Use of HPV genotyping in primary HPV-based cervical cancer screening: a study among 10,762 HPV-infected women

Maria Demarco
National Cancer Institute
DCEG/CGB
Rockville, MD, USA

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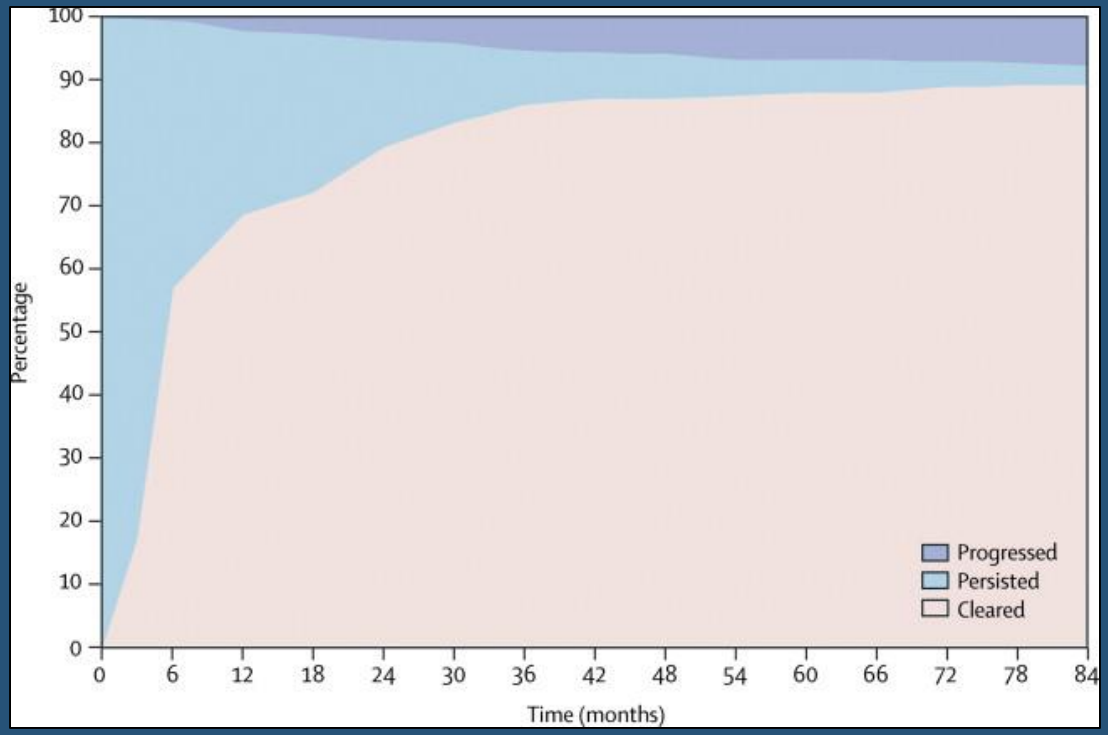
Disclosures

- The NCI has received HPV and cytology test results at no cost from Roche Molecular Systems and BD Diagnostics for independent evaluations of these technologies.

Background

- 3 possible outcomes of HPV infection
- HPV infection is usually transient:
  70–90% clear within 12–24 months
- Longer HPV persistence =
  lower probability of subsequent clearance
  higher risk of progression to precancer



Source: Schiffman, M., et al. Lancet, 2007.

