Research with an impact
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At the National Institute for Public Health and the Environment (RIVM), researchers carry out a great deal of excellent research every day. Not a week goes by without one of them publishing a thorough report or an authoritative paper. To maximise the impact of that research, however, it is imperative that we start putting more effort into telling the world about our research and why it matters. And just as in some types of visual arts and in architecture, we have to learn that in communicating our science often ‘less will be more’.

**Jewels in the crown**

In my latest New Year’s speech, I alluded to an investigation by our colleagues at the Nutrition, Medicines and Consumer Safety Division (RIVM-VGC). They wondered what their clients had learned from the reports they had sent them. As it turned out, a great many details in those reports had not been picked up. In fact, the client did not fully understand some parts of the work. From my days as a researcher, I remember all too well how a crucial part of our work can easily fall through the cracks. After completing an article or report filled with tables, figures and facts, we are often too close to the deadline to spend much time on the abstract. In those final few minutes, we end up producing a summary that is okay at best, forgetting that for the great majority of our audience members, that summary will be all they will ever see of our work.

What’s more, after having done all that fascinating research and finding so many fine details, we think it is impossible to sum it up in just a few words. Yet in many respects, our abstracts and executive summaries should be the jewels in the crown of our research. If we take the time, capturing the essence in a few lines will prove to be possible after all. If we do it right, our impact will be much bigger. Policymakers will find it easier to incorporate our work into theirs; news media will more often pick up on our work. Our visibility will increase, and so will our ability to put issues on the agenda.

It is not just summaries we should care about more. At RIVM, when we design and budget our projects, we tend to push follow-up and communication to the bottom. But if we want to maximise the impact of RIVM’s outstanding research — and that is indeed what I want — follow-up and communication need to be near the top. We should ask ourselves the right questions. What is our core message? To whom should it be addressed? And what do we need to make sure it reaches its target?

Last year, in a communications policy document, the board of directors said that communications expertise needs to be close to where the research takes place. All our divisions should have their own
communication specialists, we think, and we are working to implement that policy.

At the central RIVM level, we have also set up an editorial office that stands ready to assist our researchers in effectively phrasing their messages. As of 2006, one staff member at the office is available full time to make research summaries as effective as they can be.

But at the same time people should know that RIVM at its core remains a scientific institute. Our researchers work closely with colleagues across Europe and the rest of the globe. Everything we do meets rigorous scientific standards and our research, which covers the gamut from radiation and toxicology to influenza and obesity, is published in international, peer-reviewed journals.

For our own RIVM staff too, this report has a lot to offer. I hope all our scientists will take the opportunity to re-acquaint themselves with the breadth and depth of our common research effort. All too often, we are so focused on finishing our own projects that we forget to find out what colleagues just down the hall have been up to. What’s more, given our research areas and the fact that we are mostly funded by tax-payers, it’s only fair that society gets the chance to learn about our research.

Put to wider use

Of course, another way to increase our impact is not to follow a ‘less is more’ approach. By expanding international collaborations, for example, we can ensure that our research is used beyond national borders and helps not just to set Dutch priorities, but European priorities, as well.

Take for example our research into ‘disease burden,’ which is being used by the European Centre for Disease Prevention and Control (ECDC) in Stockholm to highlight problems in European health. Our collaboration with colleagues abroad has added weight to our work and has put it to far wider use than ever before.

Similar things have happened on other fronts. Severe health effects of particulate matter and the threat of drug-resistant tuberculosis, for example, have moved up the European priority ladder thanks, in part, to research carried out by RIVM.

In the next few years, working with the ECDC, the European Medicines Agency (EMEA) in London, the European Food Safety Authority (EFSA) in Parma and the European Environment Agency (EEA) in Copenhagen should continue to be at the top of our agenda.

Raise awareness

RIVM is not a political action group. However, it is a good thing when our research raises awareness about difficult problems in our society, either by alerting governments or by attracting attention from the mass media. That is why, besides doing great research, it is important that we also make sure it is having an impact.

As a scientist, I will not let pass any opportunity to emphasise how important it is for people to quit smoking, have healthy diets and exercise frequently. As an institute, too, we have a duty to get such messages out as effectively as possible — even if that means that, often, ‘less will be more’.

Marc J.W. Sprenger, Ph.D. M.D.
Director-General, National Institute for Public Health and the Environment (RIVM),

April 2007, Bilthoven, The Netherlands
Chasing after a highly successful bug

The recent flare-up of serious whooping cough could be a side effect of successful childhood immunisations introduced in the 1950s. The causative agent, the Bordetella pertussis bacterium, has evolved into a form that is better able to withstand the vaccines. More effective vaccines could stem the resurgence.

For much of his scientific career, Frits Mooi has been tracing the path of a microbe that many once thought was a thing of the past. Bordetella pertussis, whooping cough’s causative agent, is a bacterium that as far as we know infects only humans. Spread by infected droplets from patients, the microbe first causes symptoms similar to a cold before becoming more serious or even deadly. In The Netherlands, in the first half of the 20th century, whooping cough killed hundreds of infants each year. After vaccines became available in the 1950s, numbers dropped dramatically — Bordetella seemed on its way out. Since then, it has become clear that Bordetella is “a highly successful pathogen,” says Mooi. “In The Netherlands, an estimated one million infections occur each year. Although a large fraction of these infections are subclinical or mild, there probably is no other infectious disease in this country with that much transmission.”

Bordetella’s staying power became apparent when in the 1990s, after decades of child immunisation, the number of registered whooping cough cases began to rise suddenly. Even the number of deaths among infants is climbing. However, most of the increase in the disease is found in adolescents and adults.

Controversial

Frits Mooi has been studying Bordetella’s return, and he developed a theory that became widely known but controversial: According to Mooi, the bacteria has been evolving, subtly changing its mantle and rendering the vaccine less effective. What’s more, a new type of bacteria recently appeared that is more virulent than previous ones and better able to strike adults in whom the effects of childhood immunisation has waned.

“As a microbiologist, I was used to the idea that ‘nothing in biology makes sense except in the light of evolution,’ as Theodosius Dobzhansky once said,” Mooi says, explaining why he, more than some
How Bordetella pertussis got away

For his Ph.D., Marcel Hijnien studied how evolutionary changes in a gene coding for the pertactin toxin by Bordetella pertussis may have helped the bacterium to evade whooping cough vaccines targeted at the original molecule. All current vaccines trigger immune responses by confronting immune cells with three to five bacterial proteins, and pertactin is one of them.

By closely watching the pertactin protein, and using molecular tools to tinker with its various regions, Hijnien discovered how variations in the protein can significantly influence the immunogenicity of the protein. Variable parts of the toxin are able to hide other parts, effectively preventing the immune system from responding. Some pertactin variants turned out to be more effective than others in doing just that. Removing these variable regions resulted in pertactin proteins that were more effective than conventional vaccines.

Hijnien used the data to build a synthetic peptide vaccine and tested its efficacy in a mouse model. The new vaccine provided stronger protection than the wild-type vaccine, offering new routes to potentially more effective vaccines against whooping cough. The study was carried out in co-operation with the Department of Medicinal Chemistry at Utrecht University.

Hijnien M
The Bordetella pertussis protein Pertactin: role in immunity and immune Evasion. Doctoral thesis, Utrecht University, Utrecht

According to Mooi, medically trained colleagues, tended to blame evolution. Because to his initial surprise, his hypothesis has at times been unpopular.

According to Mooi, the evidence gathered over the years suggests that vaccines should have been kept up to date better and that new vaccines should be designed to elicit a longer-lasting immune response. The trouble is that in the difficult world of vaccine development, such advice is easier given than followed, explaining in part why his ideas have not been met with applause. “People do not deny that there have been changes to the bacterium,” Mooi says, “but most of them doubt whether it was relevant for the effectiveness of the vaccine.” Not unsurprisingly, much of the scepticism comes from vaccine manufacturers or researchers he considers close to that industry.

If Mooi is correct, vaccine producers skipped their homework when they developed a new generation of safer vaccines in the 1980s. Instead of checking whether new strains had appeared, a half-dozen companies raced to market using the old strains.

After studying the recent upswing in whooping cough cases, however, Mooi believes that he found even more important mutations in the bacterium. His group found that the old Bordetella strain has been replaced by a new strain with a mutation in a regulatory gene that probably results in the production of more toxin. By making more toxin, Mooi suspects, the bacterium is able to ward off the low level of immunity in adults vaccinated decades ago. As a by-product, the higher production of toxin has made the bacterium more virulent.

“After childhood vaccination wiped away the main transmission vehicle of Bordetella, that is non-immune children, evolution selected for more aggressive strains able to survive in adults with waning immunity,” he says. The solution could be to develop DNA-based vaccines, Mooi says, which would not require chemical detoxification, a step that makes the vaccine less immunogenic. A DNA vaccine, Mooi suggests, could induce antibodies to the toxin that would last longer.

Investment

According to Mooi, many of his colleagues have warned to the idea that current vaccines are not optimal. The problem is that it will be hard to replace the vaccines because registration authorities do not accept changes in vaccines without repeating many years of research, costing many millions of euros — an investment that probably no vaccine maker is willing or able to make. However, Mooi says, some modifications probably can be implemented without extensive field trials, such as adapting the vaccine to the current circulating strains and increasing the immunogenicity of the toxin. Immunity could also be prolonged by additional (booster) vaccinations, especially with toxin-containing vaccines.

In the long run, Mooi says, vaccine companies and regulatory authorities should realise that pathogens are “moving targets” and that vaccines will have to be updated regularly.
Compared to many curative treatments, disease prevention programmes are really a great deal even if you account for the extra healthcare costs caused by people living longer lives. In terms of healthy life years, prevention gives you more bang for the buck.

Some people working in disease prevention don’t really like what he does, says Pieter van Baal. As an economist, he adds income, subtracts expenditures and comes up with the price of intervention. “Cold numbers,” people will say, and counterproductive because they show that prevention comes at a cost.

“It’s true that economists focus on numbers,” Van Baal says. “It’s also true that some people will write off prevention programs if they do not save money.” “However, as an economist, I think people are prepared to pay for their health. Even if prevention turns out to be more expensive when you include all the numbers, it still is a lot cheaper than many curative treatments. Prevention programs should be seen as investments in years spent in good health, and as such they can yield great results. A government that would spend more on prevention would get lots of health in return.”

Investment

For much of 2006, Van Baal worked on calculating the real costs of helping people to quit smoking. He used to smoke, he says, when as a Ph.D student he was crunching numbers about crime, not healthcare. “I liked smoking,” he now says, “but when I had to go out for every cigarette, being an addict felt rather pathetic.”

In pharmaco-economics, it is unusual to put the life years gained by successful treatments on the balance sheet as expenditures. However, according to some researchers, when dealing with prevention it does make sense to include indirect healthcare costs when more people will reach old age, if only because ignoring such costs makes the case for large-scale interventions less convincing.

Van Baal got to work comparing separate approaches. First, using the traditional approach, he only
counted savings in treatments for lung cancer and cardiovascular disease as a direct consequence of quit-smoking interventions. Following that, he also included extra healthcare costs caused by the expected rise in "unrelated", age-related ailments. For this he used RIVM’s chronic-diseases model, upgraded for the occasion with costs related to Alzheimer’s and similar diseases. The grand total was divided by the number of “quality-adjusted life years” (QALYs) gained by the program.

Helping smokers quit would cost about 4,400 euros per extra QALY including everything, Van Baal says. Without considering the costs of unrelated diseases, it would have been 1,500. “Either way, it’s a bargain,” he says. “Whichever cost-utility ratio you use, prevention costs far less than many hospital treatments, which are easily between 50,000 and 80,000 euros per extra QALY.”

In retrospect, the exercise was rather moot because the costs of unrelated diseases added little. “I spent a year of my life answering a question that hardly alters the fact that prevention is very cost-effective,” Van Baal says.

Politics

Economically speaking, governments should help all smokers quit before moving into curative healthcare. Obviously, other factors are at play as well. “Pretty soon our government will launch an advertising campaign against youth drinking. We know it won’t work, while making drinks more expensive definitely does,” says Van Baal.

“The better I get in understanding the field, the easier it becomes to explain things in clear language,” Van Baal says. “I’m still learning in that respect. But I’ve also discovered that finding the right way to tell your story takes just as much time as doing the research itself.”
Keeping up annoyances

For a researcher, having an impact can have advantages and drawbacks. For more than 10 years, RIVM helped shape the debate on the health effects of Schiphol Airport. Being close to public policy, however, also invites scrutiny from people other than peers.

Nowhere on earth has the continuous growth of an international airport been accompanied by so much health research. As early as 1993, when the Dutch government announced plans to build a new runway, a need for research into the health effects was established. Between 1995 and 2005, researchers analysed birth weight registrations and pharmacy records, measured blood pressure, wake-up times and lung capacity, and performed allergy and cognition tests. Thousands of people living near old or new runways filled out a questionnaire about their health and the quality of their environment. All the while, political debate about the new runway raged on. "It has been a highly interesting experience," says Danny Houthuijs, who led RIVM’s contribution to the research since 2001. The work, together with research at other institutes and universities, produced a wealth of data on the health impact of modern-day international airports. It also helped lay the foundation for a position paper by the Dutch government, published in April 2006, in which more attention was paid to the annoyance of people living farther away from runways. Yet for a researcher, Houthuijs discovered, politics can come almost too close.

Downward trends

The research data taken around Schiphol in 1996, 2002, and 2005 tell the story of a rapidly growing airport and its impact on millions of people, living close by or at greater distances from the runways. Suddenly rising noise levels related to the opening of a new runway in 2003 caused a sharply increased incidence of people reporting annoyance, the research showed; of those reporting severe annoyance, many also reported high blood pressure and reduced general health. But the number of people reporting severe annoyance decreased markedly over the years. The same trend was seen in different parameters, including the number of people reporting severe sleep disturbance and the number of people filing complaints about high noise levels. "The downward trend differs radically from what was reported in the news media," Houthuijs says. "There, you just heard about growing numbers of complaints filed after the runway had opened,
Increases that continued throughout 2004 and 2005. More complaints, however, were filed by fewer people. “Our overall conclusion has been that for people most affected by the new runway, the annoyance level subsided after an initial jump. Policies to limit the number of people experiencing annoyance have been successful,” he says. “It’s sad for people who suddenly found themselves living under a new approach route, but for many more people noise exposure decreased substantially. The policy worked, although most of the gains had already been established before the new runway opened, likely due to less noisy aircraft and optimisation of routes.”

The research also highlighted a certain arbitrariness of government policies, Houthuijs says, by showing that in absolute numbers, much more severely annoyed people were living far from the airport than were living nearby. Although at greater distances the annoyance risk is much smaller, the overall impact is bigger because many more people live farther away than nearby.

RIVM had flagged the issue several times, he says, before the government in its 2006 position paper mentioned reducing annoyance farther away from the airport as a policy priority. The paper did not revise the general policy to concentrate annoyance on a small number of people rather than spreading it out over a great many of them.

Columns and peers

However, being very close to policy can have its downside, Houthuijs and co-workers discovered when a press release about multi-centre research around international airports into performance of primary school children raised the eyebrows of one newspaper columnist. The release had stated that an estimated 50 to 3,000 high school students living near Schiphol had lower reading comprehension scores because of loud aircraft.

Volkskrant columnist Ronald Plasterk, later appointed as Minister of Education, Culture, and Science, was quick to blame the researchers for inaccurate reporting because the figures for Schiphol did not show the effect. “RIVM provides many politically relevant figures,” Plasterk wrote, “making it crucial that publicity and research match perfectly.” Houthuijs still fully supports the work. “In fact, the research has since been published in The Lancet and The American Journal of Epidemiology, two leading journals; our scientific peers had no comments,” he says.

The experience could tempt a researcher to refrain from informing large audiences and report only to scientific peers, Houthuijs acknowledges. It did make him wish for a bit more distance between his research and policy. “Having a consensus report or a commission that evaluates many separate studies, for example, might prevent one study from suddenly landing in the middle of political debate.”
Becoming a reliable source

Industries and governments worldwide are embracing nanotechnology and preparing an endless array of applications, but risk assessment procedures are falling behind. In 2006, the Dutch government asked researchers at RIVM to help fill the gap.

If there is one thing that RIVM will have to be in the area of nanotechnology, says Adriënné Sips, then it is a reliable source that carefully monitors products and applications with respect to possible risks. "As an institute, we should not stand in the way of technical development and innovation," she says. "But neither should we let ourselves be carried away by Star Trek-like applications or governments looking only for economic growth."

At RIVM, Sips heads a toxicokinetics research group that, among other things, advises the Dutch Medicines Evaluation Board on preclinical pharmacokinetics of drugs awaiting market authorisation. Within her immediate line of work, Sips encounters nanotechnology only sporadically. However, by bringing together all parts of RIVM that were dealing with it in bits and pieces, she has been an instrumental force.

"The strength of an institute such as RIVM is its ability to bundle the work and the expertise of many different disciplines in public health and environment," she says. "Before, a number of us were handling small projects and budgets separately. Now that we’ve come together, we form a large and highly visible group. By using our different roles and networks and by acting as part of RIVM rather than just ourselves, we have managed to become the country’s biggest player when it comes to assessing the risks of nanoparticles and nanotechnology products."

