Antibacterial prescribing is not easy to change >> page 12

Values in foetal screening >> page 16

Networking for evidence-based care >> page 9
ARTICLE
Managed Uptake of Medical Methods 4

FINOHTA ACTIVITIES
HTA database in Finnish for local use 6

FINOHTA PROJECTS
Effectiveness of interventions in cerebral palsy 11
Antibacterial prescribing is not easy to change 12
Effectiveness of telepsychiatry 14
Effectiveness and safety of endoscopic thoracic sympathectomy 15
Screening for foetal abnormalities 16
Invasive treatment for coronary artery disease 17
Health-related quality of life reported by patients 20
Information about screening varies widely 21

EBM NETWORK
Promoting rational use of drugs 9
National evidence based guidelines 10

HTA BRIEFLY 8

COCHRANE NETWORK
Diagnostic Cochrane reviews are coming 18
HTA and Cochrane under same roof 19
Collaboration across the borders 19

NEWS
Finolta celebrated its 10th anniversary 22

The newsletter can be subscribed free of charge from Finohta. It is also available online at www.stakes.fi/finohta/. If not stated otherwise, the material published in the newsletter does not represent the ofﬁcial views of Finolta or STAKES. The material can be quoted, provided that the source is acknowledged. Articles should not be quoted in their entirety without the author's permission.
Editorial

On the beach

Health technology assessment (HTA) provides tools for health care. Combining methods from many disciplines, this practical science answers questions transparently and in a timely fashion. The results are building blocks for clinical and policy decisions that affect many people directly, sometimes profoundly.

Assessment happens on the border of two worlds: the sound territory of methods used by HTA experts, and the fluid society that provides and funds health care. A solidly constructed evaluation is at risk of being washed away by the waves once the results reach practicing professionals or of being pounded by public discussion. Instead of huts on the beach, people assessing technologies should build boats that can carry decisions over the sea.

This issue of Impakti describes new approaches to secure safe sailing in health policy waters. Using examples from Great Britain and Denmark, Finolta builds collaboration with secondary care by asking the district hospitals to tell what new technologies they need evaluated before uptake. Our paediatrician Minna Kaila describes MUMM, or Managed Uptake of Medical Methods, on pages 4–5.

The questions from hospitals will be tackled at varying speeds, depending on how quickly the answer is needed and how much secondary research is available. Often a systematic review, at best a Cochrane review, already provides enough data for a decision. Finolta also houses the Finnish Branch of the Nordic Cochrane Centre, in what is a smooth and mutually beneficial relationship. When a question requires a broad approach over a health problem, we discuss the division of labour with the national guidelines house, Current Care; if medicines are the issue, Rohto has the know-how of spreading information to prescribing doctors. These, our companions in evidence-based work, are described on pages 9–10.

A full-scale HTA takes one to two years to complete, but a quick answer may be available in a technology assessment from another country. Impakti has long been providing titles and web addresses of selected assessments in each issue. To widen the range and improve the usability of these links, Finolta launches this spring a new service providing structured summaries of foreign HTAs in Finnish. Kristian Lampe tells more about the project on pages 6–7.

HTA agencies walk the beach, one foot on the sand and the other in water, and must be familiar with both elements. When hiring people to deal with assessment of medical methods, a basic requirement at Finolta is several years’ practical experience in treating patients. Even so, most of us are not at sea – practicing, that is – anymore. We need to listen to the seafarers for assessment topics, and the sailors need to know what types of ships we can build and how quickly. Speed, bonnie boats!

Marjukka Mäkelä
In the spring of 2006 the aim is to map topics in need of systematic evaluation, and to explore balanced ways of asking questions and finding answers together, in a reliable yet efficient enough manner. The project manager will make a tour of all the hospitals to inform about the project, and more importantly, to gather comments, topics and general ideas. Previous cooperation between Finohta and the clinical specialists continues. However, the MUMM-project is more orientated to customers, the specialized care organizations, and what they expect.

In Finland, decisions about health care are made in the 400 or so municipalities that individually or in small groups provide primary care in some 250 primary care centers. Specialized care is provided in hospitals conglomerated into 21 hospital districts. Tertiary care is centralized in 5 university hospitals. Management of the national health care system rests on management of information and recommendations. Only a few selected areas are governed by law.

TOURING THE HOSPITALS
After the December workshop there existed a list of names, “ambassadors” for MUMM in 19 hospitals. The project manager set out to tour the hospitals.

At the time of writing this report, ten hospitals have been visited, and the rest will be visited by the end of April. The meetings that have been set up have been variable, ranging from lead group meetings of the hospital, to meetings with chief clinical physicians, to meetings with clinicians. In some, head nurses and allied health professionals have been present. Time limits have varied between 20 and 60 minutes, including usually a brief overview of the project.

The atmosphere has generally been constructive and expectant. Hard criticism has not been presented, but this does not mean it does not exist. Some of the returning themes have been the realization of the significant input that the marketing of products represents. There have been demands to set up common rules for example in the way new equipment can be brought out for “testing”. Control of equipment focuses on technical safety and marketing of such has repeatedly been described as “the wild west”. The leaders of the hospitals have unanimously been behind the project since

MUMM-project
Managed Uptake of Medical Methods

The national MUMM-project was launched in a workshop with representatives from 19 hospitals together with Finohta. The project aims at collectively developing rules for the uptake of new medical technologies.

Professionals describe current equipment market as "the wild west".
Wide variation in suggested topics

Altogether more than 40 topics have been raised, mostly during the meetings. Some of them clearly cannot be evaluated using current published evidence, or would need to be studied. Some topics only need some fine-tuning and are then answerable. These topics are being screened and discussed, and some will have to be prioritized. The choice of topics in the end rests with the hospitals, but some preparatory work is necessary. There are topics where by using existing databases of appraised information solutions can easily be found.

The suggested topics include treating pleural empyema with streptokinase (a Cochrane review exists), treatment of non-melanoma skin cancer with PDT (the British Interventional Procedures Programme has evaluated it) and the same source provides information of treating prostate cancer with cryotherapy. Other topics include the use of a hyperbaric oxygen in oncology, treatment of macular degeneration with repeated injections in the eye, treatment of rheumatoid arthritis and inflammatory bowel disease with leukapheresis and cooling of the head in the treatment of brain infarction. MK

their decisive meeting in September 2005. Most of the discussions in the meetings have been about general topics related to MUMM. Concrete steps are awaited as well a listing of suggested topics.

