



Annual Report 2003

Julius Center for Health Sciences and Primary Care

UMC Utrecht

INTRODUCTION

The Julius Center for Health Sciences and Primary Care is one of the twelve departments of the University Medical Center Utrecht (UMC Utrecht). It carries out scientific research, provides education, and offers expertise and facilities in the area of clinical health sciences.

The Center aims at a leading and acquisitive position in the enlargement and dissemination of knowledge, especially in the field of health sciences. This is done by means of groundbreaking research in the area of four disease-related themes and by the provision of courses for (bio)medical students, researchers and clinicians.

Disciplines represented in the Center are general practice, (clinical) epidemiology, nursing science, medical technology assessment, public health, and nutritional sciences.

In this annual report the reader will find information on delivered services, output and finances over 2003.

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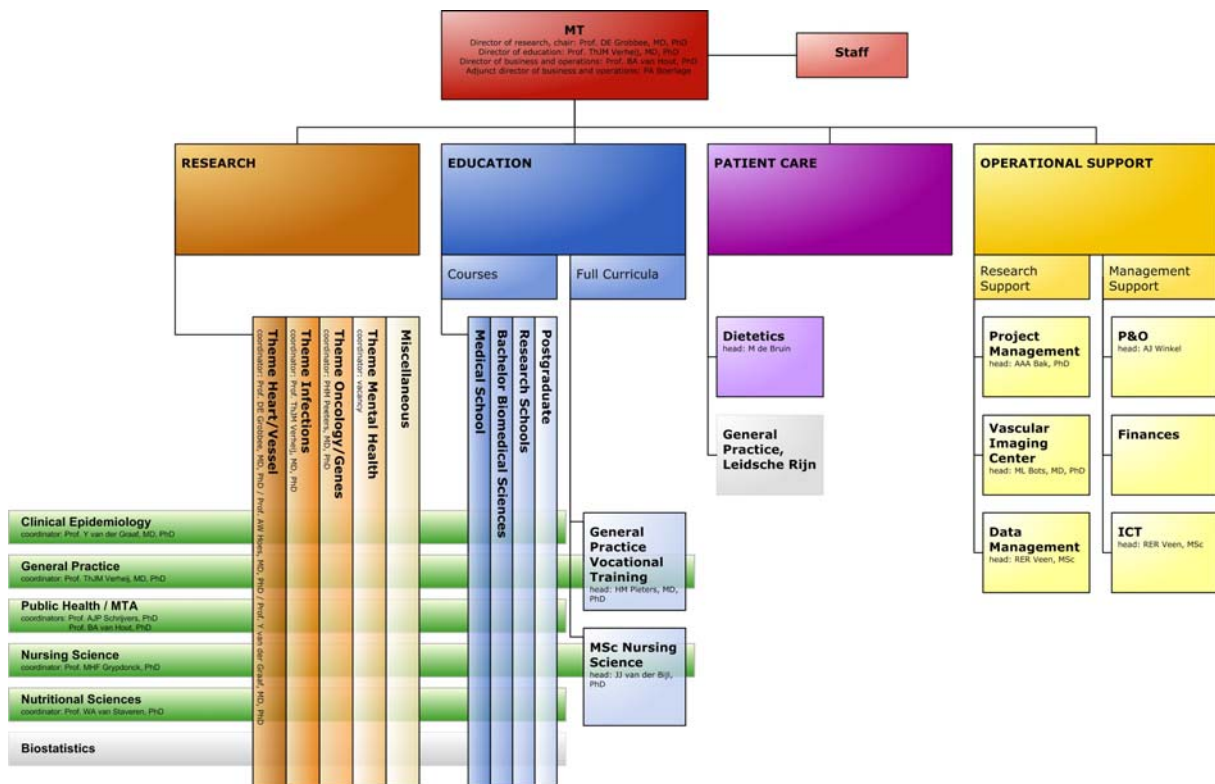
- PhD-theses
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ORGANIZATION

Short history

The Julius Center for patient oriented research was established December 16 1996, its sources being the department of epidemiology and public health, and the hospital unit of clinical epidemiology. Both scope and size have since then widely increased, as is reflected by the Julius Centers' subtitles, not in the last part because other departments have been integrated in the current center. In 1999 the department of general practice merged with the department of patient oriented research to become the Julius Center for Patient-Oriented Research and General Practice. In 2002 the department of nursing science and the nutritional sciences group joined the center to become the Julius Center for Health Sciences and Primary Care.

