B. Lehmann, R. Eilers, R. Donken, D. Barug, J. Swillens, C. de Vriend, S. Weerdenburg, M. Pot, H. van Keulen, T. Paulussen, K. Vermey, N. Alberts, E. Marra, H.E. de Melker, L. Mollema

4.1 Key points

- Both in 2013 and 2015 the mean intention of parents to vaccinate their child was high.
- Only 21% of parents reported making an informed decision about childhood vaccinations included in the NIP.
- Mass media attention on the use of allegedly inferior needles, which was later refuted, appeared to have a negative impact on mothers' attitudes and intention towards HPV vaccination for their daughters. Transparency by authorities had a preventive impact on this effect.
- HPV vaccination campaigns for non-Dutch parents should focus on the same aspects as for Dutch parents. However, delivery of the intervention should be tailored to different cultural backgrounds.
- The RIVM started to conduct studies within the project group 'extra vaccinations customised' to improve insight into the acceptance and information needs of the public and professionals with regard to vaccines that are available but not (yet) part of the NIP.
- With regard to the acceptance of vaccinations for the elderly, older adults themselves, general practitioners and elderly care specialists showed a generally positive attitude. Awareness of the existence of vaccination against pneumococcal disease, herpes zoster, and pertussis could be improved, as well as knowledge about the individual health benefits that can be achieved with these vaccines.
- With regard to maternal pertussis vaccination, the RIVM started to conduct studies to explore the information needs of pregnant women and professionals to develop communication materials for these groups.
- Studies about the determinants of the intention to get vaccinated against HPV among boys, their parents and young gay and bisexual men were conducted in order to prepare for the possible implementation of HPV vaccinations in these groups in the future.

4.2 Monitoring system for acceptance of vaccination

In 2013, a monitoring system was instigated with the aim of monitoring acceptance and trust in vaccination among the public and professionals. As part of this monitoring system, in 2013 and 2015, a questionnaire was sent to parents with at least one child between the ages of 3 months and 3.5 years. In both years the intention and attitude with regard to the NIP was high, and parents had a high perceived social and moral norm, did not perceive many barriers, had a high trust in the NIP, did not strongly believe that the use of combination vaccines was too much for the immune system of their child, believed vaccinate one's child is self-evident, had a high risk perception of the disease and a moderately high risk perception of the vaccine

(e.g. side effects), had positive beliefs about the vaccine (e.g. 'Due to the NIP there are fewer infectious diseases in the Netherlands') and less positive beliefs about the disease (e.g. 'Experiencing infectious diseases provides better and lifelong protection than vaccination'), and perceived a high anticipated regret of not vaccinating their child (Table 4.1). With regard to the questionnaire in 2013, only some very small but significant differences were found in some factors that may influence parents' decision to vaccinate their child or not, which were a small increase in intention to vaccinate, perception combination vaccines are good, trust, positive beliefs about vaccines and a somewhat higher anticipated regret not to vaccinate and a small decrease in barriers perceived and negative beliefs about diseases (Table 4.1).

Table 4.1 Mean (standard deviation) of socio-psychological determinants and its possible differences between sample 2013 (n=800) and sample 2015 (n=1,384)

	Mean (Standard Deviation)		p
	2013	2015	
1 Intention	6.01 (1.17)	6.31 (1.31)	<0.001
2 Attitude	5.44 (1.10)	5.52 (1.12)	0.091
3 Perceived norm	5.27 (1.05)	5.25 (1.28)	0.616
4 Barriers	2.19 (1.00)	2.01 (0.84)	<0.001
5 Perception combi vaccines	4.77 (1.27)	4.92 (1.62)	0.020
6 Trust	5.22 (1.00)	5.40 (1.03)	<0.001
7 Consideration	2.88 (1.30)	2.90 (1.46)	0.709
8 Moral norm	5.21 (1.29)	5.17 (1.33)	0.516
9 Risk perception disease	5.29 (0.92)	5.36 (0.97)	0.080
10 Risk perception side effects	3.74 (1.14)	3.69 (1.26)	0.304
11 Beliefs vaccine	4.76 (0.87)	4.92 (0.94)	<0.001
12 Beliefs disease	3.44 (1.30)	2.88 (1.44)	<0.001
13 Anticipated regret not vaccinating	5.90 (1.35)	6.12 (1.37)	>0.001

