Pre-exposure prophylaxis amongst men who have sex with men in the Netherlands

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HIV diagnoses amongst MSM
Effective interventions

- status quo: N=1470
- immediate cART: N=917
- annual testing: N=629
- reduced risk: N=139

The graph shows the annual number of infections over calendar years from 2005 to 2020, comparing different interventions: status quo, immediate cART, annual testing, and reduced risk.
What is the impact of PrEP on the HIV epidemic amongst MSM?
MSM and PrEP

200,000 MSM → Sexually active → HIV infection

~30 years

Bezemer et al, AIDS 2008; Epidemics 2010 (updated)
MSM and PrEP

200,000 MSM

Sexually active

HIV infection

~30 years

PrEP used from start of sexual career onwards

PrEP started in 5% of MSM each year

Bezemer et al, AIDS 2008; Epidemics 2010 (updated)
Unprotected sex partners

Xiridou et al, Epi Infect 2009
Sexual mixing

High risk

Low risk
Assortative mixing

High risk

Low risk
Proportionate mixing

| 7% | Size       | 93% |
| 38% | Partnerships | 62% |
Diagnoses over time

- Homogeneous sexual risk
- Heterogeneous sexual risk

Number of diagnoses

Calendar year

Projection
MSM on PrEP

- Low and high risk
- Low risk only
- High risk only

Calendar year

2009  2014  2019

MSM on PrEP

0  40000  80000
Infections averted 2010-2019

No PrEP: 7287 infections

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Number Averted</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low and high risk</td>
<td>2910</td>
<td>39%</td>
</tr>
<tr>
<td>Low risk only</td>
<td>1354</td>
<td>18%</td>
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<tr>
<td>High risk only</td>
<td>2050</td>
<td>28%</td>
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</table>
Effectiveness

Infections prevented per 1000 person-years PrEP

- Low and high risk: 7.2
- Low risk only: 3.6
- High risk only: 86.1
Conclusion & Discussion

- PrEP may be a useful prevention measure.
- Target men with highest sexual risk behaviour.
- Danger of risk compensation.
- Implementation.
- Use PrEP as part of combination prevention.
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