Development of the vision and hearing screening micro-simulation models

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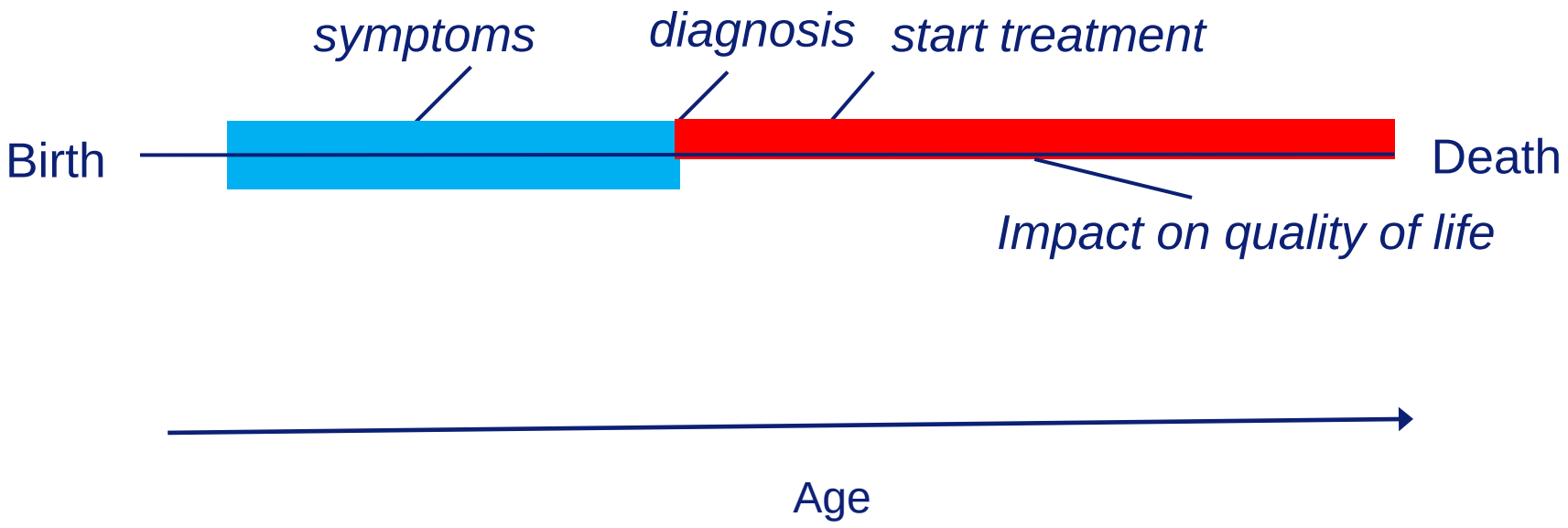
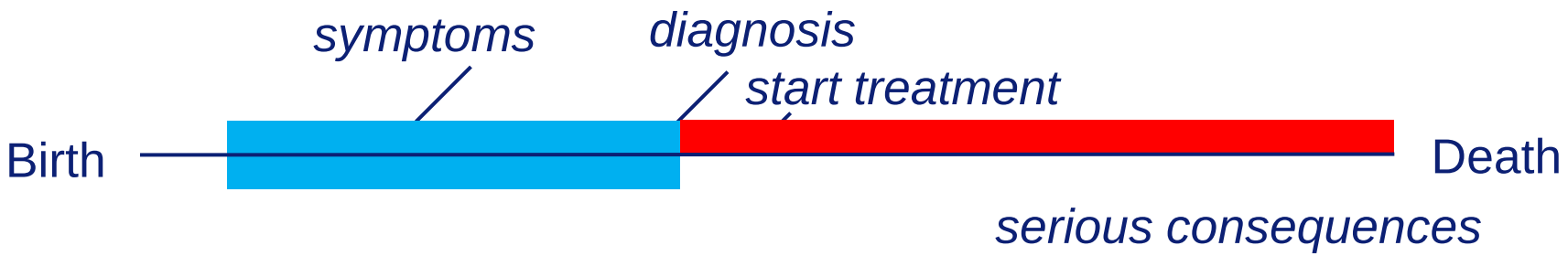
Aim

- Evaluate benefits, and harms and cost-effectiveness of current vision and hearing screening programmes
- Predict effects of introduction/change of programmes