The next workshop will take place in May. By then the project will be more concrete – some summaries of evidence have been produced, different ways to summarize have been piloted and models for solutions tested. The cooperation between Finohta and the “ambassadors” will have evolved. The summaries, or solutions, may include the following: appraised evidence does exist with a link to the evidence, appraised evidence does not exist, but let’s make a rapid review, or this topic may not be among the most urgently needed.

ACTIVE DIALOGUE

The work ahead consists of formulating answerable questions together with the “ambassadors” and clinicians, the latter of whom will also definitely be needed in the small rapid-review working groups. The more meticulous and unified management of uptake of new technologies and formulating national recommendations means a lot of work – for the project manager and Finohta, but especially in the hospitals. A way of recognizing upcoming methods needs to be built in. In the project, the so called mini-HTA form that has been developed in Denmark will be translated and disseminated for use. The form contains 26 relevant questions that need to be considered when contemplating the advantages, disadvantages and resources needed for the new technology. The repercussions in other units of the organization and possible changes in organization also need to be considered. The planned homepage for the project will be set up as soon as the modernization of the STAKES own website is completed. Then the exchange of information can be channeled via the Internet instead of burdening everybody’s already overburdened email accounts.

We are developing the project in close dialogue with the hospital districts. The project was launched with minimal or no new structures. A project team with a backing of a more formal lead group will be organized, since the current small working party cannot go on indefinitely. The tour of the hospitals so far has strengthened the belief that there are customers and actors for such a project. The idea of a national recommending body has come up on several occasions, so as to synchronize decision-making, though laws or strict criteria are not sought for.

MINNA KAILA
minna.kaila@pshp.fi
HTA database in Finnish for local use

Active dissemination of information has always been an integral part of Finohta’s strategy. Four publication series have formed the backbone of this activity. Soon a new online service will complement them.

Health care actors have two types of information needs. On the one hand people need to constantly keep up to date with current knowledge. On the other hand, case-specific information needs arise in acute situations, in which people need to admit being uncertain or not knowing enough and to start searching for more information.

Following recent developments in one’s field enables appropriate actions in practice. Avoiding obsolete perceptions is crucial for clinicians who make dozens of decisions as part of their daily work. Similar needs are vital also to many decision-makers and patients – particularly those with chronic disease.

Continuous updating of one’s personal knowledge base is a great challenge for anyone, regardless of experience or occupation. The hectic pace of modern health care settings and the ever increasing overflow of information pose an impossible equation to most human brains. Even with meticulous monitoring of relevant journals, many find themselves regularly in situations where decisions should be made but one does not have enough knowledge on the theme.

Different types of information needs should be met with adequate means. Needs related to keeping abreast of the state-of-the-art have traditionally been addressed through journals and reports, and more recently through e-newsletters and content alerts. Such media, however, do not optimally fulfil case-specific information needs. A pile of journals or a collection of content alert emails are not particularly useful when information is needed right now.

In 2003, we surveyed our customers about their information needs. A clear picture emerged: decision-makers, health professionals and other interest groups want information on foreign assessments – but in a concise form and in their own language.

The diary of a medical writer

19th OCTOBER 2005

I choose an interesting source. I’m supposed to condense the results of a systematic review into 4000 characters, and additionally produce a short piece of text of 1500 characters. I open the link. The screening report seems interesting but extremely exhaustive: over 250 pages, nine research questions – it gathers together the results of more than a thousand studies! So condensing won’t be that simple. I end up wading through the entire report.

14th NOVEMBER

I’m going through the English abstract of a German report. I don’t quite catch the meaning here. I dig up the “Kurzfassung” section of the original review. Now, this is much easier to understand! It’s simply impossible to make sense of one sentence in the conclusions of the English abstract. I again take up the original report. I notice that a word is missing in the sentence. I end up drafting the summary on the basis of the German report.
Results of local assessments are published as FinOHTA Reports or Rapid Reviews. The newsletter Impakti provides its readers with miscellaneous HTA-related articles and a variety of selected news from Finland and abroad. TA Updates provide more detailed insight into foreign assessment reports. The three latter series mostly make use of assessments produced in other countries. Utilizing the already created knowledge has often been the most reasonable and swiftest method of supporting local decision-making.

Since then we have reviewed our information functions and tools. All publication series and the web site have been redesigned to better meet current standards. Particular attention has been placed on our ability to utilize international assessment in responding to case-specific information needs.

We are currently setting up a new database that contains Finnish language summaries of international assessments. We systematically identify foreign HTA reports and rate their relevance in Finland. Our medical writers produce structured summaries of most reports. These are not direct translations of original abstracts but rather adhere to a common format. In select cases the writers complement the summaries with their own commentary. Relevant metadata are systematically linked to the summaries and are used to provide versatile search options. Content quality is assured through review by senior HTA experts. The service will be freely available on the Internet this year.

In addition to providing a solution to case-specific information needs, the systematic compilation and review of foreign assessments also support keeping our customers informed on current developments. The most relevant reports are discussed in Impakti or published as TA Updates. The database is also a foundation for future developments, such as personalized alerts and linking of information to various decision-support systems. Finally, we aim at promoting interactivity by providing end-users with feedback mechanisms.

KRISTIAN LAMPE
kristian.lampe@stakes.fi

Condensing HTA reports to support decision-making on health care in Finland.

20th DECEMBER
Is my work more translation than editing? What can international assessment reports offer Finns? Although the results of a report can’t be directly transferred to the Finnish context, they may anyway provide a different, perhaps broader view of our actions. The findings of reports are interpreted differently, depending on the culture, values, the health-service delivery system and care practices.

6th JANUARY 2006
A report is easy to read when the results are presented in a separate paragraph rather than together with the conclusions, not only in the report but also in the abstract. An ideal report gives a clear answer to all research questions even if the answer is that no information was found, or that no assessment can be made, etc. The conclusions and recommendations are based on the findings of the report.

11th FEBRUARY
I’ve been preparing summaries like on a conveyor belt. Sometimes I feel bored. The terminology is difficult.

I contact a medical expert. The reply comes quickly: “This method is so new that there’s no established Finnish term yet.” I try to fit the concept into the text without making the language too clumsy and complicated. The term seems to occur in the text a thousand times.

23rd MARCH
It takes plenty of time to find justifications in the report’s results section. When the abstract of the report states that there’s no evidence of the effectiveness of the method assessed, it should also state why there’s no evidence. Weren’t there enough studies? Were the studies poor in quality? The results are sometimes presented with such a cautious wording that you can’t tell whether the method is good or not.