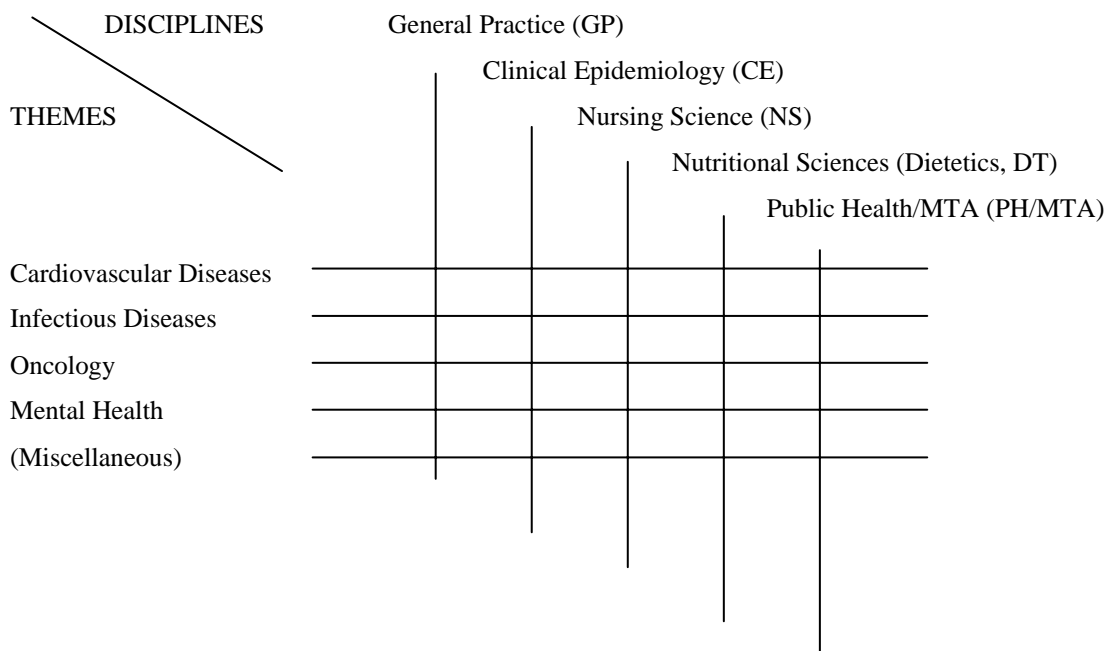
Organizational structure



RESEARCH

Research organization

The Julius Center contributes to the five main programs of the Utrecht University Medical Center: heart- and vascular disease, infectious diseases, cancer, mental health, and image. The research conducted at the Julius Center is organized according to a matrix structure. The vertical axes are formed by the scientific disciplines of the center: (clinical) epidemiology, general practice, MTA, public health, nursing science, and nutritional sciences. The horizontal axes are made up of the disease-based fields of interest. Themes: heart and vascular disease, infectious diseases, cancer, and mental health. Within these fields, one finds further focussing in subfields, e.g., research on the complications of diabetes mellitus. The Center's policy is to concentrate its own research as much as possible on the matrix's intersections so that the disciplines within the Center can contribute to the scientific themes of the UMC Utrecht as a whole, themes that are also arranged according to the same matrix system.



In addition to the four clinically oriented fields of interest, each with its own research institute within the UMC Utrecht, the UMC Utrecht has a research institute that is focussed on imaging research (Image Sciences Institute). The research of the Julius Center is in part positioned within this research institute and has strong links. The appointment of Dr. Y. van der Graaf in 2001 as a professor of clinical epidemiology in imaging diagnostics underlines the importance given by the Center, not only to the theoretical principles of research on the effectiveness of diagnostics, but also to imaging diagnostics in particular.

In addition to its own research, consultancy in research methods is an important activity for the Julius Center. The Center gladly advises on the design, implementation, analyzing and reporting of research.

Research themes

Cardiovascular diseases

A considerable amount of the research carried out at the Julius Center is directed towards the cause, diagnosis and prognosis of atherosclerotic vascular diseases. An example is research into the influence of sex hormones on

the condition of the heart and blood vessels in postmenopausal women. In this research not just the menopause is studied but also the effects of using natural or synthetic female hormones. Research is also being carried out into the genetic and non-genetic factors which determine the prognosis of patients with vascular diseases.

In the Utrecht region, the Center is involved with the setting up and scientific study of heart failure outpatient departments. The purpose of this is to gain a better understanding as to the nature and causes of heart failure and to be able to make an earlier diagnosis.

Various cardiovascular studies are being carried out in diabetes mellitus patients. Other studies include the possibly infectious cause of arteriosclerosis, blood pressure and vessel damage amongst young adults, and the risk of thrombosis if the contraceptive pill is used. The Center coordinates a large number of multicenter international cardiovascular prevention and treatment trials (see also 'research services and vascular imaging center').

Finally the Julius Center is involved with many cardiovascular studies and trials from other departments within the Utrecht University Medical Center, especially in the area of diagnostic imaging research and the effectiveness of primary and secondary prevention.

Infectious Diseases

Infectious diseases research at the Julius Center is primarily concerned with the prevention, diagnosis and prognosis of respiratory tract infections. For example, research is being carried out to establish whether or not certain patient characteristics predict for an abnormal and serious clinical progression of bronchial infections, and the consequences of this for treatment and patient advice.

