

# STRATEGY23

Technology & Dedication



**Erasmus MC**  
University Medical Center Rotterdam



# STRATEGY23

## Technology & Dedication

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# ACKNOWLEDGEMENTS

Strategy23 is the result of the combined efforts of many different members of Erasmus MC staff. Our staff have worked with tremendous enthusiasm on the formulation of the strategy ever since the ‘Strategy Days’ held in November 2017 (right at the start of the planning process), when we identified seven topics as forming the foundations of our new strategy. It has been extremely gratifying to see so many staff willing to join the seven discussion groups and share their knowledge and experience with their fellows. The *Green Team* of young professionals also supplied plenty of useful input. And of course, the members of our advisory and representative bodies, the heads of department and directors, the staff who attended four staff meetings, our readers and the members of the Supervisory Board all proved of tremendous value in giving their views both on the contents of the strategy and on the planning process.

We would like to thank all those involved for their sterling work. Special thanks are due to the seven ‘topic leaders’ and ‘topic secretaries’. With their boundless energy and enthusiasm, they steered their discussion groups towards their destinations.

Rotterdam, January 2019

Executive Board

Ernst Kuipers, David Voetelink, Hans van Leeuwen and Joke Boonstra

## STRATEGY23

### Technology & Dedication



Technology & Dedication are the two guiding principles underlying Strategy23 and are at the core of our goals. The word ‘dedication’ describes the way in which our staff perform their work, with time and consideration for their patients and each other, passion for scientific research and concern for the interests of their students. They do this against a backdrop of rapid changes in technology. Our strategic ambitions embrace both these aspects: people and technology, healthcare and innovation, and teamwork and impact.

# 1 WE ARE ERASMUS MC

**We are the people of Erasmus MC. Day in, day out, our staff, volunteers and students work with passion and dedication to achieve everything we stand for: safe, first-rate healthcare for patients with complex issues, unusual conditions or acute needs. But we also stand for top-quality teaching that attracts ambitious, inquisitive and talented students and seeks to answer the healthcare questions of tomorrow. And we stand for world-class scientific research that bolsters our understanding of diseases and disorders and helps to predict, treat and prevent them.**

Together, we are Erasmus MC. Our roots lie in Rotterdam, a city and port of international standing. We are the most innovative university medical center in the Netherlands and one of the world's leading centers of scientific research. We need vision, ambition, courage and – above all – perseverance to maintain this status.

*Our mission statement expresses our guiding principles:*

***'We are committed to achieving a healthy population and pursuing excellence in healthcare through research and teaching.'***

*Our ambition stems from our vision:*

***'To be recognised as a leading innovator in healthcare.'***

*Our three core values encapsulate our approach:*

***'Responsible, connecting and enterprising.'***

## Strategy18 ▶ Strategy23

The adoption of Strategy23 signals the end of the Strategy18 period. A number of the goals set out in Strategy18 have been achieved, and it is now time for us to take the following step. And where we have not proved able to fully achieve certain goals, Strategy23 puts us back on course.

*Visibly Better.* This was the slogan we chose to represent Strategy18. Over the past five years, we have worked hard to show the outside world what we stand for and what we do.

### Adding more value for patients

Our new hospital, which will incorporate new systems and redesigned operating processes, creates new opportunities for supplying our patients with greater value. We have set up a comprehensive quality assurance system for our patient services. We are a world leader in value based healthcare and will do our best to maintain this status, now and in the new strategy period.

### Adopting a more distinctive profile

We wish to deliver a standard of healthcare as befits our status as an enterprising university medical center. This means that our focus is on treating and caring for patients with complex healthcare issues, rare disorders and complex, acute care needs. This focus makes clear to the outside world what it is that we stand for. At the same time, it underlines the need for us to strengthen our ties with our external partners. We have made good progress in this regard. We are currently (i.e. in January 2019) a member of over 200 regional partnerships, have received ministerial recognition for 60 expertise centers for rare conditions, are a member of 18 European Reference Networks and manage trauma care in the southwest of the Netherlands.

Thanks to the efforts of our Technology Transfer Office and our Research Development Office, our scientific research has become both more visible and more socially relevant. The launch of new degree courses in Nanobiology and Clinical Technology sets the tone for the future: these are multidisciplinary degrees combining aspects of medicine, biomedical sciences, the natural sciences, data science and technology. These are all advances on which Strategy23 will build.

## Cultivating a professional working culture

Erasmus MC is very much a work in progress and this constant development is not without its drawbacks. Our resilience has been put to the test in recent years. Despite the demands of our day-to-day work, we have nonetheless had to devote a great deal of time and energy to the move to the new hospital. We will need to ask our staff to devote their time and energy in equal measure to the demands resulting from the building work on our children's hospital and faculty building.

Our aim as set out in Strategy<sup>18</sup> of cultivating a professional working culture remains fully relevant today. We have made progress in facilitating, improving and simplifying our working procedures and we will continue to work on these. On top of this, one of the aims of our new strategy is to boost the level of personal attention given to our staff, as well as to raise job satisfaction levels. We will continue our efforts to get the basics in order.

## Looking ahead

A new strategy means looking ahead to the future. We want to – and indeed must – respond to trends in the world around us. However, in order to do so, we need to make a realistic assessment of what we ourselves can do. This will enable us to plan accordingly.

