

LIST OF PUBLICATIONS (Kari Auranen, August 2017)

Peer-reviewed scientific articles

1. **Auranen K**, Ranta J, Takala AK, Arjas E
A statistical model of transmission of Hib bacteria in a family
Stat Med 1996; **15**:2235–2252.
2. **Auranen K**, Eichner M, Käyhty H, Takala AK, Arjas E
A hierarchical Bayesian model to predict the duration of immunity to
Haemophilus influenzae type b
Biometrics 1999; **55**:1306–1313.
3. **Auranen K**
Backcalculating the age-specific incidence of recurrent subclinical
Haemophilus influenzae type b infection
Stat Med 2000; **19**:281–296.
4. Leino T, **Auranen K**, Mäkelä PH, Käyhty H, Takala AK
Dynamics of natural immunity by subclinical infections; a case study on
Haemophilus influenzae type b (Hib)
Epidemiol Infect 2000; **125**:583–591.
5. **Auranen K**, Arjas E, Leino T, Takala AK
Transmission of pneumococcal carriage in families: a latent Markov
process model for longitudinal binary data
J Am Stat Assoc 2000; **95**:1044–1053.
6. Leino T, **Auranen K**, Jokinen J, Leinonen M, Tervonen P, Takala AK
Pneumococcal carriage in children during their first two years;
important role of family exposure
Pediatr Infect Dis J 2001; **20**:1022–1027.

7. Leino T, **Auranen K**, Mäkelä PH, Käyhty H, Ramsay M, Slack M, Takala AK
Haemophilus influenzae type b and cross-reactive antigens in natural Hib infection dynamics; modelling in two populations
Epidemiol Infect 2002; **129**:73–83.
8. Puumalainen T, Zeta-Capeding MR, Käyhty H, Lucero MG, **Auranen K**, Leroy O, Nohynek H
Antibody response to an elevenvalent diphtheria- and tetanus-conjugated pneumococcal conjugate vaccine in Filipino infants
Pediatr Infect Dis J 2002; **21**:309–314.
9. Leino T, **Auranen K**
Voidaanko rokotuspäätösten seurauksia väestössä ennustaa? (in Finnish)
Duodecim 2002; **118**:57–61.
10. Mäkelä PH, Käyhty H, Leino T, **Auranen K**, Peltola H, Lindholm N, Eskola J
Long term persistence of immunity after *Haemophilus influenzae* type b conjugate vaccination
Vaccine 2003; **22**:287–292.
11. Straetemans M, Palmu A, **Auranen K**, Ollgren J, Zielhuis GA, Kilpi T
The effect of pneumococcal conjugate vaccine on the risk of OME at 7 and 24 months of age
Int J Pediatr Otorhi 2003; **67**:1235–1242.
12. Hanage WP, **Auranen K**, Syrjänen R, Herva E, Mäkelä PH, Kilpi T, Spratt BG
The ability of pneumococcal serotypes and clones to cause acute otitis media: implications for the prevention of otitis media by conjugate vaccines
Infect Immun 2004; **72**:76–81.
13. Leino T, Takala T, **Auranen K**, Mäkelä PH, Takala AKT
Indirect protection obtained by *Haemophilus influenzae* type b vaccinations, analysis in a structured population model
Epidemiol Infect 2004; **132**:959–966.
14. **Auranen K**, Eichner M, Leino T, Takala AKT, Mäkelä PH, Takala T
Modelling transmission, immunity and disease of *Haemophilus influenzae* type b in a structured population
Epidemiol Infect 2004; **132**:947–957.