In the fall of 2006, the strategy paid off when the Dutch government published a position paper. It named RIVM as the site of a future “observation post” for potential risks of nanoparticles and nanotechnology products. "That paper gave us a real boost," Sips says.

Technology celebration

The current state of affairs in nanotechnology resembles a technology celebration, Sips says, in which often the sky seems to be the limit. Industry has introduced hundreds of products using nanoparticles and is investing heavily in what is projected to be a multi-billion-dollar market. Governments, especially those of highly industrialised regions such as the United States and Europe, are mostly cheering their efforts, keenly aware of the need for highly advanced technological sectors to grow now that manufacturing jobs are being moved to lower-wage countries.

“As a government institute, RIVM has an obligation to investigate whether some of those applications could carry risks," Sips says. "At the same time, however, people should not start seeing us as spoiling
Giving nanoparticles better visibility

In 2006, the RIVM nanotechnology working group, which had been launched the year before, raised its profile. Twelve RIVM staffers who had previously acted alone or in small groups now started operating together, bundling knowledge, efforts and visibility to the outside world. All of them acted as ambassadors for a joint RIVM effort to become a strong player in nanotechnology.

The group got a boost from a 2006 position paper of the Dutch government in which RIVM was named as a future “observation post” for nanotechnology risks assessment.

According to Adriënette Sips, the nanotechnology working group aims to focus on risk assessment and bundling of expertise. Some laboratory work should be included to gain hands-on experience. The group is involved in setting up several research agendas and participates in several grant proposals at the EU’s Seventh Framework Programme.


the party. There could be great applications of nanotechnology, and perhaps RIVM should even engage in efforts to develop applications that are useful for activities of our own. Also, we should explain to companies that it’s not in their interest if, at some later stage, their products suddenly attract negative media attention or will have to be pulled off the market.”

To operate in such a high-stakes, multi-stakeholder environment can be complicated, Sips says, especially in a country such as The Netherlands where the public has not been informed about nanotechnology. “We need to be careful when publicly talking about potential risks, since some stakeholders won’t necessarily like it. However, we also have to make sure our credibility is not compromised. At the end of the day, we should deal with nanotechnologies like we handle all others — check carefully whether there could be potential risks involved.”

RIVM will focus its efforts on potential human and ecotoxicological risks. Conventional titanium oxide particles, for instance, used in cosmetics, can’t reach the brain from the bloodstream. Although thus far it does not seem to be the case, for titanium oxide nanoparticles theoretically things could be different. “We know nanoparticles have the potential of behaving differently than bigger particles of the same composition,” Sips says. “We cannot trust the chemical and physical criteria used for conventional compounds, such as size and lipophilicity. More research is needed to explore such basic questions.”

Consumers

Many stakeholders publicly acknowledge this need, Sips says, but not much funding is following such promises. “More than 95 percent of research budgets is spent on product development, less than 5 percent on risk assessment research.”

“In policy circles, many people say they don’t want to see the history of biotechnology being repeated,” Sips says, referring to food and agricultural applications of biotechnology that ran into trouble with European consumers. Yet some similarities are starting to show, Sips says, such as hundreds of products reaching the market while risk assessment procedures are still in the making. “That’s why I’m happy to see rising awareness of the importance of collecting toxicological data, both at the national and international level,” she adds.
Getting the best of two worlds

“Public Health Status and Forecasts” is a book published every four years by RIVM to map the health status of The Netherlands and to suggest ways to address major public health concerns. Designed to maximise the impact of research on policymakers, the project also manages occasionally to grab newspaper headlines.

At the Centre for Public Health Forecasting, all everyone thinks about is increasing the impact of scientific research. The centre’s mission is to integrate and to interpret other people’s research and to disseminate the results to Dutch policymakers. For Nancy Hoeymans, a nutritional scientist, working at the centre has been great because she likes to operate in both worlds. “Digging deeper and deeper into one question is not my thing,” she says. “I like translating basic research into ideas that can be put to work. At the centre, we gather all available research and tell our client: This is what we know; this is what we don’t know. This is what you can do; this is what it will cost; and this is what you can expect to come out of it. That’s the kind of work I like very much.”

Forecasting

In 2006, the Centre for Public Health Forecasting (VTV) published its fourth “Public Health Status and Forecasts,” the centrepiece of a portfolio that includes several Web sites, as well as a series of thematic reports, for example, on the future of care for the elderly. Nancy Hoeymans was a member of the editorial board, together with four of her colleagues: Guus de Hollander, Johan Melse, Hans van Oers and Johan Polder. “Never before have I worked so hard for so long to get something completed,” she says. “But never before have I had so much fun doing it.” To maximise the study’s impact, the editors worked with policymakers at the Dutch government’s Ministry of Public Health, Welfare and Sports (VWS). Their co-operation led to a government report,
“Choosing Healthy Living” in which several priorities highlighted by the RIVM study had been translated into policy plans. Programmes to help prevent alcohol abuse and mental disorders, for instance, had gained prominence.

“We had concluded that these were important health problems, that there are significant opportunities for prevention and that therefore they made excellent policy priorities,” Hoeymans says. “We didn’t make the policy choices, but we did bring them up with the government.”

It is not the only way the centre tries to make sure the work will reach its target. Before beginning to work on thematic reports, Hoeymans says, clients are asked how the outcomes will be put to use. “If the client can’t answer such questions, we won’t even start,” she says. “We will not write a report that ends up just being shelved. For us, it’s important to know our work will actually land.”

Another way to maximise impact is to limit the size of the four-yearly reports. “In 2006, we were determined to keep it at 100 pages,” Hoeymans says. “We failed — we ended up making 350.” Reducing the size is difficult, in part because new questions keep being added, she notes. Yet she knows that although many people heaped praise on the book, almost no one had read it.

For the future, Hoeymans wonders whether it could be useful to produce two books: one rather thin, summing up everything for policymakers, and another, more voluminous, to satisfy the research community. “It’s easier, though, to write a thick book than a thin one,” she acknowledges. “Usually you don’t have the time to cut the number of pages.”

Media attention

Hoeymans vividly remembers one telling example of how very little information can have significant impact. “Someone suggested I should make a press release about a map showing how life expectancy varies across Dutch regions, with differences up to 12 years. I did, and it attracted immense media attention. I was on national television, and all newspapers carried big headlines. In the media, that one press release carried more weight than the 350 pages so many people had worked on so hard. From this, I learned that news media need one clear message, not 20 messages in a hefty report. That is important because what gets into the media will often also end up in the heads of policymakers.”

Dutch health is okay, but it could be better

As was done in 1993, 1997 and 2002, a large amount of information on health, prevention and health care in The Netherlands was collected for the fourth edition of the VTV public health forecast. Public health in the Netherlands is improving, the authors conclude, but there is room for improvement. For example, at birth Dutch women have a lower life expectancy than the average woman in Europe; In The Netherlands, smoking is more popular than in the rest of Europe.

Unhealthy behaviors and conditions, including obesity, especially among young people, are undermining the future of Dutch public health. Aging of the population could lead to a surge in demand for health care. Furthermore, large differences in health and health risks exist across regions and neighbourhoods within cities. Public health problems are often associated with socioeconomic deprivation.

According to the authors, prevention efforts should not focus only on individuals, but also on social and spatial factors surrounding them. To improve public health, other areas of government policy, including education, spatial planning and socioeconomic development, should be involved.

The report was written with the assistance of hundreds of Dutch researchers. Many detailed maps and figures can be found at the VTV Web site.

Bringing 30,000 chemicals within REACH

The Chemical Substances Bureau mandate from the Dutch government is to perform executive tasks under chemical substances legislation. In 2006, the bureau prepared for the launch of European rules called REACH. The result: thousands of pages of legislation, guidelines for authorities and industry, a Web site, a video and a help desk.

Dick Sijm started his career as an academic. For many years, he tested toxicity levels of chemical compounds in university labs. Since then, however, his focus has shifted to work that brings him more into contact with the rest of the world.

“I think RIVM has to serve all parts of the chain: from basic research to its application,” Sijm says. “For me personally, the latter parts are the most exciting these days — interacting with players outside, witnessing the impact our research is having. That’s what gets me going here at RIVM. As a scientist, setting up a help desk for the industry is about as close as you can get to applying your research.”

Radical transition

As a government-mandated body, the Chemical Substances Bureau, which Sijm heads, has been heavily involved in preparations for a radical transition in chemical substances legislation. In December 2006, the European Union formally adopted the laws to make industry responsible for demonstrating

Getting ready to answer questions 24/7

The Chemical Substances Bureau spent much of 2006 drafting a handbook and preparing material for a help desk to assist companies in finding answers to questions about the new REACH framework. The help desk, along with a Web site filled with explanations, guidance, questions and answers and a “role identification tool,” was produced in co-operation with SenterNovem, an agency of the Dutch government’s Ministry of Economic Affairs.

The official language of the Web site is Dutch because under the REACH regulations all enterprises, whether large or small, should be able to fully understand the rules.

As of January 1, 2007, the help desk can be reached every morning by phone. RIVM and SenterNovem staff members take turns answering the questions or forwarding them to experts.

REACH help desk
www.reach-helpdesk.nl
the safe use of chemicals it brings to the market and which, through its products, eventually end up in
the environment. The new regulation is called REACH, an acronym for Registration, Evaluation,
Authorisation and restriction of Chemicals.
REACH will require manufacturers and importers to centrally register applications of some 30,000
chemical substances and supply toxicological data showing that their use is safe. Governments will
get to check the quality of the data and ban chemicals or specific applications when they find that the
benefits do not outweigh the risks. In shifting the burden of proof from the government to industry, the
legislation means a radical change.

As their country’s prime experts, Sijm and his colleagues assisted the Dutch government during years of
negotiations over the legislation, especially when The Netherlands acted as the EU’s president in 2004,
as well as the year after when Luxembourg took up that role. Later on, Sijm’s bureau took up key tasks
in preparing its implementation, primarily in The Netherlands.
The work consisted mostly of translating extensive legislation into practical guidelines to be used by
companies and the government. “My department has worked tirelessly to write thousands of pages, all
in close co-operation and consultation with the European Commission, national ministries and industry
partners,” Sijm says. “It was a very constructive but highly pressurised process, since it was imperative
that these handbooks are ready when REACH will go into effect.”
The same expertise was used to prepare the REACH help desk that includes a Web site (see box) to
answer many questions that companies have. The help desk is a joint effort of RIVM and SenterNovem,
an agency of the Dutch ministry of Economic Affairs. “Talking to industry will help companies and will
help us to further improve our handbooks and alert policymakers to problems. We very much wanted
to be part of that monitoring,” Sijm says.
As a general rule, he adds, the help desk will tell companies what to do to comply with the rules,
not how they should do it. “REACH makes companies responsible for implementation, so if they need
help filling in forms, we will refer them to trade organisations or consultants, not help them ourselves,”
Sijm says.

Weighing claims

Has having so many conversations with stakeholders changed his outlook on how toxicology should be
applied? “Yes,” Sijm says. “Since my days at the university, I have gained more realistic insights into how
we should deal with chemical substances. Of course, we have to keep looking at risks for people and the
environment, but we also have to take arguments from industries and non-governmental organisations
into account.”
“For me, it’s important that thanks to REACH our bureau will get to weigh the toxicological risks of
certain substances against the benefits of their actual use. Certainly, some plastic softeners carry great
health risks, but does that mean we should not allow their use in equipment that can treat kidney
patients? I think it is important to give society a more firm place at the table.
“We won’t do toxicological tests here at the bureau, but we will stay in close contact with scientists and
their work. Sometimes, we will determine that new research needs to be done. In the end, our work will
be about interpreting the data and weighing the claims from all relevant parties. If we come up with
the best arguments, we could have immense impact doing that.”
For 10 years, researchers at RIVM have quietly provided feedback to a growing number of Dutch hospitals, informing them about their nosocomial infection rates. Increasingly, their measurements are being used to evaluate the success of attempts to bring rates down.

Of every 100 patients entering a Dutch hospital, five to 10 will acquire some sort of infection in the hospital. Many get urinary tract infections; others come down with pneumonia. Three to four percent of patients who undergo surgery will develop post-operative wound infections.

In 1996, staggering figures like these led to the launch of PREZIES, a surveillance network in which the National Institute for Public Health and the Environment (RIVM), the Dutch Institute for Healthcare Improvement (CBO) and many Dutch hospitals took part. In Dutch, the acronym resembles the word “precies” (precise); its characters stand for Prevention of Hospital Infections through Surveillance.

In 2006, 10 years after the network was launched, 90 percent of Dutch hospitals have taken part in PREZIES. In 2006, more than 75 percent of hospitals participated in one of four surveillance programs: post-operative wounds, wound infections after heart surgery, central venous catheter-associated sepsis, and ventilator-associated pneumonia were monitored. The Netherlands Health Care Inspectorate (IGZ) now routinely asks hospitals whether they take part in PREZIES as one of several performance indicators.

In 10 years, PREZIES has become the primary tool for recording hospital-acquired infections in the Netherlands.

Confidential

Judith Manniën, who once studied food and health at Wageningen University, has been a part of PREZIES for six of those 10 years. Since 2001, she has closely monitored post-operative wound infections, the longest-running of the four programs.

“It is remarkable how scores of individual hospitals can vary wildly from the national average”, Manniën
says. “For some types of surgery, the average infection rate nationally hovers somewhere between 1 and 3 percent, while individual hospitals vary between zero and 7 percent. Obviously, that tells you that there is room for improvement.”

Hospitals take part voluntarily in the network’s confidential surveillance. That, according to Manniën, is a better recipe for success than using their infection rates as a public benchmark. “We will never publish data for individual hospitals, only national averages and variances,” she says. “If we did, many hospitals might not participate in the network. What’s more, they could be tempted to subtly squeeze the registration data in order to prevent bad publicity, for instance by underreporting infections or refusing to treat high-risk patients. Or they would just monitor types of surgery they knew to run perfectly, instead of those they suspected of causing problems. As a researcher, I’m sure it would make my data less reliable and the surveillance less effective.”

In any case, using infection rates as performance benchmarks would be complicated, Manniën says. “It’s very hard to reliably compare rates across hospitals. For example, our research shows that actively following-up with patients after discharge, as some hospitals do but others don’t, almost doubles the number of infections they find. Also, patient populations can differ substantially.”

Germany

The same is true for international comparisons, Manniën says. Monitoring infection rates started in the United States, and like many other countries The Netherlands has based its protocols and risk definitions on those of the United States. “I myself have tried to compare Dutch numbers with those in Germany. That turned out to be harder than expected because many factors vary. For instance, German patients remain in the hospital longer, so higher infection rates at the time of discharge don’t tell you much.”

Publishing details on hospital procedures and improving them is probably more effective than publishing infection rates, Manniën believes. “How is the operating room being ventilated? How do they remove body hair? Is antibiotic prophylaxis administered correctly? Those things already tell you a lot about how well a hospital is performing.”

To Manniën’s delight, hospitals increasingly use PREZIES data to evaluate the effects of attempts to bring nosocomial infection rates down. “We have seen projects in which hospitals try interventions, such as opening the door to operating rooms less often. Such studies proved to be highly successful, and it would be great to see more.”

This year, Manniën will try to assess whether infection rates in participating hospitals have declined over the first 10 years of PREZIES. “My predecessor found an effect after five years, so hopefully the outcome will be the same,” she says.

Most nosocomial infections found after patients have checked out

The authors compared the number of surgical site infections registered in Dutch hospitals using active post-discharge surveillance versus hospitals that did not use active surveillance systems following discharge. Of all 98 hospitals in The Netherlands, 64 took part in the study. The study included data on 131,798 surgical procedures between 1996 and 2004. For about half of these procedures, active post-discharge surveillance was done.

Doing such surveillance the recommended way almost doubled the chance of finding post-surgical infections, the study found. On average, for the 14 surgical procedures that were studied, 3.1 percent of all patients were registered as developing site infections by hospitals not doing active surveillance. In hospitals doing surveillance the recommended way, the infection rate was 3.7 percent.

In hospitals doing active surveillance, 76 percent of surgical site infections following appendectomies were found after the patient had been discharged. For knee prosthesis surgery, the rate was 64 percent; for mastectomies 61 percent. The study demonstrates that, without actively carrying out high-quality post-discharge surveillance, hospitals will seriously underestimate post-surgical site infection rates.

Manniën J, Wille JC, Snoeren RL, Hof S van den
Impact of post-discharge surveillance on surgical site infection rates for several surgical procedures: results from the nosocomial surveillance network in The Netherlands
Infect Control Hosp Epidemiol 2006; 27(8):809-16
No major barriers for new medicines

Many people think that regulation causes undue delays when companies try to get new pharmaceuticals to market. Surprisingly, companies themselves have no major complaints. Companies and government agencies would like to see more transparency and better co-operation, however.

Last year, when Marjolein Weda started interviewing representatives from the Dutch pharmaceutical industry, she braced for a long list of complaints. Like many people, she suspected that companies do not look favourably at strict regulation and time-consuming procedures. In fact, such notions had prompted the Ministry of Public Health, Welfare and Sports (VWS) to commission RIVM to find out whether things could be improved.