### The main external trends

Four major trends in the world around us will affect our work in the years ahead. These trends are all closely connected. They are:

1. changes in society and in people's views on health and disease;
2. digital disruption: new technologies creating seismic changes;
3. changes in the viability of and access to the healthcare system;
4. an international focus on sustainability.

Society at large is tending to focus more on health than on disease, and on prevention and lifestyle interventions rather than on treatment. People now use different types of wearable technology to keep a check on their health and doctors use remote tracking devices to monitor their patients. Hospital care is giving way to 'home care'. Patients know more about their own condition and want their experiences and wishes factored into the care process. As the population ages, so technology is creating more treatment options.

Both these factors are pushing up the cost of healthcare higher and higher. Costs must be controlled if we are to preserve one of the pillars of a sustainable healthcare system: solidarity. The growing shortage of qualified healthcare professionals presents a real challenge. Technology and the greater emphasis placed on health may well generate potential solutions to this problem. Finally, the UN's 17 Sustainable Development Goals are clear pointers to the future, calling as they do for good health and well-being, climate action, the eradication of poverty and reduced inequality.

## Internal organisation: just right

We need to have a strong internal organisation if we are to remain at the forefront and keep in step with all these external trends. This applies first and foremost to our principal assets: our staff. We must be able to attract and retain staff and allow them to adapt in the face of change. The key elements here are appreciation, diversity and user-friendly, non-bureaucratic procedures for staff gaining promotion or joining or leaving our employment.

We must continue to prioritise fundamentals such as an efficient IT infrastructure (Research Suite and HiX being good examples), with clear rules on access to healthcare data, as well as on governance and policy issues. Data must be managed in accordance with the FAIR principle, i.e. data should be findable, accessible, interoperable and reusable.

The new Strategy<sup>23</sup> strategy is underpinned by three pillars: the ambitions set out in Strategy<sup>18</sup>, the main external trends and the priorities for our own organisation.

## 2 IMPACT: THE CRUX OF STRATEGY23

**We wish to have a social impact and make a difference by championing a healthy society. This is our task as a university medical center. It is what the outside world expects of us. This key message reflects the target towards which we will be working over the next few years.**

### **We want to take the lead**

Situated in the centre of Rotterdam, in the heart of the southwest of the Netherlands, Erasmus MC is a leading university medical center. Aware as we are of our social responsibility, we wish to make an international impact on the health both of individual patients and of society as a whole. This is why we wish to be recognised as a leading healthcare innovator.

It is not only our responsibility to take the lead, it is also what is expected of us. We are expected to take the lead in treating patients effectively (i.e. providing the right form of healthcare at the right time and place), in promoting health, in understanding, predicting and preventing disease through research, and in training the healthcare professionals of the future. These are all things we seek to do in conjunction with our partners, rather than on our own.

We need to contribute to political and public debate and to be perceived as an established and reliable scientific authority on healthcare. We also wish to make effective use of scarce public funds and to help create an accessible, affordable and inclusive healthcare system.

### **A technical university medical center**

In the future, major innovations in health and healthcare will emerge at intersections between the biomedical and natural sciences, medicine, technology and big data. These innovations will influence people's views on health and disease, in terms of molecules and cells, but also in terms of individuals and populations as a whole. They will affect the way in which we organise our patient care, our scientific research and our teaching. Technology is becoming an increasingly important – and indeed crucial – part of our work.

Against this background, we are seeking to become the top technical university medical center in the Netherlands. Operating in a unique setting means that the conditions are ideal for this. Firstly, Rotterdam — with its highly diverse population — is a city with pronounced ambitions in life sciences and health, and whose inhabitants are renowned around the country for their can-do mentality. Secondly, the southwest of the Netherlands is a large and diverse hinterland with some 4.5 million inhabitants, many hospitals, three universities (in Rotterdam, Leiden and Delft), as well as our subsidiary hospital in the province of Zeeland. Add into the mix our links with the European Commission in Brussels and our reputation for top-class research performed with long-term partners all over the world.

### **A valued partner**

We aspire to being a valued partner in all our collaborative efforts. Trust, interest and respect for each other's input and expertise are key here. While this especially affects our relationship with patients and their loved ones, it applies just as much to cooperation among colleagues, with our students and with our external partners. It also means that we wish to do our very best to help overcome the growing shortage of healthcare professionals. This is our responsibility, not just as a healthcare provider and Rotterdam's biggest employer, but also as an innovator.

Our aim is to achieve these strategic goals during the coming years. How we intend to do this is set out in the following three chapters. Chapters 3 and 5, entitled *Positioning ourselves as a partner and Focus on our staff and internal organisation* respectively, build on Strategy18. Our new ambitions are unfolded in chapter 4, *Leading the way in innovation*.

# 3 POSITIONING OURSELVES AS A PARTNER

## Our ambition

We are an academic powerhouse shaping, leading and facilitating new regional, national and international partnerships and networks, and connecting the Rotterdam region with new developments in the Netherlands and further afield. Our aim is to be a driving force strengthening and enriching existing partnerships and challenging our partners to seek the unexpected. We will make the most of the synergy and innovations resulting from these partnerships to promote a healthy society and thus make a social impact.

Our strength lies in the close ties between our clinical work and our medical faculty: we combine fundamental, translational and clinical research with patient care and a wide range of teaching activities. Accepting our role as an academic powerhouse means being willing to take responsibility for certain fields of work. We realise that we cannot take this role for granted, which is why we seek to be a valuable partner for other healthcare providers, and for research institutes, local authorities, government bodies and businesses – as well as for our patients, of course. We encourage patients to take control of their treatment and quality of life, with the aid of healthcare professionals.