15. Sillanpää M, **Auranen K**
Replication in genetic studies of complex diseases
Ann Hum Genet 2004; **68**:646-657.
16. Zhang Y, **Auranen K**, Eichner M
The influence of competition and vaccination on the co-existence
of two pneumococcal serotypes
Epidemiol Infect 2004; **132**:1073-1081.
17. Syrjänen R, **Auranen K**, Leino T, Kilpi T, Mäkelä PH
Pneumococcal acute otitis media in relation to
pneumococcal nasopharyngeal carriage
Pediatr Infect Dis J 2005; **24**:801-806.
18. Hanage WP, Kaijalainen TH, Syrjänen R, **Auranen K**, Leinonen M,
Mäkelä PH, Spratt BG
Invasiveness of serotypes and clones of *Streptococcus pneumoniae*
among children in Finland
Infect Immun 2005; **73**:431-5.
19. Käyhty H, **Auranen K**, Nohynek H, Dagan R, Mäkelä H.
Nasopharyngeal colonization: a target for pneumococcal vaccination
Expert Rev Vaccines 2006; **5**:651-667.
20. Syrjänen R, Herva E, Mäkelä PH, Puhakka H, Auranen K, Takala AK, Kilpi T
The value of nasopharyngeal culture in predicting the etiology
of acute otitis media in children less than two years of age
Pediatr Infect Dis J 2006; **25**:1032-6.
21. Ocampo AF, Biloft C, Lucero M, Olander RM, Ugbo J, **Auranen K**,
Soininen A, Nohynek H
Response and persistence of antibodies to PRP-T and DTwP vaccines with
concomitant administration of conjugate vaccines'
Vaccine 2007; **25**:605-611.
22. Granat S, Ollgren J, Herva E, Das M, Piirainen L, **Auranen K**, Mäkelä PH
Longitudinal study on pneumococcal carriage during
the first year of life in Bangladesh
Pediatr Infect Dis J 2007; **26**:319-324.

23. Mossong J, Hens N, Jit M, Beutels Ph, **Auranen K**, Mikolajczyk R et al.
Social contacts and mixing patterns relevant to the spread of infectious diseases
PLoS Med 2008; **5**:e74.
24. Leino T, Hoti F, Syrjänen R, Tanskanen A, **Auranen K**
Clustering of serotypes in a longitudinal study of *Streptococcus pneumoniae*
– carriage in three day care centres
BMC Infect Dis 2008; **8**:173.
25. Granat S, Ollgren J, Zakaria M, **Auranen K**, Mäkelä PH
Epidemiological evidence for serotype independent acquired immunity
to pneumococcal carriage
J Infect Dis 2009; **200**:99-106.
26. Rinta-Kokko H, Dagan R, Givon-Lavi N, **Auranen K**
Estimation of vaccine efficacy against pneumococcal carriage
Vaccine 2009; **27**:3831-3837.
27. Hoti F, Erästö P, Leino T, **Auranen K**
Outbreaks of *Streptococcus pneumoniae* carriage in Finnish day care cohorts -
implications for elimination of transmission
BMC Infect Dis 2009; **9**:102
28. Ölander RM., **Auranen K**, Härkänen T, Leino T
High tetanus and diphtheria antibody concentrations in Finnish adults
– time for new booster recommendations?
Vaccine 2009; **27**:5295-5298.
29. Varvio S-L, **Auranen K**, Arjas E, Mäkelä PH
Evolution of the capsular regulatory genes in *Streptococcus pneumoniae*
J Infect Dis 2009; **200**:1144-1151.
30. Karhunen M, Leino T, Salo H, Davidkin I, Kilpi T, **Auranen K**
Modelling the impact of varicella vaccination on varicella and zoster in Finland
Epidemiol Infect 2009; **138**:469-481.