Evaluation of screening programmes



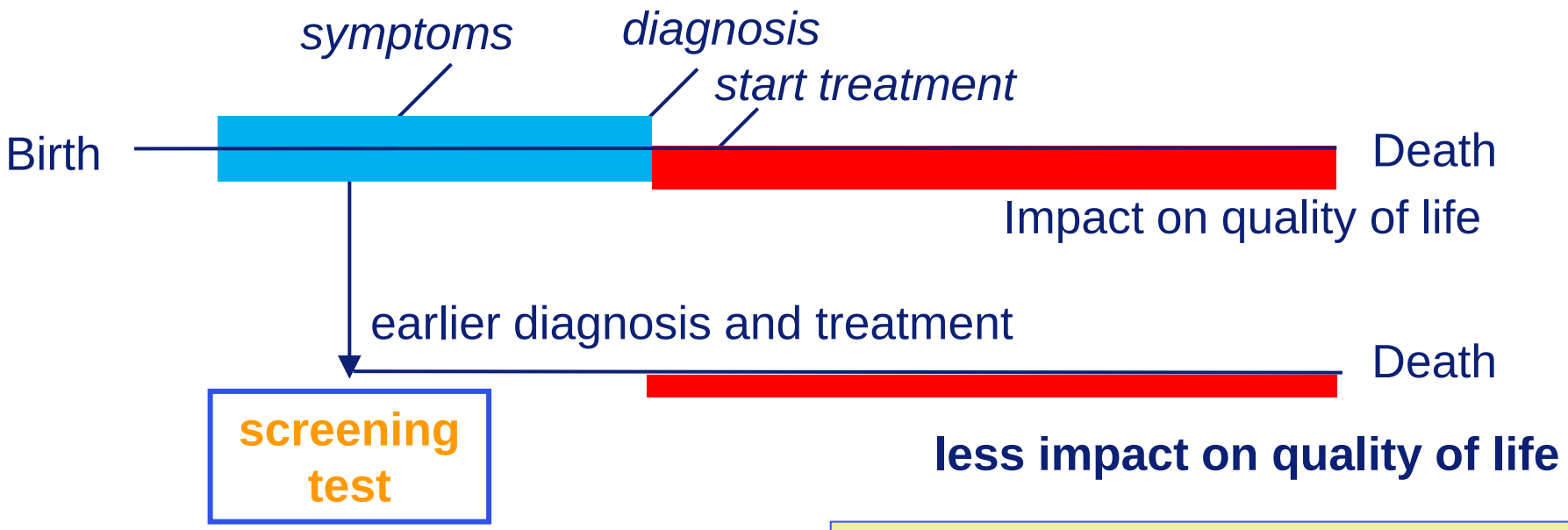
General background



General background

- Incidence (risk factors)
- Life expectancy
- Treatment
- Costs

Screening programme



Screening programme

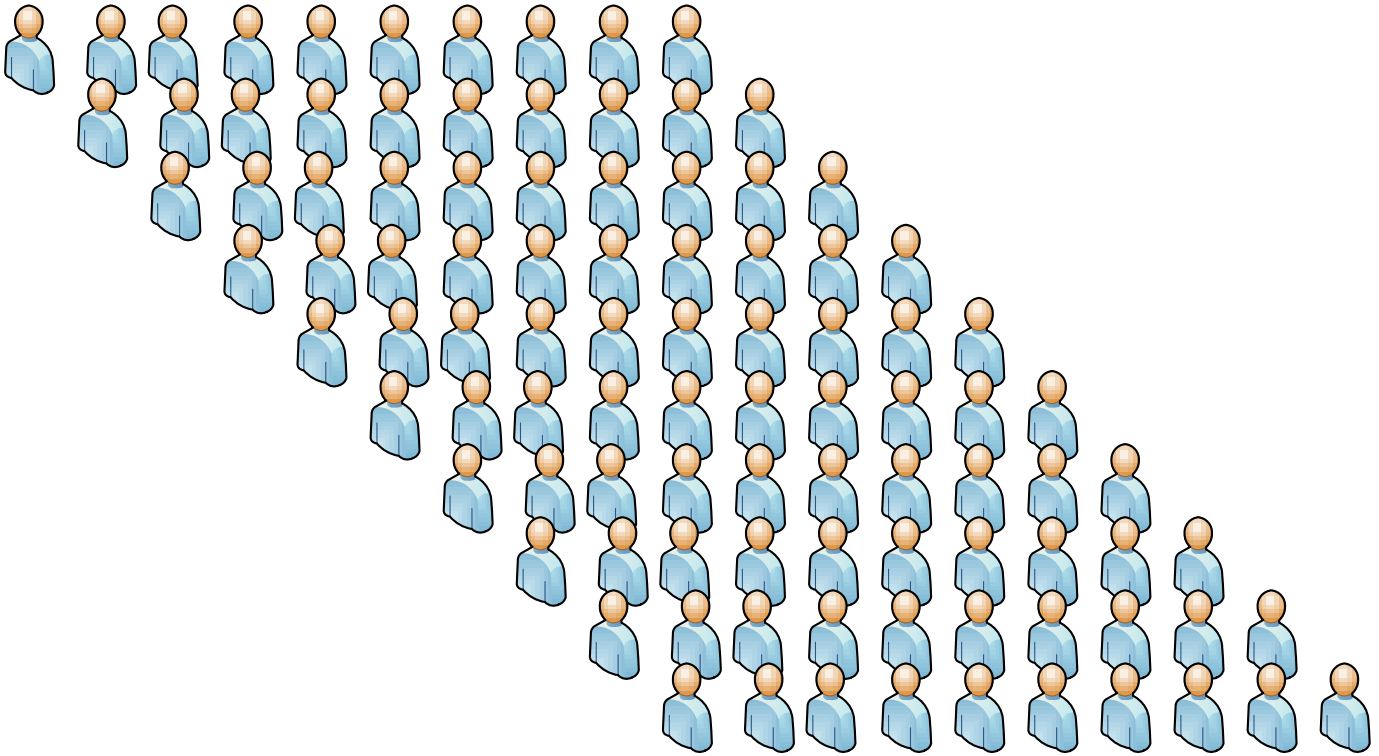
- Age and frequency
- Type of test
- Sensitivity and specificity
- Attendance
- Referral criteria