Infections in patients with diabetes mellitus are also being studied: how can foot sores and amputations in patients with diabetes be prevented by the general practitioner? What is the relationship between infection and the control of diabetes? Finally projects are conducted on *heliobacter pylori* infections and associated upper abdominal complaints.

Oncology

Oncological research within the Julius Center focuses strongly on cancer in women. This research further builds on the tradition which in the past led to the setting up of 'Preventicon' for breast cancer screening, and 'Cyt-U-Universitair' for cervical smear testing.

With almost 30,000 new cases a year amongst Dutch women, cancer is a serious health threat. Yet the known causes of cancer can explain scarcely 30% of the cases encountered. The possible reason for this is that environmental and hormonal factors were previously researched without consideration being given to the genetic predisposition. Oncological research within the Julius Center is strongly directed towards the interaction between genes and the environment, for example in nutrition. Research is based on biological material originating from two large-scale population studies, namely Prospect and DOM.

Other research projects include determining the best diagnostic techniques for breast cancer (COBRA) and the integrated care given to breast cancer patients.

Mental Health

Clinical pictures such as depression and schizophrenia occur very frequently within the population and place a heavy burden on the healthcare budget. Although there are very good reasons for thoroughly investigating, for example, the genetic disposition for schizophrenia and emotional disorders, clinical epidemiological research in the area of psychiatry is also an area in which both nationally and internationally little research has been done. By combining expertise in various research fields, such as psychiatry, epidemiology and health studies, the Julius Center provides possibilities for carrying out groundbreaking research. Mental health is a relatively recent line of research within the Julius Center, which is expected to grow further with the planned appointment of a professor in epidemiology of mental health in 2003.

Miscellaneous

Several research projects do not directly relate to the core themes of research of the Julius Center. Some of these projects are initiated because they contribute to methodological development of one of the core disciplines of the Julius Center. Others have historic background, for instance because of former research environments of staff members. The policy is to complete these project but not pursue continuation for projects not belonging to the main themes, with the exception of a limited number of largely methodological projects. Most of the miscellaneous projects are, obviously, initiated from outside the Julius Center and often because of methodological expertise staff members become involved.

Research services and vascular imaging center

Research services

The Julius Center has a research services unit and infrastructure to support various scientific research projects and in particular clinical trials. The Julius Center has considerable experience in the efficient design and implementation of clinical trials. The services include research support, monitoring, data management and statistics, an outpatient research center and the vascular imaging center. The outpatient research center is equipped with the necessary facilities for carrying out clinical trials in accordance with Good Clinical Practice guidelines. Participants in various studies present here on a daily basis.

Studies are carried out at the initiative of the Julius Center or in cooperation with the pharmaceutical industry. In addition to clinical trials, population epidemiological research is also carried out here. This cluster of service activities is not only available for researchers at the Julius Center; other researchers at the Utrecht University Medical Center can also take advantage of the expertise and facilities.

Vascular imaging center

The Vascular Imaging Center (VIC) is a core laboratory facility that supports a range of vascular measurements, with the emphasis on ultrasound techniques. Since the start of the VIC in 1997, it has supported a large number of etiologic, prognostic and therapeutic vascular projects among a-symptomatic and symptomatic men and women from the general population, the outpatient clinic and the hospital using non-invasive techniques.

VIC facilitates all steps needed in a vascular project. The activities of the VIC comprise development of measurement protocols, advise on equipment, performing of actual measurements, training on site and certification, continuous quality assurance and quality control programs during the study, quantitative QC/QA, reading of stored images, data management, statistical analyses and scientific reporting. All activities are performed according to GCP guidelines, and documented 'standard operation procedures' are available for each procedure at the VIC, including the IT-procedures.

For all supported measurements the VIC provides training and certification of technicians for the protocols involved. Training can be given in Utrecht and on-site using the equipment of the participating center.

The supported measurements include:

- subclinical atherosclerosis
- retinal vascular characteristics
- fat distribution

EDUCATION

Overview

Participation in numerous educational programs covering various aspects of health sciences or primary care is core-business of the Julius Center whose two main themes are research and education. Combined research and educational tasks guarantee teaching at high - up-to-date - level in all disciplines. The Center is, among others, responsible for the specialization of medical doctors into GP's, a three year vocational training program. Furthermore the Center houses the only Dutch graduate program for nursing science. The Center also actively participates in new educational developments such as the ambitious undergraduate medicine program of the UMC Utrecht that started in 1999 (CRU'99) which is based on interdisciplinary problem-oriented learning. The majority of educational programs are provided in co-operation with other divisions within or outside the Utrecht University Medical Center. Education for the benefit of researchers at the Julius Center takes place by means of participation in recognized research schools such as the Netherlands Institute for Health Sciences (NIHES) (www.nihes.nl), Infection & Immunity (www.eijkmanschool.org), Psychology and Health (pandh.fss.uu.nl), and Imago (www.imago.uu.nl).