31. Erästö P, Hoti F, Granat S, Mia Z, Mäkelä PH, **Auranen K**
Modelling transmission of *Streptococcus pneumoniae* in Bangladeshi families
Epidemiol Infect 2010; **138**:861-872.
32. **Auranen K**, Mehtälä J, Tanskanen A, Kaltoft M
Between-strain competition in acquisition and clearance of pneumococcal carriage
– epidemiologic evidence from a longitudinal study of day-care children
Am J Epidemiol 2010; **171**:169-176.
33. Väkeväinen M, Soininen A, Lucero M, Nohynek H, **Auranen K**, Mäkelä PH, Williams G, Käyhty H
Serotype-specific hyporesponsiveness to pneumococcal conjugate vaccine in infants carrying pneumococcus at the time of vaccination
J Pediatr 2010; **157**:778-783.
34. Mehtälä J, **Auranen K**, Kulathinal S
Optimal designs for epidemiologic longitudinal studies with binary outcomes
Stat Methods Med Res 2011 Dec 13. [Epub ahead of print]
35. Erästö P, Hoti F, **Auranen K**
Modeling transmission of multitype infectious agents - application to carriage of *Streptococcus pneumoniae*
Stat Med 2012; **31**:1450–1463.
36. Simell B, **Auranen K**, Käyhty H, Goldblatt D, Dagan R, O'Brien K
The fundamental link between pneumococcal carriage and disease
Expert Rev Vaccines 2012; **11**:841-855.
37. **Auranen K**, Rinta-Kokko H, Halloran ME
Estimation of strain-specific and overall efficacy of polyvalent vaccines against recurrent pathogens from a cross-sectional study
Biometrics 2013; **69**:235-244.
38. Nurhonen M, Cheng A C, **Auranen K**
Pneumococcal transmission and disease *in silico* – a micro-simulation model of the indirect effects of vaccination
PLOS One 2013; 8(2): e56079. doi:10.1371/journal.pone.0056079.

39. Salo H, Leino T, Kilpi T, **Auranen K**, Tiihonen P, Lehtinen M, Vänskä S, Linna M, Nieminen P
The burden and costs of prevention and management of genital disease caused by HPV in women: a population-based registry study in Finland
Intnl J Cancer 2013; **135**:204-213.
40. Pessoa D, Hoti F, Syrjänen R, Sá-Leão R, Kaijalainen T, Gomes G, **Auranen K**
Comparative analysis of *Streptococcus pneumoniae* transmission in Portuguese and Finnish day-care centres
BMC Infectious Diseases 2013, **13**:180.
41. Mehtälä J, Antonio M, Kaltoft M, O'Brien K L, **Auranen K**
Competition between *Streptococcus pneumoniae* strains - implications for vaccine-induced replacement in colonization and disease
Epidemiology 2013; **24**:552-529.
42. Vänskä S, **Auranen K**, Leino T, Salo H, Nieminen P, Kilpi T, Tiihonen P, Apter D, Lehtinen M
Impact of vaccination on 14 high-risk HPV type infections: a mathematical modelling approach
PLOS One 2013; 8(8):e72088. doi:10.1371/journal.pone.0072088.
43. **Auranen K**, Rinta-Kokko H, Goldblatt D, Nohynek H, O'Brien K, Satzke C, Simell B, Tanskanen A, Käyhty H
Colonisation endpoints in *Streptococcus pneumoniae* vaccine trials
Vaccine 2013; **32**:153-158.
44. **Auranen K**, Rinta-Kokko H, Goldblatt D, Nohynek H, O'Brien K, Satzke C, Simell B, Tanskanen A, Käyhty H
Design questions for *Streptococcus pneumoniae* vaccine trials with colonisation endpoints
Vaccine 2013; **32**:159-164.
45. Shiri T, **Auranen K**, Nunes MC, AdrianPV, van Niekerk N, von Gottberg A, de Gouveia L, Klugman KP, Madhi SA
Dynamics of pneumococcal transmission in vaccine-naïve children and their HIV-infected or HIV-uninfected mothers during the two first years of life
Am J Epidemiol 2013; **178**:1629–1637.