### We are planning to achieve our ambition in the coming years by:

1. treating our patients as partners in all our core activities;
2. acting in accordance with our responsibility for the health of the population;
3. working together with our partners in performing our coordinating role.

## Our goals for 2023

### Goal 1

Patients feel welcome when visiting Erasmus MC. Patients value our services and the physical setting in which they are treated, and help us to improve our 'healing environment'.

### Goal 2

Patients (and/or their loved ones) receive as much information as possible about, and are involved as closely as possible in, all stages of the care process, i.e. at home, at hospital and post-discharge. Patients feel valued and are able to take control of their treatment.

### Goal 3

Patients are aware that Erasmus MC is a university medical center and understand the implications of this. Patients (and/or their loved ones) feel valued and taken seriously, which means that they are in a position to act as partners in our clinical teaching. We teach our students the skills they need to reach decisions in consultation with patients.

### Goal 4

Patients (and/or their loved ones) are aware that scientific research is one of our core activities. Patients understand why scientific research is needed, are prepared in principle to take part in research studies, and are aware that, in doing so, they are making a valuable contribution to scientific research.

### Goal 5

So as to ensure that decisions taken on the care process are joint decisions, 80% of patients at Erasmus MC understand the likely outcome of the care process.

### Goal 6

We coordinate scientific research into the prevention of diseases and disorders and the application of research findings in primary, secondary and tertiary healthcare services.

### Goal 7

We have created regional, national and international networks for our core activities; these networks have a demonstrable social impact. Societal valorisation is part of this.

### Goal 8

Acting in consultation with our partners, we deliver healthcare services that need to be provided in an academic setting and with the attendant expertise. We provide the right type of healthcare in the right place, i.e. anywhere from a patient's home to a regional hospital or another university medical center. Our aim is for tertiary care to account for at least 70% of our care services.

### Goal 9

We are the first-choice hospital in the Netherlands for non-resident patients. We wish to quadruple the number of non-resident patients. This applies in particular to patients requiring tertiary care for whom we possess unique expertise.

### Goal 10

We head up scientific research programmes, including programmes centring on a healthy start in life and healthy lives, geared towards understanding, preventing, predicting, diagnosing and treating diseases and improving quality of life.

### Goal 11

We play a coordinating role in the region in the training of medical and healthcare professionals.

## What exactly do they mean?



### Our patients are our partners

*Patient-centred healthcare.* The key to good healthcare is the delivery of a personal, safe and friendly service. Decisions are taken jointly with patients. The patient and his or her healthcare provider together decide what type of healthcare is to be provided and what outcomes would be appropriate in the patient's specific situation. This is not simply a question of quality of life. It is also about accepting that patients own their medical data. The essence of patient-centred healthcare is that patients feel valued and taken seriously, based on their needs and possibilities. This is reflected by the way in which we deal with and communicate with patients. It is also reflected by the facilities we provide in order to create a 'healing environment'.

We improve the quality of our healthcare by making sure that patients and professionals alike are fully equipped to take the responsibilities inherent to patient-centred healthcare. Every patient feels welcome and — where possible and with due consideration for his or her specific situation and cultural background — is able to take control of his or her personal healthcare needs. We will also further improve the standard of patient safety, with the aid of a process of constant learning and improvement.

*Value based healthcare.* Value based healthcare. What is perceived as 'good healthcare' depends partly on what patients regard as good care outcomes, in light of their own standards for the quality of life. In certain cases, this may mean forgoing treatment. The value or outcome of care is a crucial factor in the success of our work and in determining our added value, both for individual patients and for society as a whole. Our healthcare services are assessed not just in terms of medical results, but also on the basis of outcomes that patients and their loved ones regard as being important. Value based healthcare means trying to achieve the best possible outcomes for patients, in personal terms and at a realistic cost. This necessarily means viewing patients as partners and fostering effective teamwork among colleagues. We will set up multidisciplinary treatment teams for specific groups of patients with a particular medical diagnosis or condition.

*Patients as partners in teaching and research.* As a university medical center, we are a healthcare provider, a research center and an educational institute all rolled into one. Viewing patients as partners has implications for our clinical research and our teaching practice. We tell patients what taking part in clinical studies implies, and seek to adopt a personal, friendly approach in this respect. The same goes for students training to be nurses, doctors and specialists, as well as for the training of other healthcare professionals and researchers. In both planning and teaching such courses, and in assessing students and trainees, our patients are our partners. In conducting studies on human subjects, we are aware of the impact these have on patients and other participants. We take patients seriously and are willing to share the knowledge generated by our studies.



### **Responsibility for promoting health**

*Focus on promoting health.* We accept and discharge our responsibility for promoting the health of our patients. This applies not just to patients attending surgery, but in much broader terms. We also feel responsible for the health of society at large, a responsibility that goes beyond the bounds of Rotterdam itself. Rotterdam has a relatively large population of people who are underprivileged in various respects.

This may be due to poor-quality housing, unhealthy living conditions, long-term unemployment, poverty or a background that is not conducive to personal development. In part for these reasons, the health of such people is much poorer than the rest of the population and they find it hard to access healthcare services. We are working together with our partners in local government and civil society to improve their health.