	Clinical Epidemiology	Public Health /MTA	General Practice	Nursing Science	Nutritional Sciences
Undergraduate education					
Bachelor Bio Medical Sciences	x				
Medical School (see also graduate education)	x	x	x	x	x
Graduate education					
Medical School	x	x	x	x	x
MSc Nursing Science				x	
Postgraduate education					
General Practice Vocational Training			x		
Graduate Schools (Nihes, Imago,I&I, P&H)	x	x	x		
Postacademic education					
Advanced training in Public Health		x			
Advanced training in General Practice			x		

Bachelor Biomedical sciences

Description

In 2002 the Bachelor Master (BaMa) structure has been implemented for Biomedical sciences. In the Bachelor phase staff members of the interfaculty Institute of Risk Assessment Sciences (IRAS), with combined appointment at the Julius Center and the faculty of veterinary medicine, are responsible for the coordination of a four-week course on epidemiology.

Course information

BMS-bachelor (course names in dutch)	number of students	year in curriculum	discipline*	coordination / participation
Epidemiologie	93	1st year	CE	coordination

* Discipline: Clinical Epidemiology (CE)

Output 2002

Number of students

See table above.

Medical school

Description

The medical curriculum is a continuous six year educational program without a distinction in undergraduate and graduate phase). The curriculum has been completely renewed in 1999 to promote problem based learning (CRU'99). In 2002 we have reached the fourth year of CRU'99 and the fifth and sixth year are being developed. In September 2002 the fourth year courses of the late curriculum were started for the last time. In September 2003 all students of the old curriculum will be in their apprenticeships or otherwise will switch to CRU'99. All disciplines of the Julius Center coordinate and/or participate in courses of the new curriculum.

Course information

CRU '99 (course names in dutch)	number of students	year in curriculum	discipline*	coordination / participation
Oriëntatie geneeskunde	312	1st year	PH/GP	coordination/part.
Stofwisseling	312	1st year	DT	participation
Klinisch lijn onderwijs	312	1st year	GP	coordination
Patiënten volg programma	312	1st year	GP/NS	coordination/part.
Patiënten volg programma	312	2nd year	GP/NS	coordination/part.
Sofwisseling 2	312	2nd year	GP	participation
Groei en ontwikkeling	312	2nd year	DT	participation
Interpretatie klinisch wetenschappelijk onderzoek	288	3rd year	CE/HAG	coordination/part.
Keuzeblok gezondheidsrecht	75	3rd year	PH	coordination
Keuzeblok zorgmanagement	75	3rd year	PH	coordination
Keuzeblok voeding: curatief of preventief	75	3rd year	DT	coordination
Determinanten van ziekte	288	4th year	GP	participation
Currently being developed				
Geneeskunde en maatschappij	288	5th year	PH/GP	coordination/part
Co-schap sociale geneeskunde	288	5th year	PH	coordination
Keuzeonderwijs 'systematisch literatuuroverzicht'	?	4th/5th year	CE	coordination
Co-schap huisartsgeneeskunde	288	5th year	GP	coordination
Keuzeonderwijs 5e en 6e jaar CRU'99 in ontwikkeling	?	5th/6th year	All	coordination

* Disciplines: General Practice (GP), Clinical Epidemiology (CE), Nursing Science (NS), Nutritional Sciences, (Dietetics, DT), Public Health/MTA (PH)

Output 2002

Number of students

See table above.

Papers

- Damoiseaux, RAMJ, Slegers LJP, Rutten GEHM. Samenwerkingsverbanden in de eerstelijnszorg rondom problempatienten: eerste ervaringen met een nieuw keuzeco-assistentenschap huisartsgeneeskunde. TMO 2002; 21: 131-5

MSc Nursing Science

Description

In 2000, a Master of Science degree for the program Health Sciences was established at the Utrecht University. Nursing Science is the first major field of study to be offered within the program Health Sciences. Physiotherapy Science was added as a major field of study in 2002. Both fields of study are taught part-time, over a 4 year time period. The Nursing Science field of study is developed and coordinated by the discipline group Nursing Science, that is part of the Julius Center.

Course information

Health Sciences	nr	ects
Field of study: Nursing Science		135
Academic Skills	course 0.0	7.5
Philosophy and Nursing Theories	course 1.1	7.5
Research Methods 1	course 1.2	7.5
Nursing in Context	course 1.3	7.5
Statistics 1	course 1.4	7.5
Statistics 2	course 2.1	7.5
Management of Nursing Innovations 1	course 2.2	7.5
Research Methods 2	course 2.3	7.5
Advanced Nursing Practice 1	course 2.4	7.5
Quality of Care	course 3.1	7.5
Advanced Nursing Practice 2 (specialization)	course 3.2	7.5
Management of Nursing Innovations 2 (spec.)	course 3.2	7.5
Advanced Nursing Practice 3 (spec.)	course 3.3	7.5
Management of Nursing Innovations 3 (spec.)	course 3.3	7.5
Research Methods 3	course 3.4	7.5
Elective course	course 4.1	7.5
Master Thesis	course 4.2 – 4.4	15

Output 2002

Number of students:

- Started 2002: 46
- Graduated: 10 Maastricht students¹
- Total number: 200 students (144 Utrecht students + 56 Maastricht students¹)

Other relevant information

- An additional course Nursing Science for HBO-bachelor students in nursing was developed.
- Preparations were made for the visitation of the master course Nursing Science in the year 2003, for example the writing of a self-evaluation study.