Background

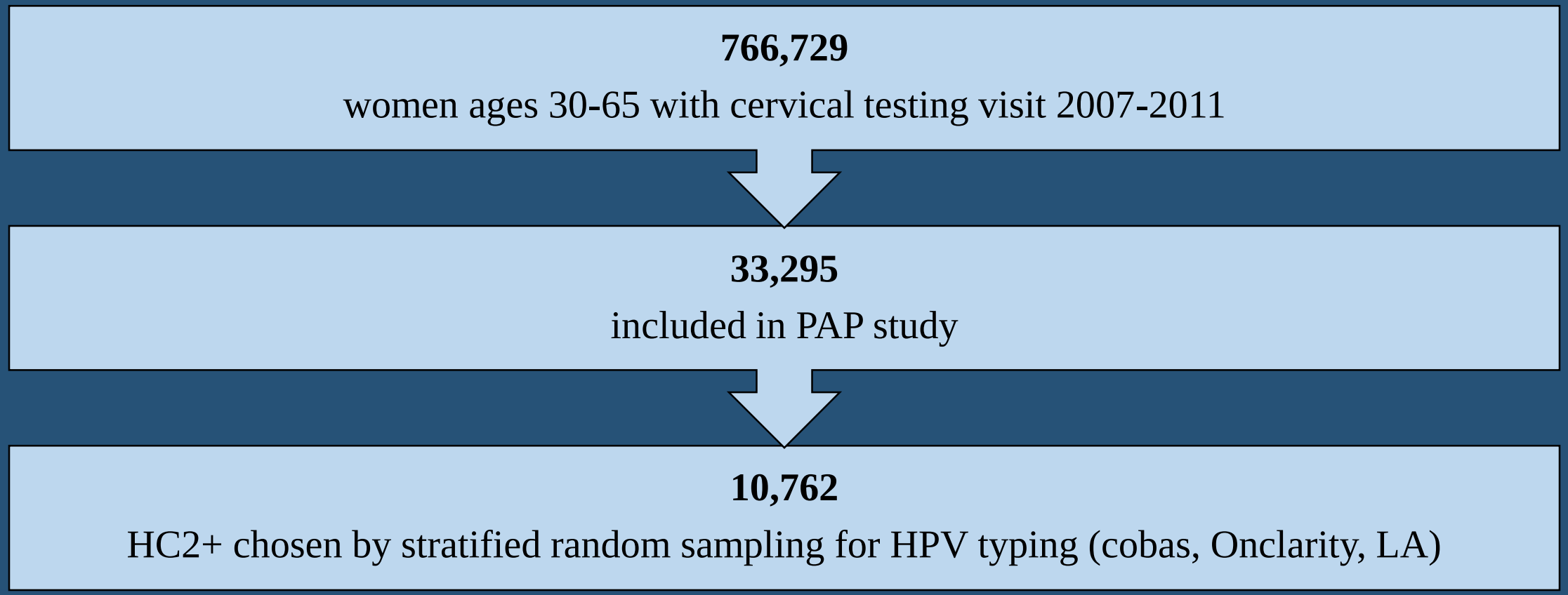
- HPV testing is now recommended for primary cervical screening, but infection is common.
- We need triage methods to prevent overtreatment.
- Determine if HPV type influences pattern enough to be important to clinical management