Health outcomes (life time)

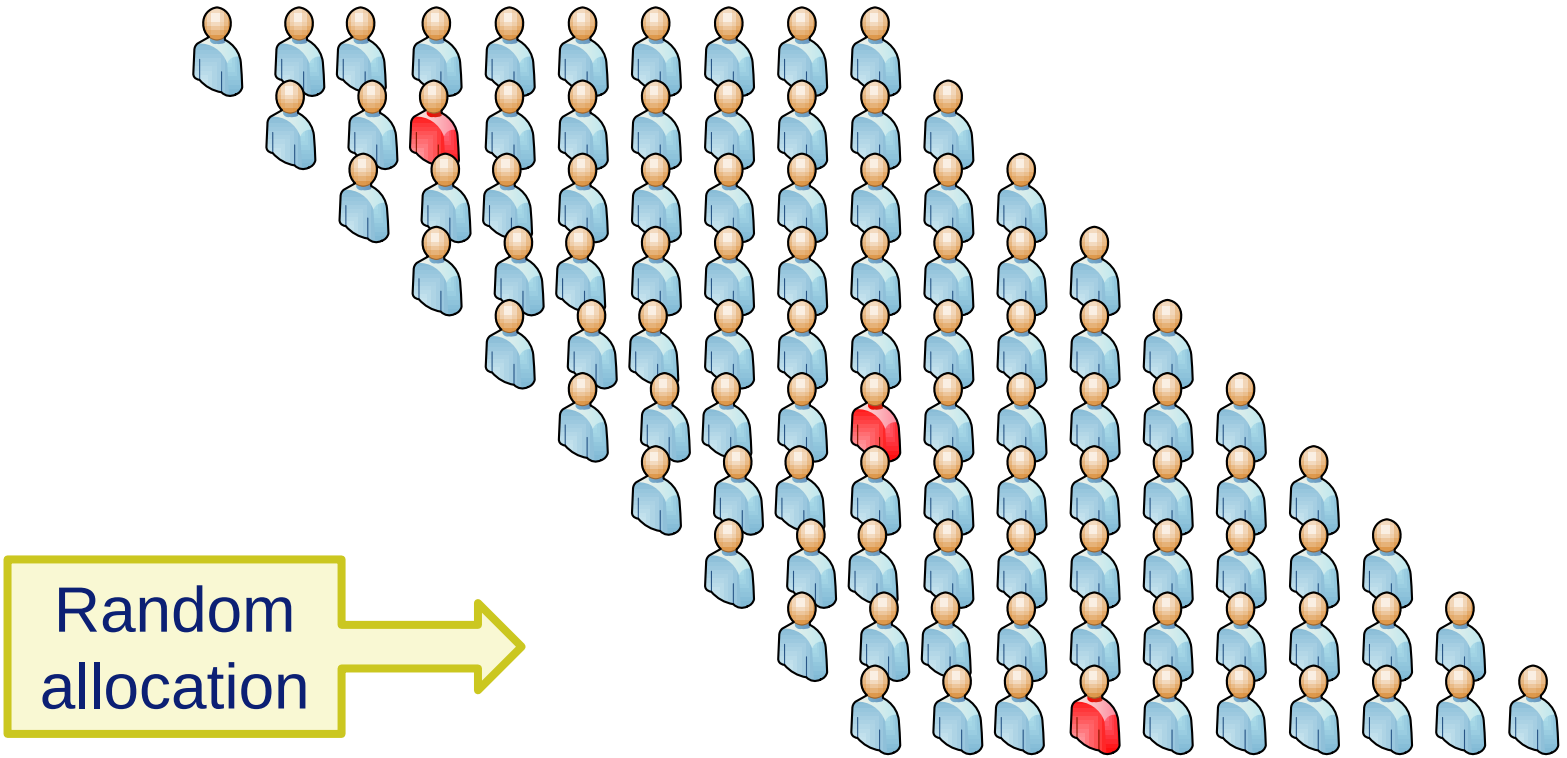
Visual impairment

Irreversible life-long speech and language impairment

Microsimulation: simulating a large cohort



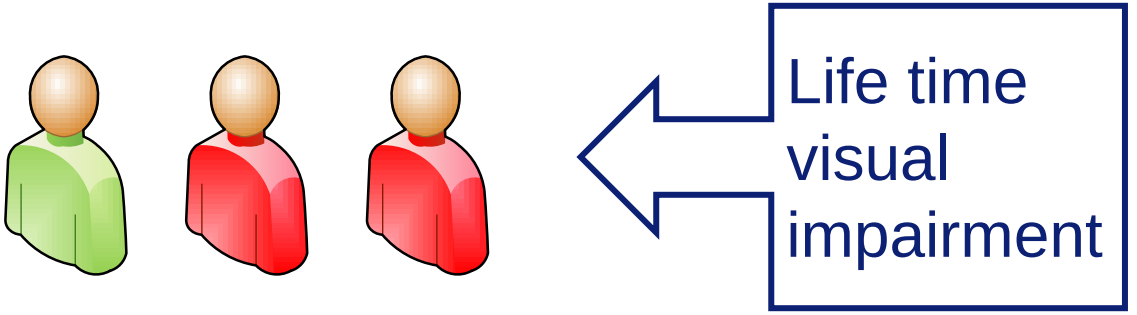
Simulating amblyopia prevalence



EUscreen vision & hearing

Erasmus MC