46. Shubin M, Lyytikäinen O, Virtanen M, Toikkanen S, **Auranen K**
Estimating the burden of illness due to A(H1N1)v influenza
in Finland during two seasons
Epidemiol Infect 2013; **142**:964–974.
47. **Auranen K**, Leino T
Is it all Greek to you? Use of mathematical models in predicting the effectiveness
of vaccination (in Finnish)
Duodecim 2013; **129**:2411-2412.
48. Pneumococcal Carriage Consortium (PneumoCarr), Käyhty H, **Auranen K**,
Dagan R, Goldblatt D, O'Brien K, Scott A, Antonio M, Lucero M, Madhi S,
Klugman KP, Mulholland K
Case for carriage
Vaccine 2013; **32**:180-203.
49. Salo H., Nieminen P, Kilpi T, **Auranen K**, Leino T, Vänskä S, Tiihonen P,
Lehtinen M, Anttila A
Divergent coverage, frequency and costs of organised and
opportunistic Pap testing in Finland
Int J Cancer 2014;**135**:204-213.
50. Nurhonen M, **Auranen K**
Optimal serotype compositions for pneumococcal conjugate vaccination
under serotype replacement
PLoS Comput Biol 2014 10(2): e1003477. doi:10.1371/journal.pcbi.1003477.
51. Salo H., Nieminen P, Kilpi T, **Auranen K**, Leino T, Vänskä S, Tiihonen P,
Lehtinen M, Anttila A
Papa-koekäytäntö ei vastaa suosituksia (in Finnish)
Suomen Lääkärilehti 2014;**39**: 2447-2455
52. Scott P, Herzog S, **Auranen K**, Dagan R, Low N, Egger M, Heijne J
Timing of bacterial carriage sampling in vaccine trials: a modelling study
Epidemics 2014; 9:8-17. doi: 10.1016/j.epidem.2014.08.003.
53. Mehtälä J, Kulathinal S, **Auranen K**
Optimal observation times for multi-state Markov models –
applications to pneumococcal colonisation studies
Applied Statistics 2015; **65**(3): 451–468.

54. Mehtälä J, Dagan R, **Auranen K**
Estimation and interpretation of heterogeneous vaccine efficacy against recurrent infections
Biometrics. 2016 Sep;72(3):976-85. doi: 10.1111/biom.12473
55. Shubin M, Lebedev A, Lyytikäinen O, **Auranen K**
Revealing the true incidence of pandemic A(H1N1)pdm09 influenza in Finland during the first two seasons - an analysis based on a dynamic transmission model
PLoS Comp Biol 2016, DOI:10.1371/journal.pcbi.1004803
56. **Auranen K**, Syrjänen R, Leino T, Kilpi T
New pneumococcal carriage acquired in association with acute respiratory infection is prone to cause otitis media
PLoS One. 2016 Jun 3;11(6):e0156343. doi: 10.1371/journal.pone.0156343
57. Karvonen T, **Auranen K**, Kuusi M, Leino T
Epidemiology of hepatitis B infection in Finland: implications for immunisation policy
Vaccine, 2017;35:412-418.
58. Karppinen S, Teräsjarvi J, **Auranen K**, Schuez-Havupalo L, Quishui H, Siira L, Waris M, Peltola V
Acquisition and transmission of *Streptococcus pneumoniae* is facilitated during rhinovirus infection in families with children
Am J Respir Crit Care Med, 2017 May 10. doi: 10.1164/rcmm.201702-0357OC.
59. Ojal J, Flasche S, Hammitt LL, Akech D, Kiti MC, Kamau T, Adetifa I, Nurhonen M, Scott JAG, **Auranen K**
Sustained reduction in vaccine-type invasive pneumococcal disease despite waning effects of a catch-up campaign in Kilifi, Kenya: A mathematical model based on pre-vaccination data
Vaccine. 2017 Aug 16;35(35 Pt B):4561-4568. doi: 10.1016/j.vaccine.2017.07.019

Non-refereed scientific articles

“Towards Bayesian inference in epidemic models”, A discussion to ‘Threshold parameters for epidemics in heterogeneous environments’ by Niels Becker in Highly Structured Stochastic Systems, Green P, Hjort NL, Richardson S, eds., Oxford: Oxford University Press, 2003.

Theses

“On Bayesian Modelling of Recurrent Infections”, Ph.D. thesis
Helsinki: Rolf Nevanlinna Institute Research Reports A26, 1999.