Objectives

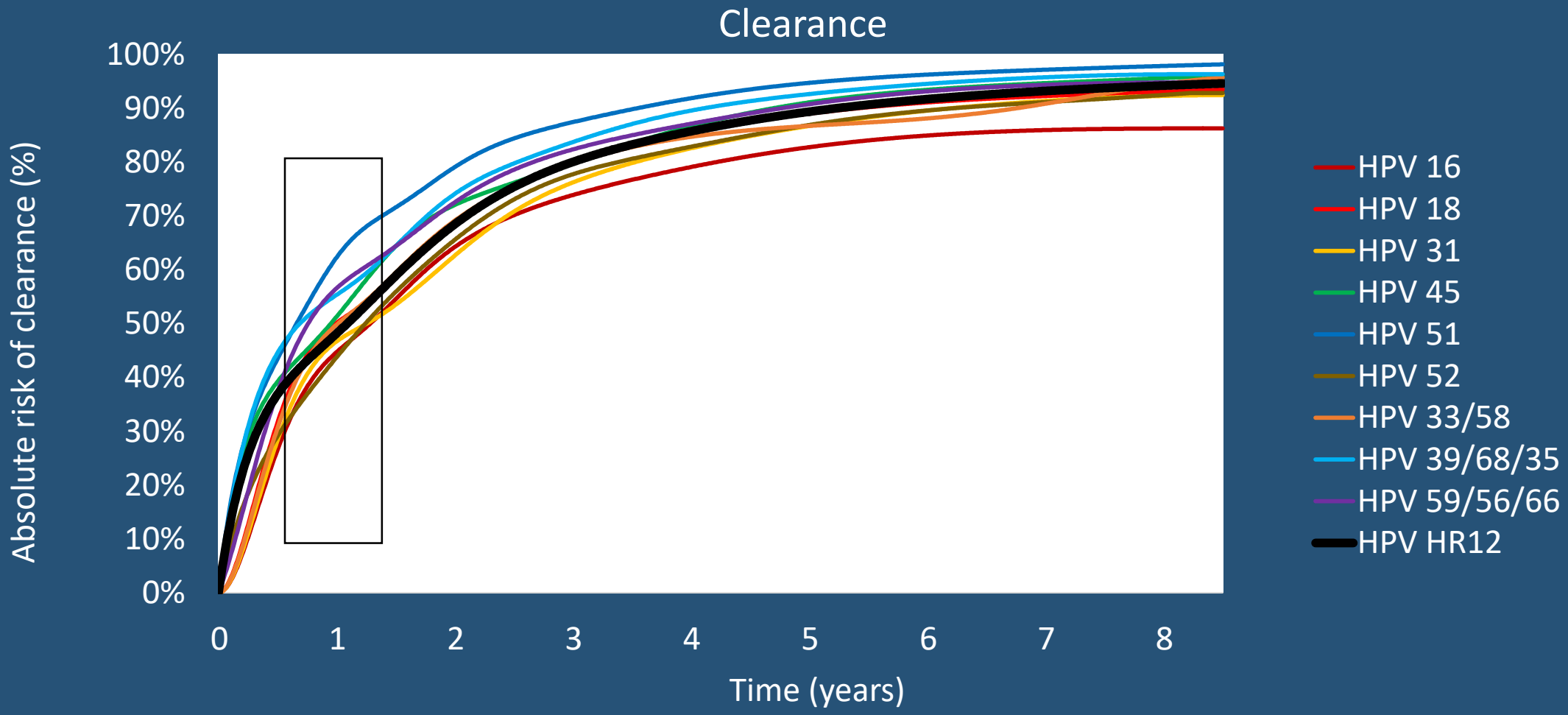
We studied HPV genotyping for prediction of whether an HPV-positive test poses a risk of present or imminent precancer, or will likely “clear” if followed.

a) Type-specific risk of **clearance** over 8.5 years
b) Type-specific risk of **progression (CIN2+)** over 8.5 years
c) Type-specific risk of **persistence** over 8.5 years