Without screening



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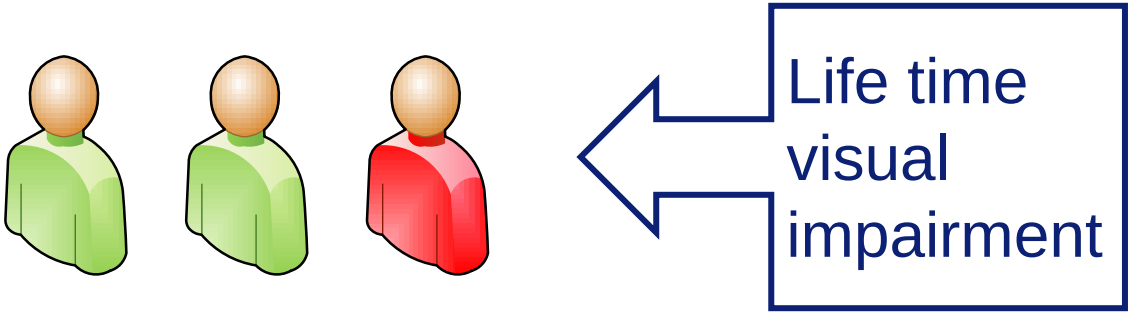
Erasmus MC

With screening



EUscreen vision & hearing

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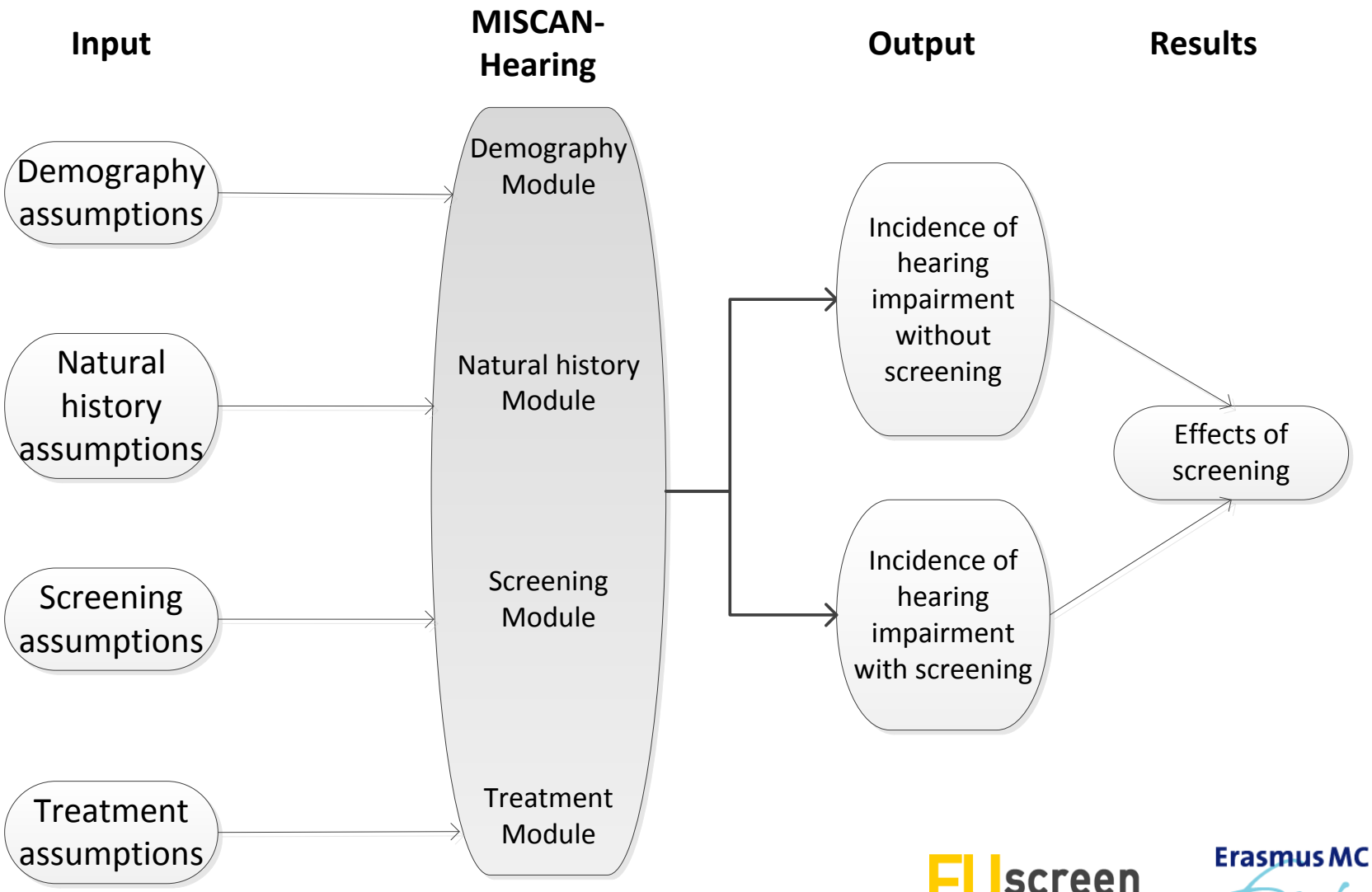
Overview of MISCAN-Screening model