To Weda’s surprise, pharmaceutical companies did not complain about overly tight regulation or long procedures. “In fact, government bodies and industry mostly agreed on the issues,” she says. “Companies acknowledge that registration of medicinal products needs to be done meticulously. In a way, it even protects them from competitors quickly making similar products. For industry, it’s most important that procedures are clear and transparent.”

Priority medicines

With Ingrid Hegger, Weda interviewed about 20 representatives of government bodies and industry, all dealing with regulation of newly developed drugs and vaccines. The project was driven in part by the Dutch government’s intention to lower companies’ administrative burden. Another reason came from a 2004 conference of the World Health Organisation (WHO) “Priority Medicines for Europe and the World,” suggesting which medicines should fill companies’ pipelines and stressing the need to get them to market as quickly as possible.

Medicines without barriers

After interviewing key players in drug development and registration in The Netherlands, the authors found that there are no significant regulatory barriers obstructing or delaying the registration of new medicines in The Netherlands. Nevertheless, the authors think improvements in the process could be made. Their recommendations are generally aimed at increasing the reliability, predictability and transparency of the role of the government, including consultation procedures in the run-up to new regulation. Some parts of the regulation could be organised more efficiently, such as the formal release of batches of “immunologic pharmaceutical products.”

The agencies and committees involved in regulating drug development, clinical testing and market authorisation should communicate more effectively with industry as well as amongst each other, for instance through setting up Intranet and Internet Web sites where relevant information can be accessed more easily. Applying these measures will help prevent the pharmaceutical industry from moving drug development and market registration to countries other than The Netherlands, the authors conclude.

Weda M, Hegger I
Development and registration of medicines
Are there regulatory barriers?
RIVM report 370001001/2006
“Generally speaking, we have concluded that there are no significant barriers obstructing or delaying the registration of new medicines in The Netherlands,” Weda says. “We did find however that communication between government and industry could be improved, both during development of new regulation as well as during research into new products and during authorisation procedures.”

Adds Hegger: “Communication between the various government bodies can also be improved, we found. Procedures surrounding drug development are rather fragmented in this country, and the agencies which are part of the process could communicate and co-operate more effectively than they currently do.”

Hegger expected complaints about procedures during clinical research. In fact, some of those complaints did materialise, in part because many agencies are involved at this early stage, even more so after laws were revised in March 2006.

In the revised Medical Research Involving Human Subjects Act, committees that had previously overseen only the ethical aspects of clinical trials are now also charged with assessing the safety and quality of pharmaceutical compounds used in the trial. For products involving genetically modified organisms, such as in gene therapy, a second committee (the Committee Genetic Modification or COGEM) assesses risks to the environment, including people other than the patient. Because they operate in different regulatory frameworks, the two committees occasionally come up with conflicting requirements.

A third body would get involved if an immunological medicinal product, such as a vaccine, was investigated in humans: the Health Care Inspectorate (IGZ) would have to check the quality and safety of the experimental vaccine. Finally, during the market authorisation procedure, the European Medicines Agency (EMEA) or the Medicines Evaluation Board (CBG) evaluates whether the research proved the new therapy to be safe and effective.

“All those government bodies do not always communicate and co-operate in the best possible way,” Hegger says. Ethical requirements for clinical studies can be at odds with requirements for market authorisation. That makes it important for government bodies to improve their lines of communication.”

Transparency

In the end, Hegger and Weda mostly recommended better communication, better co-ordination and more overall transparency. Together, those recommendations should increase the reliability and predictability of the Dutch government’s actions and prevent companies from taking their drug development, as well as applications for market authorisations, to countries elsewhere.

One procedure was indeed simplified since the report was published. The Health Care Inspectorate was relieved of its duty to also check the quality and safety of experimental vaccines. Ironically, that decision also affected RIVM’s division, which used to carry out the work on behalf of the Inspectorate.

It did not prevent RIVM investigators from flagging the situation as potentially inefficient, Hegger says. Adds Weda: “Like any agency, we have to be able to also take a critical look at the work we are doing ourselves.”
Research Output
Research output
Centre for Infectious Disease Control (RIVM-CIb)

Professorial Chairs (4)

Coutinho RA
Professor of Epidemiology and Infectious Disease Control
University of Amsterdam
Gründmann H
Professor of Epidemiology of Microbial Diseases
University of Groningen
Koopmans MPG
Professor of Viral Infections in the Gastrointestinal Tract
Erasmus University, Rotterdam,
Mooi FR
Professor of Molecular Microbiology
Utrecht University

Research Papers (Intl., 149)

A

High interlaboratory reproducibility of DNA sequence-based typing of bacteria in a multicenter study
J Clin Microbiol 2006; 44(2):619-21

Prediction of costs, effectiveness, and disease control of a population-based program using home sampling for diagnosis of urogenital chlamydia trachomatis infections
Sex Transm Dis 2006; 33(7):407-15

B

Banos HA, Vandebriel RJ, Ruiter H de, Dormans JAMA, Nagelkerke NJ, Mooi FR, Hoehr B, Kranen HJ van, Kimman TG
Host genetics of Bordetella pertussis infection in mice: significance of toll-like receptor 4 in genetic susceptibility and pathobiology
Infect Immun 2006; 74(5):2596-605

Bij AK van der, Coutinho RA, Poel CL van der
Surveillance of risk profiles among new and repeat blood donors with transfusion-transmissible infections from 1995 through 2003 in the Netherlands
Transfusion 2006; 46(10):1729-36

Bij AK van der, Spaargaren J, Morre SA, Fennema HSA, Mindel A, Goutinho RA, Vries JHC de
Diagnostic and clinical implications of anorectal lymphogranuloma venereum in men who have sex with men: a retrospective case-control study
Clin Infect Dis 2006; 42(2):186-94

Boot HJ, Melker HE de, Stolk EA, Wit GA de, Kimman TG
Assessing the introduction of universal varicella vaccination in the Netherlands
Vaccine 2006; 24(37-39):6288-99

Boot R, Berg L van de
Evaluation of antigen panels for ELISA monitoring of mouse colonies for antibodies to Pasteurellaceae
Laboratory Animals 2006; 40(2):194-9

Boot R, Berg L van de, Vlemminx MJ
Detection of antibodies to Streptobacillus moniliformis in rats by an immunoblot procedure
Laboratory Animals 2006; 40(4):447-55

Antibiotic resistance in the southeastern Mediterranean. Preliminary results from the ARMed project
Eurosurveillance Monthly 2006; 11(7-9):164-7

Boshuizen HC, Nagelkerke NJD, Boer JW den, Melker H de, Schellekens JFP, Peeters MF, Conyn-van Spaendonck MAE, Vliet H van
Estimation of minimum infection rates with Legionella pneumophila in an exposed population
Epidemiol Infect 2006; 134(3):579-84

Boxman ILA, Tilburg JJHC, Loewe NAJM te, Vennema H, Jonker K, De Boer E de, Koopmans M
Detection of noroviruses in shellfish in the netherlands
Brandhof WE van den, Barteld AIM, Koopmans MPG, Duynhoven YTHP van
General practitioner practices in requesting laboratory tests for patients with gastroenteritis in the Netherlands, 2001-2002
BMC Fam Practice 2006; 7:56

Mycobacterium tuberculosis complex genetic diversity: mining the fourth international spoligotyping database (SpolDB4) for classification, population genetics and epidemiology
BMC Microbiol 2006; 6:23

Bruin E de, Duizer E, Vennema H, Koopmans MPG
Diagnosis of norovirus outbreaks by commercial ELISA or RT-PCR
J Virol Methods 2006; 137(2):259-64

Emergent toxin-producing strains of Bacillus cereus show distinct characteristics within the Bacillus cereus group

Beijing genotype of Mycobacterium tuberculosis is significantly associated with human immunodeficiency virus infection and multidrug resistance in cases of tuberculous meningitis
J Clin Microbiol 2006; 44(11):3934-9

Chen L, Geys H, Cawthraw S, Havelaar A, Teunis P
Dose response for infectivity of several strains of Campylobacter jejuni in chickens
Risk Anal 2006; 26(6):1613-21

Coul ELM op de, Boer IM de, Koedijk FDH, Laar MJW van de
HIV and STIs increasing in the Netherlands according to latest surveillance data
Eurosurveillance Weekly 2006; 11(2)

Diavatopoulos DA, Cummings CA, Heide HGJ van der, Gent M van, Liew S, Rehm DA, Mool FR
Characterization of a highly conserved island in the otherwise divergent Bordetella holmesii and Bordetella pertussis genomes

Diavatopoulos DA, Hijmen N, Mool FR
Adaptive evolution of the Bordetella Autotransporter pertactin

Human coronavirus 229E encodes a single ORF4 protein between the spike and the envelope genes
Virol J 2006; 3:106

Doorduyn Y, Brandhof WE van den, Duynhoven YTHP van, Wannet WJB, Pelt W van
Risk factors for Salmonella Enteritidis and Typhimurium (DT104 and non-DT104) infections in The Netherlands: predominant roles for raw eggs in Enteritidis and sandboxes in Typhimurium infections
Epidemiol Infect 2006; 134(3):617-26

Doorduyn Y, Jager CM de, Zwaluw WK van der, Wannet WJB, Ende A van der, Spanjaard L, Duynhoven YTHP van
Invasive Listeria monocytogenes infections in the Netherlands, 1995-2003
Eur J Clin Microbiol Infect Dis 2006; 25(7):433-42

Doorduyn Y, Jager CM de, Zwaluw WK van der, Friesema IHM, Heuvelink AE, Boer E de, Wannet WJB, Duynhoven YTHP van
Shiga toxin-producing Escherichia coli (STEC) O157 outbreak, The Netherlands, September-October 2005
Eurosurveillance Monthly 2006; 11(7-8)

Doorduyn Y, Jager CM de, Zwaluw WK van der, Wannet WJB, Ende A van der, Spanjaard L, Duynhoven YTHP van
First results of the active surveillance of Listeria monocytogenes infections in the Netherlands reveal higher than expected incidence
Eurosurveillance Weekly 2006; 11(4)
Doorn HR van, Haas PEW de, Kremer K, Borgdorff MW, Soolingen D van, Vandenburgue-Gruls CMJE
Public health impact of isoniazid-resistant Mycobacterium tuberculosis strains with a mutation at amino-acid position 315 of katG: a decade of experience in The Netherlands
Clin Microbiol Infect 2006; 12(8):769-75

Dowdle W, Avoort H van der, Gourville E de, Delpeyroux F, Desphande J, Hovi T, Pallansch M, Kew O, Wolff C
Containment of polioviruses after eradication and OPV cessation: characterizing risks to improve management
Risk Anal 2006; 26(6):1449-69

Duijn C van, Ruijs H, Timen A
Second probable case of vCJD in the Netherlands
Eurosurveillance Weekly 2006; 11(6)

Hand rub consumption and hand hygiene compliance are not indicators of pathogen transmission in intensive care units
J Hosp Infect 2006; 64(4):406-11

Edmunds WJ, Kafatos G, Wallinga J, Mossong JR
Mixing patterns and the spread of close-contact infectious diseases
Emerg Themes Epidemiol 2006; 3(1):1-8

Variable host-pathogen compatibility in Mycobacterium tuberculosis
Proc Nat Acad Sci 2006; 103(8):2869-73

Distribution of molecular subtypes within Salmonella enterica serotype Enteritidis phage type 4 and S. Typhimurium definitive phage type 104 in nine European countries, 2000-2004: results of an international multi-centre study
Epidemiol Infect 2006; 134(4):729-36

Geubbels EL, Nagelkerke NJ, Mintjes-de Groot AJ, Vandenburgue-Gruls CM, Grobbee DE, Boer AS de
Reduced risk of surgical site infections through surveillance in a network
Int J Qual Health Care 2006; 18(2):127-33

Geubbels ELPE, Grobbee DE, Vandenburgue-Gruls CMJE, Wille JC, Boer AS de
Improved risk adjustment for comparison of surgical site infection rates
Infect Control Hosp Epidemiol 2006; 27(12):1330-9

Giessen AW van de, Bouwknecht M, Dam-Deizs WD, Pelt W vanm, WJB, Pelt W van, Wannet WJ, Visser G
Surveillance of Salmonella spp. and Campylobacter spp. in poultry production flocks in The Netherlands
Epidemiol Infect 2006; 134(6):1266-75

Foster KR, Grundmann H
Do we need to put society first? The potential for tragedy in antimicrobial resistance
Genotyping of Giardia in Dutch patients and animals: a phylogenetic analysis of human and animal isolates
Int J Parasitol 2006; 36:849-58

Glynn JR, Kremer K, Borgdorff MW, Rodriguez MP, Soolingen D van
Beijing/w genotype Mycobacterium tuberculosis and drug resistance. European concerted action on new generation genetic markers and techniques for the epidemiology and control of tuberculosis
Emerging Infect Dis 2006; 12(5):736-43

Greeff SC de, Melker HE de, Spanjaard L, Schouls LM, Ende A van der
Protection from routine vaccination at the age of 14 months with meningococcal serogroup C conjugate vaccine in the Netherlands
Pediatr Infect Dis J 2006; 25(1):79-80

Greeff SC de, Spanjaard L, Dankert J, Hoebe CJPA, Nagelkerke N, Melker HE de
Underreporting of meningococcal disease incidence in the Netherlands: results from a capture-recapture analysis based on three registration sources with correction for false positive diagnoses
Eur J Epidemiol 2006; 21(4):315-21

Grotenbreg GM, Buizert AEM, Llamas-Saiz AL, Spalburg E, Hooft PAV van, Neeling AJ de, Noort D, Raaij MJ van, Marel GA van der, Overkleeft HS, Overhand M
Beta-turn modified gramicidin S analogues containing arylated sugar amino acids display antimicrobial and hemolytic activity comparable to the natural product

Grundmann H, Aires-de-Sousa M, Boyce J, Tiemersma E
Emergence and resurgence of meticillin-resistant Staphylococcus aureus as a public-health threat
Lancet 2006; 368(9538):874-85

Grundmann H, Hellriegel B
Mathematical modelling: a tool for hospital infection control

Grundmann H, Tiemersma E
Author's reply to: Global prevalence of meticillin-resistant Staphylococcus aureus [Letter to the editor]
Lancet 2006; 338(9550):1866-7
Horan KL, Freeman R, Weigel K, Semret M, Pfalter S, Covert TC, Soolingen D van, Leao SC, Behr MA, Cangelosi GA
Isolation of the genome sequence strain Mycobacterium avium 104 from multiple patients over a 17-year period J Clin Microbiol 2006; 44(3):783-9

Huard RC, Fabre M, Haas P de, Claudio Oliveira Lazzarini L, Soolingen D van, Cousins D, Ho JL
Novel genetic polymorphisms that further delineate the phylogeny of the Mycobacterium tuberculosis complex J Bacteriol 2006; 188(12):4271-87

Huijsdens XW, Dijke BJ van, Spalburg E, Heck MEOC, Pluister GN, Voss A, Wannet WJB, Neeling AJ de, Santen-Verheuvel MG van
Community-acquired MRSA and pig-farming Ann Clin Microbiol Antimicrob 2006; 5:26

Huijsdens XW, Lier AMC van, Kregten E van, Verhoef L, Santen-Verheuvel MG van, Spalburg E, Wannet WJB
Methicillin-resistant Staphylococcus aureus in Dutch soccer team Emerg Infect Dis 2006; 12(10):1584-6

Huijsdens XW, Santen-Verheuvel MG van, Spalburg E, Heck MEOC, Pluister GN, Eijkkelkamp BA, Neeling AJ de, Wannet WJB
Multiple cases of familial transmission of community-acquired methicillin-resistant Staphylococcus aureus J Clin Microbiol 2006; 44(8):2994-6

Huang NT, Lan NTN, Cobelens FGJ, Duong BD, Co NV, Bosman MC, Kim SJ, Soolingen D van, Borgdorff MW

Kimman TG, Boot H
The polio eradication effect has been a great success – let’s finish it and replace it with something even better Lancet Infect Dis 2006; 6(10):675-8

Kimman TG, Boot HJ, Berbers GAM, Vermeer-de Bondt PE, Wit GA de, Melker HE de
Developing a vaccination evaluation model to support evidence-based decision making on national immunization programs Vaccine 2006; 24(22):4769-78

Kimman TG, Janssen R, Hoebee B

Kolader ME, Dukers NHTM, Bij AK van der, Dierdorp M, Fennema JSA, Coutinho RA, Bruisten SM
Molecular epidemiology of Neisseria gonorrhoeae in Amsterdam, The Netherlands, shows distinct heterosexual and homosexual networks J Clin Microbiol 2006; 44(8):2689-97

Koopmans M, Harris J, Verhoef L, Depoortere E, Takkinen J, Coulombier D
European investigation into recent norovirus outbreaks on cruise ships: update Eurosurveillance Weekly 2006; 11(7)

Kretzschmar M, Walling J, Teunis P, Xing S, Mikolajczyk R
Frequency of adverse events after vaccination with different vaccinia strains PLoS Med 2006; 3(8):1341-51


Increase in norovirus activity reported in Europe Eurosurveillance Weekly 2006; 11(12)