*Understanding disease.* One of the ways in which we promote health is by genuinely understanding the diseases we treat. This means acquiring a thorough understanding of a condition — from the most fundamental processes occurring within the body's cells, and the impact a condition has on the well-being of the patient and his or her loved ones, to improving public health in general. This 'deep understanding' (as we call it) enables us to predict the risk factors involved in the development of disease, thus enabling us to prevent them ('primary prevention'). This understanding also generates information we can use in designing tailored treatments ('precision' and 'personalised medicine') and means we are better placed to respond to the progress of diseases ('secondary prevention'). Analyses of research data generate even better information that we can use to further refine our healthcare, research and teaching. Once the quest for this deep understanding becomes second nature to us, we will be able to assume our role as the leading center of scientific research into disease prevention and as a coordinator of the application of research findings in primary, secondary and tertiary care.

*Societal valorisation.* The outside world is looking to university medical centers to open up their research data for the benefit of society, societal well-being and public health. This is what is known as 'societal valorisation'. We wish to be a pioneer in this field by displaying commitment, acting as a catalyst, being quick to publish news on innovations and research findings, taking part in public debate, and using new knowledge to influence government policy, whether at local or at national level.



### **Acting as a coordinator**

We cannot assume responsibility for people's health without working in close cooperation with our partners. The government has asked the university medical centers to take the lead in this regard. Our organic link with Erasmus University Rotterdam and our partnership with Leiden University Medical Center are both important factors here. The same goes for our contacts with our partners (from the healthcare sector, government and civil society) in the southwestern region. At the same time, we also need to forge alliances at nationwide, European and global levels. By positioning ourselves as an approachable coordinator and a valued partner, we can show the outside world what we stand for and forge effective partnerships. Our main potential partners are organisations that seek to improve healthcare, research and teaching, or to develop new types of organisation that open up permanent access to healthcare services.

*The right form of healthcare in the right place.* By seeking to deliver at least 70% of our services in the form of tertiary care, we are assuming our role as a provider of healthcare services for treating complex and rare conditions and as a regional coordinator of acute care. Tertiary care always forms part of the individual, end-to-end healthcare chain. Much of the care process takes place elsewhere, be this at home, at a GP's surgery, in other hospitals, in psychiatric hospitals, or in institutions for the disabled and the elderly. In order to ensure that the whole process runs smoothly, close consultation is needed, not just with the patient, but also among the healthcare providers in the chain. The guiding principle at all times is that the patient should receive the right form of healthcare in the right place and at the right cost. By putting this into practice, we can help keep healthcare both affordable and accessible to all people. The focus on tertiary care and the treatment of complex conditions is resulting in the intake of a growing number of non-resident patients needing highly specialised treatment. By carefully controlling this inflow of non-resident patients, we can sustain our expertise and make the best possible use of our staff and equipment.

*Recognised as excellent in research.* Our top-class scientific research and researchers deserve greater public recognition. A clear profile attracts talented scientists and international partners, and helps secure funding. We run a large number of successful research programmes built around close-knit networks and producing eye-catching publications and PhDs. We will continue to combine top-flight healthcare, research and teaching in academic centers of excellence operating as part of the Erasmus MC, and to set up national centers of research into rare conditions, as well as European Reference Networks. The challenge here is to create more impact by bringing these centers closer together. Our Core Facilities will help in this regard. This further concentration of our activities will generate national and international recognition for our research, making us an even more attractive partner for other organisations.

**The priorities include:**

- a healthy start in life and healthy lives;
- a data-driven approach to promoting health;
- prevention.

*Coordinating teaching.* We are responsible for training the doctors, nurses, researchers and other healthcare professionals of the future and offering them a high-quality, attractive education. As an institute of higher education, we design courses so that they meet the current needs of the relevant professions and pave the way towards future needs in a range of different fields. We work in conjunction with our partners, and take account of the changing needs of patients, citizens and society. Our focus on tertiary care and on bolstering our academic profile affects the distribution of training institutes in the region: we want to have the right institutes in the right locations. There is a wide range of hospitals, universities and colleges of secondary vocational education training all sorts of healthcare professionals, both in and beyond our local region. By working more closely with them and finding new solutions, we can help to alleviate the shortage of specialist healthcare staff and at the same time offer our staff better prospects and career opportunities.

**Examples of good practice**

Viewing patients as partners: Collective healthcare at Erasmus MC Sophia Children's Hospital

Cooperation in the local region: Concord

International partnership: ERN CRANIO (European Reference Network for rare and/or complex craniofacial anomalies and ENT disorders)

# 4 LEADING THE WAY IN INNOVATION

## Our ambition

Innovation has always been an essential part of our work. We aim to lead the way and stand out from the field in our use of technology for shaping healthcare in the future. Our ambition is to be the first technical university medical center in the Netherlands. As a result of the explosion in the opportunities offered by technology and digital in health monitoring, teaching and research, combined with the pressure placed on the healthcare system in terms of staffing and solidarity, both healthcare and hospitals will look fundamentally different in the future.

Technology and data analysis will produce innovative solutions to biomedical and medical problems and bridge the gap between the medical faculty and the academical hospital. Data-yielding technologies will ensure that fundamental and translational research will become clinically relevant much more quickly than in the past and also that we acquire new insights from clinical data more quickly than we used to. The *'medical humanities'* will play a vital role in the development and use of technology and the use of data in healthcare. It will be vital to strike the right balance between people (i.e. healthy citizens, patients, doctors and students) and machines.

In short, technology and data are resources that can be used for speeding up the learning process, allowing us to absorb more information, and for designing and using new products and services – and hence for boosting our social relevance.

