



HEALTH SCIENCES (70 EC)

ERASMUS MEDICAL CENTRE

ERASMUS UNIVERSITY ROTTERDAM

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This report was finalised on 25 March 2021.

REPORT ON THE MASTER'S PROGRAMME HEALTH SCIENCES OF ERASMUS UNIVERSITY ROTTERDAM

This report takes the NVAO's Assessment Framework for the Higher Education Accreditation System of the Netherlands for limited programme assessments as a starting point (September 2018).

ADMINISTRATIVE DATA REGARDING THE PROGRAMME

Master's programme Health Sciences

Name of the programme:	Health Sciences
CROHO number:	75042
Level of the programme:	master's (postgraduate, in Dutch <i>post-initieel</i>)
Orientation of the programme:	academic
Number of credits:	70 EC
Specialisations or tracks:	Biostatistics Clinical Epidemiology Epidemiology Genetic and Molecular Epidemiology Health Decision Sciences Medical Psychology Public Health Epidemiology
Location(s):	Rotterdam
Mode(s) of study:	full time, part time
Language of instruction:	English
Submission deadline NVAO:	1 November 2020, extension of submission date until 31 October 2021 due to legislation WHW art. 5.16 lid 4

The digital assessment of the MSc Health Sciences in the Health Sciences cluster at the Erasmus Medical Centre (Erasmus MC) took place on 16 and 17 November 2020. The Erasmus MC hosts the medical faculty of Erasmus University Rotterdam.

ADMINISTRATIVE DATA REGARDING THE INSTITUTION

Name of the institution:	Erasmus University Rotterdam
Status of the institution:	publicly funded institution
Result institutional quality assurance assessment:	positive

COMPOSITION OF THE ASSESSMENT PANEL

The NVAO has approved the composition of the panel on 20 December 2019. The panel that assessed the master's programme Health Sciences consisted of:

- Prof. dr L.J. (Louise) Gunning-Schepers, professor of Health and Society at the University of Amsterdam [chair];
- Prof. dr E. (Erik) Buskens, professor of Health Technology Assessment at the University of Groningen;
- Prof. dr J. (Joost) Weyler, professor of Epidemiology at the University of Antwerp (Belgium);

- C.P.L. (Carel-Peter) van Erpecum MSc, graduated research master's student Clinical and Psychosocial Epidemiology at the University of Groningen and PhD candidate at the Department of Epidemiology of the Faculty of Medical Sciences of the University of Groningen [student member].

The panel was supported by dr I.M. (Irene) Conradie, a certified NVAO secretary.

WORKING METHOD OF THE ASSESSMENT PANEL

The site visit to the master's programme Health Sciences at the medical faculty of Erasmus University Rotterdam was part of the cluster assessment Health Sciences. Between March 2020 and December 2020 the panel assessed 3 programmes at 3 universities. The following universities participated in this cluster assessment: Erasmus University Rotterdam, Leiden University, and Vrije Universiteit Amsterdam. Due to the COVID-19 outbreak, the site visits of the Erasmus University Rotterdam and Vrije Universiteit Amsterdam had to be postponed until November 2020 and December 2020, respectively.

On behalf of the participating universities, quality assurance agency Qanu was responsible for logistical support, panel guidance and the production of the reports. Anke van Wier MA was project coordinator for Qanu. She acted as secretary during the site visit to Leiden University and dr. Irene Conradie acted as secretary during the site visits to Erasmus University Rotterdam and Vrije Universiteit Amsterdam.

Panel members

The members of the assessment panel were selected based on their expertise, availability and independence. The panel consisted of the following members:

- Prof. dr L.J. (Louise) Gunning-Schepers, professor of Health and Society at the University of Amsterdam [chair];
- Prof. dr E. (Erik) Buskens, professor of Health Technology Assessment at the University of Groningen;
- Prof. dr J. (Joost) Weyler, professor of Epidemiology at the University of Antwerp (Belgium);
- C.P.L. (Carel-Peter) van Erpecum MSc, graduated research master's student Clinical and Psychosocial Epidemiology at the University of Groningen and PhD candidate at the Department of Epidemiology of the Faculty of Medical Sciences of the University of Groningen [student member].