Kuijper EJ, Berg RJ van den, Debast S, Visser CE, Veenendaal D, Troelstra A, Kooi T van der, Hof S van den, Notermans DW
Clostridium difficile ribotype 027, toxinoype LII, The Netherlands Emerging Infect Dis 2006; 12(5):827-30

Kuijper EJ, Berg RJ van den, Debast S, Visser CE, Veenendaal D, Troelstra A, Kooi T van der, Hof S van den, Notermans DW
Clostridium difficile ribotype 027, toxinoype LII, The Netherlands Emerging Infect Dis 2006; 12(5):827-30

Laar MJW van de
The emergence of LGV in Western Europe: what do we know, factors and extracellular surface proteins do not confer an increased propensity to cause invasive disease Clin Infect Dis 2006; 43(7):884-91

Meijer A
Importance of rapid testing to combat the global threat of bird flu Expert Rev Mol Diagn 2006; 6(1):1-4

Meijer A, Bosman A, Kamp EEM van de, Wilbrink B, Ry van Beest Holle M du, Koopmans M
Meijer A, Brown C, Hungnes O, Schweiger B, Valette M, Werf S van der, Zambon M
Programme of the Community network of reference laboratories for human influenza to improve influenza surveillance in Europe
Vaccine 2006; 24(44-46):6717-23

Meijer A, Falcao JM, Jong JC de, Kyncl J, Meerhoff TJ, Meuwissen LE, Nicoll A, Velden J van der, Paget WJ
Clinical influenza activity in Europe is still low, with influenza B virus being dominant: an update from EISS
Eurosurveillance Weekly 2006; 11(2)

Meijer A, Paget WJ, Meerhoff TJ, Brown CS, Meuwissen LE, Velden J van der
Epidemiological and virological assessment of influenza activity in Europe, during the 2004-2005 winter
Eurosurveillance Monthly 2006; 11(4-6):111-8

Meijer A, Roholl PJM, Ossewaarde JM, Jones B, Nowak BF
Molecular evidence for association of Chlamydiales Bacteria with epitheliocystis in leafy seadragon (Phycodurus eques), Silver Perch (Bidyanus bidyanus), and Barramundi (Lates calcarifer)

Melker H de, Berbers G, Hahne S, Rumke H, Hof S van den, Wit A de, Boot H
The epidemiology of varicella and herpes zoster in The Netherlands: implications for varicella zoster virus vaccination
Vaccine 2006; 24(18):3946-52

Melker HE de, Versteegh FGA, Schellekens JFP, Teunis PFM, Kretzschmar M
The incidence of Bordetella pertussis infections estimated in the population from a combination of serological surveys

Mertens PL, Widdowson MA, Avoort HG van der, Richardus JH
Risk of introduction of poliovirus into a Dutch Cape Verdian community during an outbreak of poliovirus in Cape Verde, 2000
Trop Med Int Health 2006; 11(5):746-50

Minich T, Riemer J, Schulz JB, Wielinga P, Wijnholds J, Dringen R
The multidrug resistance protein 1 (Mrp1), but not Mrp5, mediates export of glutathione and glutathione disulfide from brain astrocytes
J Neurochem 2006; 97(2):373-84

Muilwijk J, Walenkamp GHIM, Voss A, Wille JC, Hof S van den
Random effect modelling of patient-related risk factors in orthopaedic procedures: results from the Dutch nosocomial infection surveillance network ‘PREZIES’
J Hosp Infect 2006; 62(3):319-26

Oosten M van, Greef SC de, Spanjaard L, Schouls LM
Introduction of pneumococcal conjugate vaccine into the Dutch national immunisation programme
Eurosurveillance Weekly 2006; 11(6)

European seroepidemiology network 2: Standardisation of assays for seroepidemiology of varicella zoster virus
J Clin Virol 2006; 36(2):111-8

Paget WJ, Meerhoff TJ, Meijer A
Epidemiological and virological assessment of influenza activity in Europe during the 2003-2004 season
Eurosurveillance Monthly 2006; 10(4):107-11

Pinelli E, Brandes S, Fonville M, Dormans J, Gremmer E, Verlaan B, Loveren H van, Giessen J van der
Acute infection with Toxocara canis leads to exacerbation of experimental allergic asthma

Rahamat-Langendoen JC, Vliet JA van, Suijkerbuijk AWM
Recognition of threats caused by infectious diseases in the Netherlands: the early warning committee
Eurosurveillance Monthly 2006; 11(12)

Reuter G, Vennema H, Koopmans MPG, Szucs G
Epidemic spread of recombinant noroviruses with four capsid types in Hungary
J Clin Virol 2006; 35(1):84-8

Rockx B, Asten I van, Wijngaard C van den, Godeke GJ, Goehring I, Vennema H, Avoort H van der, Pelt W van, Koopmans M
Syndromic surveillance in the Netherlands for the early detection of West Nile virus epidemics
Vector Borne Zoonotic Dis 2006; 6(2):161-9


Rutjes SA, Beerg HHJL van den, Lodder WJ, Roda Husman AM de Real-time detection of noroviruses in surface water by use of a broadly reactive nucleic acid sequence-based amplification assay Appl Environ Microbiol 2006; 72(8):5349-58

Rutjes SA, Lodder-Verschoor F, Poel WH van der, Husmani AM, Duijnhoven YT van Detection of noroviruses in foods: a study on virus extraction procedures in foods implicated in outbreaks of human gastroenteritis J Food Prot 2006; 69(8):1949-56


Sande MAB van der, Ruirs WLM, Meijer A, Cools HJM, Plas SM van der Use of oseltamivir in Dutch nursing homes during the 2004-2005 influenza season Vaccine 2006; 24(44-46):6664-9

Schalk JA, Mool FR, Berbers GA, Aerts LA van, Ovelgonne H, Kimman TG Preclinical and clinical safety studies on DNA vaccines Hum Vaccin 2006; 2(2):45-53

Schanke A van, Venrooij GCMAL van, Jongsma MJ, Banus HA, Mullenders LHF, Kranen HJ van, Gruijl FR de Induction of nevi and skin tumors in Ink4a/Arf Xpa knockout mice by neonatal, intermittent, or chronic UVB exposures Cancer Res 2006; 66(5):2608-15

Schets FM, Berg HHJL van den, Demeulmeester AA, Dijk E van, Rutjes SA, Hooijdonk HPJ van, Roda Husman AM de Vibrio alginolyticus infections in the Netherlands after swimming in the North Sea Eurosurveillance Weekly 2006; 11(11)


Schielen J, Roda Husman AM de A survey of diving behavior and accidental water ingestion among Dutch occupational and sport divers to assess the risk of infection with waterborne pathogenic microorganisms Environ Health Perspect 2006; 114(5):712-7


Schouls LM, Ende A van der, Damen M, Pol I van der Multilocus variable-number tandem repeat analysis of Neisseria meningitidis yields groupings similar to those obtained by multilocus sequence typing J Clin Microbiol 2006; 44(4):1509-18

Schyns F, Giessen J van der, Tixhon S, Pozio E, Dorny P, Borchgrave J de First isolation of Trichinella britovi from a wild boar (Sus scrofa) in Belgium Vet Parasitol 2006; 135(2):191-4
Semret M, Turenne CY, Haas P de, Collins DM, Behr MA
Differentiating host-associated variants of mycobacterium avium by PCR for detection of large sequence polymorphisms
J Clin Microbiol 2006; 44(3):881-7

Smit C, Lindenburg K, Geskus RB, Brinkman K, Coutinho RA, Prins M
Highly active antiretroviral therapy (HAART) among HIV-infected drug users: a prospective cohort study of sexual risk and injecting behaviour
Addiction 2006; 101(3):433-40

Smith NH, Kremer K, Inwald J, Dale J, Driscoll JR, Gordon SV, Soolingen D van, Hewinson RG, Smith JM
Ecotypes of mycobacterium tuberculosis complex

Steenbergen J van, Gelletlie R, Casteren V van
Communicable disease control: still a core public health function
Eur J Public Health 2006; 16(2):118

Stolte IG, Wit JBF de, Kolader M, Fennema H, Coutinho RA, Dukers NHTM
Association between safer sex fatigue and rectal gonorrhea is mediated by unsafe sex with casual partners among HIV-positive homosexual men
Sex Transm Dis 2006; 33(4):201-8

Stuen S, Moum T, Petrovec M, Schouls LM
Genetic variants of Anaplasma phagocytophilum in Norway
Int J Med Microbiol 2006; 296(Suppl 1):164-4

Proposal for standardization of optimized mycobacterial interspersed repetitive unit-variable-number tandem repeat typing of Mycobacterium tuberculosis
J Clin Microbiol 2006; 44(12):4498-510

Svraka S, Toman R, Skultety L, Slaba K, Homan WL
Establishment of a genotyping scheme for Coxiella burnetii
FEMS Microbiol Lett 2006; 254(2):268-74

Timen A, Doornum GJJ van, Schutten M, Steenbergen JE van, Meer JWM van der, Conyn-van Spaendonck MAE, Osterhaus ADME
Public health implications of using various case definitions in The Netherlands during the worldwide SARS outbreak
Clin Microbiol Infect 2006; 12(12):1214-20

High and persistent excretion of hepatitis A virus in immunocompetent patients

Torkzaban S, Hassanizadeh SM, Schijven F, bruin HAM de, Husman AMDR
Virus transport in saturated and unsaturated sand columns
Vadose Zone J 2006; 5(3):877-85

Torkzaban S, Hassanizadeh SM, Schijven F, Berg HHJL van den
Role of air-water interfaces on retention of viruses under unsaturated conditions
Water Resour Res 2006; 42(12):W12S14

Serotypes, genotypes, and antibiotic susceptibility profiles of group B streptococci causing neonatal sepsis and meningitis before and after introduction of antibiotic prophylaxis
Pediatr Infect Dis J 2006; 25(10):945-8

Vermeer-de Bondt PE, Dzaferagic A, David S, Maas NAT van der
Performance of the Brighton collaboration case definition for hypotonic-hyporesponsive episode (HHE) on reported collapse reactions following infant vaccinations in The Netherlands
Vaccine 2006; 24(49-50):7066-70

The calculated genetic barrier for antiretroviral drug resistance substitutions is largely similar for different HIV-1 subtypes
J Acquir Immune Defic Syndr 2006; 41(3):352-60

Vo ATT, Duijkeren E van, Fluit AC, Heck MEOC, Verbruggen A, Maas HME, Gaastra W
Distribution of Salmonella enterica serovars from humans, livestock and meat in Vietnam and the dominance of Salmonella Typhimurium phage type 90
Vet Microbiol 2005; 113(1-2):153-8

Vo ATT, Duijkeren E van, Fluit AC, Wannet WJB, Verbruggen AJ, Maas HME, Gaastra W
Antibiotic resistance, integrons and Salmonella genomic island 1 among non-typhoidal Salmonella serovars in The Netherlands
Vo ATT, Duijkeren E van, Fluit AC, Heck MEOC, Verbruggen A, Zwaluw K van der, Gaastra W
Class 1 integrons in Dutch salmonella enterica serovar Dublin isolates form clinical cases of bovine salmonellosis
Vet Microbiol 2006; 117(2-4):192-200

Vries PJ de, Koolen MGJ, Mulder MMS, Kortbeek LM
Acute pulmonary histoplasmosis from Ghana
Travel Med Infect Dis 2006; 4(5):286-9

Wagenaar JA, Mevius DJ, Havelaar AH
Campylobacter in primary animal production and control strategies to reduce the burden of human campylobacteriosis

Wagner D, Vos MC, Buiting AGM, Serr A, Bergmans AMC, Kern WV, Schouls LM
"Mycobacterium tilburgii" infections [Letter to the editor]
Emer Infect Dis 2006; 12(3):532-4

Wallinga J, Teunis P, Kretzschmar M
Using data on social contacts to estimate age-specific transmission parameters for respiratory-spread infectious agents
Am J Epidemiol 2006; 164(10):936-44

Meat inspection for Trichinella in pork, horsemeat and game within the EU: available technology and its present implementation
Eurosurveillance Monthly 2006; 11(1-3):50-5

Westrell T, Teunis P, Berg H van den, Lodder W, Ketelaars H, Stenstrom TA, Rada Husman AM de
Short- and long-term variations of norovirus concentrations in the Meuse river during a 2-year study period

Longitudinal analysis of tick densities and Borrelia, Anaplasma, and Ehrlichia infections in Ixodes ricinus ticks in different habitat areas in The Netherlands
Appl Environ Microbiol 2006; 72(12):7594-601

Wijnands LM, Dufrenne JB, Zwietering MH, Leusden FM van
Spores from mesophilic Bacillus cereus strains germinate better and grow faster in simulated gastro-intestinal conditions than spores from psychrotrophic strains
Int J Food Microbiol 2006; 112(2):120-8

Worp J, Boonstra A, Coutinho RA, Hoek JAR van den
tattooing, permanent make-up and piercing in Amsterdam; guidelines, legislation and monitoring
Eurosurveillance Monthly 2006; 11(1-3):34-6

The epidemiology of Haemophilus influenzae type b meningitis in Burkina Faso

Yzerman EPF, Boer JW den, Lettinga KD, Schel AJ, Schellekens J, Peeters M
Sensitivity of three serum antibody tests in a large outbreak of Legionnaires’ disease in the Netherlands

Zalm MM van der, Uiterwaal CSM, Jong BM de, Wilbrink B, Ent CK van der
Viral specimen collection by parents increases response rate in population-based virus studies [Letter to the editor]

Research Papers (Dutch, 63)

Asten L van, Wijngaard K van den, Vliet H van, Pelt W van, Jacobi A, Sande M van der, Koopmans M
Syndroomsurveillance: een vinger aan de pols van de volksgezondheid
Infectieziekten Bulletin 2006; 17(4):135-6

Avoort HGAM van der
Poliomyeltis in 2006: alles of niets
Ned Tijdschr Geneeskd 2006; 150(49):26889-92

Ballezooijen WM van
Evolutie en ecologie van infectieziekten
Infectieziekten Bulletin 2006; 17(11):386-6
Beaujan D, Broek M van den, Giessen A van der, Kluytmans J, Mevius D, Neeling H de, Tiemersma E, Verbrugh H, Voss A, Wolf P van der
MRSA-beleid voor ziekenhuizen aangescherpt
Infectieziekten Bulletin 2006; 17(9):314

Beaujean D
MRSA-beleid voor ziekenhuizen aangescherpt
Infectieziekten Bulletin 2006; 17(9):314

Bijkerk P
Hengelen naar poliovirus
Infectieziekten Bulletin 2006; 17(2):53-4

Bijkerk P
Symposium influenza-ecologie en pandemie
Infectieziekten Bulletin 2006; 17(6):204-5

Boer JM de, Laar MJW van de
Toename van Chlamydia en HIV. Voorlopige soacijfers 2005
Infectieziekten Bulletin 2006; 17(4):129-31

Boot R
Murine norovirus
Biotechniek 2006; 45:7-8

Boot R, Noomen RCEA
Proefdierpathogene microorganismen: Eimeria spp (coccidiose)
Biotechniek 2006; 45:167-71

Brummelen SE van, Vries E de, Binnendijk RS van, Lestrade P, Weber PC
Twee patienten met de bof
Ned Tijdschr Geneeskd 2006; 150(31):1732-5

Coul ELM op de, Laar MJW van de
Aangifte acute hepatitis C in 2005
Infectieziekten Bulletin 2006; 17(2):77

Dijkstra F, Gageldonk-Lafeber AB van, Brandsema P, Ry van Beest Holle M du, Meijer A, Lubben IM van der, Wilbrink B, Sande MAB van der
Respiratoire infectieziekten in het jaar 2005/2006
Infectieziekten Bulletin 2006; 17(11):390-7

Dijkstra F, Stenvers OFJ
Toename van individuele gevallen en clusters van psittacose in 2005
Infectieziekten Bulletin 2006; 17(1):5

Doorduyn Y, Jager CM de, Zwaluw WK van der, Friesema IHM, Heuvelink AE, Boer E de, Wannet WJB, Duynhoven YTHP van Filet americaan oorzaak van eerste landelijke uitbraak van Shigotoxine-producerende Escherichia coli O157-infecties
Infectieziekten Bulletin 2006; 17(8):288-92

Doorduyn Y, Jager CM de, Zwaluw WK van der, Wannet WJB, Ende A van der, Spanjaard L, Duynhoven YTHP van Intensieve surveillance van Listeria monocytogenes in Nederland, 2005
Infectieziekten Bulletin 2006; 17(12):441-7

E
Ende A van der, Spanjaard L
Overzicht van pneumokokkenmeningitis voor de introductie van het 7-valente vaccin in het Rijksvaccinatieprogramma
Infectieziekten Bulletin 2006; 17(4):138-9

Esveld M
Een jaar ECDC: een blik terug en een blik vooruit
Infectieziekten Bulletin 2007, 17(7):241-3

F
Friesema IM, Jager CM de, Heuvelink AE, Zwaluw WK van der, Maas HME, Pelt W van, Wannet WJB, Duynhoven YTHP van Intensieve surveillance van Shigatoxine-producerende Escherichia coli O157 in Nederland, 2005
Infectieziekten Bulletin 2006; 17(8):282-7