Parameters

- Prevalence by age
- Category (amblyopia type, level of hearing loss)
- Detection by parents by age
- Test characteristics by age
- Diagnostics
- Treatment
- Costs
- Quality of life

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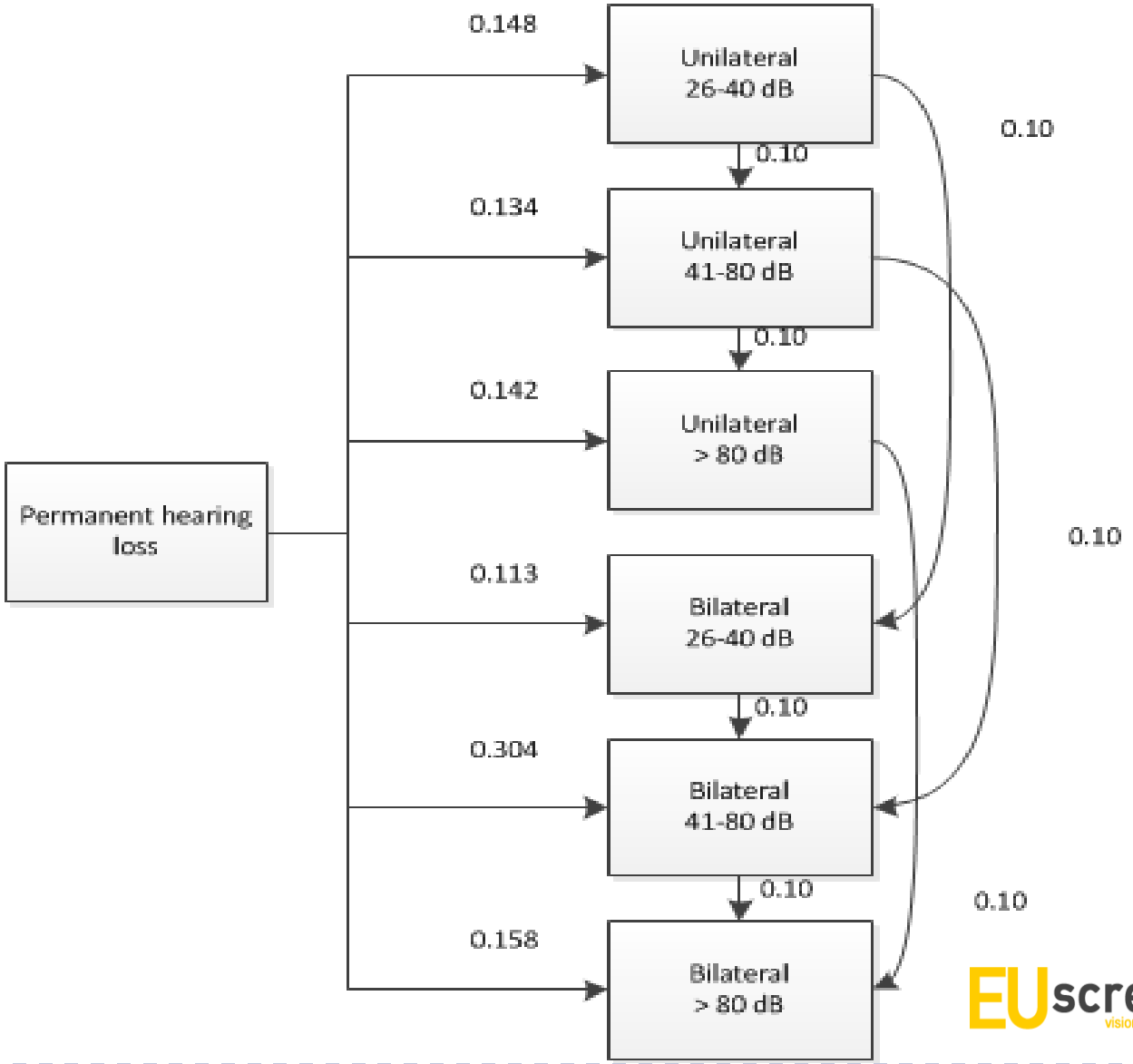
Hearing loss in well babies



