

**S5 Table. Sensitivity analyses comparing country-specific data on influenza-positivity with data on influenza-like illness for the total population of European countries**

| Country                      | Influenza season      | ILI cases               |              |                                    |       |       | Influenza cases         |         |                                    |       |       |
|------------------------------|-----------------------|-------------------------|--------------|------------------------------------|-------|-------|-------------------------|---------|------------------------------------|-------|-------|
|                              |                       | Spearman rank           |              | Negative binomial regression model |       |       | Spearman rank           |         | Negative binomial regression model |       |       |
|                              |                       | Correlation coefficient | p-value      | IRR                                | 95%CI |       | Correlation coefficient | p-value | IRR                                | 95%CI |       |
|                              |                       |                         |              |                                    | Lower | Upper |                         |         |                                    | Lower | Upper |
| France                       | 2001/2002 – 2011/2012 | 0.49                    | 0.13         | 1.00                               | 0.70  | 1.43  | -0.73                   | 0.01    | 0.90                               | 0.63  | 1.30  |
| Germany                      | 2001/2002 – 2012/2013 | -0.26                   | 0.41         | 0.99                               | 0.87  | 1.12  | -0.09                   | 0.78    | 0.98                               | 0.87  | 1.11  |
| Hungary                      | 2006/2007 – 2013/2014 | 0.87                    | 0.005        | 1.17                               | 0.58  | 2.34  | 0.49                    | 0.22    | 1.07                               | 0.49  | 2.34  |
| Italy                        | 1999/2000 - 2013/2014 | 0.07                    | 0.81         | 1.03                               | 0.85  | 1.27  | 0.09                    | 0.45    | 1.07                               | 0.87  | 1.32  |
| Latvia                       | 2003/2004 – 2013/2014 | -0.25                   | 0.47         | 1.00                               | 0.85  | 1.17  | -0.39                   | 0.24    | 0.98                               | 0.84  | 1.14  |
| Lithuania                    | 2005/2006 – 2012/2013 | -0.04                   | 0.93         | 1.00                               | 0.68  | 1.48  | 0.43                    | 0.29    | 1.34                               | 0.91  | 1.98  |
| the Netherlands <sup>a</sup> | 1996/1997 – 2013/2014 | <b>-0.60</b>            | <b>0.003</b> | 0.96                               | 0.80  | 1.16  | -0.20                   | 0.42    | 0.98                               | 0.81  | 1.18  |
| Portugal                     | 2001/2002 – 2013/2014 | 0.10                    | 0.74         | 1.02                               | 0.73  | 1.43  | 0.01                    | 0.96    | 1.04                               | 0.71  | 1.54  |
| Romania                      | 2004/2005 – 2012/2013 | -0.22                   | 0.54         | 0.92                               | 0.79  | 1.07  | -0.15                   | 0.70    | 0.95                               | 0.83  | 1.10  |
| Slovakia                     | 2006/2007 – 2013/2014 | 0.74                    | 0.03         | 1.06                               | 0.85  | 1.33  | 0.65                    | 0.08    | 1.08                               | 0.87  | 1.36  |
| Spain                        | 2002/2003 – 2012/2013 | -0.12                   | 0.72         | 1.01                               | 0.83  | 1.22  | 0.05                    | 0.89    | 0.99                               | 0.82  | 1.20  |

<sup>a</sup>The amount of influenza seasons for the total population used in the sensitivity analyses differs from the amount used in the primary analyses, as data on influenza positivity was only available from the 1996/1997 season onwards.