



NETHERLANDS CANCER INSTITUTE

PRIORITIES & FIGURES 2016

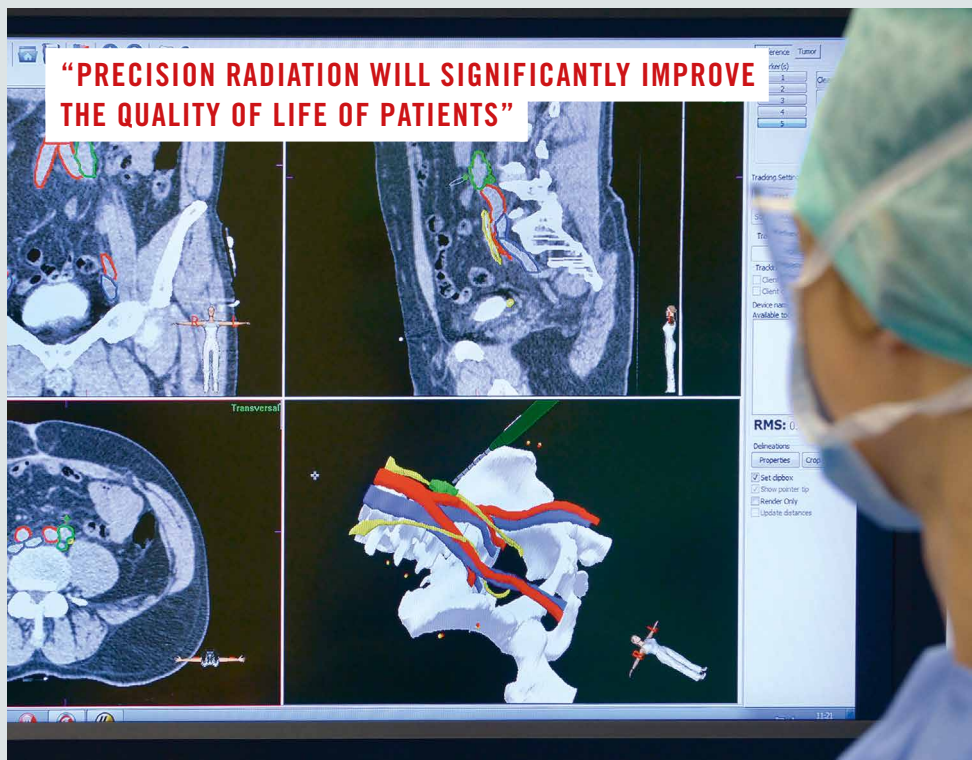


Image-guided therapy: DEVELOPMENTS CONTINUE

Executing a treatment plan using imaging techniques is called image-guided therapy. The use of imaging techniques has gained an increasingly important role in recent years in the treatment of cancer patients, within radiotherapy, surgery and interventional radiology. Images are becoming faster and sharper, allowing tumors in the operating room or radiation area to be followed with more accuracy and in real-time. The Netherlands Cancer Institute plays a leading role in the development and use of these latest techniques on a national and international level. In 2016, several significant developments took place that will further enhance the possibilities of image-guided therapy. The Netherlands Cancer Institute acquired two special devices which will provide better treatment options within

radiotherapy in the coming year. Firstly, an MRI accelerator was installed in 2016. The device combines two functions: an MRI scanner and a linear accelerator and allows tumors with lots of movement and tumors that are difficult to demarcate to be monitored during radiation and therefore to be treated with better precision. The second device is the Gamma Knife Icon. This radiation device can radiate tumors and other minor brain abnormalities with extreme precision. The device is expected to be put into use in 2017. Dr. Marcel Verheij, professor and head of the Radiotherapy Department, thinks that both devices will be of great benefit to the patients. "Precision radiation will significantly improve our patients' quality of life."

Survivorship: QUALITY OF LIFE PART OF GOOD CARE

The Netherlands Cancer Institute considers support and rehabilitation during and after the cancer treatment as a natural part of good care. In that context, preparations were made in 2016 for the opening of the Center for Quality of Life: a center for cancer rehabilitation and supportive care where patients can go for multidisciplinary rehabilitation, counseling and psychosocial support in coping with cancer. In the Psychosocial Research and Epidemiology Department (PSOE), professor of epidemiology Dr. Lonneke van de Poll-Franse has been

appointed as group leader. She is conducting research at the Netherlands Cancer Institute into the health problems of survivors, people that have been treated for cancer. Her research focuses on whether it is possible to reduce the long-term effects of the treatment of cancer. Lonneke van de Poll-Franse: “We do not yet understand why some people manage to live a relatively healthy life after cancer, while others suffer from various health problems after their illness and treatment. We are going to investigate this further.”