¹ From 1990 – 2000, the Utrecht University offered a master program in Nursing Science in collaboration with the Maastricht University. There are still a number of Maastricht students in Utrecht finishing this collaborative master program, and graduating from the Maastricht University.

General practice vocational training

Description

The Julius Center houses one of the eight General Practice Vocational Training Courses in the Netherlands. It admits 60 junior doctors a year. It is a three-year course and consists of a two-year training in general practices and one year in hospitals, healthcare institutes and nursing homes. To serve the needs of the course there is a close cooperation with 155 general practitioners, 4 peripheral hospitals, 18 nursing homes and 15 regional institutes for outpatient mental healthcare. The GPs in training attend the department of general practice for tuition one day a week.

Course information

Each of the three training years has its own characteristics. In the first year the emphasis is on obtaining and sharpening skills within general practice. In the second year, particular attention is paid to the cooperation between the GP, specialist, Regional Institute for Outpatient Healthcare and the nursing home. In the third-year, the acquisition and integration of in-depth knowledge takes center stage. Every effort is made to increase the expertise and quality of future GPs.

Output 2002

Number of students

In only a few years the capacity has been increased from 72 to a 180 trainees 2002.

- Number of students that finished their GP training in 2002: 51
- Number of students that started their GP training in 2002: 65

Other relevant information 2002¹

In 2002 focus was on professionalization of the management structure of the GP vocational training course. Tasks have been delegated from the manager to the adjunct manager, year coordinators, GP practice coordinator and the education coordinator. A work conference in March 2002 led to a new organization structure that was implemented during the course of 2002.

The increase in capacity of the GP vocational training alongside the flourishing of the different sections within the Julius Center led to increasing accommodation shortage. Therefore several parts of the GP training, in particular the teaching locations, were moved to a different location in the Utrecht University area (de Uithof). The resulting separation of staff and support with the actual education threatened the quality, therefore in November 2002 the decision was made to temporarily move the training course organization and personnel to a single location in de Bilt, which will be effectuated in January 2003.

¹ For more information see also www.juliuscenter.nl/huisartsopleiding or 'Jaarverslag 2002 van de Huisartsopleiding Universitair Medisch Centrum Utrecht'.

Graduate schools (Nihes, ImagO, I&I, P&H)

Description

The Julius Center participates in four graduate schools, formally accredited as such by the Royal Netherlands Academy of Science (KNAW). This means that staff members and PhD students participate in the research and educational programs of these schools. Participation in more than one school occurs frequently, based on subject and methodological setup of someone's research. Three of the schools have their chair in Utrecht: the graduate school for biomedical imaging (ImagO), the Eijkman-Winkler graduate school for infection and immunity (I&I), and the graduate school for Psychology & Health (P&H). One has its chair in Rotterdam: the Netherlands Institute for Health Sciences (Nihes). Both in Nihes, ImagO and I&I staff members of the Julius Center are responsible for part of the courses.

Course information

Policy is that all internal PhD-students of the Julius Center follow in part or in whole the educational program of a graduate school, in majority Nihes. In general the educational programs of the schools can be combined such that courses followed at one school may in part substitute the course program for the other school. Therefore allowing students to participate in two schools without investing double time. Thereby students, dependent on their subjects may optimize their individual educational program.

Output 2002

Number of students

The 25 PhD-students that finished their thesis in 2002 participated in the following schools:

- Nihes: 15 students (12 intern, 3 extern)
- ImagO: 12 students (10 intern, 2 extern)
- I&I: 2 students (2 intern)
- P&H: 2 students (1 intern, 1 extern)

Note1: PhD student may participate in more than one research school.

Note2: External PhD students may participate in research schools in which the Julius Center does not participate, these data are not available.