Preparation

On 16 January 2020, the panel chair was briefed by Qanu on her role, the assessment framework, the working method, and the planning of site visits and reports. A preparatory panel meeting was organised on 10 March 2020. During this meeting, the panel members received instruction on the use of the assessment framework and explanatory notes to the assessment framework for the assessment of academically oriented postgraduate master's programmes in the Netherlands. The panel also discussed their working method and the planning of the site visits and reports.

The project coordinator composed a schedule for the site visit in consultation with the Faculty. Prior to the site visit, the Faculty selected representative partners for the various interviews. See Appendix 3 for the final schedule. Before the site visit to Erasmus University Rotterdam, Qanu received the self-evaluation report of the programme and sent this to the panel. A thesis selection was made by the panel's chair and the project coordinator. The selection consisted of 15 theses and their assessment forms, based on a provided list of graduates between October 2017 and August 2019. A more detailed underpinning of the selection is provided in Appendix 4.

After studying the self-evaluation report, theses and assessment forms, the panel members formulated their preliminary findings. The secretary collected all initial questions and remarks and distributed these amongst all panel members.

At the start of the site visit, the panel discussed its initial findings on the self-evaluation report and the theses, as well as the division of tasks during the site visit.

Site visit

The site visit to Erasmus University Rotterdam took place on 16 and 17 November 2020 by digital means. It was designed to inform the panel and entailed the same meetings as a regular site visit. Before and during the site visit, the panel studied the additional documents provided by the programme. An overview of these materials can be found in Appendix 4. The panel conducted interviews with representatives of the programmes: students and staff members, the programme's management, alumni and representatives of the Board of Examiners. It also offered students and staff members an opportunity for confidential discussion during a consultation hour. No requests for private consultation were received. The panel used the final part of the site visit to discuss its findings in an internal meeting. Afterwards, the panel chair publicly presented the panel's preliminary findings and general observations.

Development dialogue

A development dialogue took place by digital means in spring 2021. For this dialogue, the programme prepared an agenda. The results of this dialogue are summarised in a separate report, confirmed by the panel chair, which will be published through the programme's communication channels.

Report

After the site visit, the secretary wrote a draft report based on the panel's findings and submitted it to a colleague at Qanu for peer assessment. Subsequently, the secretary sent the report to the panel. After processing the panel members' feedback, the project coordinator sent the draft report to the Faculty in order to have it checked for factual irregularities. The project coordinator discussed the ensuing comments with the panel's chair and changes were implemented accordingly. The report was then finalised and sent to the Faculty and University Board.

Definition of judgements standards

In accordance with the NVAO's Assessment framework for limited programme assessments, the panel used the following definitions for the assessment of the standards:

Generic quality

The quality that, from an international perspective, may reasonably be expected from a higher education Associate Degree, Bachelor's or Master's programme.

Meets the standard

The programme meets the generic quality standard.

Partially meets the standard

The programme meets the generic quality standard to a significant extent, but improvements are required in order to fully meet the standard.

Does not meet the standard

The programme does not meet the generic quality standard.

The panel used the following definitions for the assessment of the programme as a whole:

Positive

The programme meets all the standards.

Conditionally positive

The programme meets standard 1 and partially meets a maximum of two standards, with the imposition of conditions being recommended by the panel.

Negative

In the following situations:

- The programme fails to meet one or more standards;
- The programme partially meets standard 1;
- The programme partially meets one or two standards, without the imposition of conditions being recommended by the panel;
- The programme partially meets three or more standards.

