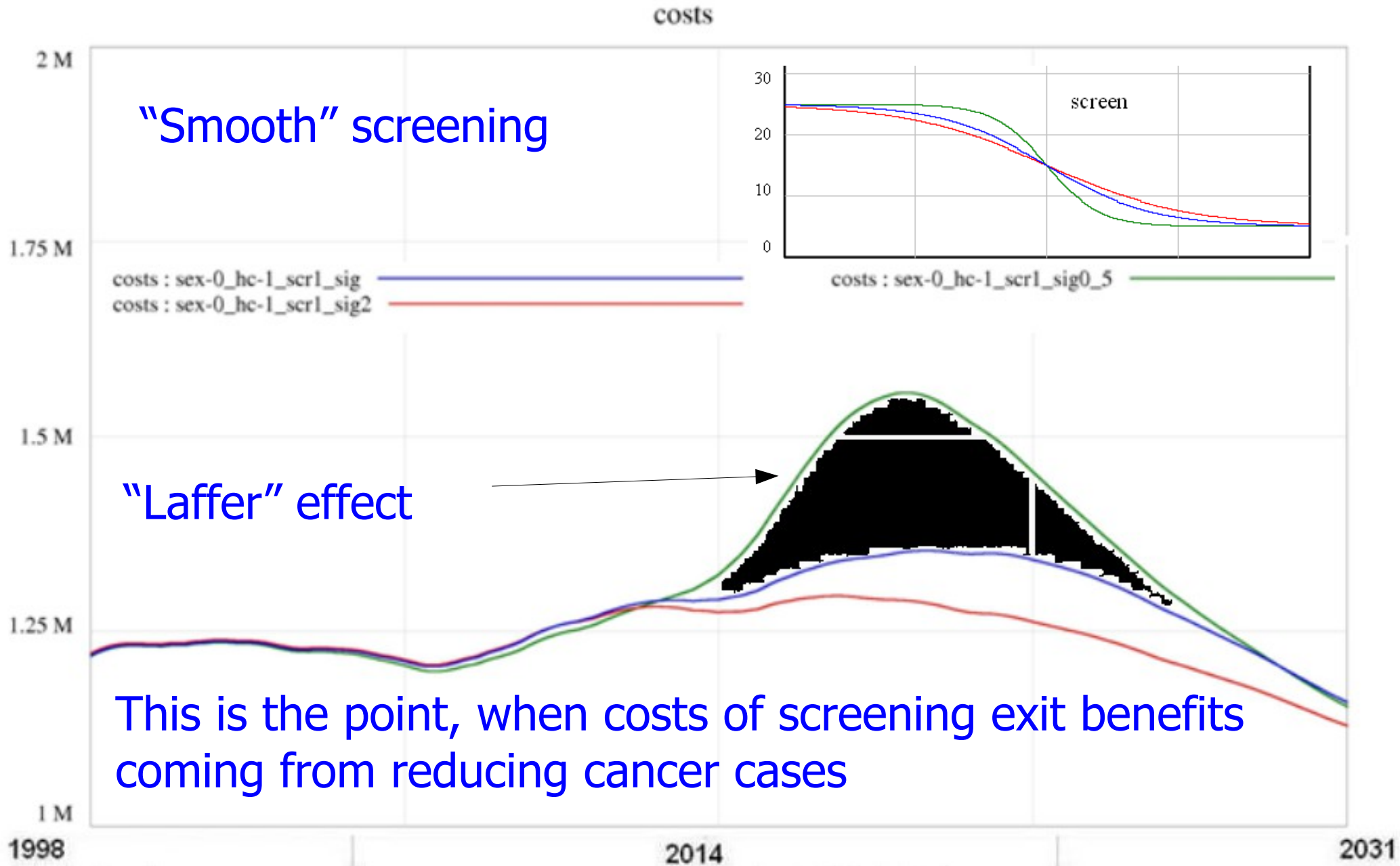
cost: 10-15 additional cancer cases yearly





# Approaching 5 years effective screening intervals

“Smooth” screening





## Conclusions



- **Moldova has no capacity to apply official screening program, where more than 700k test suppose to be done yearly (currently it's 100k and in many sites it seems to be already overloaded);**
- **The saving perspective in 10-15 years would in range 100-300k EUR yearly with almost no population costs;**
- **Targeted vaccination and sexual education have similar financial costs (in long perspective) like frequent screening, but provide more populational profits.**



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