Table: participation in research schools of PhD-students 2002

Name	Date of PhD-degree	In- / extern	Title	Researchschool			
				IMAGO	NIHES	P&H	I&I
Bosch, M.A.A.J., van den	22-1-02	intern	Peripheral arterial occlusive disease in young women	X	X		
Strien, R.T., van	29-1-02	extern	Of mite and man. Epidemiological studies on determinants and effects of exposure to housedust and mite allergens				
Weijnen, C.F.	7-2-02	intern	Helicobacter pylori infection and dyspepsia in primary care. Studies on diagnosis and guideline implementation				X
Ossewaarde, M.E.	8-2-02	intern	Estrogens and cardiovascular disease: studies on risk and risk factors in postmenopausal women	X	X		
Koopman, L.P.	28-2-02	extern	Risk factors for the development of atopic disease in infancy and early childhood				
Venrooij, F.V., van	1-3-02	intern	Metabolic aspects of lipid lowering therapy in patients with type 2 diabetes mellitus		X		
Brouwer, D.H.	11-3-02	extern	Assessment of occupational exposure to pesticides in Dutch bulb culture and glasshouse horticulture				
Bouvy, M.L.	18-3-02	extern	Drug therapy in heart failure: studies on prescribing, drug induced problems and compliance		X		
Klei, W.A., van	16-4-02	intern	Preoperative evaluation. Risk management and implementation aspects	X	X		
Jedelloo, S.	8-5-02	intern	Quality of needs assessment and the provision of assistive devices and services for people with a functional disability				X

Pijnappel, R.	17-5-02	extern	Diagnosis of nonpalpable breast lesions	X
Erkens, J.A.	21-5-02	intern	Pharmacotherapy in type 2 diabetes mellitus patients: beyond glycaemic control	X X
Meer, G., de	27-5-02	extern	Airway responsiveness to direct and indirect stimuli. A population based approach	
Dijkstra, K.	28-5-02	intern	Prediction of spontaneous preterm birth	X
Bloemenkamp, D.G.M.	31-5-02	intern	Infections and peripheral arterial disease in young women	X X
Nederkoorn, P.J.	14-6-02	intern	Non-invasive imaging of carotid artery stenosis	X X
Bleeker, S.E.	11-9-02	extern	Children with fever without aparent source: diagnosis and dilemmas	X
Rosendal, H.	24-9-02	extern	Comparative cohort studies in transmural care. Three cases of structurally embedded practice in the Netherlands	X
Dijk, D., van	22-10-02	intern	Outcomes after offpump coronary bypass surgery	X X
Geubels, E.	29-10-02	extern	Prevention of surgical site infections	X
Spoelstra, J.A.	6-11-02	intern	Type2 diabetes mellitus treatment strategies in primary care: Utrecht Diabetes Epidemiology Studies	X X
Keinan – Boker, L.	12-11-02	intern	Phytoestrogens and breast cancer	X X
Oren, A.	14-11-02	intern	Young adults and their arteries. Studies on development of vascular damage	X X
Hel, O.L., van der	6-12-02	intern	Gene-environment interaction in breast and colorectal cancer risk	X X
Hof, S., van den	6-12-02	extern	Sero-epidemiology of maesles, mumps and rubella in the Netherlands	
Hoogwerf, L.J.R.	17-12-02	extern	Innovation and change in a rehabilitation unit for the elderly through action research	

Other relevant information 2002

June 2002 NIHES obtained continuation of accreditation by the Royal Netherlands Academy of Science (KNAW) for the next five years.

Advanced training in public health

Description

Postacademic training for health care professionals.

Course information

In 2002 the Julius Center organized 5 courses, covering in total nine training days, for health care professionals

Course title (Dutch)	Number of students	Date
Gezondheidsrecht	33	January-March 2002, 9 evenings
Opname en ontslagproblemen op IC afdelingen in Nederland	120	17 January 2002, 1 day
Regionale Indicatieorganen	240	6,20,27 March 2002, 3 afternoons
Spoedeisende zorg	180	21 June 2002, 1 day
Moderne patientenzorg in Nederland	160	6 December 2002, 1 day

Output 2002

Number of students

See table above.

Advanced training in general practice

Description

Post academic training for general practitioners (postacademisch huisartsenonderwijs, PAOH). The focus is on up-to-date information for GPs, evidence based and relevant for general practice.

Course information

In 2002 the Julius Center organized nine training days for GPs in the Netherlands.

The following table shows the courses (titles in Dutch) for 2002:

Course title (Dutch)	Date
Geriatricie	Friday, 1 February 2002
Kindergeneeskunde	Thursday, 28 February 2002
Allergie	Thursday, 14 March 2002
Acute geneeskunde en palliatieve zorg	Friday, 19 April 2002
Sportgeneeskunde	Friday, 17 May 2002
Gynaecologie en seksuologie	Thursday, 13 June 2002
Gastro-enterologie revisited, een update voor de huisarts	Friday, 20 September 2002
Vijfde Utrechtse diabetesdag	Thursday, 31 October 2002
Problemen met de vaten	Thursday, 28 November 2002

Output 2002

There is an average participation of 100-150 GPs.

PATIENT CARE

Dietetics

The Julius Center is contributing to patient care since Nutritional Sciences and Dietetics joined the Center in 2002.