### We will achieve our ambition in the coming years by:

1. using technology and data science to develop and use innovations in health and healthcare;
2. opening up access to and sharing data and the knowledge gained from data.

## What do we mean by technology, data and data science?

### Technology

Technology may be broken down into the following categories:

#### Resources

Medical equipment, minimally invasive devices and procedures, robotics, 3D printing and prosthetics

#### Imaging

Imaging technologies, detection and image reconstruction

#### Health data science

Machine learning (AI), big data analysis and clinical decision-making

#### Process optimisation

Logistics, supply chain, work processes and facilities

#### Biomedical technology

Genome engineering, regenerative medicine, nanobiology, organ-on-chip and quantitative analysis (simulation and modulation)

### Data

We hold a vast quantity of digital information:

- data on people (i.e. patients, students, staff and population groups);
- data generated by scientific research;
- operational data.

The term 'data' refers to all information collectively.

### Data Science

Data science is an interdisciplinary field of research for extracting information from data with the aid of scientific methods, processes and systems.

## Our goals for 2023

### Goal 1

We are one of the top five university medical center leading the world in *convergence*.

### Goal 2

We have adopted three *pipelines* for data, imaging and (medical) technological resources.

### Goal 3

Technology and data science are integral parts of our corporate culture and organisation. We have created an ideal ecosystem for innovation, so that new products and services can be put to use in patient services and prevention. Staff recognise the value of our data and understand the need to share data both internally and externally, provided that the appropriate conditions have been put in place.

### Goal 4

Thanks in part to the interaction between fundamental research and the university medical center, we lead the way in Europe in terms of innovative methods for extracting information from data about prevention, prediction and precision medicine.

### Goal 5

Our data science experts have been brought together in the form of a data science network that is firmly anchored in our organisation.

### Goal 6

Data science and the application of new technologies in healthcare and science are an integral part of all forms of teaching.

## What exactly do they mean?



### Using technology and data science to foster innovation

Technology is developing at breakneck speed and in a wide variety of fields – from medical instruments and devices, minimally invasive surgery, imaging and image analysis, information technology and smart data technology to artificial intelligence, *machine learning* and biomedical technology. Technology is producing a constant flow of innovations in healthcare, research, teaching and operating processes.

**Convergence.** ‘Convergence’ is the term used to describe the merging of these fields with the biomedical sciences and medical science. Convergence generates new knowledge on health and healthcare, as well as technological innovations in healthcare. Convergence offers massive benefits, by:

- achieving new forms of knowledge as a result of synergy between different fields of science;
- creating treatments with fewer side effects and complications, such as minimally invasive interventions that enable patients to recover more rapidly;
- opening up links between different conditions, thus generating more applications for screening and treatment options;
- developing medical devices and technologies for enhancing quality of life;
- boosting efficiency in terms of time, money and resources, for example by preventing the duplication of diagnoses.

This is why we wish to step up our collaboration with Delft University of Technology, which we regard as a logical partner. We are also exploring how cooperation with commercial tech companies could help us achieve our ambitions.

*Pipelines and testing grounds.* One of the first steps in this direction is the introduction of three pipelines, i.e. for data, imaging and (medical) technological resources. A pipeline is a clearly defined process specifically designed to enable the adoption of a given technology. This may be the case either within or beyond our own walls. A pipeline may also serve as a testing ground for trialling healthcare ideas generated by civil-society organisations, universities or businesses.

Pipelines provide a route for applying ideas generated by research, design, construction, early assessment, first-in-man studies and clinical studies in patient care.

We recognise the need to pay attention to and invest in the human dimension of these technological changes and their impact on patients and staff. We wish to foster a culture in which technological innovation is axiomatic. This means that our staff must be able to contribute to innovations. We are setting up regional testing grounds and innovation platforms for sharing good practice and fostering innovations.



### Opening up access to data and sharing data

*From information to knowledge.* We learn from each and every result, outcome and treatment.

Everything we do generates data. Using the knowledge we derive from data, we improve and modernise our healthcare, treatments and prevention, our teaching, scientific research and operating processes.

We seek to make careful use of this knowledge for the purpose of prevention, prediction and precision medicine. However, this depends on our making optimum use of our vast wealth of data and allowing our partners to access it. As a civil-society organisation operating in the public sector, we take the lead in this respect. We must exercise due care in our use of data and take stringent steps to protect our data. We must also safeguard privacy and be prudent in handling information obtained from scientific research.

*New possibilities for healthcare and research.* The first step in sharing data is to ensure it is accessible. We do this in accordance with the FAIR principle, i.e. data should be findable, accessible, interoperable, and reusable. In order to share and use data effectively, both internally and externally, we are creating a structure known as a 'Research Suite' for fostering data-sharing and exchanging examples of good practice. Given that our own staff possess a great deal of professional expertise on data-sharing and data access, we believe that the creation of an Erasmus MC Data Science Network will generate considerable benefits. Personal contacts in teams working together to analyse, combine and interpret data should produce surprising new partnerships and generate new knowledge. We can boost the value of our own data by linking it with that held by other parties. Partnering with external parties and working together with them to access, combine and analyse data in an innovative way will generate added value for healthcare and research. Healthcare and research complement one another as parts of a single, integrated system, enabling us to make optimum use of the knowledge we acquire — in areas ranging from prevention, prediction and diagnosis to complex treatments.