4th APRIL
Hooray! I receive a report to be condensed that contains no difficult terms. The subject is topical, and the authors’ social and ethical considerations are very interesting. I enjoy writing this text!
This column comprises the source references of selected recent HTA reports. These reports have been published in different original languages and include a summary in English.

**DEVICES**

Bilateral cochlear implantation (CI) for barn - Alert, SBU, 2006. [http://www.sbu.se/file/Context0/publikationer/3/SBU_Alert_Bilaterala_cochlearimplantat_CI_hos_barn_200601.pdf](http://www.sbu.se/file/Context0/publikationer/3/SBU_Alert_Bilaterala_cochlearimplantat_CI_hos_barn_200601.pdf)


**PROCEDURES**


A systematic review to examine the impact of psycho-educational interventions on health outcomes and costs in adults and children with difficult asthma. NCCHTA, 2005. [http://www.ncbiHTA.org/fullmono/mon923.pdf](http://www.ncbiHTA.org/fullmono/mon923.pdf)


**DRUGS**


**ORGANISATIONAL AND SUPPORT SYSTEMS**


MTV af Avastin mod tyktarmskræft. DACEHTA, 2005. [http://www.sst.dk/publ/Publ2005/CEMTV/Laegeiml/MTV_Avastin.pdf](http://www.sst.dk/publ/Publ2005/CEMTV/Laegeiml/MTV_Avastin.pdf)

MTV af Tarceva mod lungekræft. DACEHTA, 2005. [http://www.sst.dk/publ/Publ2005/CEMTV/Laegeiml/MTV_Tarceva.pdf](http://www.sst.dk/publ/Publ2005/CEMTV/Laegeiml/MTV_Tarceva.pdf)


**OTHER TOPICS**


NZHTA Technical Brief - Staff training programmes for the prevention and management of violence directed at nurses and other healthcare workers in mental health services and emergency departments. NZHTA, 2005. [http://nzhta.chmeds.ac.nz/publications/staff_training.pdf](http://nzhta.chmeds.ac.nz/publications/staff_training.pdf)

The Centre for Pharmacotherapy Development ROHTO

Promoting rational use of drugs

Implementation of knowledge promoting rational pharmacotherapy is based on local ROHTO educational and development activities co-ordinated by regional facilitators in hospital districts and by local facilitators in primary care health centres. The facilitators are experienced GPs.

The starting point for a local ROHTO workshop is a challenge (e.g. large variation) in clinical practices. Local facilitators organise tailored ROHTO activities in their health centres for GP’s and other professionals (primary care nurses, pharmacy personnel). These “evidence into practice” activities take place using methods based on the growing body of scientific evidence concerning guideline implementation and change management.

Prescription statistics from national registries provided by ROHTO can be used to facilitate discussion, analyze the problem and define the objectives of change. EBM-learning materials from the ROHTO-centre and other sources are used both for analyzing the problem (e.g. deviation from Current Care guidelines) and enhancing learning and change. Regionally adapted national guidelines may also be used. A local agreement, “house role” is produced whenever possible. Combinations of small group learning methods and quality improvement tools are used. In 2005 ROHTO- workshops were conducted in 41 health centres in five hospital districts. In 2006 the number of participating units is near to one hundred.

INFORMATION INTO KNOWLEDGE

ROHTO-centre evaluates, summarizes and disseminates information on evidence-based, cost-effective pharmacotherapy. Different types of articles are published:

- ROHTO evaluations of drugs using levels of evidence agreed in GRADE collaboration
- Finnish editions of evaluations published abroad
- Articles highlighting a current trend or challenge in prescribing

The articles are mainly published in the permanent column of the Finnish Medical Journal and on the ROHTO website. Summaries of articles will also be published in other journals targeted to medical, nursing and pharmacy professionals.

NETWORKING IS CRUCIAL

Networking at a national and international level is crucial for ROHTO. Experts in pharmacology, clinical pharmacology and clinical medicine make up the network’s expert sector. Other national bodies and organisations, as well as hospital districts and health centres, form the organisation sector. Finally, patients and their organisations comprise the population sector of the network. An important part of networking is EBM-co-operation with Finohta and Current Care.

TAINA MÄNTYRANTA
MD, Director
The Centre for Pharmacotherapy Development ROHTO
taina.mantyranta@rohto.fi

The Centre for Pharmacotherapy Development

ROHTO is a permanent, independent expert unit under the Ministry of Social Affairs and Health since 2003. It promotes the health of the Finnish population by collecting and disseminating information to promote rational pharmacotherapy and supporting implementation of this in practice. The prescribers, particularly in primary health care, are the focus of our activities. ROHTO has nine permanent posts, and in addition is contracting expert knowledge.

In promotion of more rational pharmacotherapy it is essential to use:

- national evidence based guidelines and other evidence based sources
- producer-independent information on drugs along with effective distribution
- powerful methods for implementation

Info: www.rohto.fi
National evidence based guidelines

Evidence-based guidelines, Current Care (CC), have been developed by the medical societies since 1994. These support the national health strategy in Finland.

The Board of Current Care selects topics from among suggestions made mostly by specialist societies. The guideline group consists of relevant clinical experts, always including a general practitioner, and allied health professionals when appropriate. A physician-editor trained in the methods of evidence-based medicine supports the group, and the work begins with a systematic literature search done by an experienced medical librarian. Critical appraisal of the literature is based on criteria originally outlined by the Evidence-Based Medicine Working Group and the level of evidence is graded from A to D.

Based on the evidence and consensus, the development group drafts a guideline that is widely circulated to important stakeholders. Then comments are carefully reviewed and relevant changes made. All Current Care guidelines are freely and easily accessible via the Internet at www.kaypahoito.fi. The Finnish health care professionals use them also via the Health portal “Terveysportti”. The CC guidelines are also available on CD-ROM. The printed version is published in the Duodecim medical journal, as are the abstracts of updated versions. Since 2005 also abstracts of the newly published guidelines are available in the Internet in English.

The electronic version is the main route for disseminating the guidelines. Importantly, this allows the linking of guidelines with locally developed implementation programmes or care pathways. The electronic version also includes the evidence summaries on which the gradings have been based. These describe briefly the essential studies and provide background for the level of evidence. A number of publications are tailored to specific audiences, such as nurses or patients. The implementation tools are freely available via the Internet.