4.2.1 Childhood immunisation in the context of informed decision making

In September 2015, a second questionnaire to monitor the acceptance of the NIP was sent to parents with at least one child between the ages of 3 months and 3.5 years. This questionnaire contained some extra items to objectively assess parents' level of informed decision making. Informed decision making was defined as choices that are based on sufficient knowledge, engaging in a process of deliberation and making a choice that is consistent with the decision maker's values (e.g. attitude towards vaccination). A total of 1,615 parents were included in this study, of which 1,393 (86.3%) reported to have a completely immunised child (having had all vaccinations they should have had according to the NIP depending on the age of the child) and were classified as acceptors, 134 (8.3%) reported to have not immunised their child and were classified as decliners, and 84 (5.2%) reported to have immunised their child partially and were classified as partial acceptors. Only 21% of the parents met the criteria for informed decision making by having sufficient knowledge, showing a process of deliberation and being

value-consistent in their choice. Decliners more often made an informed decision than acceptors (33.3% vs 19.5%). The main reason decliners were considered to have made an uninformed decision was insufficient knowledge, which could mean that they based their decision on incorrect information. Among acceptors, the main reason for being considered to have made an uninformed decision was insufficient deliberation (see Table 4.2). Like the decliners, the partial acceptors showed low levels of knowledge and deliberation.
Ways to increase knowledge among decliners (e.g. debunking vaccination myths) and to motivate acceptors to think more about their vaccination choices (e.g. by means of a decision aid) are currently under consideration.

Table 4.2 Mean percentages of sufficient knowledge, deliberated process and value consistency among decliners and acceptors who made an uninformed decision (n=1,206)

	Sufficient knowledge	Process of deliberation	Value consistency
Decliners (N=88)	7	88	94
Acceptors (N=1,118)	77	11	92
Chi-Square	$\chi^2(1)=196.3$, $p<0.001$	$\chi^2(1)=340.8$, $p<0.001$	$\chi^2(1)=0.5$,

4.2.2 Impact on HPV vaccination intentions of mass media risk communication about the use of allegedly inferior needles

In spring 2015, Dutch mass media claimed that the use of inferior needles might represent a health risk for children who get vaccinated within the NIP. The glue that was used in assembling these needles was suspected of releasing a poisonous substance when children got vaccinated. This message was disseminated just after the start of the annual campaign in which all 12-year-old girls are invited to receive the HPV vaccination. The Ministry of VWS then decided to stop using these needles, until closer investigation confirmed or refuted the detrimental effect of their use. Based on investigations that were carried out after the completion of the study described below, it was concluded that these needles could be used safely.
Before the media reports on the supposedly inferior needles, the TNO had been conducting a pre-post-test controlled field experiment to test the effectiveness of an experimental web-based tailored education intervention among mothers of girls who were invited for HPV vaccination in 2015. In this experiment, the mothers were randomly exposed either to an experimental web-based tailored intervention or to the general information usually provided within the annual HPV vaccination campaign. Before the mass media started publishing the possible health risks of certain needles, the mothers participating in that field experiment had completed the baseline and follow-up assessment of their attitudes, perceived decisional conflict and intentions towards the HPV vaccination of their daughters. To assess the impact of the mass media messages about inferior needles on these determinants of HPV vaccination behaviour, a brief second follow-up assessment was added to the educational experiment