*Data science and technology in teaching.* Technological developments and the potential offered by data science play prominent roles in our teaching. Our students, research assistants and doctoral students will be increasingly likely to encounter these aspects in their future careers, and will need to be prepared for them. We are training the next generation of doctors, nurses and researchers to be ready to use and refine the latest technologies and databases. This is partly because more and more patients today are also familiar with the same technologies. We will be embedding data science in our teaching curricula by launching a data science module.

All our courses familiarise students with the benefits and limitations of data science, and we work in close collaboration with other universities. This gives students an opportunity to acquire practical knowledge and experience as part of their training.

We are stepping up our role in the Clinical Technology and Nanobiology courses, by contributing to classroom teaching and by arranging work placements for student trainees and students working on their graduation projects. This will enable us to play a meaningful role in the academic education of our students and to train our own PhD students. New technologies also form an integral part of degree courses in medicine as well as in the training of nurses. Our staff take refresher courses in new technologies and are encouraged to embrace technological developments in their day-to-day working practices.

*Contributing to socially driven scientific initiatives.* Our goals tie in well with socially driven scientific initiatives such as the Dutch National Research Agenda, the Innovative Medical Device Initiative, the Medical Delta, the Road Map for the Next Economy in Rotterdam and The Hague, and EIT Health. Our involvement in these schemes boosts our profile as a university medical center.

### **Examples of good practice**

1. Sharing data and knowledge and opening up access to data and knowledge: Health Infrastructure (Health RI)
2. Technology-driven innovation: partnership between Erasmus MC and Delft University of Technology; CUBE (Center for Ultrasound and Brain Imaging at Erasmus MC)
3. Technology-driven innovation: zorginnovaties010/Design4care

# 5 FOCUS ON OUR STAFF AND INTERNAL ORGANISATION

## Our ambition

We cannot take the lead in the areas outlined above without the backing of committed, dedicated staff. Adopting a personal approach means fostering long-term relationships not just with our patients, but also with our staff, students and volunteers. Our aim is to offer the latter a pleasant and safe place in which to work, study and fulfil their ambitions. This means paying attention to one another, and to personal and professional development, creating an adaptive culture and a versatile organisation, offering scope for creativity, easing bureaucracy and fostering a healthy working environment.

### We will achieve these goals in the coming years by:

1. paying individual attention to our staff, students and volunteers;
2. developing an adaptive culture;
3. creating a versatile organisation.

## Our goals for 2023

### Goal 1

Everyone matters. The principles of inclusivity and diversity apply at all levels of the organisation and form the basis for our policies on selection and recruitment, appointments and training.

### Goal 2

We make the most of everyone's talents: the right person is employed in the right post, where he or she performs the right duties.

### Goal 3

Our people are fit and healthy: we help staff, students and volunteers to lead healthy lives and keep fit.

### Goal 4

Our people are proud of Erasmus MC, enjoy working and studying here, and recommend us as an employer and educational institute.

### Goal 5

We are the most attractive employer in the region.

### Goal 6

Our staff are versatile workers capable of responding and adapting to developments, needs and changes, whether internal or external. Skills in relation to teamwork, hospitality and the use of technology and data are key in this respect.

### Goal 7

Our systems, processes and resources are designed not to get in the way. They offer our staff the best possible conditions for working to the best of their ability and delivering a service of the highest possible quality.

### Goal 8

Our staff recognise that we encourage and support entrepreneurship. This enables us to capitalise on developments and grasp opportunities in a creative and innovative manner, and to create added value for our patients, students and other interested parties.

## What exactly do they mean?



### **Focus on the personal dimension: getting stronger together**

*Appreciation, respect and responsibility.* We are an ambitious organisation, developing everyone's talents and recruiting talented individuals at all levels. We put a lot of work into seeking out talented individuals elsewhere, in our quest for professionals whose ambitions match our own. We are honest about the possibilities and open and respectful in our approach. Our organisation reflects the setting in which

we work and in which our patients live. The cultural diversity of Rotterdam is reflected in the composition of our staff, students and volunteers.

Our culture is one in which we have time for each other, and respect and trust each other in who we are and what we do. Managers set inspirational examples by showing dedication, creativity, courage and empathy.

Teamwork and a readiness to be clear about likely outcomes and/or future developments are both important factors in terms of career and growth opportunities. Staff and students also have a responsibility of their own: we regularly discuss working and learning conditions and opportunities with them, and expect staff and students to take an open, active approach. We get great store by high standards of ethical behaviour and safety, and give staff the space they need to call each other to account for meeting their responsibilities and targets. We encourage teams of staff to work independently and to seek continuous improvement. We plan our work in such a way that we make the most of each other's expertise, for example by encouraging job rotation and by organising networking events.

Staff, volunteers and students are all passionate about their roles. Personal attention and a sense of appreciation are vital ingredients if they are to remain dedicated to their work. They deserve an organisation that facilitates them, that guarantees a safe, pleasant working environment, and that helps them grow in step with the changing world around them.

*Long-term vitality.* In addition to showing staff our appreciation, we also want to make sure that they are fit and well. Staff who feel fit and well enjoy their work, are better at coping with pressure and are fully employable. Students who feel fit and well enjoy studying and are better at coping with the pressures of learning. We monitor the long-term employability of our staff, in part to ensure they remain fit and well, but also for the benefit of diversity and inclusiveness and in order to minimise the rate of absenteeism due to illness. Our ambition is to be a center of excellence in terms of the long-term employability and vitality of both staff and students.