Current Care and Finohta have a common task: to provide evidence-based information to health care to help decision-makers choose effective treatments and diagnostic methods. In Finland, active network of professionals participate in HTA and guideline work. Finohta and Current Care organise regular methodological training for different audiences, and use similar methods for information searching and critical appraisal. The results of cost-effectiveness studies of Finohta are available and used in our guidelines. Given that knowledge of and interest in evidence-based medicine and health care is growing all the time, we have a great possibility to collaborate in helping professionals to cope with the growing flow of information. What is effective and useful? What is not so useful? – there are many questions to be answered, together.

EEVA KETOLA
MD, PhD
Editor in chief, Current Care
Finnish Medical Society Duodecim
eeva.ketola@duodecim.fi

Current Care guidelines – Käypä hoito

In Finland, the first Current Care guideline published was on celiac disease in 1997. All guidelines are available in Finnish, and many as abstracts also in English. In February 2006 there are 65 guidelines available, 22 of them are in the process of being updated, and 29 new guidelines are in the pipeline. By 2010 we expect to have published one hundred CC guidelines.

Current Care /Finnish Medical Society Duodecim is a founding member of Guidelines-International-Network (G-I-N).

Info: www.kaypahoito.fi.
The motor disability can be managed by combining various individual therapies, orthoses, surgery and pharmacotherapy. The rehabilitation is planned in collaboration with parents, different therapists, day care and school personnel and put into practice in everyday situations.

The hospital for children and adolescents proposed that Finohta should review the effectiveness of various CP therapies. In a joint project several systematic reviews have been conducted (Table 1). Evidence on the use of upper and lower limb orthoses was found to be scarce 1. Only very few well-reported trials on physiotherapy methods were located, so it was difficult to judge the clinical effectiveness of physiotherapy. 2

The project recruited a clinical expert group with experienced therapists and pediatric neurologists. One of the main issues is the clinical applicability of the gathered evidence; unfortunately, results from systematic reviews and original RCTs are difficult to apply in practice.

LARGE VARIATION IN CURRENT PRACTICE
To explore national treatment practices for children with CP, questionnaires were sent to all rehabilitation teams treating children with CP in Finland. This national survey included videos of three children with spastic diplegia with short written summaries. The teams listed the treatment methods available at their district in the structured questionnaire and made rehabilitation plans for each child. The result shows a large variation in the rehabilitation of children with CP in Finland, which clearly calls for a national consensus.

The results of all reviews and the national survey will be gathered into a report and discussed in national and international seminars.

HEIDI ANTTILA
heidi.anttila@stakes.fi

REFERENCES
The data-collection method was first tested in the 20 health centres in the region of Pirkanmaa in a one-week survey in November 1994. Later, national data were collected in 30 MIKSTRA study health centres around the country during one week of November annually from 1998 to 2002 and in 20 control health centres (in 2002 only). In this five-year national study, 29 043 consultations for an infection were recorded in the study health centres and 4 881 consultations in the control health centres.

National evidence-based treatment guidelines were drawn up in co-operation with the Current Care Programme of the Finnish Medical Association Duodecim in 1999–2000 on the six most common infections in primary care. The guidelines were implemented in the study health centres by means of interactive education at the work site, facilitated by a trained, local trainer and supported by feedback on previous data collections and patient and population information.

Respiratory tract infections comprised three-quarters of all infections with common cold, otitis media and sinusitis as the most common diagnoses. Almost two-thirds of patients were prescribed antibiotics in Pirkanmaa in 1994, while less than half received them later in the national study. Patients with a common cold were rather seldom prescribed antibiotics (9–15%), while most patients with otitis media, sinusitis and urinary tract infections (82–95%) as well as those with acute bronchitis (59–83%) received them.

**RECOMMENDATIONS**

**IMPROVED PRESCRIPTION**

About half of the antibiotic treatments that were prescribed for respiratory tract infections were totally or almost in line with the recommendations. Prescribing in line with the recommendations in all aspects increased from 21% in 1998 to 27% in 2001 (p<0.001). One fifth of antibiotics were prescribed for infections for which they are not recommended, mainly for acute bronchitis, both before and after the intervention. Other than a first-line drug was selected without any justification in a quarter of cases. In the rest of the cases infection and antibiotic choice were correct but the duration of treatment was longer than recommended.

In respiratory tract infections some diagnostic tools are often needed. A sinus ultrasound device was widely available and adequately used in diagnosing sinusitis (74%), but throat swab was under-used in throat infections (culture 37% vs. 42%, antigen detection 24% vs. 30% before and after intervention, respectively). Tympanometry was recommended for diagnosing otitis media, but devices for such were available in only a third of the study health centres and even there seldom used (1%). In acute bronchitis, the scant use of recommended C-reactive protein test (8%) increased slightly (to 11%).

The detailed information obtained on the diagnostic and treatment practices make it possible...
Acute otitis media (AOM) is a common disease in childhood. Use of antibacterial agents in the treatment of AOM varies considerably in western countries from 31% in the Netherlands to more than 90% in most other countries. Most children with AOM feel better within 24 hours, regardless of whether antimicrobial treatment is utilised. As most AOM cases resolve spontaneously, the possible benefit of antimicrobials must be weighed against the increased likelihood of side effects such as diarrhea, colonization, and spread of bacterial resistance. Observation without antibacterial therapy is an option in many AOM cases, if follow-up for 48 to 72 hours can be assured and analgesia is provided.

Over 3,000 AOM patients participated in the MIKSTRA study. According to Current Care guidelines for AOM, pain relief medication should be used as a supportive treatment especially if prescription of antimicrobials is postponed.

Medication for pain relief, mostly non-steroidal anti-inflammatory agents and painkillers was prescribed or recommended for 10.4% and systemic antibacterials for 94% of the AOM patients in this study. Topical eardrops with analgesic-anti-infective combination for earache were prescribed for 4.4% of the patients. Medication for pain only was prescribed or recommended for 1.0% of the patients. Older children (5–14 years) tended to receive more often medication for management of pain than children aged under 5.

Finnish physicians rarely prescribe or recommend pain medication for AOM patients. This is in contrast to the Finnish and most of other AOM guidelines that encourage regular use of pain relief regardless of whether antibacterial agents are prescribed or not. Physicians should consider pain medication in all patients with AOM. Instead of using immediate prescription of antibacterial agents, watchful waiting with proper pain relief could help decrease unnecessary antibacterial treatment.