Model predictions vision screening

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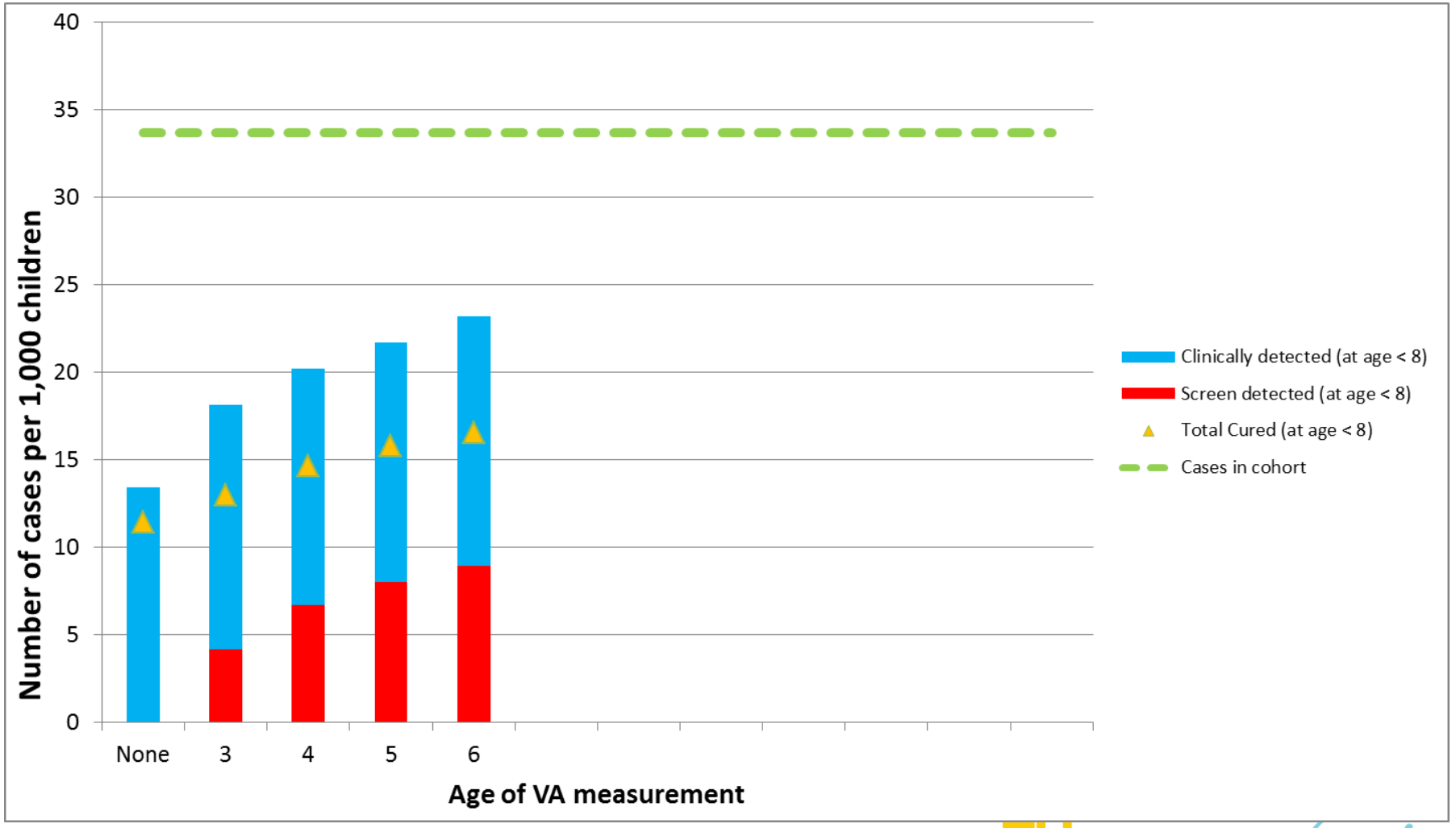
Model predictions vision screening