Dietetics provides patient care for hospitalized patients and out patients at the UMC Utrecht (including the children's hospital Wilhelmina Kinderziekenhuis) and the rehabilitation center 'de Hoogstraat' in Utrecht. Normal, specialized and high level innovative patient care is the main task. The specialized and innovative care, like developing dietary treatment strategies in cardiovascular diseases, oncology, metabolic disorders, epilepsy, cystic fibrosis, malnutrition, eating disorders and obesity, are connected to the scientific themes of the UMC Utrecht. Development of evidence based dietary guidelines is also a major goal.

Teaching other professionals is common practice. In 2002 several guest lectures have been presented to nurses, dietitians, doctors, physical therapists and students of these disciplines.

Education and research performed by the nutritional sciences and dietetics group are related to patient care.

There is special interest in the life-style related health problems like obesity, cardiovascular diseases and secondary prevention in oncology.

Care provided in 2002 by the section of dietetics

	1st visits *	Control visits*	Consult units**	Management agreement consult units**
Team 1	1804	5563	10107	9105
- outpatients	664	2385	4989	5230
- hospitalized	1140	3178	5118	3875
Team 2	1987	5752	9736	8445
- outpatients	746	1222	3486	3000
- hospitalized	1241	4530	6250	5445
Team 3			6481	5390
- outpatients			4546	3665
- hospitalized			1935	1725

*Except 'Wilhelmina Children's Hospital' and 'de Hoogstraat'

**1 consult unit = 30 minutes, except 'de Hoogstraat'

BUSINESS AND OPERATIONS

Operational support

The core activities of the Julius Center, research, education and patient care, are supported by a number of support services.

Research may be supported by project management, the vascular image center and data-management. Project management involves the organization and conduct of patient-related studies. This may concern small studies with less than 20 patients, but also very large studies, including more than thousands of patients from various centers and various countries. Expertise concerning the measurement of vascular parameters (as collected in patient related studies) is bundled in the vascular imaging center. Expertise concerning data-collection and data-management is concentrated within the data-management department.

Management is supported by a financial department and P&O department. The financial department manages all operational support and handles all contracts and financial matters. The P&O department supports the management concerning personnel and handles all procedural matters. The ICT department supports all personnel and supports all departments with respect to computers and software.

PERSONNEL AND FINANCES

Personnel, figures

ABSOLUTE NUMBERS	Scientific	Support	Care	TOTAL
Male	77	27	1	105
Female	93	114	32	239
TOTAL	170	141	33	344

FTE	Scientific	Support	Care	TOTAL
Male	47,84	22,34	1	71,18
Female	70,62	81,24	23,03	174,89
TOTAL	118,46	103,58	24,03	246,07

Average FTE	Scientific	Support	Care	
Male	0,63	0,83	1	
Female	0,74	0,73	0,73	

Personnel, listing

CLINICAL EPIDEMIOLOGY

Professors

Prof. van der Graaf, Y. MD, PhD
Prof. Grobbee, D.E., MD, PhD
Prof. Hoes, A.W., MD, PhD (also GP)
Prof. Brunekreef, B., PhD

Coordinating staff

Kluijtmans, M., PhD

Senior staff

Algra, A., MD, PhD
Bots, M.L., MD, PhD
Noord, P.A.H. van, MD, PhD
Peeters, P.H.M., MD, PhD
Schouw, Y.T. van der, PhD

Staff

Berkel, T.F.M. van, MD, PhD
Bom, J.G. van der, MD, PhD
Burger, H., MD, PhD
Geerlings, M.I., PhD
Gils, C.H. van, PhD
Heijden, G.J.M.G. van der, PhD
Kalmijn, S., MD, PhD
Kuck - Koot, V.C.M., MD, PhD
Moons, K.G.M., PhD
Stolk, R.P., MD, PhD
Uiterwaal, C.S.P.M., MD, PhD

Junior staff

A, D.L. van der, MSc
Ariesen, M.J., MSc
Asselt, K.M. van, MD
Atsma, F., MSc
Biesheuvel, C.J., MSc
Brouwer, C.N.M., MD
Brussee, J.E., MSc
Bunck, M.C.M., MSc
Dijk, J.M., MD
Duijnhoven, F.J.B. van, MSc
Elias, S.G., MD
Erkens, J.A., MSc
Gorp, M. van, MD
Hel, O.L. van der, MSc
Houten, M.E. van, MD
Keinan - Boker, L., MD
Klein, W.M., MD
Koek, H.L., MD
Koerselman, J., MD
Kok, L., MD
Koomen, I., MD
Kreijkamp - Kaspers, S., MD
Krevel, C.A.M. van, MD
Lankveld, M.A.L. van, MD
Muis, M.J., MD
Muller, T.H., MD
Onland - Moret, N.C., MSc
Oren, A., MD
Raamt, A.F. van, MD
Sierksma, A., MSc
Spoelstra, J.A., MD

Straatman, M.N., MSc
Tanis, B.C., MD
Trijp, M.J.C.A. van, MD
Vos, L.E., MD
Witte, D.R., MD
Kok, H.S., MD