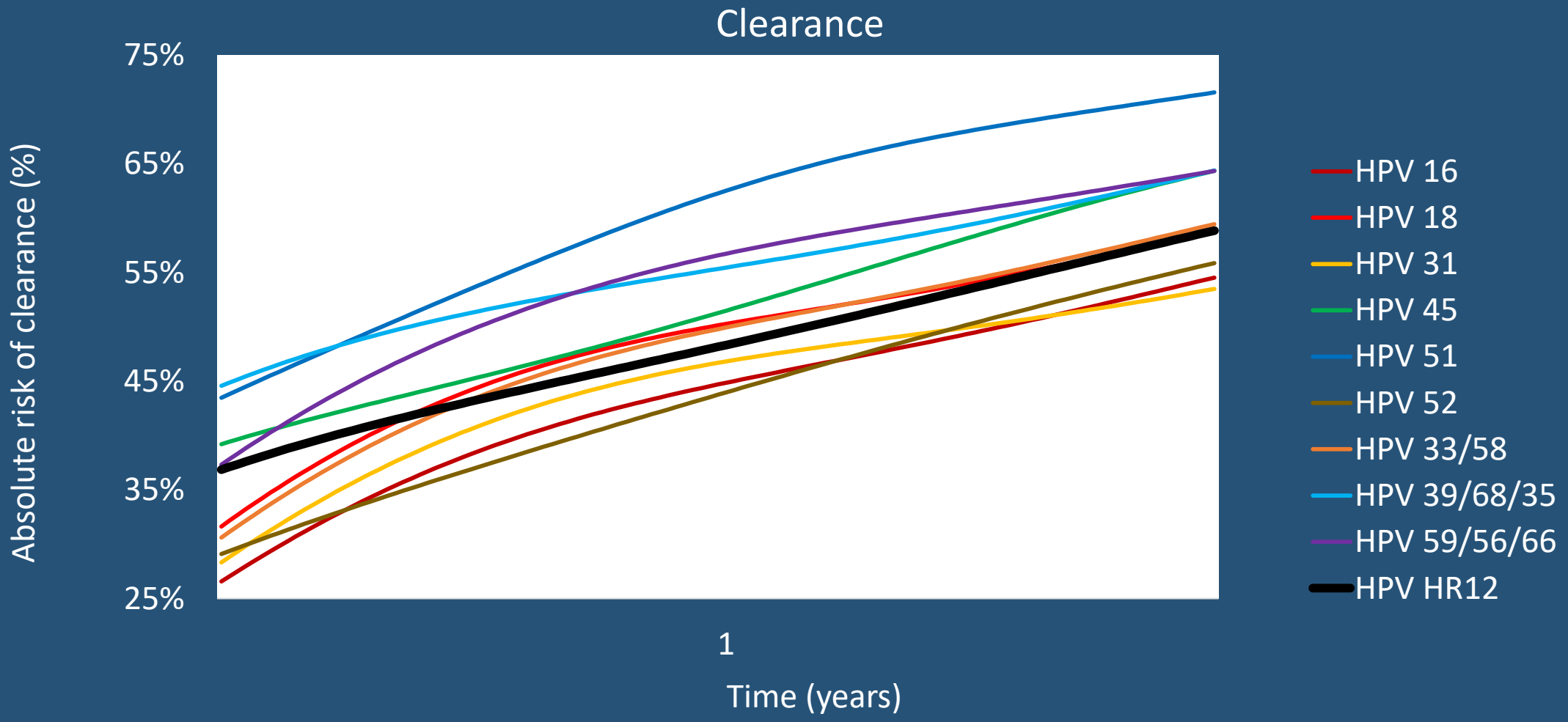
Methods - KPNC/NCI PaP study



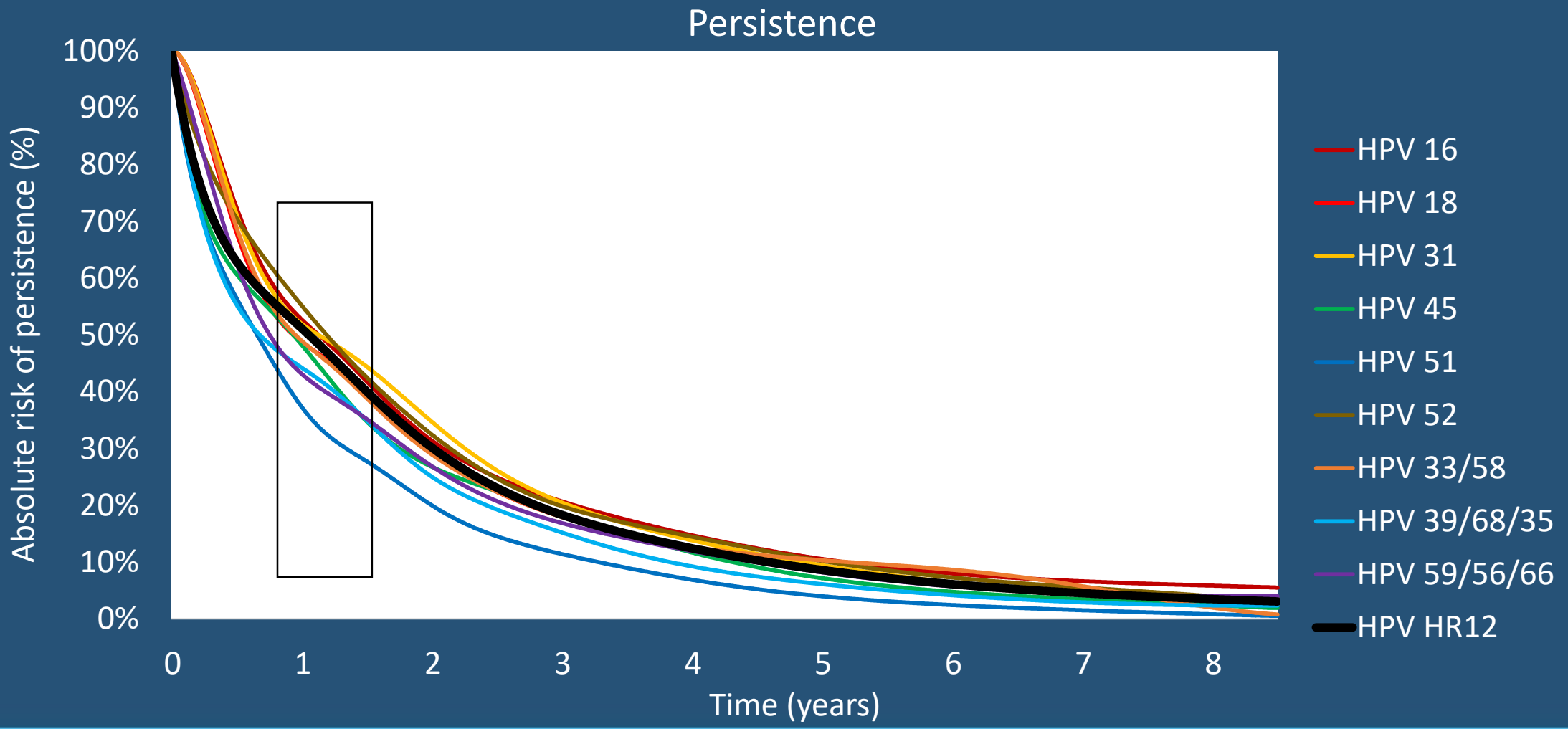
Results


Clearance
Absolute risk of clearance (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
1
2
3
4
5
6
7
8
Time (years)
HPV 16
HPV 18
HPV 31
HPV 45
HPV 51
HPV 52
HPV 33/58
HPV 39/68/35
HPV 59/56/66
HPV HR12

Results


Clearance
75%
65%
55%
45%
35%
25%
Absolute risk of clearance (%)
1
Time (years)
HPV 16
HPV 18
HPV 31
HPV 45
HPV 51
HPV 52
HPV 33/58
HPV 39/68/35
HPV 59/56/66
HPV HR12