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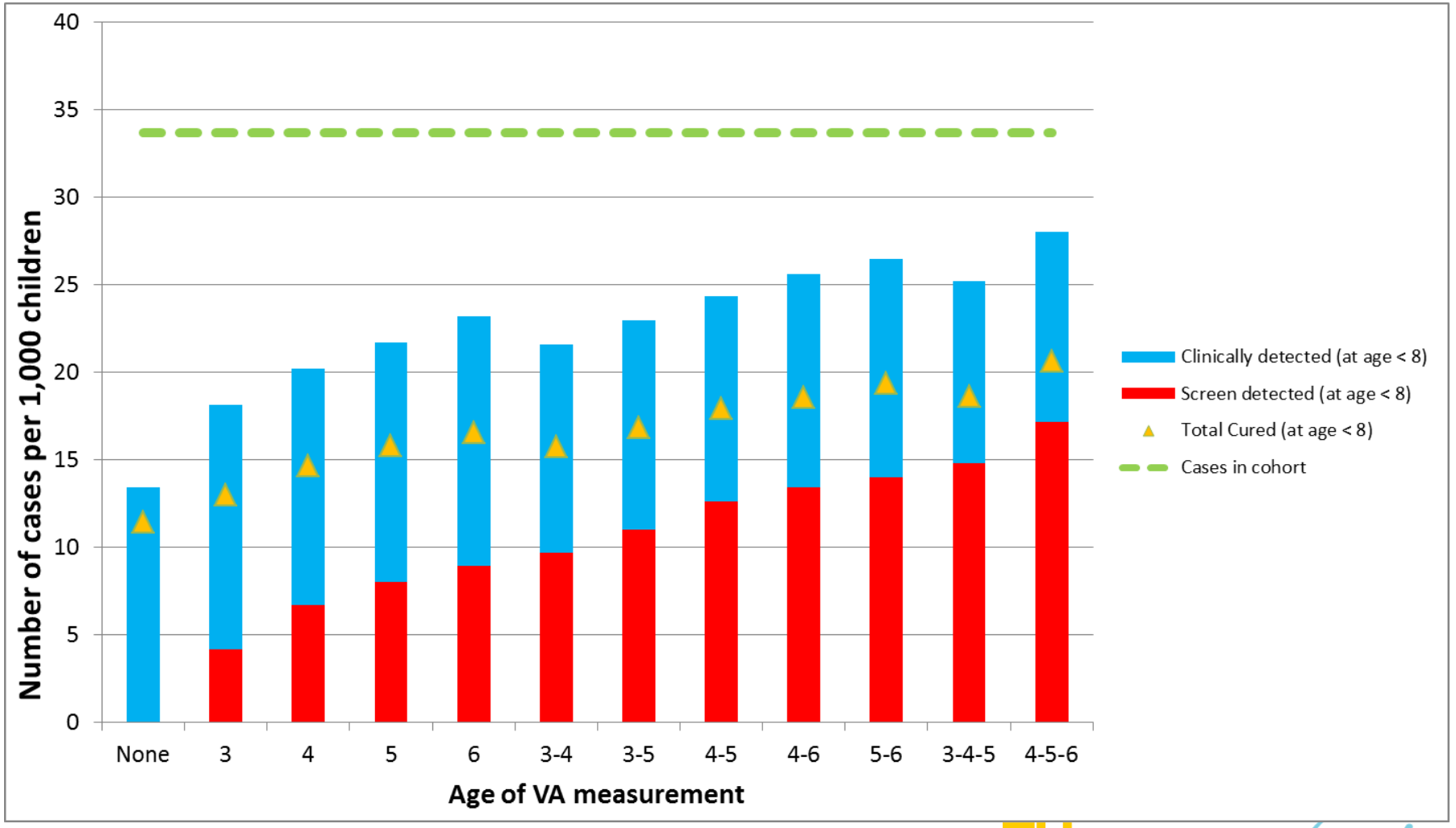
Model predictions vision screening



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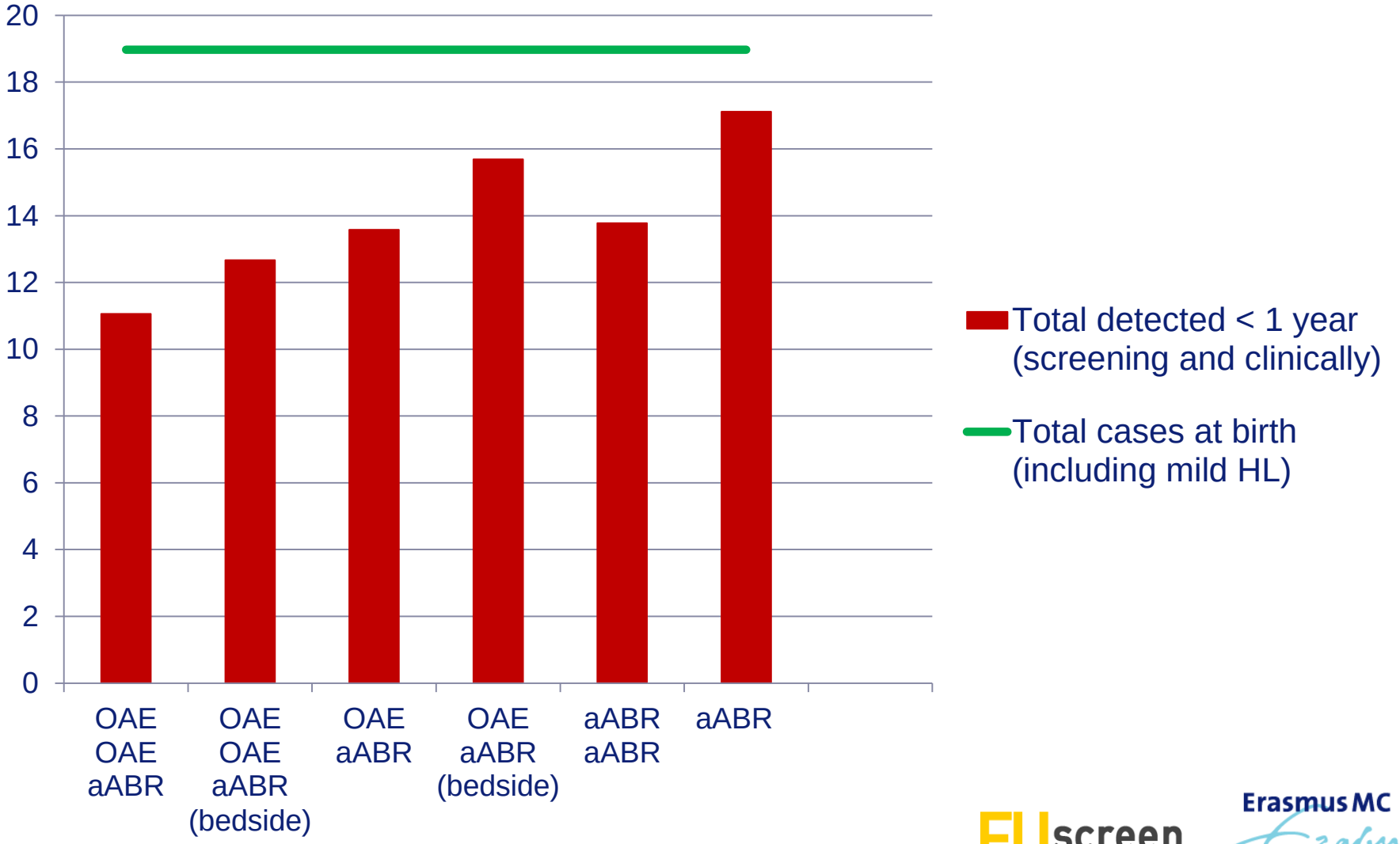
Model predictions hearing (per 10,000 children)