already running. A random sub-sample of 472 mothers was invited to participate in the present study. We received a net response of 74% on this second follow-up, of which 155 were mothers (45%) exposed to the experimental intervention and 193 were mothers (55%) exposed to the control information. Besides attitudes, perceived decisional conflict and intention, the mothers were asked whether they were aware of the mass media messages about suspect needles and of the Ministry's decision to stop using them.
Mothers' attitudes and intentions towards the HPV vaccination of their daughters declined significantly between the first and second follow-up (from 4.86 to 4.71 and from 5.04 to 4.76 on a 7-point Likert scale, respectively ($p<0.05$)). However, this overall decline did not differ between mothers that were or were not aware of the mass media messages about inferior needles. A possible explanation for the absence of a difference in degree of decline might be that the group of mothers who were aware of the messages about the inferior needles corrected their initially decreasing attitudes after becoming aware of the Ministry's decision to stop using the needles. In addition, the overall decline in intention did not differ between mothers that were or were not exposed to the experimental web-based tailored education. However, the decline in attitude and intention was less strong among mothers who were aware of the Ministry's decision to stop using these needles than among mothers who were not aware of that decision. The preventive effect of this awareness was even stronger among mothers that had previously been exposed to the experimental web-based tailored education than among their counterparts who had been exposed to the general information ($p=0.03$). Finally, mothers that were aware of the Ministry's decision also reported lower levels of decisional conflict than those unaware of the Ministry's decision ($p=0.01$) (see also TNO report for more results [1]).
Overall, mass media attention on the risks involved in using the allegedly inferior needles appeared to have had a negative impact on the mothers' attitudes and intentions towards the HPV vaccination of their daughters. Awareness of the Ministry's decision to stop using these needles had a significant preventive impact on this decline, even more so when mothers were previously exposed to the web-based tailored education. This underscores the importance of transparency and timely communication by the authorities about matters relating to the NIP, especially when something happens to cause concern among the target population about the possible risks of vaccination.

4.2.3 A longitudinal study on determinants of HPV vaccination uptake in parents/guardians from different ethnic backgrounds in Amsterdam, the Netherlands

HPV vaccination coverage among 12-year-old girls in the Netherlands is lower (61%) than coverage for other childhood vaccinations given at younger ages (>90%), and it is even lower among ethnic minorities, which is worrying, as these groups are known to have a higher incidence of cervical cancer than the native Dutch population. The Public Health Service of Amsterdam therefore decided to explore the possible impact of ethnicity on the determinants of HPV vaccination intention and uptake among parents/guardians having a daughter eligible for HPV vaccination.
Parents/guardians of girls that were invited for HPV vaccination in 2014 were asked to complete a questionnaire on socio-demographics and the social-psychological determinants of HPV vaccination uptake in 2014. For this study, four ethnic groups were distinguished: Dutch

(NL, n=723), Surinamese, Netherlands Antillean, and Aruban (Sur, n=126), Middle-Eastern and North-African (MENA, n=237) and Other (n=223). The MENA group was mainly composed of individuals with a Moroccan, Turkish or Egyptian background. In all ethnic groups, we found intention to be the strongest predictor of the daughters' HPV vaccination uptake. Explained variance is a measure of how well the assessed determinants predict the outcome. In this study, we found that the explained variance of uptake was highest in the NL group (56%) and lower in the other ethnic groups (ranging between 23% and 29%). The lower explained variance can be attributed to participants with a positive intention that did not opt for vaccination in the Sur group (11%) and MENA group (30%). Explained variance of intention to vaccinate (rather than actual vaccination) varied between 66% and 77% across ethnic groups, and was mainly explained by social-psychological determinants, namely attitude, beliefs, risk perception and social norms. The strength of association of the determinants on both intention and uptake were largely similar across ethnic groups.
We conclude that HPV vaccination campaigns can focus on the same determinants as used for the Dutch group when targeting non-Dutch groups, although the mode of delivery of the intervention needs to be tailored to the different cultural backgrounds (by personal communication or via social media and, if possible, in their own language). Further research is needed to explain the observed discrepancy between intention and uptake, especially among parents/guardians in the non-Dutch groups.