JOHANNA PULKKI
National Public Health Institute
Department of Bacterial and Inflammatory Diseases
johanna.pulkki@ktl.fi

REFERENCES


Info: MIKSTRA Antimicrobial treatment strategies program www.mikstra.fi
Particularly where long distances can limit access to care, telepsychiatry offers new options for arranging health services. However, large-scale use of telemmedicine requires research evidence of its real benefits. Not even the frequently expressed argument that telemmedicine brings cost benefits should be accepted before evidence has been provided by economic analysis.

In psychiatry, a physical contact between the therapist and the patient is not necessary in most cases, so the consultations are easy to arrange by modern videoconferencing technology. The price of technology should no longer be a major hindrance. Appropriate low priced videoconferencing devices are currently available. A range of telepsychiatry applications have been tested in many countries, but research evidence of their benefits is still rather fragmented. Nor has it been examined in any great detail how extensively telepsychiatry has been applied in routine use.

Finohta has supported a number of systematic literature reviews that have analysed the efficiency and cost-effectiveness of telemedicine. However, the reviews have unfortunately frequently concluded that research evidence of real benefits is still rather slender for most applications. A current Finohta project run in co-operation with researchers from the Institute of Health Economics (Edmonton, Canada) aims to delve deeper into telepsychiatry: research findings on the benefits and costs of telepsychiatry are identified by going through relevant literature in order to provide an overall picture of its effectiveness and cost-efficiency. The literature search gave more than 800 articles that touch on telepsychiatry, of which slightly more than a hundred were included in a more detailed analysis on the basis of their abstracts. The analysis is currently ongoing.

One indicator of the excellence of a new service delivery practice is to what extent it is being used in practical work. It is, of course, possible that a new practice of service delivery that makes use of telemedicine has proved so superior in practical work that those responsible for the service delivery system have taken action rather than remained waiting for research evidence. Whether this is the case will obviously become apparent at the second stage of the project, which includes a survey addressed to various actors in psychiatry.

The research group responsible for the overall implementation of the project includes David Hailey (Institute of Health Economics, Edmonton), Arto Ohinmaa (Associate Professor of University of Alberta), and Risto P. Roine (Chief Physician of the Helsinki and Uusimaa Hospital District). They have produced several systematic literature reviews in telemedicine. The project is estimated to be completed towards the end of 2006.

RISTO ROINE
risto.p.roine@hus.fi
Endoscopic thoracic sympathectomy (ETS) aims at reducing blushing of the face and excessive sweating in the face and hands due to over activity of sympathetic nerves. The upper thoracic chain of the sympathetic nerve trunk is transected or clamped.

Randomised controlled trials and prospective observational studies on ETS with at least 100 patients were searched in Medline and the Cochrane Library. Among the 195 retrieved articles there were no trials. Two researchers independently selected papers based on titles and abstracts and assessed the quality of potentially eligible studies using full text versions. Fifteen prospective studies were included. They had recruited 5,767 patients, of which 46% were male. Patients were typically young adults, but eight studies had also included children younger than 15 years of age.

The methodological quality was poor in most studies. Only one study provided clear inclusion and exclusion criteria for patients. Five studies had a uniform follow-up time for all patients. In three studies the mean follow-up time was over two years, and only one had followed all patients for two years at least.

Blushing and excessive sweating of hands, trunk and feet decreased after ETS in all studies. Complications after ETS included haemo- or pneumothorax, Horner’s syndrome, and neuralgias. Some complications caused permanent disability. In all but two studies, compensatory sweating after ETS occurred in more than half of the patients, typically on the trunk below nipples. This caused significant disability for 3–15% of those who experienced it. Excessive dryness of skin and gustatory sweating were also reported.

The effectiveness of ETS in alleviating sweating or facial blushing cannot be evaluated on the basis of studies without control groups. Prospective patient series, however, can provide valid information of side effects of interventions. The studies of this review were seemingly prospective, although very variable follow-up times and other inconsistencies point toward the possibility of retrospective designs.

Endoscopic thoracic sympathectomy is associated with significant immediate and long-term adverse effects. This is alarming especially since the operation is performed to alleviate a relatively harmless condition. Many patients also suffer from compensatory hyperhidrosis after ETS. Due to wide variation in the reporting of adverse effects, it is probable that these have been underreported most of the time.

If this procedure is considered safe enough for use, its effectiveness should be evaluated in prospective, controlled trials. Follow-up times should be sufficiently long to inform about possible recurrence of the symptoms. Informed consent for these studies and the ETS operations should be required, especially if minors are subjected to the risk of permanent adverse effects.

ANTTI MALMIVAARA
anti.malmivaara@stakes.fi

Major congenital abnormalities are detected in 2 to 3 of every 100 births. About one third of them are severe major structural abnormalities or syndromes. Some severe anomalies lead to miscarriage or foetal death. Some require immediate life-saving treatment after birth. For many abnormalities, no treatment during pregnancy or after birth would significantly improve the quality of life.

Screening for foetal anomalies cannot be adjusted to identify severe anomalies only. Unavoidably, other anomalies are also identified during the screening process. The effects of detected anomaly may not be predictable during foetal life, nor does an explicit definition for a severe anomaly exist. This problem is culminated in Down syndrome, which can have consequences that range from mild mental handicap to a severe multianomaly syndrome leading to early death. Screening for foetal abnormalities thus introduces major ethical questions regarding its aims and consequences.

NO CLEAR ANSWERS CAN BE GIVEN

In the Finohta report the sensitivity and specificity of various existing methods for screening chromosomal abnormalities were scrutinized. The results were balanced against risk of miscarriage due to diagnostic procedures for screening positives and the costs of the screening organisation. The possibilities to detect structural abnormalities by ultrasound screening during various weeks of pregnancy were balanced against the length of time remaining to perform required diagnostic tests for screening positives. The parents also need time to decide what to do given a diagnosis for foetal abnormality. We also scrutinised a novel option to screen after 24th gestation week for structural abnormalities in which early detection would improve outcome by better planning of care during pregnancy and delivery, and by treating the newborn immediately.

The report called for public discussion about the aims of foetal screening and pinpointed several steps in screening needing quality improvement. Especially counselling prior to and at each step of the screening process is essential. The national screening committee has carefully processed the report. An open seminar involving over 300 participants ranging from layperson to health decision-makers was organized to identify the various values and fears existing in Finnish society in relation to screening for foetal abnormalities.