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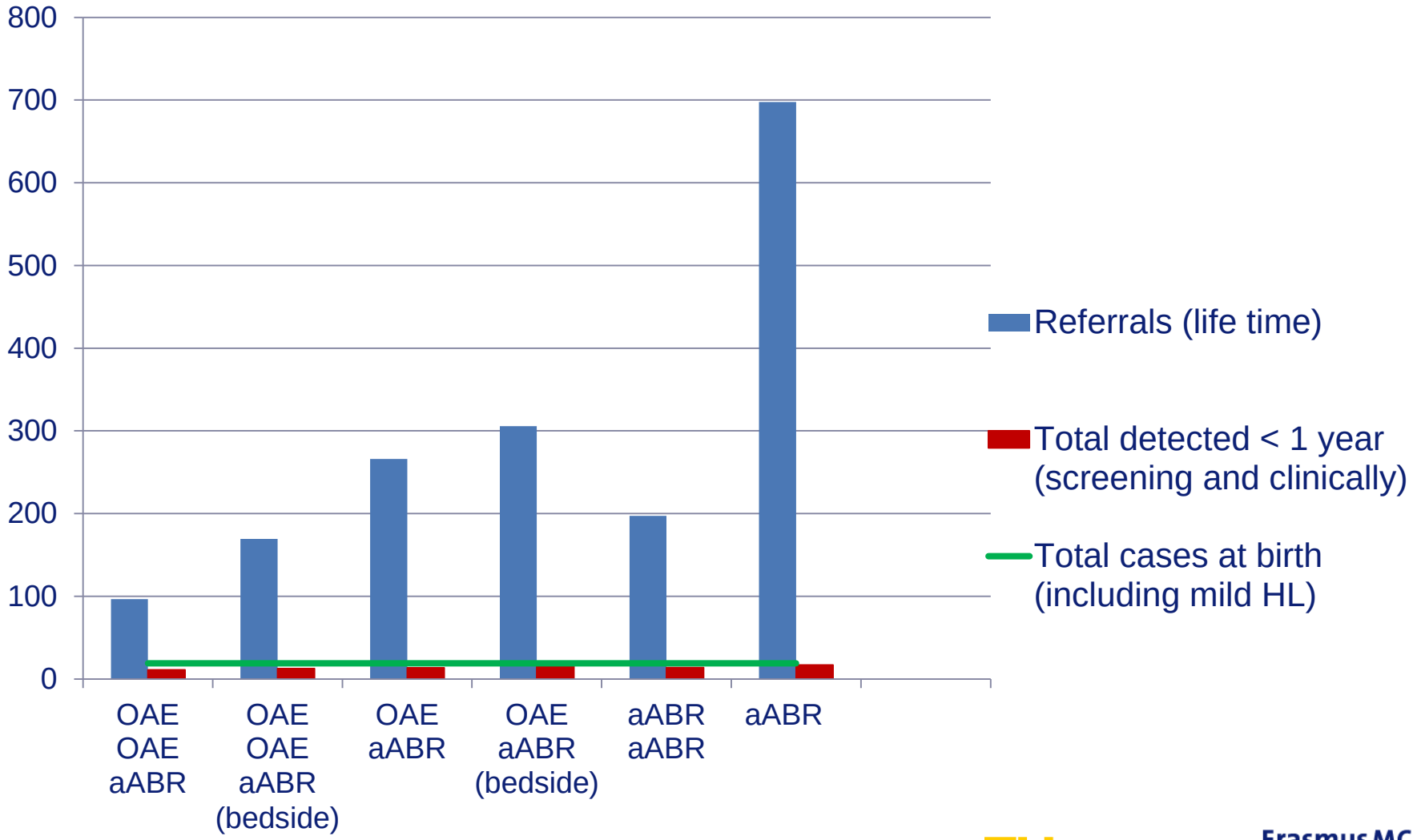
Model predictions hearing (per 10,000 children)



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Simulate

Start by selecting the type of simulation you want to perform

○ Vision ○ Hearing

Please specify the country, region or (city) district you want to simulate

Answer all questions for that particular area only.

Name of Simulation

Skip advice & Continue Continue