“WE WANT TO UNDERSTAND WHY SOME PEOPLE LIVE A RELATIVELY HEALTHY LIFE AFTER CANCER AND OTHERS DON’T”



“WE ARE INVESTIGATING FACTORS THAT CAN HELP PREDICT WHICH PATIENTS WILL RESPOND TO IMMUNOTHERAPY.”

Immunotherapy: EXPANDING AND IMPROVING KNOWLEDGE

Immunotherapy is a treatment that makes it possible for your body's own immune system to destroy the cancer cells. The Netherlands Cancer Institute is a pioneer in the field of immunotherapy, partly due to the rapid exchange between care and research. After the first breakthrough and application of immunotherapy in 2011, the researchers at the Netherlands Cancer Institute have spent the last few years working on expanding on the existing knowledge and improving the effectiveness and survival rate of immunotherapy. For example, in 2016 various studies were started into the effectiveness of immunotherapy: on cancer types in which immunotherapy is already commonly used, but also on cancer types where immunotherapy

is not yet known to be a standard form of treatment. Immunotherapy is a treatment that cannot yet be used for every tumor type. At the Netherlands Cancer Institute, immunotherapy is used for asbestos cancer, cervical cancer, bladder cancer, breast cancer, ovarian cancer, Hodgkin's lymphoma, hypopharyngeal cancer, throat cancer, lung cancer, melanoma, Merkel cell carcinoma, oral cavity cancer, mouth cancer, nasopharyngeal cancer, kidney cancer, thyroid cancer, laryngeal cancer, tongue cancer, and vulvar cancer. The Netherlands Cancer Institute sees knowledge transfer as a mission and organized the National Cancer Immunotherapy Symposium in 2016, with speakers from home and abroad.

Personalized medicine: TARGETED CUSTOMIZED TREATMENT

Thanks to scientific research, we know that every cancer is different and that each tumor has a unique combination of DNA abnormalities. As a result, the effect of a treatment is not the same for everyone. The Netherlands Cancer Institute advocates, where possible, for a targeted and customized treatment. In 2016, progress was made making this possible for more patients. The results of the European MINDACT study were published, a study among breast cancer patients run in the Netherlands by Dr. Emiel Rutgers, a professor at the Netherlands Cancer Institute. The MINDACT study shows that the MammaPrint, a test that can predict which women with early stage hormone-sensitive breast cancer require additional chemotherapy, can be more widely used than was the case up till then. The MammaPrint was developed over ten years ago at the Netherlands Cancer Institute by Dr. René Bernards and

Laura van 't Veer and can avoid unnecessary chemotherapy for 2,500 patients per year. In 2016, professor René Bernards and his team also discovered that colorectal cancer tumors with a mutation in the BRAF gene are highly sensitive to the chemotherapy agent Vinorelbine. The DRUP study also began in 2016, investigating whether patients with certain genetic flaws may benefit from a new application of existing drugs. DRUP stands for Drug Rediscovery Protocol. The Netherlands Cancer Institute coordinates the study on behalf of the Center for Personalized Cancer Therapy (CPCT), the national network of hospitals working on a customized treatment. Professor and one of the main researchers Dr. Emile Voest: "With DRUP, we are another step closer to our ultimate goal of finding a customized therapy for the patient on the basis of the tumor's DNA abnormalities.



"ANOTHER STEP CLOSER TO OUR ULTIMATE GOAL OF A CUSTOMIZED THERAPY FOR THE PATIENT"

Prizes and special grants

Many researchers from the Netherlands Cancer Institute received a prize or a grant again this year. Their commitment and expertise is

recognized nationally and internationally. We are proud of the commitment and expertise of our employees. A selection.

AVL PRIZE 2016

Fabricio Loayza-Puch, from the Reuven Agami research group, received the AVL award 2016 for his research into the metabolic dependencies of tumors.

ERC AWARDS

Researchers Bas van Steensel and Jacques Neefjes have received an ERC Advanced grant of 2.5 million euros each.

VENTURE CHALLENGE

Researcher Jasper Nijkamp and the surgeons Koert Kuhlman and Theo Ruers received the venture challenge award for their startup company with which they will develop better operating techniques.

KWO PRIZE

Researcher Sanne Schagen has received the KWO research award from the Dutch Cancer Society (KWF). The prize includes a grant of 2 million euros for research.

OEUVRE PRIZE

Nursing specialist Erik van Muilekom received the Oeuvre Award from the Society for Nursing and Caregivers Netherlands Oncology (V&VN Oncologie).

NATIONAL ACADEMY OF SCIENCES USA

Anton Berns, researcher and former chairman of the Board of Directors, has been appointed as a foreign member of the Academy.