G
Greeff SC de, Westerhof A, Wijkmans C, Mooi FR
Onderzoek transmissieroutes van kinkhoest naar zuigelingen
Infectieziekten Bulletin 2006; 17(6):208-9

Hijn W, Medema Gj, Schijven J, Dullemond Y
Langzame zandfiltratie goede biologische veiligheidsbarriere tegen lage kosten
H2O 2006; 39(25/26):16-7

Hoek JAR van den, IJzerman EFP, Coutinho RA
Legionella-uitbraak in Amsterdam: koeltoren als bron
Ned Tijdschr Geneeskd 2006; 150(33):1808-11

Hoek JAR van den, IJzerman EFP, Coutinho RA
Legionella-uitbraak in Amsterdam: koeltoren als bron
Infectieziekten Bulletin 2006; 17(9):319-21

Hofhuis A, Giessen JW van der, Borgsteede FHM, Wielinga PR, Notermans DW, Pelt W van
De ziekte van Lyme in Nederland tussen 1994 en 2005: Drievoudige toename van het aantal huisartsconsulten en verdubbeling van het aantal ziekenhuisopnames
Infectieziekten Bulletin 2006; 17(7):238-405
Hofhuis A, Veen MG van, Wagemans MAJ, Laar MJW van de, Walter J, Helm T van de, Prins M
Pilot HIV-survey onder klanten van prostituees in Amsterdam
Infectieziekten Bulletin 2006; 17(2):51-2

Huijsdens XW, Eijkelkamp BA, Elzenaar CP, Spalburg E, Wannet WJB
Emm-typering van group-A-streptokokken.
Surveillancerapport 2004
Infectieziekten Bulletin 2006; 17(1):19-21

K
F, Wit A de, Laar M van de
Resultaten vragenlijst seksueel risicogedrag ten behoeve van de kosteneffectiviteitsanalyse van hepatitis B-vaccinatie voor gedragsgebonden risicogroepen
Infectieziekten Bulletin 2006; 17(1):22-6

Koedijk FDH, Borgen K, Loo IHM van, Laar MJW van de
Resistentie van gonokoken in Nederland, 2002-2004. Aanleiding voor hernieuwde landelijke surveillance voor gonokokkenresistentie
Infectieziekten Bulletin 2006; 17(4):146-9

Koene R, Vennema H
Diarree op een kinderdagverblijf
Infectieziekten Bulletin 2006; 17(2):55-6

Koopmans MPG
Aviaire influenza: dreiging of niet?
Infectieziekten Bulletin 2006; 17(3):99-100

Kretzschmar M, Wallinga J, Coutinho RA
Wiskundige modellering voor bestrijding van infectieziekten
Ned Tijdschr Geneeskd 2006; 150(36):1965-70

Kuijper EJ, Berg RJ van, Jong M de, Kooi TII van der, Hof S van den, Notermans DW
Spoorzoek naar Clostridium difficile in Nederland
Infectieziekten Bulletin 2006; 17(3):105-6

L
Laar MJW van de, Boer JM de, Koedijk FDH, Coul ELM op de
Seksueel overdraagbare aandoeningen nemen opnieuw toe. Cijfers soa en HIV 2004
Infectieziekten Bulletin 2006; 17(1):8-9

Langelaar M
Grenzeloos geanimeerd, aangenaam kennis maken
Infectieziekten Bulletin 2007, 17(7):244-5

Langelaar M, Giessen J van der, Soolingen D van
Een storm in een glas melk: ziekte van Crohn door ziekte van Johne?
Infectieziekten Bulletin 2006; 17(6):206-7

M
Merelle ME, Visser LF, Bokma JA, Melker HE de, Winter JP de
Waterpokken: soms complicaties bij voorheen gezonde kinderen
Ned Tijdschr Geneeskd 2006; 150(48):2625-9

Mommers M, Pinelli E, Kortbeek I
Ontwikkeling van een IgG1 en IgG4 immunoblot voor de diagnose van Echinococosis
Analyse 2006; 61(6):10-8

O
Oosten M van
Pneumokokkenvaccinatie in het Rijksvaccinatieprogramma
Infectieziekten Bulletin 2006; 17(4):137

Op de Coul E, Sighem A van, Laar M van de
Schatting van het aantal volwassenen met HIV/aids in Nederland in 2005
Infectieziekten Bulletin 2006; 17(11):398-403

P
Pelt W van, Notermans D, Giessen AW van der, Mevius DJ, Vennema H, Koopmans M, Asten I van, Duymhoven YTHP van
Infectieziekten Bulletin 2006; 17(10):364-70

R
Rahamat J, Vliet H van, Suijkerbuijk A, Bijkerk P, Hoeymans N, Poos R
Staat van infectieziekten
Infectieziekten Bulletin 2006; 17(9 supp):3

Rahamat J, Vliet H van, Suijkerbuijk A, Bijkerk P, Hoeymans N, Poos R
Staat van Infectieziekten in Nederland, 2000-2005
Infectieziekten Bulletin 2006; 17(bijlage bij nummer 9)

Reusken CBEM, Takken W
Vectoren van het West Nile-virus in Nederland
Infectieziekten Bulletin 2006; 17(12):420-2

Rimmelzwaan GF, Jong JC de, Donker GA, Meijer A, Fouchier RAM, Osterhaus ADME
Het influenzaseizoen 2005'/06 in Nederland en de vaccinsamenstelling voor het seizoen 2006'/07
Ned Tijdschr Geneeskd 2006; 150(40):2209-14

Roda Husman AM de, Schets C
Recreatiewatergerelateerde gezondheidsklachten in Nederland
Infectieziekten Bulletin 2006; 17(3):97-8
Sande M van der
Tekort aan influenzavaccins: welke medisch-wetenschappelijke kennis is beschikbaar om prioriteiten te stellen?
Infectieziekten Bulletin 2006; 17(10):347-9

Schijven J, Roda Husman AM de
Verspreiding van vogelgriepvirus via water naar de mens?
Infectieziekten Bulletin 2006; 17(5):172-3

Sonder GJB, Plas SM van der
Evaluatie van de richtlijnen van het Landelijk Coordinatiecentrum Reizigersadvisering (LCR) voor malarialiprolyxal
Infectieziekten Bulletin 2007, 17(7):249-52

Soolingen D van, Haas PEW de, Doorn RH van, Sebek MMGG, Borgdorff MW, Kremer K
Virulentie en overdraagbaarheid van resistente Mycobacterium tuberculosis
Infectieziekten Bulletin 2006; 17(12):435-40

Suijkerbuijk AWM
Surveillance van soa en HIV heeft zijn nut bewezen
Infectieziekten Bulletin 2006; 17(8):276-7

Suijkerbuijk AWM, Bijkerk P
Veterinaire en humane dokters moeten beter samenwerken
Infectieziekten Bulletin 2006; 17(2):49-50

Swaan CM, Ward M, Visser LG, Duijnhoven YTHP van, Wannet WJB, Kuijper EJ
Twee clusters van listeriose in de Randstad
Infectieziekten Bulletin 2006; 17(5):178-82

V
Veen Y van der, Hahne S, Ruijs H, Timen A, Binnendijk R van, Loon T van, Melker H de
Rubella-epidemie 2004-2005: surveillance van congenerale gevolgen
Infectieziekten Bulletin 2006; 17(9):322-5
Dullemont YJ, Schijven JF, Hijnens WAM, Colin M, Magic-Knezev A, Oorthuizen WA
Removal of microorganisms by slow sand filtration.
In: Gimbel R, Graham NJD, Collins MR, eds. Recent progress in slow sand and alternative biofiltration processes

Kimman TG
Pinkengriep: een taai en uitdagend probleem
In: Strengte wetenschappelijkheid in practische zin. Een eeuw Nederlands Centraal Veterinair Instituut 1904-2004
Rotterdam: Erasmus Publishing, 2006;327-31

Mangen MJJ, Duynhoven YTHP van, Pelt W van, Kemmeren J, Havelaar AH
Priorisation of foodborne pathogens
In: Reid SWJ, Menzies FD, Russell AM, eds. Proceedings of a meeting, Exeter, March 2006. Society for Veterinary Epidemiology and Preventive Medicine, 2006;266-79

Pinelli E, Dormans J, Die I van
Toxocara and asthma
In: Holland CV, Smith HV, eds. Toxocara: the enigmatic parasite
Oxfordshire: CAB International, 2006;42

Verbrugh HA, Neeling AJ de, eds.
SWAB. NethMap 2006. Consumption of antimicrobial agents and antimicrobial resistance among medically important bacteria in the Netherlands

Weisbroth SH, Kohn DF, Boot R
Bacterial, mycoplasmal and mycotic infections
In: Suckow MA, Weisbroth SH, Franklin CL, eds. The laboratory rat. 2nd. ed.
Amsterdam: Elsevier, 2006;339-422

Zwietering MH, Havelaar AH
Dose-response relationships and foodborne disease

Doctoral Theses

Diavatopoulos DA
Evolution and host-adaptation of the mammalian bordetellae

Hijnen M
The Bordetella pertussis protein Pertactin: role in immunity and immune evasion
Research output
Public Health and Health Services (RIVM-V&Z)

Professorial Chairs (4)
Oers H van
   Professor of Public Healthcare, University of Tilburg
Polder, J
   Professor of Health Economics, University of Tilburg
Teunis PFM
   Professor of Quantitative Microbiology
Emory University, Atlanta, USA
Westert G
   Professor of Quality of Healthcare, University of Tilburg

Research Papers (Intl., 149)

A
Agyemang C, Ujcic-Voortman J, Uitenbroek D, Foets M, Droomers M
Prevalence and management of hypertension among Turkish, Moroccan and native Dutch ethnic groups in Amsterdam, the Netherlands: The Amsterdam Health Monitor Survey
J Hypertens 2006; 24(11):2169-76

Al-Delaimy WK, Jansen EH, Peeters PH, Laan JD van der, Noord PA van, Boshuizen HC, Schouw YT van der, Jenab M, Ferrari P, Bueno de Mesquita HB
Reliability of biomarkers of iron status, blood lipids, oxidative stress, vitamin D, C-reactive protein and fructosamine in two Dutch cohorts
Biomarkers 2006; 11(4):370-82

Repeated measurements of mite and pet allergen levels in house dust over a time period of 8 years
Clin Exp Allergy 2006; 36(12):1525-31

Arah OA, Westert GP, Hurst J, Kazinga NS
A conceptual framework for the OECD health care quality indicators project
Int J Qual Health Care 2006; 18(suppl 1):5-13

Avendano M, Boshuizen HC, Schellevis FG, Mackenbach JP, Lenthe F van, Bos GAM van den
Disparities in stroke preventive care in general practice did not explain socioeconomic disparities in stroke
J Clin Epidemiol 2006; 59(12):1285-94

Socioeconomic status and ischaemic heart disease mortality in 10 western European populations during the 1990s
Heart 2006; 92(4):461-7

Avendano M, Kawachi I, Lenthe F van, Boshuizen HC, Mackenbach JP, Bos GAM van den, Pay ME, Berkman LF
Socioeconomic status and stroke incidence in the US elderly: the role of risk factors in the EPESE study
Stroke 2006; 37(6):1368-73

B
Baal PHM van, Hoeynms N, Hoogvenen RT, Wit GA de, Westert P
Disability weights for comorbidty and their Influence on Health-adjusted Life Expectancy
Popul Health Metr 2006; 4:1

Baal PHM van, Hoeynms N, Hoogvenen RT, Wit AG de, Westert GP
Disability weights for comorbidty and their Influence on healthy adjusted life expectancy
Popul Health Metric 2006; 4:1

Baal PHM van, Hoogvenen RT, Wit GA de, Boshuizen HC
Estimating health-adjusted life expectancy conditional on risk factors: results for smoking and obesity
Popul Health Metr 2006; 4:14
Bakker FC, Sandfort TGM, Vanwesenbeeck I, Lindert H van, Westert GP
Do homosexual persons use health care services more frequently than heterosexual persons: findings from a Dutch population survey

Bemelmans WJE, Lenthe F van, Hoogenveen R, Kunst A, Deeg DJH, Brandt PA van den, Goldbohm RA, Verschuren WMM
Modeling predicted that tobacco control policies targeted at lower educated will reduce the differences in life expectancy
J Clin Epidemiol 2006; 59(9):1002-8

Berg B van den, Spauwen P
Measurement of informal care: an empirical study into the valid measurement of time spent on informal caregiving
Health Economics 2006; 15(5):447-60

Anthropometry, physical activity, and the risk of pancreatic cancer in the European prospective investigation into cancer and nutrition

Boot HJ, Melker HE de, Stolk EA, Wit GA de, Kimman TG
Assessing the introduction of universal varicella vaccination in the Netherlands
Vaccine 2006; 24(37-39):6288-99

Bosbuizen HC
Reaction to: “Re: In response to the correspondence arising from Twisk and Proper: evaluation of the results of a randomized controlled trial: how to define changes between baseline and follow-up” by Siew F.Chan and others [Letter to the editor]
J Clin Epidemiol 2006; 59:323-4

Bosbuizen HC, Nagelkerke NJD, Boer JW den, Melker H de, Schellekens JF, Peeters MF, Conyn-van Spaendonck MAE, Vliet H van
Estimation of minimum infection rates with Legionella pneumophila in an exposed population
Epidemiol Infect 2006; 134(3):579-84

Bosbuizen HC, Viet AL, Picavet HSJ, Botterweck A, Loon AJM van
Non-response in a survey of cardiovascular risk factors in the Dutch population: determinants and resulting biases
Public Health 2006; 120(4):297-308

Traffic-related air pollution and otitis media
Environ Health Perspect 2006; 114(9):1414-8

Brink CL van den, Bos GA van den, Tijhuis M, Aljanseppa S, Nissinen A, Giampaoli S, Kromhout D
Hierarchy levels, sum score, and worsening of disability are related to depressive symptoms in elderly men from three European countries. J Aging Health 2006; 18(1):125-41

Buuren S van, Bosbuizen HC, Reijneveld SA
Toward targeted hypertension screening guidelines

Corver K, Kerkhof M, Brussee JE, Brunekreef V, Strien RT van, Vos AP, Smit HA, Gerritsen J, Neijens HJ, Jongstt JC de
House dust mite allergen reduction and allergy at 4 yr: follow up of the PIAMA-study
Pediatr Allergy Immunol 2006; 17(5):329-36

Dijk L van, Otters HB, Schuit AJ
Moderately overweight and obese patients in general practice: a population based survey
BMC Fam Practice 2006; 7:43

Dotinga A, Eijnden RJJM, Bosveld W, Garretsen HFL
Measuring alcohol use: “quantity frequency variability” and “weekly recall” compared among Turks and Moroccans in The Netherlands
Substance Use Misuse 2006; 41(14):1951-65

Douwes J, Strien R van, Doekes G, Smit J, Kerkhof M, Gerritsen J, Postma D, Jongstt J de, Travier N, Brunekreef B
Does early indoor microbial exposure reduce the risk of asthma?
The Prevention and Incidence of Asthma and Mite Allergy birth cohort study

Eijkeren JCH van, Bakker MI, Zeilmaker MJ
A simple steady-state model for carry-over of aflatoxins from feed to cow's milk
Food Addit Contam 2006; 23(8):833-8
Gelder BM van, Tijhuis M, Kalmijn S, Giampaoli S, Nissinen A, Kromhout D
Marital status and living situation during a 5-year period are associated with a subsequent 10-year cognitive decline in older men: the FINE study

Gijsen R, Poos MJJC
Using registries in general practice to estimate countrywide morbidity in The Netherlands
Public Health 2006; 120(10):923-36

Greeff SC de, Spanjaard L, Dankert J, Hoebe CJPA, Nagelkerke N, Melker HE de
Underreporting of meningococcal disease incidence in The Netherlands: results from a capture-recapture analysis based on three registration sources with correction for false positive diagnoses
Eur J Epidemiol 2006; 21(4):315-21

Gumbs PD, Verschuren WM, Mantel-Teeuwisse AK, Wit AG de, Hofman A, Trienekens PH, Stricker BH, Boer A de, Klungel OH
Drug costs associated with non-adherence to cholesterol management guidelines for primary prevention of cardio-vascular disease in an elderly population: the Rotterdam study
Drugs Aging 2006; 23(9):733-41

Hartemink N, Boschuijn HC, Nagelkerke NJD, Jacobs MAM, Houwelingen HC van
Combining risk estimates from observational studies with different exposure cutpoints: a meta-analysis on body mass index and diabetes type
Am J Epidemiol 2006; 163(11):1042-52

Heisterkamp SH, Dekkers ALM, Heijne JCM
Automated detection of infectious disease outbreaks: hierarchical time series models

Hollman PCH, Milder IEJ, Arts ICW, Feskens EJM, Bueno de Mesquita HB, Kromhout D
Pytoestrogens and risk of lung cancer [Letter to the editor]

Hoogendoorn M, Feenstra TL, Schermer TR, Hesselink AE, Rutten-van Molken MP
Severity distribution of chronic obstructive pulmonary disease (COPD) in Dutch general practice
Respir Med 2006; 100(1):83-6