*Safe and healthy.* Apart from seeking to cultivate an environment that is conducive to well-being, we also endeavour to create a pleasant and safe environment (both physically and socially) for our patients, staff, volunteers and students. Bullying and improper conduct (including sexual harassment) are not tolerated. Our aim is to explore and develop opportunities for safe, healthy work in conjunction with staff, students and patients. We moved into a state-of-the-art hospital building in 2018. This offers a healthy environment, with modern equipment helping us to provide excellent healthcare and minimise stress for patients. This ambition is also reflected by the renovation and construction work currently being carried out on the faculty building (under the Eread programme) and the children's hospital (under the Sophia programme).

Staff, volunteers and students all enjoy performing their roles. They feel valued, respected and an integral part of the organisation.

**Excelleren.** We are evolving into an employer of choice – an employer that everyone wants to work for, and keep working for, with pleasure and passion. Our staff, former staff, students and alumni are our ambassadors and recommend us to others, whether as an employer or as an educational institute. Our personal culture ensures that we not only perform well, but genuinely excel. It is a culture that enables us to attract and retain staff. We give special attention to our nursing staff, who form the backbone of our patient services. By encouraging leadership skills, facilitating scientific research into nursing practices, and fostering cooperation among professionals, we are able to provide patients with the best possible care and be an attractive employer.

**Staff capacity.** We need highly qualified staff in order to excel. The shortage of such staff is a worrying trend in the healthcare sector. It places pressure on current staff and makes it even more urgent for us to devote sufficient attention to them. We seek to maintain adequate staffing levels by making it more attractive for people to work in the healthcare sector, and at Erasmus MC in particular. Our methods include adopting a personal approach and using innovations to re-engineer healthcare services. This allows us to discharge our responsibility for providing first-class healthcare, research and teaching.



### **Adaptability**

**Adapting.** We wish to create a culture and an organisation of which technological innovation and multidisciplinary teamwork, in and beyond Erasmus MC, are integral parts. Our aim is to respond to the needs and trends of a changing society. In addition to perseverance and a willingness to accept responsibility, this requires adaptability – both on our own part, and on the part of our staff and students. We must help our staff and students to acquire the necessary skills, competencies, behaviours and knowledge.

Our aim is for every member of staff to feel a sense of responsibility for ensuring that working practices are as effective and efficient as possible. However, we can achieve this only if changes and improvements are genuinely noticeable. We dare to make clear choices in this respect.



### **A versatile organisation**

**'Deregulation'.** We want to minimise red tape. We can bring this about by designing systems and procedures that require only a single registration at source, and so that data is available in real time and in clear formats, enabling immediate action to be taken. Once such systems and procedures have been put in place, we can then scrap unnecessary rules, create and/or strengthen the relevant guidelines, and delegate responsibilities so that staff and students genuinely feel and accept their own responsibility. We undertake critical assessments of any barriers that are found to have only a limited impact. We enable our staff to perform their work as effectively as possible.

**Continuous improvement.** We must remain critical at all times about processes that need improving. This means constantly seeking to improve our organisation or certain parts of it. In the coming years we will be seeking to make even more efficient use of the available space and operating processes, so that we make optimum use of the available capacity. We will be adopting an organisation-wide method of continuous improvement – as a means to an end and not as an end in itself. The adoption of a single, uniform system of improvement will make it easier for us to share examples of good practice and information on improvements, in turn making these easier to understand and adopt in other parts of the organisation. Consequently, improvements will have a knock-on effect and 'continuous improvement' will become a fundamental aspect of the entire organisation.

**Entrepreneurship.** Motivation, creativity, courage, freedom to make mistakes and a willingness to learn from them, and a sense of appreciation are all vital ingredients of an entrepreneurial mindset and culture. An entrepreneurial mindset creates improvements, opportunities and a process of continuous learning. Staff will be invited to make suggestions and to be part of innovations (for example, in the form of innovation platforms and testing grounds). We encourage teamwork among staff, students, patients and others in the form of co-creation and entrepreneurship. This requires managers who are encouraging and empathetic, as well as a readiness to work together with others, both within and beyond the walls of our organisation.

*Sustainability.* In order to become a sustainable organisation, we must be aware of our own actions and the impact they have on those around us. As a major employer and a university medical center, we accept our responsibility for responding to calls from society to adopt sustainability and a circular economy. We wish to contribute to the achievement of the UN's 17 Sustainable Development Goals, as befits our desire to meet our responsibility for people's health by focusing on a healthy start in life and healthy lives, on promoting healthy lifestyles and on understanding disease. Our aim is to deliver high-quality, accessible care and education for all and to reduce inequalities in health and well-being. We are an equal-opportunity employer and educational institute. Our buildings and facilities are designed with sustainability and circular use in mind; we use sustainable materials.

We seek to maximise the recycling of products and raw materials and to minimise value destruction.

### **Examples of good practice**

Vitality: Perfect Fit

Staff capacity: tackling shortage of IC staff

Entrepreneurship: GERS (Society for Extracurricular Study Projects in Rotterdam).

# 6 IMPLEMENTATION: HOW WE ARE GOING TO ACHIEVE OUR AMBITIONS?

## What does Strategy23 mean for our staff?

As the people of Erasmus MC, we will be implementing our strategy together. But we can do this only if everyone knows what the strategy means for them, what is expected of them and how they can set about doing what they need to do. This process starts with a dialogue among staff and their managers, among colleagues, students and lecturers, and among patients and healthcare providers. We will help everyone to develop and refine the skills and competencies they need for this purpose.