KWF AND PINK RIBBON

Researchers of the Netherlands Cancer Institute received 4 grants from the Pink Ribbon Foundation and 29 grants from the Dutch Cancer Society (KWF) for research.

WILLIAM B. COLEY AWARD

Researcher Ton Schumacher received the William B. Coley Award, awarded by the American Cancer Research Institute.



Antoni van Leeuwenhoek Foundation

The Antoni van Leeuwenhoek Foundation raises funding for research at the Netherlands Cancer

Institute. It does this in close cooperation with the Dutch Cancer Society (KWF).

DONATIONS IN 2016

2,800,000 EUROS

€1,400,000
FROM LARGE DONORS

€200,000
FROM STRUCTURAL DONORS

€741,000
FROM ACTIONS

OF WHICH:

€130,000
FROM COMPANIES

€300,000
FROM
INHERITANCES AND
FOUNDATIONS

Comprehensive Cancer Center

The Netherlands Cancer Institute wants to make a significant contribution to solving the cancer problem in the 21st century. Our ambition is to be among the top 10 of the Comprehensive Cancer Centers in the world. Here, patients arguably get the best care and service, practice-changing research is conducted and high-quality training offered.

OUR CORE TASKS:

- **PATIENT CARE**
- **RESEARCH**
- **EDUCATION AND SHARING KNOWLEDGE**

The Netherlands Cancer Institute works together with (academic) hospitals, universities, research institutes and patient organizations, both nationally and internationally.

FORMS OF (INTER) NATIONAL COOPERATION

- Exchange of knowledge
- Joint research
- Consultants & second opinions

EXAMPLES:

- Cancer Core Europe
- Center for Personalized Cancer Treatment (CPCT)
- University of Twente
- University of Leiden
- UMC Utrecht
- Hubrecht Institute

**RESEARCH INSTITUTE
(THE NETHERLANDS CANCER INSTITUTE)**
+
**SPECIALIZED CLINIC
(ANTONI VAN LEEUWENHOEK HOSPITAL)**
=
**ANTONI VAN LEEUWENHOEK
COMPREHENSIVE CANCER CENTER**



Patient care

The Netherlands Cancer Institute works to provide the best care for people with cancer every day. Multidisciplinary teams of surgeons, oncologists, radiotherapists and nurses are continuously searching for the best treatment plans for each individual patient. Honest information about the different forms of treatment, the chance of success and the consequences, are important starting points. The Institute finds it important to choose a treatment or a combination of treatments in the hospital together with the patient. Therefore, each situation is individually evaluated as to the treatment options and care that can be offered,

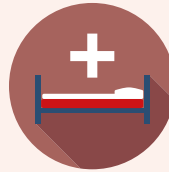
and the pros and cons of these. The Netherlands Cancer Institute understands that each patient bases the choice of treatment on various factors, such as the risks and side effects of the treatment, personal lifestyle, work and wishes. From a driving ambition to understand cancer and improve the treatment of it, the Institute combines cancer care with high quality and innovative research. As a result, the latest findings and techniques are directly available to patients. Conversely, experiences in daily care give the research direction. This creates new and better treatments that are immediately applicable in practice.



36,506

PATIENTS TREATED

Existing patients	24,884
New Patients	11,622
Growth of new patients	5.2%



220

BEDS



7,828

PATIENTS ADMITTED



11

RADIATION DEVICES



133,468

OUTPATIENT VISITS



16

CERTIFICATIONS AND ACCREDITATIONS

Research

Our scientific research covers a wide range, from fundamental biological questions to translational and clinical research, epidemiology and psychosocial research. Through this broad

spectrum, new findings from the laboratory can be further developed into improved treatment methods for patients.