Hoogendoorn M, Rutten-van Molken MPMH, Feenstra TL
Author's reply to: Projection of COPD in males in the Netherlands [Letter to the editor]
Eur Respir J 2006; 27(1):241-2

Jong JD de, Westert GP, Lagoe R, Groenewegen PP
Variation in hospital length of stay: do physicians adapt their length of stay decisions to what is usual in the hospital where they work?
Health Serv Res 2006; 41(2):374-94

Kamphuis CBM, Giskes K, Bruijn GJ de, Wendel-Vos W, Brug J, Lenthe FJ van
Environmental determinants of fruit and vegetable consumption among adults: a systematic review

Kamphuis MH, Geerlings MI, Tijhuis MAR, Kalmijn S, Grobbee DE, Kromhout D
Depression and cardiovascular mortality: a role for n-3 fatty acids?
Am J Clin Nutr 2006; 84(6):1513-7

Kassteele J van de, Koelmeijer RBA, Dekkers ALM, Schaap M, Homan CD, Stein A
Statistical mapping of PM10 concentrations over Western Europe using secondary information from dispersion modeling and MODIS satellite observations

Keil T, Kulig M, Simpson A, Custovic A, Wickman M, Kull I, Wijsa AH
European birth cohort studies on asthma and atopic diseases: I. comparison of study designs - a GALEN initiative
Allergy 2006; 61(2):221-8


Kimman TG, Boot HJ, Berbers GAM, Vermeer-de Bondt PE, Wit GA de, Melker HE de
Developing a vaccination evaluation model to support evidence-based decision making on national immunization programs
Vaccine 2006; 24(22):4769-78
Kruit MC, Launer LJ, Ferrari MD, Buchem MA van
Brain stem and cerebellar hyperintense lesions in migraine
Stroke 2006; 37(4):1109-12

Lagoe RJ, Westert GP
Community wide electronic distribution of summary health care utilization data
BMC Med Inform Dec Making 2006; 6:17

Leeuw M, Houben RMA, Severeijns R, Picavet HJS, Schouten EGW, Vlaeyen JWS
Pain-related fear in low back pain: a prospective study in the general population
Eur J Pain 2006; 11:256-66

Luijten M, Speksnijder EN, Alphen N van, Westerman A, Heisterkamp SH, Benthem J van, Kreijl CF van, Beems RB, Steeg H van
Phenacetin acts as a weak genotoxic compound preferentially in the kidney of DNA repair deficient Xpa mice
Mutat Res 2006; 596(1-2):143-50

Mantel Teeuwisse AK, Klungel OH, Hofman A, Verschuren WMM, Trienekens PH, Porsius AJ, Stricker BHC, Boer A de
Prescribing behaviour according to Dutch and European guidelines on the management of hypercholesterolaemia (1992-1999)
Br J Clin Pharm 2006; 61(5):592-600

Melker H de, Berbers G, Hahne S, Rumke H, Hof S van den, Wit A de, Boot H
The epidemiology of varicella and herpes zoster in the Netherlands: implications for varicella zoster virus vaccination
Vaccine 2006; 24(18):3946-52

Melker HE de, Versteegh FGA, Schellekens JFP, Teunis PFM, Kretzschmar M
The incidence of Bordetella pertussis infections estimated in the population from a combination of serological surveys

Milder IEJ, Feskens EJM, Arts ICW, Bueno de Mesquita HB, Hollman PCH, Kromhout D
Intakes of 4 dietary lignans and cause-specific and all-cause mortality in the Zutphen Elderly Study
Am J Clin Nutr 2006; 84(2):400-5

Polder JJ, Barendregt JJ, Oers H van
Health care costs in the last year of life: the Dutch experience

Ethanol intake and risk of lung cancer in the European Prospective investigation into cancer and nutrition (EPIC)
Am J Epidemiol 2006; 164(11):1103-14

Rupp I, Boshuizen HC, Roorda LD, Dinant HJ, Jacobi CE, Bos GAM van den
Course of patient-reported health outcomes in rheumatoid arthritis: comparison of longitudinal and cross-sectional approaches
J Rheumatol 2006; 33(2):228-33

Rupp I, Boshuizen HC, Dinant HJ, Jacobi CE, Bos GA van den
Disability and health-related quality of life among patients with rheumatoid arthritis: association with radiographic joint damage, disease activity, pain, and depressive symptoms
Scand J Rheumatol 2006; 35(3):175-81

Rupp I, Boshuizen HC, Roorda LD, Dinant HJ, Jacobi CE, Bos G van den
Poor and good health outcomes in rheumatoid arthritis: the role of comorbidity
J Rheumatol 2006; 33(8):1488-95

Schelleman H, Stricker BH, Verschuren WM, Boer A de, Kroon AA, Leeuw PW de, Kromhout D, Klungel OH
Interactions between five candidate genes and antihypertensive drug therapy on blood pressure Pharmacogenomics 2006; 6(1):22-6

Scher AI, Terwindt GM, Verschuren WMM, Kruit MC, Blom HJ, Kowa H, Frants RR, Maagdenberg AMJ van den, Buchem M van, Ferrari MD, Launer LJ
Migraine and MTHFR C677T genotype in a population-based sample
Ann Neurol 2006; 59(2):372-5

Scher AI, Terwindt GM, Verschuren WMM, Kruit MC, Blom HJ, Kowa H, Frants RR, Maagdenberg AMJ van den, Buchem M van, Ferrari MD, Launer LJ
Author’s reply to: MTHFR C677T polymorphism and migraine with aura [Letter to the editor]
Ann Neurol 2006; 60(5):622-3
Schijven JF, Mulschlegel JHC, Hassanizadeh SM, Teunis PFM, Roda Husman AM de
Determination of protection zones for Dutch groundwater wells against virus contamination-uncertainty and sensitivity analysis
J Water Health 2006; 4(3):297-312

Analysis of epidemiological cohort data on smoking effects and lung cancer with a multi-stage cancer model
Carcinogenesis 2006; 27(7):1432-44

Schuit AJ
Physical activity, body composition and healthy ageing

Effect of 5-year community intervention Hartslag Limburg on cardiovascular risk factors

Physical activity and lung cancer risk in the European prospective investigation into cancer and nutrition cohort
Int J Cancer 2006; 119(10):2389-97

Struijs JN, Baan CA, Schellevis FG, Westert GP, Bos GAM van den
Comorbidity in patients with diabetes mellitus: impact on medical health care utilization
BMC Health Serv Res 2006; 6:84

Struijs JN, Genugten MLL van, Evers SMAA, Ament AJH, Baan CA, Bos GAM van den
Future costs of stroke in the Netherlands: the impact of stroke services
Wijga AH, Houwelingen AC van, Kerkhof M, Tabak C, Jongste JC de, Gerritsen J, Boshuizen H, Brunekreef B, Smit HA
Breast milk fatty acids and allergic disease in preschool children: the Prevention and Incidence of Asthma and Mite Allergy birth cohort study
J Allergy Clin Immunol 2006; 117(2):440-7

Wijnhoven HA, Vet HC de, Smit HA, Picavet HS
Hormonal and reproductive factors are associated with chronic low back pain and chronic upper extremity pain in women-the MORGEN study
Spine 2006; 31(13):1496-502

Wijnhoven HAH, Vet HCW de, Picavet HSJ
Explaining sex differences in chronic musculoskeletal pain in a general population
Pain 2006; 124(1-2):158-66

Willers SM, Brunekreef B, Oldenwening M, Smit HA, Kerkhof M, Vries H de, Gerritsen J, Jongste JC de
Gas cooking, kitchen ventilation, and asthma, allergic symptoms and sensitization in young children – the PIAMA study
Allergy 2006; 61(5):563-8

Willers SM, Brunekreef B, Oldenwening M, Smit HA, Kerkhof M, Vries H
Gas cooking, kitchen ventilation, and exposure to combustion products
Indoor Air 2006; 16(1):65-73

Wolfs M, Jong N de, Ocke MC, Verhagen H, Verschuren WMM
Effectiveness of customary use of phytosterol/-stanol enriched margarines on blood cholesterol lowering

Research Papers (Dutch, 31)

Brouwer WFB, Polder JJ, Lienden H van, Boot JM
Economie is goed voor volksgezondheid en zorg!
TSG 2006; 84(5):3

Dotinga A
Alcoholgebruik onder tweede-generatie-Turken in Rotterdam Verslaving 2006; 2(3):16-24

Dotinga A, Eijnden R van den, Bosveld W, Garretsen H
Alcoholgebruik van Turken en Marokkanen. Invloed van religie, cultuur en sociale cognitie
Cultuur Migratie Gezondheid 2006; 3(2):78-87

Hollander AEM de
Zorg voor gezondheid. TSG 2006; 84(7):379

Hoogendoorn M, Feenstra TL, Rutten-van Molken MPMH
Toekomstprojecties van het zorggebruik en de kosten van astma en COPD in Nederland
Ned Tijdschr Geneeskd 2006; 150(22):1243-50

Lindert H van, Lambooij M, Westert GP
Gezondheidstoestand naar arbeidsstatus: een vergelijking in de tijd (1987-2001)
TSG 2006; 84(6):324-9

Melse JM
Gezondheid: van gift tot plicht? TSG 2006; 84(7):375-6

Melse JM, Polder JJ
Veelkleurig grijs. TSG 2006; 84(8):445-6

Oers JAM van, Verkleij H
Volksgezondheid en zorg: de prestaties bekeken
TSG 2006; 84(7):377

P
Picavet HSJ
Landelijk onderzoek naar klachten en aandoeningen van het bewegingsapparaat (deel 1): pijnprevalentie en angst voor bewegen bij lage-rugpijn
Ned Tijdschr Fysiother 2006; 116(5):125-6

Polder JJ
De verlies- en winstrekening van (on)gezond gedrag
TSG 2006; 84(5):4-7
Polder JJ, Barendregt JJ, Oers JAM van
Ontketent de grijze golf een tsunami in de zorgkosten?
Econ Stat Berichten 2006; 91:181-4

Polder JJ, Brouwer WBF
Werk aan de winkel!
VGE Bulletin 2006; 23(2):1-6

Rahamat J, Vliet H van, Suijkerbuijk A, Bijkerk P, Hoeymans N, Poos R
Staat van infectieziekten
Infectieziekten Bulletin 2006; 17(9 suppl):3

Rahamat J, Vliet H van, Suijkerbuijk A, Bijkerk P, Hoeymans N, Poos R
Staat van Infectieziekten in Nederland, 2000-2005
Infectieziekten Bulletin 2006; 17(bijlage bij nummer 9)

Schoemaker C
Depressief, overspannen en burn-out. Buiten de orde
Maandblad Geestelijke Volksgezondheid 2006; 61:489-90

Schoemaker C
Moeten we alle patienten screenen op depressie?
Samenvatting systematisch review voor rubriek Beproefd
Maandblad Geestelijke Volksgezondheid 2006; 61:545-6

Schoemaker C
Is depressie met comorbid persoonlijkheidsstoornissen moeilijker te behandelen?
Samenvatting systematisch review voor rubriek Beproefd
Maandblad Geestelijke Volksgezondheid 2006; 61:647-8

Schoemaker C
Welke medicatie werkt het best bij depressie met psychotische kenmerken?
Samenvatting systematisch review voor rubriek Beproefd
Maandblad Geestelijke Volksgezondheid 2006; 61:751-2

Schoemaker C
Werkt combinatietherapie bij paniekstoornissen?
Samenvatting systematisch review voor rubriek Beproefd
Maandblad Geestelijke Volksgezondheid 2006; 61:855-6

Smit HA, Schayck CP van
Recente veranderingen in de prevalentie van astma bij kinderen
Ned Tijdschr Geneeskd 2006; 150(5):233-6

Tiessen-Raaphorst ZH, Kerssens JJ, Bakker DH de, Schellevis FG, Wendel-Vos GCW, Veldhoven N HMJ van, Wit MJP de
Sporters bewegen en voelen zich gezonder
TSG 2006; 84(7):387-93

Treurniet HF, Gijsen R, Hoeymans N, Poos MJJC, Polder JJ
Ontwikkelingen in het gebruik van eerstelijnszorg: een vooruitblik tot 2020. TSG 2006; 84(3):145-50

Vergleek H, Oers JAM van
Modernisering public health opleidingen. TSG 2006; 84(8):451

Vos MLG de, Graafmans WC, Westert GP, Voort PHJ van der
Een kwaliteitszeef voor de IC
Medisch Contact 2006; 61(21):871-3

Westert GP
Hoofdlijnen van de eerste zorbalans. TSG 2006; 84(7):377-8

Westert GP, Verkleij H
Vertrekpunt voor verbetering. HMF 2006; 4(10):7-10

Wijga AH, Kerkhof M, Brunekreef B, Jongste JC de, Vos APH, Gerritsen J, Smit HA
Zwangerschap en stoppen met roken: resultaten uit het PIAMA geboorte-cohort. TSG 2006; 84(5):292-3

Wit A de, Schuit J
Kosten-effectiviteit en implementatie: de theorie van economische evaluatie versus de public health-praktijk
TSG 2006; 84(5: middenkatern):11-3

Books, Chapters & Reports

Boer A de, Klerk M de, Cardol M, Westert G
Social networks and receiving informal care

Cardol M, Bakker D de, Westert G
Deville W, Uiters E, Westert G, Groenewegen P
Perceived health and consultation of GPs among ethnic minorities compared to the general population in The Netherlands
Oxford: Radcliffe Publishing, 2006;85-95

Droomers M, Lindert H van, Westert G

Fleming D, Schellevis F, Linden M van der, Westert G
Oxford: Radcliffe Publishing, 2006;45-56

Hollander AEM de, Melse JM
Valuing the health impact of air pollution: deaths, dalys or dollars?
London: Imperial College Press, 2006;197-230

Jong J de, Groenewegen P, Westert G
Oxford: Radcliffe Publishing, 2006;125-34

Linden M van der, Schellevis F, Westert G
Morbidity in the population and in general practice
Research output

Nutrition, Medicines and Consumer Safety (RIVM-VGC)

Professorial Chairs (4)

Loveren H van
Professor of Immuno-Toxicology, University of Maastricht

Slob W
Professor of Toxicology, Utrecht University

Steeg H van
Professor of Toxico-Genetics, Leiden University

Stephaniy R
Professor of Food of Animal Origin, Utrecht University

Research Papers (Intl., 126)

A

A DL van der, Peeters PH, Grobbee DE, Roest M, Voorbij HA, Schouw YT van
HFE genotypes and dietary heme iron: no evidence of strong gene-nutrient interaction on serum ferritin concentrations in middle-aged women
Nutr Metab Cardiovasc Dis 2006; 16(1):60-8

Aerts LAGJM van, Kasper P, Queckenberg O, Mueller L, Cartwright A
International workshop on qualification and control of impurities. Drug Inf J 2006; 40:155-63

No association between polymorphisms in CYP2E1, GSTM1, NAT1, NAT2 and the risk of gastric adenocarcinoma in the European prospective investigation into cancer and nutrition Cancer Epidemiol Biomarkers Prev 2006; 15(5):1043-5


Doctoral Theses

K

Kassteele J van de
Statistical air quality mapping
Wageningen: Wageningen University, 2006
Polymorphisms in metabolic genes related to tobacco smoke and the risk of gastric cancer in the European prospective investigation into cancer and nutrition
Cancer Epidemiol Biomarkers Prev 2006; 15(12):2427-34

Al-Delaimy WK, Jansen EH, Peeters PH, Laan JD van der, Noord PA van, Boshuizen HC, Schouw YT van der, Jenab M, Ferrari P, Bueno de Mesquita HB
Reliability of biomarkers of iron status, blood lipids, oxidative stress, vitamin D, C-reactive protein and fructosamine in two Dutch cohorts
Biomarkers 2006; 11(4):370-82

Amsterdam J van, Talhout R, Vleeming W, Opperhuizen A
Contribution of monoamine oxidase (MAO) inhibition to tobacco and alcohol addiction

Amsterdam JGC van, Brunt TM, Verlaan APJ, Cleven RFMJ, Opperhuizen A, Vleeming W
The relation between the quantity of ammonium compounds in tobacco and the nitrogen monoxide (NO) levels in the smoke of cigarettes marketed in the Netherlands
Contr Tobac Res 2006; 22(3):196-203

Arranz I, Sizoo E, Egmond H van, Kroeger K, Legarda TM, Burdaspal P, Reif K, Stroka J
Determination of aflatoxin B1 in medical herbs: interlaboratory study
J AOAC Int 2006; 89(3):595-605

B

Bajer R, Hartmann CH, Rodriguez KA, Denny AD, Busuttil RA, Dolle MET, Calder RB, Chisholm GB, Pollock BH, Klein CA, Vijg J
Increased cell-to-cell variation in gene expression in ageing mouse heart
Nature 2006; 441(7096):1011-4

Bakke KA, Ezendam J, Gremmer ER, Klerk A de, Pennings JLA, Matthee B, Peijnenburg AACM, Loveren H van
Evaluation of immunomodulation by Lactobacillus casei Shirotia: immune function, autoimmunity and gene expression
Int J Food Microbiol 2006; 112(1):8-18

Banus HA, Vandelbriel RJ, Ruiter H de, Dormans JAMA, Nagelkerke NJ, Mooi FR, Hoebee B, Kranen HJ van, Kimman TG
Host genetics of Bordetella pertussis infection in mice: significance of toll-like receptor 4 in genetic susceptibility and pathobiology
Infect Immun 2006; 74(5):2596-605

Barends DM, Groot DW, Steen JC van der, Kaste D de, Frijlink HW
Results of a Market Surveillance Study in the Netherlands on break-mark tablets
Pharmeuropa Scientific Notes 2006; (2):1-7

Risk assessment of substances that are both genotoxic and carcinogenic. Report of an International Conference organized by EFSA and WHO with support of ILSI Europe

Anthropometry, physical activity, and the risk of pancreatic cancer in the European prospective investigation into cancer and nutrition

Tobacco smoke and bladder cancer - in the European Prospective investigation into cancer and nutrition
Int J Cancer 2006; 119(10):2412-6

The effect of occasional smoking on smoking-related cancers: in the European Prospective Investigation into Cancer and Nutrition (EPIC)
Cancer Causes Control 2006; 17(10):1305-9


Fat oxidation before and after a high fat load in the obese insulin-resistant state
J Clin Endocrinol Metab 2006; 91(4):1462-9

Blokland MH, Sterk SS, Stephany RW, Launay FM, Kennedy DG, Ginkel LA van

Determination of resorcylic acid lactones in biological samples by GC-MS. Discrimination between illegal use and contamination with fusarium toxins
Anal Bioanal Chem 2006; 384(5):1221-7


Fat oxidation before and after a high fat load in the obese insulin-resistant state
J Clin Endocrinol Metab 2006; 91(4):1462-9

Brink CL van den, Bos GA van den, Tijhuis M, Aijanseppa S, Nissinen A, Giampaoli S, Kromhout D

Hierarchy levels, sum score, and worsening of disability are related to depressive symptoms in elderly men from three European countries
J Aging Health 2006; 18(1):125-41

Buijse B, Feskens EJM, Kok FJ, Kromhout D

Cocoa intake, blood pressure, and cardiovascular mortality
The Zutphen Elderly Study
Arch Intern Med 2006; 166(4):411-7

Busuttil RA, Rubio M, Dolle MET, Campisi J, Vijg J

Mutant frequencies and spectra depend on growth state and passage number in cells cultured from transgenic lacZ-plasmid reporter mice
DNA repair 2006; 5(1):52-60

Canzian F, McKay JD, Cleveland RJ, Bueno de Mesquita HB, et al.