Results


Persistence
Absolute risk of persistence (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
1
2
3
4
5
6
7
8
Time (years)
HPV 16
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HPV 45
HPV 51
HPV 52
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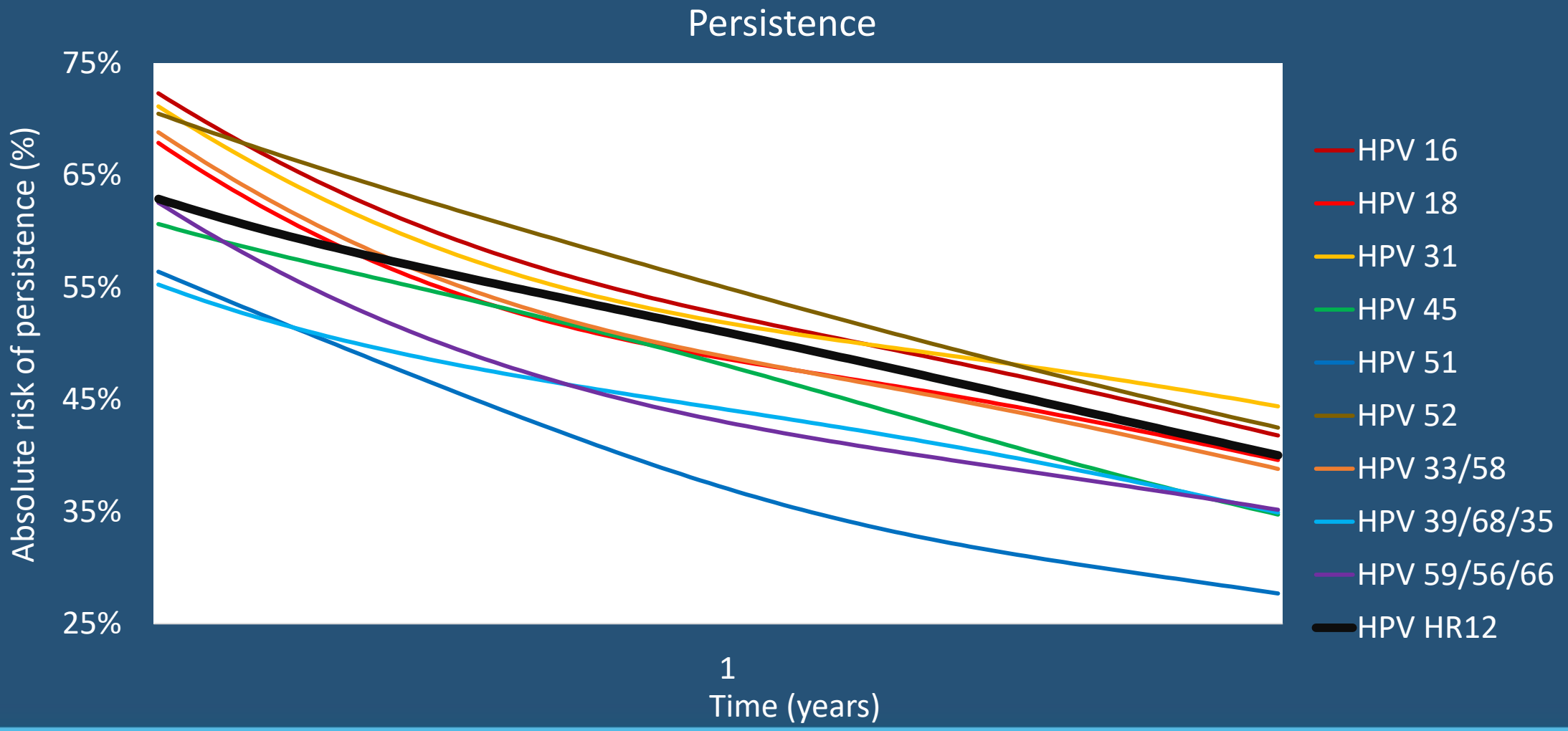
Results