4.3 Vaccines not included in a public vaccination programme

Within the project group 'extra vaccinations customised', studies have been conducted to improve insight into acceptance and information needs among the public and professionals with regard to vaccines that are available but not (yet) part of a public vaccination programme. On the website *www.rivm.nl/vaccinaties* there is now information available on a number of vaccines available to the public. This information is being updated gradually in accordance with the most recent findings from ongoing research. Professional guidelines on herpes zoster and maternal pertussis vaccines are available, and others are currently being developed and reviewed by representatives of the different groups of professionals (e.g. child vaccine providers, general practitioners, paediatricians). Within the following year, professional guidelines for vaccination against rotavirus, pneumococcal disease, varicella, meningococcal disease B and W, HPV for boys, influenza for people under 60 years old, hepatitis B for migrants, and hepatitis A for migrant children are expected to be completed.

4.3.1 Vaccines for adults

4.3.1.1 Acceptance of four vaccines among Dutch older adults

In order to improve insight into the willingness of people aged 50 years and older to get vaccinated against influenza, pneumococcal disease, herpes zoster and pertussis, a questionnaire study was conducted; a total of 735 adults above 50 years of age completed the survey. The psychological concepts were measured on a 7-point Likert scale. Findings showed a positive attitude towards influenza vaccination (M=5.28, SD=1.39) and vaccination in general (M=4.76, SD=1.01), and a positive intention to get vaccinated (M=4.90, SD=1.60). The perceived severity of pneumococcal disease was highest (M=5.98, SD=0.76), which also resulted in the

highest willingness to get vaccinated against this disease (M=5.47, SD=1.38). The severity of herpes zoster and pertussis was perceived to be lower (M=5.38, SD=1.03 and M=5.33, SD=1.06, respectively), which also led to a lower willingness to get vaccinated against these diseases (M=4.93, SD=1.50 and M=4.86, SD=1.50, respectively).
Looking at the predictive value of different determinants of the intention to get vaccinated, findings showed that older adults are more willing to get vaccinated when they have positive outcome expectations (i.e. 'Getting vaccinated will prevent me from getting an infectious disease'), a positive attitude towards getting vaccinated in general, as well as against influenza, if they perceive themselves as susceptible to infectious diseases, when they have been vaccinated against influenza in the previous year, and if they did not mind the number of vaccinations they get. The determinants for attitude were similar to those for intention, and the following variables also had some predictive value: a positive belief about vaccinating people over the age of 50 against as many infectious diseases as possible, and a higher perceived severity of pneumococcal disease. With increasing age, participants perceived themselves to be more susceptible to the diseases and their attitude and intention were more positive. In order to ensure a positive attitude among the elderly, especially those aged between the ages of 50 and 60, they should be properly informed about the benefits of vaccination at their age. It should be highlighted that vaccination at their age might be more effective and more beneficial, considering that immunosenescence affects not only their immunity but also the effectivity of the vaccine. In addition, they should be informed about the severity of the various diseases and the susceptibility to them according to their age; and additional vaccinations might be discussed and administered at the same time as influenza vaccination.

4.3.1.2 Acceptance of vaccination for the elderly among general practitioners

Possible expansion of the current influenza vaccination programme to include vaccination against pneumococcal disease, herpes zoster and pertussis partly depends on the willingness of general practitioners (GPs) to endorse additional vaccinations. GPs were therefore asked to fill in a questionnaire about the factors that influence their attitudes and willingness to offer vaccination – other than influenza vaccination – to the elderly. GPs were positive about vaccination in general (M=5.43, SD=1.16 on a 7-point Likert scale), but somewhat less positive about expanding the current programme (M=4.22, SD=1.66). Prediction analysis showed that the intention of GPs to offer additional vaccination was predicted by positive attitudes towards offering additional vaccination, towards vaccination as a preventive tool, towards offering vaccination during an outbreak and when they thought that they are suitable to offer additional vaccination. The attitude of GPs towards offering additional vaccination was predicted by the perceived severity of herpes zoster and pneumonia, as well as the perceived incidence of herpes zoster. The severity of diseases was ranked as an important argument to recommend vaccination, followed by effectiveness and expected health benefits for the individual. Comorbidity was seen as a more important selection criterion for vaccination than age. In order to ensure a positive attitude among GPs towards informing older people about and administering additional vaccinations, they need to have clear guidelines, including evidence-based information about the severity and incidence of the diseases, the effectiveness and health benefits of the vaccines, as well as about advising vaccination based on high-risk groups.