Polymorphisms of genes coding for insulin-like growth factor 1 and its major binding proteins, circulating levels of IGF-I and IGFBP-3 and breast cancer risk: results from the EPIC study
Br J Cancer 2006; 94(2):299-307

Corpeleijn E, Feskens EJM, Jansen EHJM, Mensink M, Saris WHM, Bruin TW de, Blaak EE

Improvements in glucose tolerance and insulin sensitivity after lifestyle intervention are related to changes in serum fatty acid profile and desaturase activities: the SLIM study
Diabetologia 2006; 49(10):2392-401

Corpeleijn E, Kallen CJ van der, Kruitshoop M, Magagnin MG, Bruin TW de, Feskens EJ, Saris WH, Blaak EE

Direct association of a promoter polymorphism in the CD36/FAT fatty acid transporter gene with Type 2 diabetes mellitus and insulin resistance
Diabet Med 2006; 23(8):907-11

Cox M, Geertsma R

Regulatory challenges for medical devices utilising animal materials
Regul Affairs J 2006; 14(1):5-11

Brandon EFA, Oomen AG, Rompelberg CJM, Versantvoort CHM, Engelen JGM van, Sips AJAM

Consumer product in vitro digestion model: Bioaccessibility of contaminants and its application in risk assessment
Regul Toxicol Pharmacol 2006; 44(2):161-71

Bos PMJ, Zeilmaier JK, Eijkerken JCH van

Application of physiologically based pharmacokinetic modeling in setting acute exposure guideline levels for methylene chloride
Toxicol Sci 2006; 91(2):576-85

Dolle MET, Busuttil RA, Garcia AM, Wijnhoven S, Drunen E van, Niedernhofer L, Horst G van der, Hoeijmakers JH, Steeg H van, Vijg J

Increased genomic instability is not a prerequisite for shortened lifespan in DNA repair deficient mice
Mutat Res 2006; 596(1-2):22-35
Drongelen A van, Bruijn ACP de
Instruction for reuse: beware when buying!
Zentr Steril 2006; 14(1):34-6

Drongelen AW van, Bruijn ACP de, Janssen PJCM, Orzechowski TJH, Jong WH de, Geertsma RE
Aldehyde residues on endoscopes - practical values and allowable limits
Hyg Med 2006; 31(10):449-57

Du H, A DL van der, Feskens EJ
Dietary glycaemic index: a review of the physiological mechanisms and observed health impacts

Eijkeren JCH van, Bakker MI, Zeilmaker MJ
A simple steady-state model for carry-over of aflatoxins from feed to cow’s milk
Food Addit Contam 2006; 23(8):833-8

Eijkeren JCH van, Zeilmaker MJ, Kan CA, Traag WA, Hoogenboom LAP
A toxicokinetic model for the carry-over of dioxins and PCBs from feed and soil to eggs
Food Addit Contam 2006; 23(5):509-17

Engeset D, Alsaker E, Lund E, Ocke M, Bueno de Mesquita HB, et al.
Fish consumption and breast cancer risk. The European Prospective Investigation into Cancer and Nutrition (EPIC)
Int J Cancer 2006; 119(1):175-82

Ezendam J, Loveren H van
Probiotics: immunomodulation and evaluation of safety and efficacy
Nutr Rev 2006; 64(1):1-14

F
Fabjan E, Huizebos E, Mennes W, Piersma AH
A category approach for reproductive effects of phthalates
Crit Rev Toxicol 2006; 36(9):695-726

Physical activity and risk of colon and rectal cancers:
the European prospective investigation into cancer and nutrition

Germer S, Piersma AH, Ven L van der, Kamyschnikow A, Fery Y, Schmitz HJ, Schrenk D
Subacute effects of the brominated flame retardants hexabromocyclododecane and tetrabromobisphenol A on hepatic cytochrome P450 levels in rats
Toxicology 2006; 218(2-3):229-36

Giltay EJ, Kamphuis MH, Kalmijn S, Zitman FG, Kromhout D
Dispositional optimism and the risk of cardiovascular death: the Zutphen Elderly Study
Arch Intern Med 2006; 166(4):431-6

Giltay EJ, Zitman FG, Kromhout D
Dispositional optimism and the risk of depressive symptoms during 15 years of follow-up: the Zutphen Elderly Study
J Affect Disord 2006; 91(1):45-52

Meat intake and risk of stomach and esophageal adenocarcinoma within the European Prospective Investigation into Cancer and Nutrition (EPIC)
J Nat Cancer Inst 2006; 98(5):345-54

Fruit and vegetable intake and the risk of stomach and oesophagus adenocarcinoma in the European Prospective Investigation into Cancer and Nutrition (EPIC-EURGAST)
Int J Cancer 2006; 118(10):2559-66
Reply to the letter to the editor
Int J Cancer 2006; 119(12):2992

TP53 and KRAS2 mutations in plasma DNA of healthy subjects and subsequent cancer occurrence: a prospective study
Cancer Res 2006; 66(13):6871-6

Body mass index, waist circumference and waist-hip ratio and serum levels of IGF-1 and IGFBP-3 in European women
Int J Obesity 2006; 30(11):1623-31

Review of global regulations concerning biowaivers for immediate release solid oral dosage forms

Hafner M, Korthof G
Does a “500 million-year-old hormone” disprove Darwin?
Faseb J 2006; 20(9):1290-2

Heidema AG, Boer JMA, Nagelkerke N, Mariman ECM, A DL van der, Feskens EJM
The challenge for genetic epidemiologists: how to analyse large numbers of SNPs in relation to complex diseases
BMC Genetics 2006; 7:23

Tree Rs approaches in marine biotoxin testing. The report and recommendations of a joint ECVAM/DG SANCO workshop (ECVAM Workshop 54)
Altern Lab Anim 2006; 34(2):193-224

Hinz T, Buchholz CJ, Stappen T van der, Cichutek K, Kalinke U
Manufacturing and quality control of cell-based tumor vaccines: a scientific and a regulatory perspective
J Immunother 2006; 29(5):472-6

Hollman PCH, Milder IJ, Arts ICW, Feskens EJM, Kronhmout D, Bueno de Mesquita HB
Petoestrogens and risk of lung cancer [Letter to the editor]

Hoogenboom LAP, Kan CA, Zeilmaker MJ, Eijkeren J van, Traag WA
Carry-over of dioxins and PCBs from feed and soil to eggs at low contamination levels-- influence of mycotoxin binders on the carry-over from feed to eggs
Food Addit Contam 2006; 23(5):518-27

Endogenous versus exogenous exposure to N-nitroso compounds and gastric cancer risk in the European Prospective Investigation into Cancer and Nutrition (EPIC-EURGAST) study
Carcinogenesis 2006; 27(7):1497-501

Jantratid E, Prakongpam S, Dressman JB, Amidon GL, Junginger HE, Midha KK, Barends DM
Biowaiver monographs for immediate release solid oral dosage forms: cimetidine
J Pharmaceutical Sci 2006; 95(5):974-84

Plasma and dietary carotenoid, retinol and tocopherol levels and the risk of gastric adenocarcinomas in the European prospective investigation into cancer and nutrition
Br J Cancer 2006; 95(3):406-15
Mamalakis G, Jansen E, Cremers H, Kiriakakis M, Tsibinos G, Kafatos A
Depression and adipose and serum cholesteryl ester polyunsaturated fatty acids in the survivors of the seven countries study population of Crete
Eur J Clin Nutr 2006; 60(8):1016-23

Biowaiver monographs for immediate release solid oral dosage forms: amitriptyline hydrochloride
J Pharm Sci 2006; 95(5):966-73

Mars M, Graaf C de, Groot CPGM de, Rossum CTM van, Kok FJ
Fasting leptin and appetite responses induced by a 4-day 65%-energy-restricted diet
Int J Obesity 2006; 30:122-8

DNA repair polymorphisms and cancer risk in non-smokers in a cohort study
Carcinogenesis 2006; 27(5):997-1007

McDonald DR, Janssen R, Geha R
Lessons learned from molecular defects in nuclear factor kappaB dependent signalling
Microbes Infection 2006; 8(4):1151-6

Menotti A, Lanti M, Nedeljkovic S, Nissinen A, Kafatos A, Kromhout D
The relationship of age, blood pressure, serum cholesterol and smoking habits with the risk of typical and atypical coronary heart disease death in the European cohorts of the Seven Countries Study
Int J Cardiol 2006; 106(2):157-63

Milder IEJ, Feskens EJM, Arts ICW, Bueno de Mesquita HB, Holiman PCH, Kromhout D
Intakes of 4 dietary lignans and cause-specific and all-cause mortality in the Zutphen Elderly Study
Am J Clin Nutr 2006; 84(2):400-5

Motta AC, Marlire M, Pelitre G, Steerenberg PA, Lacroix G
Traffic-related air pollutants induce the release of allergen-containing cytoplasmic granules from grass pollen
Int Arch Allergy Immunol 2006; 139(4):294-8

Hazard classification of chemicals inducing haemolytic anaemia: An EU regulatory perspective
Regul Toxicol Pharmacol 2006; 45(3):229-41

O
O’Brien J, Renwick AG, Constable A, Dybing E, Muller DJG, Schlatter J, Slob W, Tueting W, Benthem J van, Williams GM, Wofleys A
Approaches to the risk assessment of genotoxic carcinogens in food: a critical appraisal

Olf M, Meewisse ML, Kleber RJ, Velden PG van der, Droegendijk AN, Amsterdam JGC van, Opperhuizen A, Gersons BPR
Tobacco usage interacts with postdisaster psychopathology on circadian salivary cortisol
Int J Psychophysiol 2006; 59(3):251-8

Oostrom AJHHM van, Plokker HWM, Asbeck BS van, Rabelink TJ, Kessel KPM van, Jansen EHM, Stehouwer CDA, Castro Cabezás M
Effects of rosuvasatin on postprandial leukocytes in mildly hyperlipidemic patients with premature coronary sclerosis
Atherosclerosis 2006; 185(2):331-9

P
CagA+ Helicobacter pylori infection and gastric cancer risk in the EPIC-EURGAST study
Int J Cancer 2006; 120(4):859-67

Piersma AH
Alternative methods for developmental toxicity testing
Basic Clin Pharmacol 2006; 98(5):427-31

Piersma AH

Body size and risk of colon and rectal cancer in the European prospective investigation into cancer and nutrition (EPIC)
J Nat Cancer Inst 2006; 98(13):920-31


Body size and risk of renal cell carcinoma in the European Prospective Investigation into Cancer And Nutrition (EPIC)
Int J Cancer 2006; 118(3):728-38


IGF-I, IGFBP-3 and breast cancer risk in women: The European Prospective Investigation into Cancer and Nutrition (EPIC)
Endocr Relat Cancer 2006; 13(2):593-605


Relationship of alcohol intake and sex steroid concentrations in blood in pre- and post-menopausal women: the European Prospective Investigation into Cancer and Nutrition
Cancer Causes Control 2006; 17(8):1033-43

Am J Epidemiol 2006; 164(11):1103-14

Rossum CTM van, Pijl A, Adan RAH, Hoebee B, Seidell JC
Polymorphisms in the NPY and AGRP genes and body fatness in Dutch adults
Int J Obesity 2006; 30:1522-8

Rots MG, Ellerink MGL, Gommans WM, Oosterhuis D, Schalk JAC, Curiel DT, Olinga P, Haisma HJ, Groothuis GMM
An ex vivo human model system to evaluate specificity of replicating and non-replicating gene therapy agents


Tienhoven EA van, Korbee D, Schipper L, Verhaven HW, Jong WH de In vitro and in vivo (cyto)toxicity assays using PVC and LDPE as model materials J Biomed Mater Res 2006; 78(1):175-82


Waijers PMCM, Dekkers ALM, Boer JMA, Boshuizen HC, Rossum CTM van The potential of AGE MODE, an age-dependent model, to estimate usual intakes and prevalences of inadequate intakes in a population J Nutr 2006; 136(11):2916-20

Waijers PMCM, Ocke MC, Rossum CTM van, Peeters PHM, Bamia C, Chioptsios Y, Schouw YT van der, Slimani N, Bueno de Mesquita HB Dietary patterns and survival in older Dutch women Am J Clin Nutr 2006; 83:1170-6


Prevalence of musculoskeletal disorders is systematically higher in women than in men

Significance of ammonium compounds on nicotine exposure to cigarette smokers

Effectiveness of customary use of phytosterol/stanol enriched margarines on blood cholesterol lowering
Food Chem Toxicol 2006; 44(10):1682-8

Developing new reference materials for effective veterinary drug-residue testing in food-producing animals

Hemmen J, Cuppers-Maarschalkerweerd BN, Laan JW van der
Onvoldoende navraag over zwangerschap en medicijnen
Pharm Weekbl 2006; 141(43):1354-5

Kloosterman J, Jong N de, Rompelberg CJM, Kranen HJ van, Kampman E, Ocke MC
Foliumzuurverrijking: zowel preventie als bevordering van kanker
Ned Tijdschr Geneeskd 2006; 150(26):1443-8

Ozgen MH, Reuvers-Lodewijks WE, Hennekam RCM
Mogelijke teratogene invloed van thiamazol
Ned Tijdschr Geneeskd 2006; 150(2):101-4

Risico’s geavanceerde medische technologie bij de patiënt thuis
Tijdschr Verpleegkundigen 2006; 116(7-8):60-2

Verhagen H
Geen magic bullets in de voeding
Voeding Nu 2006; 8(5):9

Verhagen H
Van fundamenteel onderzoek naar actie. De toekomst van voeding en gezondheid in Europa
Voeding Nu 2006; 8(4):15-7

Vroeg medicamenteuze zwangerschapsafbreking: goede, maar in Nederland weinig gebruikte methode
Ned Tijdschr Geneeskd 2006; 150(31):1747

Amsterdam JGC van
Het hormoon van de nacht als geneesmiddel
In: De 24-uurs-mens, waar economie en biologie van tijd tot tijd botsen. Cahier Stichting Bio-Wetenschappen en Maatschappij, 2006:34-6

Barug D, Bhatnagar D, Egmond HP van, Kamp JW van der, Osenbruggen WA van, Visconti A
The mycotoxins handbook. Food & feed topics
Catai JR, Sastre Torano J, Jongen PMJM, Somsen GW
Analysis of recombinant human growth hormone by capillary electrophoresis with bilayer-coated capillaries using UV and MS detection
In: Catai JR. Efficient capillary electrophoresis of peptides and proteins with bilayer-coated capillaries
Utrecht: Universiteit Utrecht, 2006

Egmond HP van
Okadaic acid: monograph

Egmond HP van, MacDonald S
Mycotoxins

Hoogervorst E
Door ploegendienst meer kans op borstkanker
In: De 24-uurs-mens, waar economie en biologie van tijd tot tijd botsen. Cahier Stichting Bio-Wetenschappen en Maatschappij, 2006:46-8

Laan JW van der
Safety assessment of pharmaceuticals: regulatory aspects
In: Mulder G, Dencker L, eds. Pharmaceutical toxicology
London: Pharmaceutical Press, 2006;209-27

Legler J, Zee M van der, Ven LTM van der, Jonkers N, Vethaak AD, Brug B van der, Murk AJ
Bioanalysis of the exposure and effects of estrogenic chemicals in the aquatic environment with an in vivo transgenic zebrafish reporter gene assay
In: Vethaak AD, Schrap SM, Voogt P de, eds. Estrogens and xenoestrogens in the aquatic environment: an integrated approach for field monitoring and effect assessment
Pensacola: SETAC, 2006;382-311

Njapeu H, Trujillo S, Egmond HP van, Park DL
Research output
Environmental Risk and Safety (RIVM-MEV)

Professorial Chairs
Meent D van de
Professor of Environmental Quality
Radboud University Nijmegen

Research Papers (Intl., 66)

B
Bagate K, Meiring JJ, Gerlofs-Nijland ME, Cassee FR, Borm PJA
Signal transduction pathways involved in particulate matter induced relaxation in rat aorta - spontaneous hypertensive versus Wistar Kyoto rats

Bagate K, Meiring JJ, Gerlofs-Nijland ME, Cassee FR, Wiegand H, Osorno-Vargas A, Borm PJA
Ambient particulate matter affects cardiac recovery in a Langendorff ischemia model
Inhal Toxicol 2006; 18(9):633-43

Beerens HI, Post JG, Uijt de Haag PAM
The use of generic failure frequencies in QRA: The quality and use of failure frequencies and how to bring them up-to-date
J Hazardous Mater 2006; 130(3):265-70

Airway antioxidant and inflammatory responses to diesel exhaust exposure in healthy humans
Eur Respir J 2006; 27(2):359-65

Berg B van den, Velden PG van der, Yzermans CJ, Stellata RK, Grievink L
Health-related quality of life and mental health problems after a disaster: Are chronically ill survivors more vulnerable to health problems?