42

PROFESSORS



758

PUBLICATIONS IN SCIENTIFIC MAGAZINES



240

CLINICAL STUDIES

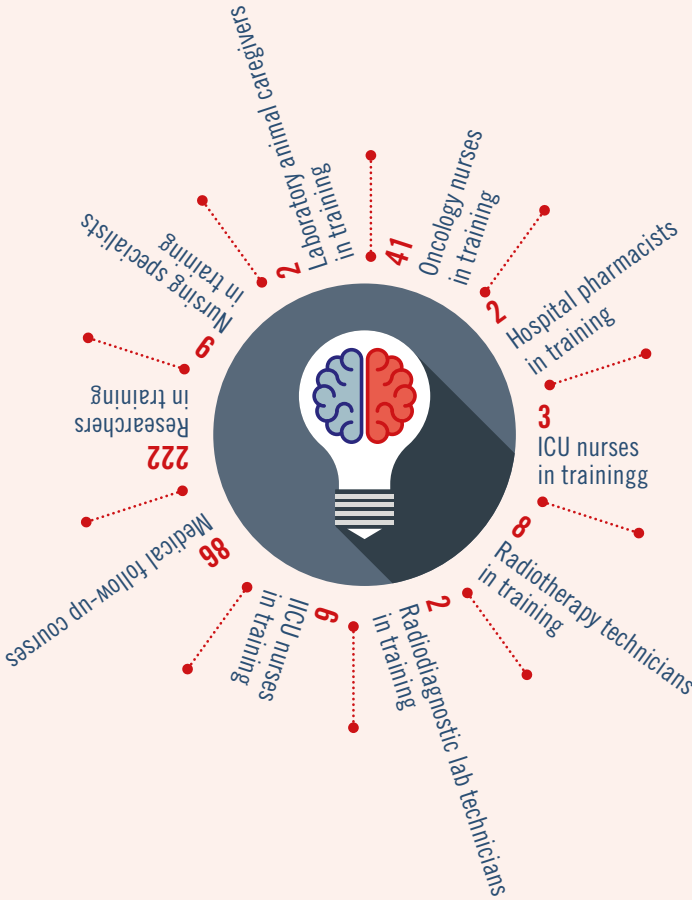
2,386

PATIENTS TOOK PART IN AN
EXPERIMENTAL TREATMENT IN 2016

Education and sharing of knowledge

The third core task of the Netherlands Cancer Institute is to increase and share knowledge about oncology. We offer oncology courses, we share our knowledge with collaborative hospitals in the form of consultancy services and we organize symposia.

EDUCATION AND TRAINING

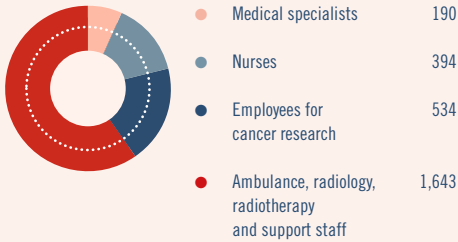


Employees

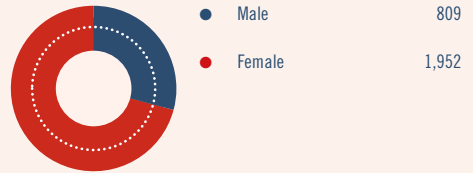
For a successful fight against cancer, the Netherlands Cancer Institute depends on decisive and committed employees. Our

success is also due to our 2761 motivated and passionate colleagues and 150 volunteers.

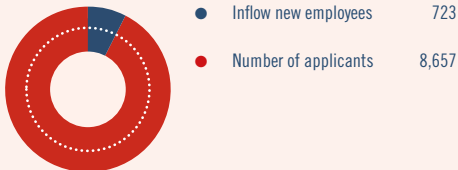
NUMBER OF EMPLOYEES



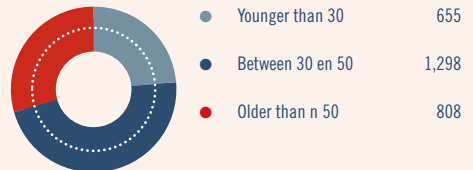
MALE/FEMALE RATIO



INFLOW NEW EMPLOYEES



AGE STRUCTURE



NATIONALITIES



There are 64 different nationalities working at the Netherlands Cancer Institute.

Financial

The financial position of the Netherlands Cancer Institute is stable. We closed the year 2016 on a positive note. Through cooperation with the Dutch Cancer Society (KWF) we are assured of

structural funding for fundamental research. This is of great importance to the progress of high-quality research into the emergence and treatment of cancer.

TOTAL TURNOVER IN 2016

331,4 MILLION EUROS

HOSPITAL REVENUE

196,2 MILLION EUROS

FROM HEALTH INSURANCE COMPANIES

25,1 MILLION EUROS

FROM THE GOVERNMENT (MINISTRY OF HEALTH WELFARE AND SPORT - VWS)



REVENUE RESEARCH INSTITUTE

17,3 MILLION EUROS

FROM THE GOVERNMENT
(MINISTRY OF HEALTH WELFARE
AND SPORT - VWS)

11,1 MILLION EUROS

PROJECT GRANTS FROM THE DUTCH
CANCER SOCIETY - KWF

16,1 MILLION EUROS

GRANTS FROM THE DUTCH CANCER
SOCIETY - KWF

33,1 MILLION EUROS

ON PROJECT GRANTS

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SOCIAL MEDIA

www.avl.nl
www.nki.nl
www.avlfoundation.nl
www.werkenbijavl.nl
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www.youtube.com/user/NKIAVL

CONCEPT & DESIGN

Room for ID's

PHOTOGRAPHY

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COMPOSITION AND EDITING

Marketing, Communication & Fundraising
Antoni van Leeuwenhoek

NETHERLANDS
CANCER
INSTITUTE



ANTONI VAN LEEUWENHOEK