Support

Batenburg, T.A.J. van
Broeders, C.A.E., MSc
Meegdes - Kuiperij, H.
Zanten - Nout, A. van

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Prof. Verheij, Th.J.M., MD, PhD

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Numans, M.E., MD, PhD
Quartero, A.O., MD, PhD
Rovers, M.M., PhD
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Wit, N.J. de, MD, PhD

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Kelder, J.C., MD
Welschen, I., MSc
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Weijnen, C.F., MD

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Kwee, S.K., MSc
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Rikkers, G.M., MSc
Smulders, M.M.Th., MSc
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Tiesema, M., MSc
Truijens, L., MSc
Vermeulen, M.I., MSc
Zwart, D.L.M., MSc
Zwart, S., MD, PhD

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Hoeven - van Vriesland, I.A. v den
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Jedeloo, S., MSc
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Villevoeye, D.P.J.

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Straaten, M.C. van

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Hooft - Leemans, G. van der, MSc
Horenberg, A.H., MSc
Kars, M.C., MSc
Kol, E.A.H.M.R. van, MSc

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Megens, Y.A.C.T., MSc
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Moes, H., MSc
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Schoonhoven, L., MSc
Swieten - Duyfjes, E. van, MSc
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Eussen, S.A.
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Schipperheijn - Martin, A.F.
Verbaan, E.C.
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Zweers - de Groot, J.A.M.

Supporting staff

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Schipper, A.
Winkelman, L.

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Heest - Cooman, P.D. van
Hiemstra, G.K.
Hollander - Kraaijeveld, F.M.
Hurk, Th.A.M. van den
Janse, L.C.M.
Jonge - Wierda, J.I. de
Jongh - Kampherbeek, E.H. de
Kemp, K.
Kempen - Schipper, E.A. van
Leermakers - Vermeer, J.M.P.
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Michelsen - Huisman, A.D.
Remeijnse - Meester, T.A.W.
Renken - Terhaardt, J.W.M.
Runia, S.
Schreurs, J.C.M.

Steenhagen, E.
Stijvers - de Leeuw, W.E.
Timmer, C.
Wamsteker, E.W.
Wijngaard, K.N. van den
Woestenenk, J.W.

Support

Gil, A.
Maarseveen - Hendriks, J.M. van

MANAGEMENT SUPPORT

Coordinating staff

Boerlage, P.A.

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Alibaks, R.
Horstink, G.H.M.
Kok - Kortekaas, M.G.A.
Schouten, R.B.
Wees - Ester, P.A. van

Personal and organisation

Gerritsen, H.F.
Nimwegen, M. van
Winkel, A.J.

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Meerwijk, E.L.
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Plomp, E.P.

I&A

Dieleman, K.P.
Harkema, J.C.
Nelissen, R.
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RESEARCH SUPPORT

Coordinating staff

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Project management and Vascular Imaging Center

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Berg - de Jong, A.C.J. van de
Brevet, M.
Brink, J.J. van de
Burema, A.J.
Drijvers, J.J.M.M.
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Edlinger, M., MSc
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Es - Gulinck, M.K. van, MD
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Hafkamp, M.C.
Hees, Y. van
Hemert, G.B. van
Hijman, L.E.M.
Hoorn - van Kempen, M.H. v der

Huizenga, T., MSc
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Jetses - De boer, E.
Kaptein - Waterink, J.H.
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Leeuw, M. de, MSc
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Meijer - Erberveld, M.
Meijer, R.
Meijers, G.E.P.M.
Metselaar - van den Bos, J.J.
Mooiweer - Boogaardt, D.B.
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Nijssen, K.M.
Nollen, C.Th.
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Olivier, H.
Paddenburg, D.
Pluijm - van Laar, E.
Prins, C.
Ram, E.A.M.
Ram, J.M.
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Rijswijk - Bos, A.M.
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Scholten, M.J.G.
Sikking, I.E.M.
Slothouber, B.
Sluis - Eising, S.L.
Sonsma, A.C.M.

Suiker, A.M.H.
Tims - Polderman, C.A.J.
Vendrig, L.
Vliet - Boerkamp, B.B.M. van der
Vlist, B. van der
Wiemans, R.L.L.M.
Wijnia - Lemstra, E.A.
Wilken, R.C.M.
Wisse, H.
Zeguers, V.J.M.
Zwart, L.M.

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Gouw, A.P. van der
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Leus, F.
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Maaskant, J.W.
Petersen, R.B. van
Slotboom, B.J.
Spithoven - van Leeuwen, E.H.J.
Zuithoff, N.P.A

Support

Eden, P.M. van
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Munnik, J.J. de
Verheij, F.A.
Stern - van der Heuvel, J.J.M.

Financial report

Organizations and companies providing funding

RESEARCH PROJECTS (2003)

PUBLICATIONS (2003)

PhD-theses

International publications -journal articles (international-refereed)

1.

International publications - other-

1.

National publications- journal articles

1.

National publications- other

1.

Books

Chapters in books

1.