Bijwaard H, Brugmans MJP, Schollinberger H
Can promotion of initiated cells be explained by excess replacement of radiation-inactivated neighbor cells?
Rad Res 2006; 165(6):741-4

Boivin ME, Greve GD, Kools SAE, Wurff AWG van der, Leeflang P, Smit E, Breure AM, Rutgers M, Straalen NM van
Discriminating between effects of metals and natural variables in terrestrial bacterial communities
Appl Soil Ecol 2006; 34(2-3):103-13

Boivin MEY, Massieux B, Breure AM, Greve GD, Rutgers M, Admiraal W
Functional recovery of biofilm bacterial communities after copper exposure
Environ Pollut 2006; 140(2):239-46

Geophysical validation of SCIAMACHY limb ozone profiles
Atmos Chem Phys 2006; 6:197-209

C
Clark C, Martin R, Kempen E van, Alfred T, Head J, Davies HW, Haines MH, Barrio IL, Matheson M, Stansfeld SA
Exposure-effects relations between aircraft and road traffic noise exposure at School and reading comprehension.
The Ranch project

Development and application of a sediment toxicity test using the benthic cladoceran Chydorus sphaericus
Environ Pollut 2006; 140(2):231-8

Dirkzwager AJE, Grievink L, Velden PG van der, Yzermans CJ
Risk factors for psychological and physical health problems after a man-made disaster. Prospective study
Br J Pyschiat 2006; 189:144-9

F
Fabjan E, Huizebos E, Mennes W, Piersma AH
A category approach for reproductive effects of phthalates
Crit Rev Toxicol 2006; 36(9):695-726
Fijen JW, Kemperman H, Ververs FFT, Meulenbelt J
False hyperfactatemia in ethylene glycol poisoning
Intensive Care Med 2006; 32(4):626-7

Freney EJ, Heal MR, Donovan RJ, Mills NI, Donaldson K, Newby DE, Fokkens PH, Cassee FR
A single-particle characterization of a mobile Versatile Aerosol Concentration Enrichment System for exposure studies
Part Fibre Toxicol 2006; 3:8

Gorcum TF van, Janse M, Leenders MEC, Vries I de, Meulenbelt J
Intoxication following minor stabs from the spines of a porcupine fish

Grievink L, Velden PG van der, Yzermans J, Roorda J, Stellato RK
The importance of estimating selection bias on prevalence estimates shortly after disaster
Ann Epidemiol 2006; 16(10):782-8

Harbers JV, Huijbregts MAJ, Posthuma L, Meent D van de
Estimating the impact of high-production-volume chemicals on remote ecosystems by toxic pressure calculation

Evolution of aerosol optical thickness over Europe during the August 2003 heat wave as seen from CHIMERE model simulations and POLDER data
Atmos Chem Phys 2006; 6:1853-64

Klasmeier J, Matthies M, MacLead M, Fenner K, Scheringer M, Stroebe M, Le Gall AC, McKone T, Meent D van de, Wania F
Application of multimedia models for screening assessment of long-range transport potential and overall persistence

Kocbach A, Li Y, Ittri KE, Cassee FR, Schwarze PE, Namork E
Physicochemical characterisation of combustion particles from vehicle exhaust and residential wood smoke
Part Fibre Toxicol 2006; 3:1

Koster M, Groot A de, Vijver M, Peijnenburg W
Copper in the terrestrial environment: verification of a laboratory-derived terrestrial biotic ligand model to predict earthworm mortality with toxicity observed in field soils
Soil Biol Biochem 2006; 38(7):1788-96
Nighttime ozone profiles in the stratosphere and mesosphere by the Global Ozone Monitoring by Occultation of Stars on Envisat
J Geophys Res 2006; 111:D24306

L
Can we identify sources of fine particles responsible for exercise-induced ischemia on days with elevated air pollution? The ultra study. Environ Health Perspect 2006; 114(5):655-60

M
Matthijsen AJCM, Kooi ES
Safety distances for hydrogen filling stations
J Loss Prevention Process Industries 2006; 19:719-23

Evaluation of global ozone monitoring experiment (GOME) ozone profiles from nine different algorithms
J Geophys Res 2006; 111(D21):D21306

Stable isotope tagging of epitopes: a highly selective strategy for the identification of major histocompatibility complex class I-associated peptides induced upon viral infection
Mol Cell Proteomics 2006; 5(5):902-13

Do inhaled carbon nanoparticles translocate directly into the circulation in humans?
Am J Respir Crit Care Med 2006; 173(4):426-31

Montforts M
Assessment of persistency and bioaccumulation in pesticide registration frameworks within the Organization for Economic cooperation and Development
Integr Environ Assessment Manag 2006; 2(1):13-21

Montforts MHMM
Validation of the exposure assessment for veterinary medicinal products
Sci Total Environ 2006; 358(1-3):121-36

Mulder C
Driving forces from soil invertebrates to ecosystem functioning: the allometric perspective
Naturwissenschaften 2006; 93(10):467-79

Mulder C, Creure AM
Impact of heavy metal pollution on plants and leaf-miners

Mulder C, Hollande H den, Schouten T, Rutgers M
Allometry, biocomplexity, and web topology of hundred agro-environments in The Netherlands
Ecological Complexity 2006; 3:219-30

Mulder C, Wouterse M, Raubuch M, Roelofs W, Rutgers M
Can transgenic maize affect soil microbial communities?

Peijnenburg W, Vijver M
Predicting toxicity of metals to soil organisms
SETAC Globe 2006; (jul/aug):19-20

Peijnenburg WJGM
Editorial: the new JSS subject area framework. Subject area ‘soils’ – challenges

Peijnenburg WJGM, Struijs J
Occurrence of phthalate esters in the environment of The Netherlands
Ecotoxicol Environ Saf 2006; 63(2):204-15

Pieters BJ, Jager T, Kraak MHS, Admiraal W
Modeling responses of Daphnia magna to pesticide pulse exposure under varying food conditions: intrinsic versus apparent sensitivity
Ecotoxicology 2006; 15(7):601-8

Posthuma L, Zwart D de
Predicted effects of toxicant mixtures are confirmed by changes in fish species assemblages in Ohio, USA, rivers
Pozo OJ, Guerrero C, Sancho JV, Ibanez M, Pitarch E, Hogendoorn E, Hernandez F
Efficient approach for the reliable quantification and confirmation of antibiotics in water using on-line solid-phase extraction liquid chromatography/tandem mass spectrometry
J Chromatogr A 2006; 1103(1):83-93

Provoost J, Cornelis C, Swartjes F
Comparison of soil clean-up standards for trace elements between countries: why do they differ?
J Soils Sediments 2006; 6(3):173-81

Roosbroeck S van, Wichmann J, Janssen NAH, Hoek G, Wijnen JH van, Lebret E, Brunekeef B
Long-term personal exposure to traffic-related air pollution among school children, a validation study
Sci Total Environ 2006; 368(2-3):565-73

Schmitt H, Martinalli B, Beelen P van, Seinen W
On the limits of toxicant-induced tolerance testing: cotolerance and response variation of antibiotic effects
Environ Toxicol Chem 2006; 25(7):1961-8

Analysis of epidemiological cohort data on smoking effects and lung cancer with a multi-stage cancer model
Carcinogenesis 2006; 27(7):1432-44

Comparison of analytical techniques for dynamic trace metal speciation in natural freshwaters

Relation between sources of particulate air pollution and biological effect parameters in samples from four European cities: an exploratory study
Inhal Toxicol 2006; 18(5):333-46

Long-term evolution of upper stratospheric ozone at selected stations of the Network for the Detection of Stratospheric Change (NDSC)
J Geophys Res 2006; 111:art.no. D10308

Velden PG van der, Grievink L, Kleber RJ, Drogendijk AN, Roskam AJR, Macelissen FGH, Olff M, Meewisse ML, Gersons BPR
Post-disaster mental health problems and the utilization of mental health services: a four-year longitudinal comparative study
Adm Policy Ment Health 2006; 33(3):279-88

Velden PG van der, Kleber RJ, Christiaanse B, Gersons BP, Macelissen FG, Drogendijk AN, Grievink L, Olff M, Meewisse ML
The independent predictive value of peritraumatic dissociation for post disaster intrusions, avoidance reactions, and PTSD symptom severity: a 4-year prospective study
J Trauma Stress 2006; 19(4):493-506

Velden PG van der, Christiaanse B, Kleber RJ, marcelissen FG, Dorrestejijn AM, Drogendijk AN, Roskam AJ, Grievink L, Gersons BP, Olff M, Meewisse ML
The effects of disaster exposure and post-disaster critical incidents on intrusions, avoidance reactions and health problems among firefighters: a comparative study
Stress Trauma Crisis 2006; (9):73-93
Ven LTM van der, Brandhof EJ van den, Vos JH, Power DM, Wester PW
Effects of the antithyroid agent propylthiouracil in a partial life cycle assay with zebrafish

Verloop J, Boumans IJM, Keulen H van, Oenema J, Hilhorst GJ, Aarts HFM, Sebek LB
Reducing nitrate leaching to groundwater in an intensive dairy farming system
Nutrient Cycling Agroecosystems 2006; 74(1):59-74

Vijver MG, Gestel CAM van, Straalen NM van, Lanno RP, Peijnenburg WJGM
Biological significance of metals partitioned to subcellular fractions within earthworms (Aporrectodea caliginosa)
Environ Toxicol Chem 2006; 25(3):807-14

Vliet PCJ van, Didden WAM, Zee SEATM van der, Peijnenburg WJGM
Accumulation of heavy metals by enchytraeids and earthworms in a floodplain

Screening suspected counterfeit Viagra and imitations of Viagra with near-infrared spectroscopy

Zwart D de, Dyer SD, Posthuma L, Hawkins CP
Predictive models attribute effects on fish assemblages to toxicity and habitat alteration
Ecol Applic 2006; 16(4):1295-310

Research Papers (Dutch, 22)

Bijwaard H
Of mice and men: van muis naar mens met een model van kanker door straling
NVS Nieuws 2006; 31(1):9-11

Bolte J, Pruppers M
Elektromagnetische velden in arbeidssituaties. Een handleiding aan werkgevers
NVS Nieuws 2006; (3):32-4
R
Rutgers M
Puzzelen met veldeffecten van metalen. Ecologisch onderzoek aan de grauwsluier
Bodem 2006; 16(3):117-9

Rutgers M, Boekhold AE, Sloom P
Bodem Breed 2005: op weg naar een Vitale Bodem
Bodem 2006; 16(1):38-9

Rutgers M, Gestel CAM van, Klok C, Vijver M, Posthuma L
Het onderzoek en de locaties van het SSEO.
Stimuleringsprogramma systeemgericht ecotoxicologisch onderzoek
Bodem 2006; 16(3):111-4

S
Schram-Bijkerk HE
De hygiënehypothese - zijn allergie en astma de keerzijde van de infectieziektenbestrijding?
Infectieziekten Bulletin 2006; 17(10):353-7

Smetsers R
En als het dan toch gebeurt, wat dan?
Milieu 2006; (4):40-4

Smetsers R
Bijna 20 jaar kernongevallenbestrijding: zijn we er nu klaar mee?
Nieuwsbrief Crisisbeheersing 2006; 4(4):16-7

Swartjes F
De stelling: “Voor een goed beheer van ons water moeten deskundigen op het gebied van bodem en water beter gaan samenwerken”
Bodem 2006; 16(4):134-5

T
Tangena B, Delft W van, Knepper B
Drinkwaterbeveiliging in de VS vijf jaar na 9/11
H2O 2006; 39(21):12

V
Vijver M, Peijnenburg W, Koning A de
Biotic ligand-modellen in lijn met KRW
H2O 2006; 39(12):29-31

W
Wuijt S, Schijven J
Micro-organismen in grondwaterwingsgebieden
H2O 2006; 39(8):7

Books, Chapters & Reports

B
Bierens JLM, Franssen EJF, Meulenbelt J, red.
Pillen, poeders, planten, paddenstoelen en partydrugs
Maarssen: Elsevier Gezondheidszorg, 2006

Bloem J, Schouten AJ, Sorensen SJ, Rutgers M, Werf A van de, Breure AM
Monitoring and evaluating soil quality
Wallingford: CABI, 2006;23-49

Bouwman AF, Beusen AHW, Hoek KW van der, Drecht G van
Modelling the fate of nutrients through the soil and hydrological system'

Bouwman AF, Beusen AHW, Hoek KW van der, Asman WAH, Drecht G van
Global inventory of ammonia emissions from global livestock production and fertilizer use
In: Schlesinger W, Aneja V, eds. Proceedings of the workshop on agricultural air quality: state of the science, Potomac, Maryland USA, 2006

Bouwman AF, Hoek KW van der, Drecht G van
Modelling livestock-crop-land use interactions in global agricultural production systems

Bouwman L, Hoek K van der, Drecht G van
World livestock and crop production systems, land use and environment between 1970 and 2030

Spatial aspects of food webs
In: Ruiter PC de, Wolters V, Moore JC, eds. Dynamic food webs: multispecies assemblages, ecosystem development and environmental change
San Diego: Academic Press, 2006;463-9
Poorter LRM de, Koers M, Montforts MHMM
Risicobeoordeling van stoffen en producten en de relatie met drinkwater

Ridolfi M, Blum U, Carli B, Catoire V, Ceccherini S, Carnacchia C,
Clerq C de, Fricke KH, Iarlori M, Kerridge B, Kiefer M,
Lambert JC, Meijer Y, Mona L, Oelhaf H, Pappalardo G,
Piccolo C, Pirre M, Raspollini P, Rizi V, Robert C, Swart D,
Clarmann T von, Wang DY, Waterfall A, Wetzel G
Geophysical validation of temperature retrieved by the ESA level 2 processor from MIPAS-ENVISAT measurements

Riel AJHP van
De klinisch-farmacologische aspecten van smart drugs, smart-products en ecodrugs

Rongen E van, Bolte JFB, Pruppers MJM
AI-39: Elektromagnetische velden
Den Haag: SDU Uitgevers, 2006

Rutgers M, Breure AM, Insam H
Substrate utilization in Biolog tm plates for analysis of CLPP
In: Bloem J, Benedetti A, Hopkins DW, eds. Microbiological methods for assessing soil quality
Wallingford: CABI, 2006:212-7

Stebel K, Hansen G, Meijer Y, Swart DPj, Claude H,
Steinbrecht W, Neuber R, Pai S, Nakane H, Keckhut P,
Bencherif H, McDermid IS, Leblanc T, Strawbridge K
Validation of the GOMOS high-resolution temperature product (HRTP) using lidar

Tangena B, Broeke J van den
Be prepared, the approach in the Netherlands
In: Thompson KC, Gray J, eds. Water contamination emergencies. Enhancing our response
Royal Society of Chemistry, 2006

Tanzi CP, Eleveld H
Radiological impact of industrial sources: influence of meteorological conditions and particle size distribution
In: Proceedings of the 10th international conference on harmonisation within atmospheric dispersion modelling for regulatory purposes, October 2005:686-90

Doctoral Theses

Hunault CC
Clinical prediction models in reproductive medicine. Applications in untreated subfertility and in IVF treatment Rotterdam: Erasmus Universiteit, 2006. Proefschrift