A NATIONAL CONSENSUS IN HORIZON

The national screening committee proposed to the Ministry of Social Affairs and Health the establishment of a uniform national screening system to improve quality and equity of care. The rights of parents for whom abortion is not an option are also considered in the draft. The Ministry has sent the draft for an extensive round of comments to various stakeholders: professionals, decision-makers at various levels of health care system, patient organizations and ethicists. This will hopefully result in a consensus based on shared societal values.

ILONA AUTTI-RÄMÖ
ilona.autti-ramo@stakes.fi
Invasive treatment for coronary artery disease

The routine use of angioplasty as treatment for myocardial infarction instead of thrombolysis would prevent the death of 1–2 patients, and the occurrence of 3–6 new myocardial infarctions per 100. This article highlights some key findings from a recent report.

FinOHTA reviewed the effectiveness of the invasive treatment of stable coronary artery disease. Bypass surgery can reduce mortality but otherwise evidence of the impact of invasive treatment on mortality is slim. Surgery seems to offer more lasting help for chest pain symptoms (angina pectoris) than angioplasty with or without stent. There is no research data available on a comparison between drug eluting stents and surgical treatment.

Evidence of the benefits of drug eluting stents is to date based on research on patients who primarily have just one diseased coronary artery, and follow-up times have been short. Re-narrowing of the stented coronary artery is frequently used as the primary outcome for the effectiveness of treatment in drug eluting stent research. The use of drug eluting stents leads to a reduction in the need for repeat angioplasty, but the need for repeated surgical treatment is not reduced. Drug eluting stents have no effect on mortality or myocardial infarctions. The primary reason for treatment, chest pain symptoms, has not been studied as an outcome event. Comparisons between angioplasties and life style or medical interventions are urgently needed.

In patients with unstable angina pectoris syndrome or a heart attack, an early invasive treatment strategy could save 1–2 lives per one hundred patients treated in this manner compared with early conservative treatment strategy. It is, however, possible that invasive treatment does not reduce mortality at all or even increases it.

Transferring a patient quickly to angioplasty treatment would not necessarily reduce mortality of patients suffering from MI compared with thrombolytic treatment. Rapid angioplasty would, however, prevent a new myocardial infarction in 3–4 patients and one stroke per 100 patients. Randomized effectiveness trials, on which the above conclusions are based, were carried out in ideal conditions with carefully selected patients. The treatment outcomes are unlikely to be the same in everyday situations where treatment arrangements and patients are different.

PEKKA KUUUKASJÄRVI
pekka.kuukasjarvi@stakes.fi

Diagnostic Cochrane reviews are coming

The Cochrane Collaboration has decided to include diagnostic accuracy studies in systematic reviews. Several pilot reviews are testing the software and new instructions that will be published in the Cochrane Reviewers’ Handbook.

Diagnostic systematic reviews aim to collect all relevant studies to answer a specific research question. Diagnostic systematic reviews are few compared to intervention effectiveness reviews. One reason for that may be that the methodological criteria of diagnostic studies have not been as well developed as in effectiveness studies.

A big step towards improvement was made in 2003 when two major articles promoted the assessment of validity and appropriate reporting of diagnostic studies and introduced tools for it. QUADAS (Quality Assessment of Studies of Diagnostic Accuracy) is a quality assessment tool and STARD (Standards of Reporting of Diagnostic Accuracy) proposes the ways how to report studies comprehensively and accurately. A modified version of QUADAS has been incorporated into the Cochrane handbook to be used as the basis for quality assessment in all Cochrane test-accuracy reviews. Several people involved in STARD and QUADAS also contributed to the Cochrane handbook.

When undertaking a diagnostic study, both QUADAS and STARD recommendations are needed: An otherwise well-conducted study according to the criteria of QUADAS will score low in a systematic review if the methods and results are not reported in sufficient detail. There is obviously overlapping in the two instruments.

### AVOIDING PITFALLS

The QUADAS checklist contains fourteen quality items, not all of them are applicable to every study, on the other hand some are crucially important for reliable measures of diagnostic accuracy. For example, if the results of the index test influence the decision to perform the reference test, then biased estimates of test performance may arise. This usually occurs when patients positive on the index test receive a more accurate, often invasive, reference test compared to those with a negative test result.

Ideally the results of the index test and the reference test are collected on the same patients at the same time. If this is not possible and a delay occurs, misclassification due to spontaneous recovery or to progression to a more advanced stage of disease may occur. Interpretation of the results of the index test may be influenced by knowledge of the results of the reference test, and vice versa. The more subjective the interpretation, the more likely that the interpreter can be influenced. This may again lead to inflated measures of diagnostic accuracy.

Inadequate reporting and heterogeneity of original studies cause additional problems for authors of systematic reviews. For instance as systematic review about imaging carpal tunnel syndrome, insufficient description of the reference test and clinical characteristics of the patients included, and recruitment of asymptomatic people as referents made the overall assessment of the accuracy of the imaging method most uncertain.

### Table 1. Examples of key questions in the QUADAS tool

- Was the spectrum of patients representative of the patients who will receive the test in practice?
- Is the reference standard likely to correctly classify the target condition?
- Is the time period between reference standard and index test short enough to be reasonably sure that the target condition did not change between the two tests?
- Did patients receive the same reference standard regardless of the index test result?
- Were the index test results interpreted without knowledge of the results of the reference standard?
- Were uninterpretable/ intermediate test results reported?

**IRIS PASTERNACK**
iris.pasternack@stakes.fi

**ANTTI MALMIVAARA**
antti.malmivaara@stakes.fi

**REFERENCES**


HTA and Cochrane under same roof

In Finland, two units working to supply evidence for the basis of decisions in health care have joined forces: the Finnish Office for Health Technology Assessment and the Finnish Branch of the Nordic Cochrane Centre.

This natural coalition has practical advantages. The three major publishing platforms for systematic reviews are scientific journals, the Cochrane Collaboration and health technology assessment (HTA) agencies, and their combined knowledge and skills in information retrieval, critical appraisal, and review methods would be exploited. For the twenty or more people working with health technology assessment, two person-years are given over to Cochrane activities, with one full-time and several part-time people working with the Cochrane Collaboration.