4.3.1.3 Consultants in elderly care

As well as GPs, other consultants in elderly care (e.g. nursing home physicians, clinical geriatric physicians) should be aware of the availability of additional vaccinations that might benefit older individuals. Semi-structured interviews with nursing home physicians were conducted to improve insight into their opinions, awareness and knowledge about vaccination against pneumococcal disease, herpes zoster and pertussis, how they perceive their role in the vaccination of the elderly and what their information needs are. Results showed that elderly care specialists in nursing homes have little knowledge about available vaccinations and they do not seem to perceive a role in informing the elderly about vaccination. Financial resources, additional time and clear guidelines with a focus on the elderly were stated as prerequisites for expanding their role in vaccination care.

4.3.2 Maternal pertussis vaccination

In December 2015, the Dutch Health Council recommended including maternal pertussis vaccination in the NIP. The Minister of Health will decide at the end of 2016 whether this recommendation is to be adopted. A number of studies have been conducted this year to improve insight into the current state of awareness, opinions, information needs and factors that could influence acceptance among pregnant women, as well as among midwives and other groups of professionals who might have a role in maternal pertussis vaccination.

4.3.2.1 Online forum about maternal pertussis vaccination

Online focus group discussions with three groups of pregnant women and three groups of midwives were conducted. Over a period of five days, pregnant women could log in to a forum and discuss with other pregnant women about 1. their opinion and reasons for or against vaccination during pregnancy, 2. pertussis and pertussis vaccination, 3. factors that affect the decision to get vaccinated or not, 4. their need for information and support in the decision, and 5. which professional should be administering the vaccine. Midwives had three days to discuss 1. their opinions about vaccination during pregnancy, 2. their information needs, 3. their perceived role in the vaccination of pregnant women, and 4. practical considerations (i.e. the role of other professionals, facilities, time concerns). The data is currently being analysed and results can be expected at the end of 2016.

4.3.2.2 Knowledge and opinion of general practitioners and child vaccine providers

In order to get a first impression of current knowledge, attitudes, intentions, role perception and information needs with regard to maternal pertussis vaccination among GPs and child vaccine providers (CVPs), a short questionnaire was handed out during a fair for GPs (huisartsenbeurs Utrecht, 2016) and the annual vaccination meeting for CVPs organised by the RIVM (Vasteprik-dag 2016). CVPs were found to have considerably more knowledge than GPs about maternal pertussis vaccination. However, it should be mentioned that they had already received information about this topic on the day the questionnaire was handed out. On average, the attitude of CVPs towards maternal pertussis vaccination was more positive than that of GPs (M=5.94 vs. M=4.89 on a 7-point scale). CVPs would also be more willing to offer vaccination if it is included in a public vaccination programme (M=6.18 vs. M=5.51). GPs perceived their role in maternal vaccination as to provide information and advice, while CVPs

considered themselves as the professionals who could administer the vaccine. Finally, both groups of professionals would like to receive more information about the risk of pertussis to the mother and child, the effectiveness of the vaccine and the possible side effects. The website of the RIVM was most often cited as a source of information. In addition, both GPs and CVPs considered e-learning as a good information source.