Persistence
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25%
Absolute risk of persistence (%)
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Time (years)
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HPV 31
HPV 45
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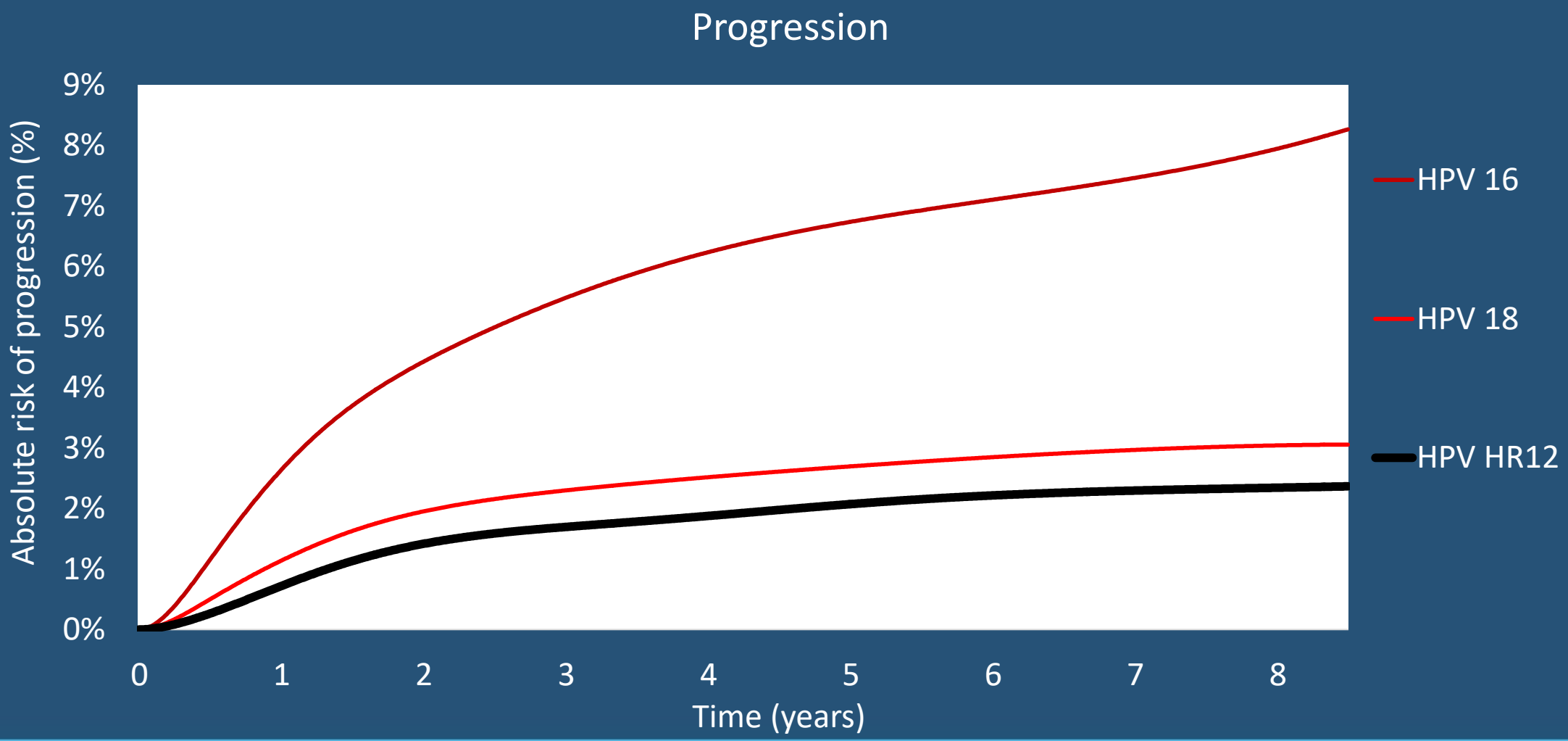
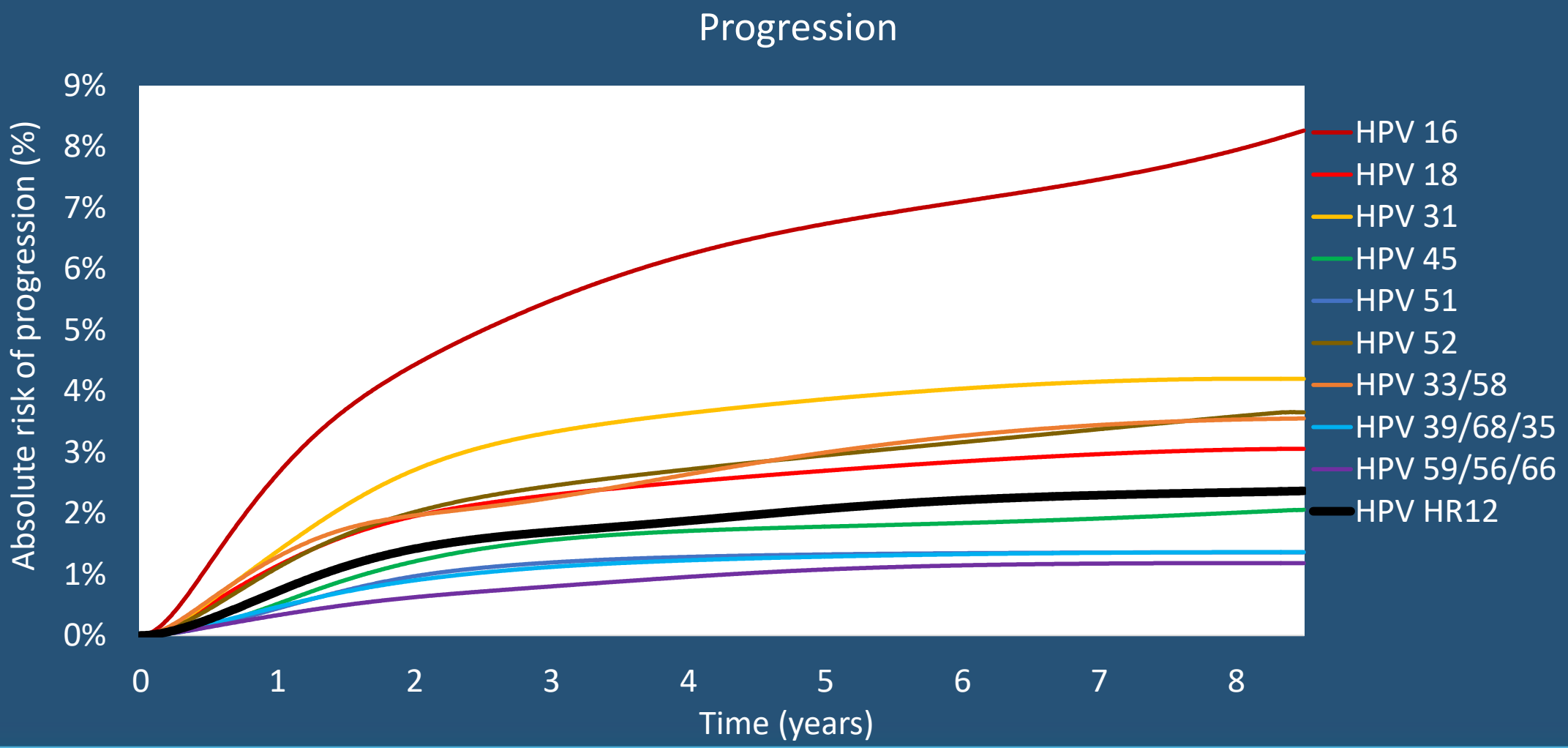
HPV HR12

Results


Progression
Absolute risk of progression (%)
9%
8%
7%
6%
5%
4%
3%
2%
1%
0%
0
1
2
3
4
5
6
7
8
Time (years)
HPV 16
HPV 18
HPV HR12

Results


Progression
Absolute risk of progression (%)
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8%
7%
6%
5%
4%
3%
2%
1%
0%
0
1
2
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HPV 39/68/35
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HPV HR12

Conclusions

- Distinguishing HPV16 is plainly valuable to predict precancer among HPV-positive women.
- The risks of HPV18 and HPV45 (disproportionately important for invasive cancer) cannot be properly assessed without even longer follow-up.
- The clinical usefulness of further HPV genotyping needs to be assessed relative to other triage strategies, to determine how long to wait for clearance before treatment.