Duplication of effort in preparing systematic reviews is widespread. Not all HTA reports use Cochrane reviews whenever possible. The Cochrane Collaboration currently produces around one fifth of all systematic reviews published in the world, with the objective of updating them at 2-year intervals. Health technology assessments (HTAs) aim at evaluating the costs, effectiveness, and even the overall significance of health care interventions, be it medicines, devices or skills. Assessment of intervention effectiveness is based on scientific summaries of current evidence, where updated Cochrane systematic reviews stand in the front line.

Collaboration across the borders

The Finnish Branch and the Russian Branch of the Nordic Cochrane Centre have started a shared research project. Last autumn, we began updating the Cochrane review on Antibiotics for acute maxillary sinusitis in adults.

The working group has collaborated mainly by email. The review work has now progressed to the stage of assessing the individual trials and analyses. Therefore it was essential that Dr. Oleg Borisenko from Stavropol visited Finland in February. The review group collaborated intensively for one week. As the Finnish Cochrane Branch is located the Finnish Office for Health Technology Assessment agency, Oleg Borisenko also had the opportunity during his visit to Finland to become acquainted with the organization of Finohta and its health technology assessment methodology.

Our common goal is to ensure good-quality up-to-date systematic reviews as an essential part of evidence-based medicine (EBM). Eighty people in Finland and forty people in Russia are involved in Cochrane work, promoting actively the work as reviewers, in making searches by hand, and in other tasks. Health care is increasingly using evidence-based publications as a basis for decision-making. The Collaboration as an international network gives an excellent frame for sharing experience and knowledge of the methodology in this area. The working group consists of Anneli Ahovuo-Saloranta (Finohta), Marjukka Mäkelä (Finohta), Oleg Borisenko from Russia and Niina Kovanen (Finohta) (in picture), Helena Varonen (FIOH) and John W. Williams from the USA.

ANNELI AHOVUO-SALORANTA
anneli.ahovuo-saloranta@stakes.fi
The quality-adjusted life year (QALY) is one of the most important indicators of effectiveness in health care. This is recognised, for instance, by the UK National Institute of Health and Clinical Excellence (NICE), which provides national guidance on treatments and care for NHS users in England and Wales. NICE uses the QALY as its principal measure of health outcome. Although QALY is considered an important measure of effectiveness of health care, only a fairly limited number of studies really base their QALY estimates on actual measurements of patients’ health-related quality of life (HRQoL).

We systematically reviewed articles that compared the HRQoL of patients in a before–after setting in a scientifically valid manner. In these studies, the HRQoL had been assessed by the patients with a generic HRQoL instrument that produces a single valid index score for the calculation of QALYs, or HRQoL had been assessed by a direct valuation method.

The selected publications were grouped according to the HRQoL instrument employed in the study, by the medical specialities they represented, and by the country of origin. Approximately half of the articles were based on randomised controlled trials.

The reported number of QALYs gained by various treatments varied widely depending on the intervention studied and, partly, on over how many years the QALY gain was extrapolated. Also the cost per QALY showed great variation.

More studies reporting QALYs based on actual measurement of patients’ HRQoL are urgently needed. This would help to ensure that allocation of health care resources is based on scientific evidence on the value of various interventions regarding their ability to produce societal welfare.

PIRJO RÄSÄNEN
pirjo.rasanen@stakes.fi


Info: The results of the review will be published in May 2006 in the International Journal of Technology Assessment in Health Care.
FinOHTA sent a letter to all screening units in Finland to ask what kind of screening information the units offered their clients. In addition, the units were asked to forward their screening invitations and result letters, as well as any other information they distributed to the women, to the researchers for analysis.

Women receive information on breast-cancer screening from different sources, such as the media and friends. However, in order for them to be able to make a conscious decision on participating in the screening programme, they should be able to base the decision on information that is as objective as possible. They need to know “What can happen to me if I participate in the programme?”.

The screening units’ invitations most frequently mentioned that the participation was free of charge, and that the screening enabled an early detection of breast cancer and of any benign changes. By contrast, the invitations did not mention the possibility of false positive findings (suspicions of cancer in healthy women) or false negative findings (failure to detect cancer). The result letters clearly informed the women that no signs of cancer had been found. The women were also encouraged to practice breast self-examination and to see a doctor if any unusual symptoms occur. Invitations for further examinations were most frequently delivered by phone, but only a few units had specifically planned in advance the information to be given on the phone.

There was rather wide variation between the screening units in the information they provided, and the information was found to be in part fairly inadequate. An extreme example was an invitation that had retained the format in use at the early stages of screening programmes in Finland: “By virtue of the Primary Health Act, you are invited for a breast cancer screening, screening date and place”.

Women’s participation rate in screening is particularly high in Finland: an average of 88 per cent accept the invitation. Experiences from other screening programmes show that when the people to be screened receive more information on the effects of screening, this may affect their rate of participation and thus also the effectiveness of screening.

MARJUKKA MÄKELÄ
marjukka.makela@stakes.fi
ULLA SAALASTI-KOSKINEN
ulla.saalasti-koskinen@stakes.fi

Finland was the first country to launch a national breast-cancer screening programme in 1987. A decree of the Ministry of Social Affairs and Health requires that municipalities should invite women aged 50–59 for free breast-cancer screening. Some municipalities also offer screening for women aged 60–69, either free of charge or for a fee.

In 2000, FinOHTA was assigned by the Ministry of Social Affairs and Health to investigate the impact of an extension of breast cancer screening to the 60–69 age group. Five years later the Ministry of Social Affairs and Health asked FinOHTA to update the findings.

In Finland, breast-cancer screening can annually prevent some 16.5 breast-cancer deaths per 100 000 women invited for screening, that is, one breast-cancer death per some 6 100 women. The Ministry’s working group on screening will use the report as a basis in its deliberations on the need to change the current screening practice, which leads to differential treatment of women in different municipalities.

REFERENCES
EUnetHTA is networking HTA agencies in Europe
European co-operation in health technology assessment has taken a great leap forward. In early 2006, a EUnetHTA project was started that forms a network of 27 states. The project is partly funded by the European Union.

EUnetHTA brings together national HTA agencies, health ministries and research institutes in producing HTAs and making use of their results. A more permanent organisational framework for HTA co-operation will be developed within three years. Further, practical tools will be created that allow HTAs to be produced effectively and their results to be utilised in decision-making in different parts of Europe. Finohta participates in four EUnetHTA work packages that aim to develop uniform HTA models and specify the core considerations to be taken into account in HTAs conforming to the European practice. Models will be prepared for two different methods, that is, intervention and screening. In addition, two assessments will be conducted in accordance with the models.
Info: www.eunethta.net.