4.3.2.3 Interviews with professionals about maternal pertussis vaccination

A total of 22 semi-structured, in-depth interviews with CVPs, midwives, gynaecologists and paediatricians were conducted to improve insight into their opinions and knowledge with regard to pertussis and pertussis vaccination during pregnancy, how they perceive their role in vaccination during pregnancy and what their information needs are. Results showed that knowledge about maternal pertussis vaccination among key professionals should be improved – especially knowledge about the necessity for it and the long-term effects. Both midwives and CVPs reported to be most likely to administer the vaccination to pregnant women. All the professionals – paediatricians, gynaecologists, midwives and CVPs – believed they had a role in informing pregnant women. Providing information to key professionals is very important in order to increase their knowledge about maternal pertussis vaccination. Both the RIVM website and e-learning were mentioned as important information sources in order to inform professionals about maternal pertussis vaccination. A campaign to inform pregnant woman about maternal pertussis vaccination was also considered to be important. Pregnant women should particularly be informed about the safety of maternal pertussis vaccination for both themselves and their (un)born child and about the necessity of maternal pertussis vaccination, especially about the disease burden of pertussis.

4.3.3 HPV vaccination among 12-year-old boys and their parents and among MSM

4.3.3.1 Exploring factors influencing the HPV vaccination intentions of boys and their parents

In this study, focus group discussions (n=7, 87 boys in total) were conducted with 12-year-old boys and interviews with six parents of boys around this age, to assess the health beliefs, behavioural factors, communication preferences and information needs regarding the HPV vaccination of boys. The majority of parents (5 out of 6) and boys had a positive attitude towards the HPV vaccine and intended to (let their sons) receive the vaccine. However, most of the participants had little knowledge about HPV and HPV vaccination, especially about its effects in boys. Parents and boys had a low perceived risk of HPV infection and several participants were concerned about the side effects of the vaccine. Both parents and boys reported that parents would decide whether their sons would receive the vaccine or not. Most parents trusted the government to ensure that the vaccine was safe. Parents and boys would like to be informed about the HPV vaccination by a personal letter, via (several types of) (social) media and via information meetings at schools or community health services.

4.3.3.2 Young gay and bisexual men suggest more attention and free vaccines are needed to promote HPV vaccination

In the Netherlands, free vaccination against HPV is limited to young girls. In March 2016, Soa Aids Nederland carried out qualitative research amongst young gay and bisexual men in the Netherlands about their knowledge of HPV, their attitudes towards HPV vaccination and

their suggestions on ways to promote HPV vaccination amongst young gay and bisexual peers. Only young men who were (also) attracted to men were selected for the interviews. Participants were interviewed either individually (n=16) or in small focus groups (n=6 per group). Prior to reading a fact sheet with key information on HPV and HPV vaccination, the participants were asked what they already knew about HPV. After the fact sheet information was discussed, participants answered questions about their attitudes towards HPV vaccination. Finally, participants were asked what could be done to encourage HPV vaccination amongst gay and bisexual peers.
In total 28 adolescent men who have sex with men (MSM) were interviewed, with an average age of 20 years (range: 15–25 years). Their education level was above average (71% had higher education level). Half of the sample lived outside North-Holland (including Amsterdam) and Flevoland. Participants were completely unfamiliar with HPV and how HPV vaccination offers protection against genital warts and/or anogenital cancer. After reading the fact sheet, participants expressed low levels of willingness to receive vaccination. The current vaccine cost (over €300) was a major barrier for every participant. Respondents generally questioned the importance of HPV vaccination for themselves, primarily because of the perceived low prevalence of HPV-related cancer versus the high rates of HPV infection; the current non-existence of free vaccination programmes for gay and bisexual men; and the lack of information and campaigns about HPV focusing on gay and bisexual men. Sexually experienced boys wondered how effective the vaccine would still be for them and participants who had a steady partner perceived a lower risk of becoming infected with HPV.
In order to stimulate HPV vaccination uptake amongst (other) young gay and bisexual men, participants suggested the following: HPV vaccines should be offered free, by default, to boys and girls and preferably via sexual health clinics; more attention should be given to HPV, by providing information about HPV in schools and by promoting HPV vaccination via websites, social media and smartphone apps commonly used by young gay and bisexual men.

