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## Summary

Health Council of the Netherlands. Vaccination of infants against pneumococcal infections. The Hague: Health Council of the Netherlands, 2005; publication no. 2005/13.

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### Questions raised

The Minister of Health, Welfare and Sport has asked the Health Council to discuss the vaccination of infants against pneumococci. The Minister wants to introduce this vaccination in the light of the Health Council's recommendation issued in 2002. This stated that pneumococcal infections were a serious condition and advised a four-injection vaccination programme. The Minister asked the Health Council whether there was any scientific evidence that three injections, rather than the recommended four, could also provide adequate protection. The Minister was considering a three-injection programme, as this would allow pneumococcal vaccination to be performed cost-effectively in the Netherlands.

A three-injection programme has clear advantages compared to a four-injection programme. It reduces the burden on parents and children, takes up less space in the vaccination schedule (which is already fairly full), and it is less expensive. However, the benefits of the three-injection programme are only relevant if the programme also offers sufficient protection. The question of efficacy is therefore a key point here. In order to give the Minister scientific information about the points that are most relevant when coming to a decision on whether to introduce a vaccination programme, the National Vaccination Programme Review Committee (the Committee responsible) also discussed the issue of the current cost-effectiveness of the standard four-injection programme.

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New calculations that took account of recent insights into the effects of pneumococcal vaccination were therefore performed.

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### **Answers to the questions**

The Committee is of the opinion that there is currently no conclusive scientific evidence that a three-injection programme is effective. Some studies showed that the three-injection programme generates a certain level of antibodies in the blood, but there is no data showing whether those antibodies provide the desired protection against infection. Research results leave too much room for uncertainty as to how far infants are actually protected. In contrast, the necessary evidence for the efficacy of the standard four-injection programme is indeed available.

New insights and information have become available since the Health Council calculated the cost-effectiveness ratio of the four-injection programme in 2001, which led to a more favourable relationship between costs and benefits. It thus appears that fewer children remain carriers of the bacteria after vaccination, leading to a much lower rate of infection outside the vaccinated age groups. This herd immunity effect especially makes the cost-effectiveness ratio much more favourable than in the past. The best estimate of this ratio is now €10,300 per QALY (*quality adjusted life year*) with a 1.5% health effects discount (€14,500 at 4%).

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### **Recommendations**

The Committee would like to see more information about shorter vaccination programmes so that these can be introduced, where possible, in the near future. Most research into the efficacy of infant vaccines is performed on four-injection programmes. However, once a vaccine has been introduced as part of this regimen, it appears to be very problematic to investigate a shorter programme. The Committee puts forward a number of recommendations for the investigation of shorter programmes. It also proposes setting up a monitoring system to be able to appropriately track the positive (and possible negative) effects of pneumococcal vaccination.

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