Impakti is also published in English
The Impakti newsletter is published six times annually, one of the issues being in English. Issue No. 2/2006 is the second Impakti in English. In addition to its Finnish readers, Impakti now also reaches 43 international HTA agencies in 21 countries.

Doctoral thesis: Common Infections in Finnish Primary Health Care
Antibiotics are among the greatest discoveries of our time. However, increase in bacterial resistance to antimicrobials has become a problem, said Ulla-Maija Rautakorpi, Med.Lic. at the public examination of her doctoral thesis at Tampere University. Professor Risto Huupponen from Kuopio University acted as the opponent and Professor Kari Mattila from Tampere University as the custos.

According to Ulla-Maija Rautakorpi’s doctoral thesis, in general practice, unnecessary prescriptions of antibiotics are becoming less common in Finland. Further information on pages 12–13.

A redesign of the Finohta web pages
Have you already looked at our new English web pages at www.stakes.fi/finohta/e? The front page offers up-to-date information on Finohta’s activities and projects. Our publications – Impakti Newsletters, assessment reports, rapid reviews – can also be read at the same address.
After the launch of the new website of STAKES in spring 2006, our web address will be finohta.stakes.fi.
Finohta celebrated its 10th anniversary

– People, networks and principles are the secrets behind Finohta’s success, Professor Marjukka Mäkelä summed up at the 10th anniversary seminar of Finohta.

Health technology assessment began to take root in Finland in the 1980s, with the Swedish assessment agency SBU acting as a model. Finohta started to operate as a project in 1995.

The newcomer was to find its place in the health-care field in Finland, as well as in international networks.

Finohta became a member of INAHTA as early as 1996. The first international projects included EurAssess and MedCertain. The future of Finohta now looks bright. Reliable and useable HTA information is in high demand in Finnish health care. The agency today employs over 30 assessment and communications experts, compared with two employees in 1995.

– We will continue to need enthusiasm combined with visions of the importance and diversity of health technology assessment, says Vappu Taipale, Director General of STAKES. She also wishes that co-operation between STAKES and Finohta will continue long into the future.

A seminar on the use of HTA information in the policy process had the following guest speakers: Dr. Berit Mørland, President of HTAi, Professor John Gabbay from INAHTA board and Professor Martti Kekomäki. The seminar had nearly 150 invited guests.

Discussions continued at dinner. Director general of STAKES and the prominent guests.

Challenges for health technology assessment were highlighted in the seminar.

A Finnish chair for G–I–N

Professor Marjukka Mäkelä has been appointed Chair of the Board of Trustees of the Guidelines International Network (G–I–N). G–I–N is an international co-operative network of 60 organisations involved in clinical practice guidelines in 27 countries. Info: www.g-i-n.net.

Finohta in English

Finohta is now the Finnish Office for Health Technology Assessment in English. In other words, the word “Care” has been omitted. The new name is more in line with the abbreviation.

Happy birthday to You, Happy birthday Finohta!
Bringing HTA into Practice
The 3rd Annual Meeting of Health Technology Assessment international (HTAi) will take place 2-5 July 2006, in Adelaide, South Australia. Topics to be covered include: Regulatory systems, HTA in surgery, Chronic diseases and HTA, HTA methodology challenges, Emerging diseases in Asia Pacific/vaccines Diagnostics, Horizon scanning, Ethics, HTA and consumer information, and Information systems. More information at www.htai.org.

XIV Cochrane Colloquium
The 14th Cochrane Colloquium will take place 23-26 October 2006, in Dublin, Ireland. Since its inception in 1993, the work of the Cochrane Collaboration has provided the stimulus for impressive advances in our understanding of how to prepare systematic reviews and promote them to a wide audience. More information at www.clinicalcollaboration.info.

The Finnish Office for Health Technology Assessment produces information to support decision-making.

The mission of Finohta is to promote the use of proper evidence-based technology in Finnish health care in order to enhance the effectiveness and impact of health care.

The Office was established in 1995. It is based in the National Research and Development Centre for Welfare and Health, STAKES.

The principles underlying our activities are:
- Independence
- Reliability
- Supporting significant decision-making
- Usability
- Collaboration
- Methodological support

FinnOHTA Finnish Office for Health Technology Assessment Terveydenhuollon menetelmien arviointiyksikkö
Postal address STAKES/Finohta PO Box 220 FIN-00531 Helsinki, FINLAND Street address Lintulahdenkuja 4, Helsinki Telephone +358 9 39 671 (switchboard) Telefax +358 9 3967 2278 E-mail address firstname.lastname@stakes.fi
Website www.stakes.fi/finohta

HEAD OF FINOHTA
Ms. Marijukka Mäkelä Research Professor

FINOHTA'S SECRETARY
Ms. Terhi Ilonen

Ms. Heidi Anttila Planning Officer
Ms. Ilona Autti-Rämö Medical Adviser
Ms. Riitta Grahn Information Specialist
Ms. Eva Kiura Medical Writer
Ms. Kerstin Korhonen Subeditor
Ms. Niina Kovanen Development manager
Ms. Pia Kärki Secretary
Mr. Kristian Lampe Medical Adviser
Mr. Antti Malmivaara Senior Medical Officer
Ms. Iris Pasternack Research Officer
Contact Person for The Cochrane Collaboration
Ms. Leena Raustia Information Specialist
Ms. Pirjo Räsänen Researcher
Ms. Ulla Saalasti-Koskinen Planning Officer
Ms. Maija Saljonkari Medical Writer
Mr. Harri Sintonen Research Professor

CONSULTANTS
Consultant in biometry
Mr. Esa Lääärä esa.laar@oulu.fi
Consultant in clinical medicine
Mr. Risto Roine risto.p.roine@hus.fi
Consultant in clinical medicine
Mr. Olli-Pekka Ryyränen olli.pekka.ryynänen@uku.fi

Tampere Office
Postal address STAKES/Finohta Medical School/ B-building FIN-33014 University of Tampere FINLAND
Street address Medisiinarinkatu 3, FIN-33520 Tampere, FINLAND
Telephone (03) 35 5111 (switchboard)
Telefax (03) 3551 4150
E-mail address firstname.lastname@stakes.fi

Ms. Anneli Ahovuo-Saloranta Research Officer
Mr. Pekka Kuukasjärvi Medical Adviser
Ms. Ulla-Maija Rautakorpi Project Manager

Further information on our website www.stakes.fi/finohta.