4.3.3.3 HPV vaccination intention among male clients of a large STI outpatient clinic in Amsterdam, the Netherlands

HPV vaccination coverage among girls is approximately 60% in the Netherlands, with some herd protection for men who have sex only with women (MSW). MSM are not protected through the indirect effects of girls' vaccination and have a higher risk of HPV-related diseases. In this study, we explored the socio-psychological determinants of the intention to get vaccinated against HPV among male clients of the sexually transmitted infections (STI) clinic in Amsterdam. From June until November 2015, men aged ≥18 years attending the STI clinic were asked to complete a web-based questionnaire about their demographic background, the socio-psychological determinants of their HPV vaccination-related intentions, and their sexual behaviour. The socio-psychological determinants of HPV vaccination that were included in the questionnaire were derived from the Theory of Planned Behaviour and Social Cognitive Theory. Additionally, the effect of different amounts of out-of-pocket payment (€50; €100; €200; €350) on intention was explored.
In total, 1,490 men participated; 1,053 (71%) were MSM. The median age was 33 years inter-quartile range (IQR) 25–44. The median HPV knowledge score was 5 (IQR 4–6) out of a maximum of 7.

HPV vaccination intention appeared very high: mean of 1.7 [SD=1.4] in MSW and mean of 2.4 [SD=1.1] in MSM (on a scale of -3 to +3). In a multivariable analysis of the responses of MSW, attitude towards HPV vaccination had the strongest association with HPV vaccination intention followed by self-efficacy. Additionally, anticipated regret and social influences were significantly associated with HPV vaccination intention (explained variance of 70%). Among MSM attitude and self-efficacy also were strongly associated with HPV vaccination intention. Anticipated regret, the number of friends that were expected to get vaccinated and outcome expectations were also associated with HPV vaccination intention (explained variance of 68%). Demographics and sexual behaviour variables did not much improve either model. With each step increase in the required out-of-pocket payment for HPV vaccination, HPV vaccination intention decreased by 0.81 (95% CI: 0.75–0.86) scale point on a scale of -3 to +3 among MSW and by 0.71 (95% CI: 0.67–0.75) among MSM.
HPV vaccination intention among male clients of the Amsterdam STI clinic is high. Most of the variance in HPV vaccination intention among men can be explained by socio-psychological factors such as attitude and self-efficacy. Out-of-pocket payment appeared to have a strong negative effect on HPV vaccination intention in both MSM and MSW.

4.4 Literature

4.4.1 References

1. Paulussen TGWM, van Keulen HM, Keer M. Het effect van media-aandacht voor het gebruik van mogelijk ondeugdelijke naalden in het voorjaar van 2015 op de bereidheid van moeders om hun dochter te laten vaccineren tegen HPV. TNO rapport, 2015. TNO/LS 2015 R11197

4.4.2 Recent RIVM publications

1. Visser O, Hautvast JLA, van der Velden K, Hulscher MEJL. Intention to accept pertussis vaccination for cocooning: A qualitative study of the determinants. PLoS ONE 2016;11(6):e0155861.
2. Van Lier A, Tostmann A, Harmsen IA, de Melker HE, Hautvast JL, Ruijs WL. Negative attitude and low intention to vaccinate universally against varicella among public health professionals and parents in the Netherlands: two internet surveys. BMC Infect Dis. 2016 Mar 15;16(1):127.
3. Harmsen IA, Bos H, Ruiter RA, Paulussen TG, Kok G, de Melker HE, Mollema L. Vaccination decision-making of immigrant parents in the Netherlands; a focus group study. BMC Public Health. 2015 Dec 10;15:1229.
4. Eilers R, Krabbe PF, de Melker HE. Attitudes of Dutch general practitioners towards vaccinating the elderly: less is more? BMC Fam Pract. 2015 Oct 28;16:158.