*Teamwork among professionals.* Teamwork is key if we are to be perceived as a valued partner. All members of staff must possess the skills they need for effective teamwork. Teamwork also means working not just with colleagues from the same department and elsewhere in the organisation, but also with partners and other external parties.

Our medical, nursing and support professionals must be capable of working with external healthcare professionals and referrers. This also means that they must possess the necessary competencies and skills to make patients and their loved ones feel welcome and at home, and to make choices and decisions together, taking account of patients' situations and care needs.

*Communication and face-to-face contact.* Communication is an essential facet of teamwork. Personal contact – with colleagues and with external partners and parties – is indispensable. The preferred mode of communication is direct contact, either face-to-face or over the phone, rather than written contact by email. We expect our managers to get out and about and bolster ties with our partners, bearing in mind both our own interests and those of society as a whole.

*Expert tertiary care.* We aim to provide a minimum of 70% of our services in the form of tertiary care. This means that we must possess sufficient expertise and staff to provide complex healthcare services. It also means that our medical and healthcare professionals must be able to decide, in consultation with our external partners, what types of healthcare services we cannot provide ourselves and should instead be provided in conjunction with our partners – and what agreements we need to make to this end.

*Embracing new technologies and processes.* We are extremely ambitious. We want to be the first technical university medical center in the Netherlands. Aware as we are that the best place for trying out new ideas is within our own walls, we must invest in data storage and analysis and be open to innovation and experimentation. We will invite our staff to come up with ideas for the continuous improvement of healthcare and other services, and of our teaching, research and operating processes, and to make suggestions for improvements.

*Data-sharing.* We are also highly ambitious in terms of the use we make of our data. We need to be prepared to open up our own data (including research findings), in the confidence that we will receive other data in return. We must be prepared to place the public interest before our own personal objectives. We must be entirely clear about the terms on which we do this.

## Long-term policies

Strategy23 plots a basic course for the future, based on external trends and our own ambitions and potential. The idea is to translate the principles underlying this strategy into a set of long-term policies, including detailed information on to put these into effect. We will develop a range of tools, measures and processes in order to pursue our strategy in practice. Our Support Services Division will play a significant role in this.

## Milestones

The ambitions and goals set out in this document describe the situation we wish to attain by the end of 2023. Our aim is to achieve these goals in the coming years. A number of milestones will be defined to indicate what progress we want to have made by which dates. The nature of this progress will be subject to annual review.

## Annual planning cycle

Based on the milestones, we will set certain policy priorities each year and thus define the goals for the coming year. We also need to monitor, in the course of each year, the progress we are making in reaching the targets set for that year. Our monitoring activities will be underpinned by a clear annual planning cycle and our annual plan (based on the ambitions set out in Strategy23).

## Projects and funding

Funds will be made available each year in order to achieve the ambitions set out in Strategy23. The amount of funds available for the forthcoming year will be decided every year at the time when the budget is finalised. Our annual plan will form the basis for the business cases financed from the funds set aside for the implementation of the strategy. The Strategy23 Advisory Board will advise the Executive Board on which business cases should be adopted and prioritised, and will monitor progress in this respect.

## Communication strategy

The more committed the staff, the stronger the organisation as a whole. We can achieve the ambitions set out in Strategy23 only if our staff know what they are expected to achieve and what their role is. This requires systematic, targeted communication with different groups of staff: nurses, doctors, medical and other support staff, researchers, teaching staff, managers, students and volunteers. We favour personal communication that seeks to recognise the input of individual members of staff, so that they can be proud of the organisation they work for. All members of staff will be affected by communications on Strategy23.

## Implementation principles

A large number of staff for whom this outstanding university medical center holds a special place in their hearts were involved in the formulation of Strategy23. They highly appreciated the fact that their input was welcome. We will continue to involve our staff in the implementation of Strategy23. Our aim in doing so is to boost their engagement with the organisation, to generate support and possible knock-on effects, as well as to engender pride in Erasmus MC.

# GLOSSARY

<b>Convergence</b>	The merging of disciplines from the natural sciences, medical science, biomedical sciences and technology
<b>Core facilities</b>	Combinations of high-quality, specialist knowledge and infrastructure at Erasmus MC in support of scientific research
<b>Data science</b>	Interdisciplinary field of research for extracting information from data with the aid of scientific methods, processes and systems
<b>Disruption</b>	Innovations that upset the status quo, as newcomers compete with established suppliers on a particular market
<b>European Reference Network (ERN)</b>	Network for cooperation among hospitals in different countries with regard to rare and complex diseases
<b>Expertise center for rare conditions</b>	Center at a university medical center focusing on a rare disease or condition; recognised by the Ministry of Health, Welfare and Sport
<b>FAIR</b>	Findable, accessible, interoperable and reusable (data)
<b>HiX</b>	Digital healthcare infrastructure, including Erasmus MC's patient files
<b>Strategy18</b>	Erasmus MC's strategy for 2013-2018
<b>Machine learning</b>	Aspect of artificial intelligence, in which a machine is able to adapt to new situations
<b>Medical humanities</b>	Multidisciplinary field of science combining medical ethics, philosophy, health law, history of medicine, social sciences (medical sociology and medical anthropology) and art
<b>Pipeline</b>	Clearly defined process specifically designed to enable the adoption of a given technology
<b>Research Suite</b>	Digital infrastructure (including tools) for project management and regulation of research at Erasmus MC