# **Supplementary Materials**

# Supplementary figure 1: Incidence of invasive cervical cancer in Sweden 1960-2017 (Source: the Swedish National Cancer Registry)

Orange: total

Blue: squamous cell cancer

Grey: adenocarcinoma

Supplementary table 1: Number of primary HPV tests and cytology tests in Sweden during 2012-2015

|  |  |  |
| --- | --- | --- |
|  | Number of primary HPV test | Number of cytology test |
| 2012 | 3085 | 681,936 |
| 2013 | 3035 | 683,971 |
| 2014 | 22,281 | 697,705 |
| 2015 | 51,337 | 687,791 |

# Supplementary table 2: Sensitivity analysis of age-adjusted incidence rate ratio of invasive cervical cancer in 2014-2015 compared to 2002-2013, among women adequately screened with normal results and women unscreened in the preceding two screening intervals, using cervical cancer cases derived from National Cancer Registry during whole study period.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Year | Number of cases | IRR (95% CI) | P-value | IRR adjusted for country of birth | P-value adjusted for country of birth |
| Adequately screened | 2014-2015 | 196 | 1.54 (1.31-1.80) | <0.0001 | 1.53 (1.31-1.79) | <0.0001 |
| 2002-2013 | 791 | Ref. |  |  |  |
| Unscreened | 2014-2015 | 173 | 1.13 (0.96-1.33) | 0.1380 | 1.13 (0.96-1.32) | 0.15 |
| 2002-2013 | 950 | Ref. |  |  |  |

# Supplementary table 3: Incidence rate ration (IRR) and 95% confidence interval (CI) of invasive cervical cancer among women adequately screened with normal results in the preceding two screening intervals comparing 2014-2015 to 2002-2013, by lab/county

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lab/county | Number of cases 2014-2015 | Expected number of cases 2014-2015\* | IRR (95%CI) comparing 2014-2015 to 2002-2013 | P-value |
| S:t Göran | 1 | 2.5 | 0.62(0.08-5.07) | 0.66 |
| Huddinge | 33 | 33.2 | 1.39(0.94-2.05) | 0.10 |
| Uppsala | 11 | 5.6 | 2.49(1.24-5.01) | 0.01 |
| Eskilstuna | 4 | 4.7 | 1.63(0.55-4.83) | 0.37 |
| Linköping | 11 | 8.6 | 2.07(1.03-4.17) | 0.04 |
| Jönköping | 5 | 7.7 | 1.39(0.53-3.67) | 0.50 |
| Växjö | 3 | 3.3 | 2.13(0.58-7.87) | 0.26 |
| Kalmar | 8 | 5.2 | 5.06(2.00-12.8) | <0.01 |
| Karlskrona | 4 | 3.5 | 1.71(0.57-5.15) | 0.34 |
| Kristianstad | 4 | 4.1 | 1.32(0.45-3.84) | 0.61 |
| Skåne | 12 | 22.0 | 1.01(0.54-1.87) | 0.99 |
| Halmstad | 4 | 7.6 | 0.75(0.26-2.19) | 0.60 |
| Sahlgrenska | 21 | 18.5 | 2.14(1.28-3.56) | <0.01 |
| Trollhättan | 6 | 6.5 | 1.95(0.76-4.99) | 0.16 |
| Borås | 6 | 6.9 | 4.33(1.45-12.9) | 0.01 |
| Skövde | 5 | 6.9 | 1.07(0.41-2.81) | 0.89 |
| Karlstad | 8 | 6.3 | 1.70(0.78-3.71) | 0.18 |
| Örebro | 7 | 5.9 | 2.61(1.09-6.24) | 0.03 |
| Västerås | 4 | 5.4 | 1.01(0.35-2.90) | 0.98 |
| Falun | 12 | 7.3 | 2.91(1.46-5.79) | <0.01 |
| Gävleborg | 7 | 6.7 | 1.28(0.57-2.89) | 0.55 |
| Sundsvall | 7 | 5.1 | 2.44(1.03-5.77) | 0.04 |
| Östersund | 2 | 2.8 | 1.19(0.26-5.44) | 0.82 |
| Umeå | 3 | 5.4 | 1.44(0.41-5.12) | 0.57 |
| Luleå | 5 | 5.7 | 1.75(0.65-4.69) | 0.27 |
| Aleris Medilab | 11 | 6.6 | 1.82(0.98-3.38) | 0.06 |

\*Expected number of cases with population size in the county under the national incidence rate in 2014-2015

Supplementary table 4: Test result of the difference in IRRs across labs/counties (model-fitting test in labs/counties with less than 5 expected cases during 2014-2015)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | -2Log likelihood | Likelihood-ratio chi2 | Degree of freedom | P-value |
| With interaction | 1963.36662 | 22.81 | 19 | 0.2457 |
| Without interaction | 1986.17844 |