SUMMARY JUDGEMENT

Standard 1: Intended learning outcomes

From the written materials and interviews with the programme management, the panel concluded that the postgraduate master's programme Health Sciences has a distinctive epidemiologic research profile with a strong focus on causal inference and modern statistical methods. It finds this profile relevant to this contemporary and rapidly changing field, and recognisable in its seven specialisations. The students are trained to the level of VvE-registered epidemiologists (the Dutch Society for Epidemiology, *Vereniging voor Epidemiologie*) who can resolve health research problems in a professional practice. The panel applauds the initiative of the programme to reconsider its name in light of its specific attention to epidemiological methods.

The panel has established that the intended learning outcomes (ILOs) are based on a common educational vision at Erasmus MC, in line with the Dublin descriptors and, for five out of seven specialisations, with the VvE requirements. It was pleased to hear that in the revised curriculum, which will be implemented in the 2021-2022 academic year, students from all specialisations will fulfil the VvE requirements upon graduation. According to the panel, the ILOs are clearly formulated and applicable to all specialisations. Although various courses in the curriculum already devote attention to social developments, societal relevance and impact, the panel considers this a requirement of growing importance for health sciences experts and recommends introducing societal relevance in the ILOs and, where needed, embedding it further in the curriculum. It concludes that the ILOs of the postgraduate master's programme Health Sciences meet the requirements of the discipline and correspond with the Dublin descriptors at the master's level. Their content, orientation and level, therefore, meet national and international requirements.

Standard 2: Teaching-learning environment

MSc Health Sciences is a 70 EC postgraduate programme, taught in English. The panel concluded that the content and structure of the programme enable the students to achieve the intended learning outcomes. Its mandatory core structure ensures that all students undergo the consecutive stages of the research cycle and gain an advanced level in their knowledge and understanding of quantitative health research. The panel subscribes to the planned restructuring of the curriculum as of 2021 and expects it will add further focus and coherence to the programme. This will help students to get a clearer view of the set of core competencies acquired in the programme and to fulfil the VvE requirements upon graduation. In its view, the flexibility of the programme is one of its strong points, and it appreciates how the wide range of electives, the research project leading to the master thesis, and the assignments during the courses offer the students ample room to pursue their individual interests. It reviewed a sample of the courses and found them to be relevant, up to date and of an academic master level. It considers the academic and professional orientation, focused on quantitative health research, to be clearly visible in the curriculum structure, the courses and Erasmus Summer Programme, and staff composition, including the involvement of renowned guest lecturers. It also appreciated that skills training is being further developed as part of the Lifelong Skills learning trajectory.

The small scale of the programme and the smart use of technology-enhanced learning activities allow for interactive and very intensive teaching. The students value this highly, as well as the strong focus on research, as the panel learned during the site visit. The advanced process of digitalisation helped to curb the negative impact of COVID-19 on the programme's education, along with its management's focused attention on the effects of a full conversion to online teaching. In the panel's view, the programme has sufficiently succeeded in safeguarding student interaction in this online setting. Still, the panel thinks it is best not to go fully digital in the future and continue along the path of blended learning.

The panel concludes that the entry requirements of the programme are fitting for an advanced level master's programme. It noted that the international student composition is diverse in terms of educational and cultural background and experience. It believes that this is an attractive feature of the programme and found the programme

succeeded in accommodating these diverse backgrounds and enabling the students to learn from each other in an international context.

Based on the staff overview and the discussions during the site visit, the panel concluded that the teaching staff consists of experts in the respective fields who are well qualified and able to assist the students in the development of their competences. It fully supports the use of English in the master's programme, given its international scientific environment. The programme management is responsive to the needs of the students, and the panel asks the programme management and staff to continue their efforts to further streamline the teaching logistics. The facilities are state of the art.

Standard 3: Student assessment

The panel concludes that the programme has an adequate assessment system in place, with careful procedures that are in a continuous process of further refinement. Course descriptions give the students a clear idea of how the assessment will take place. The programme uses a variety of assessment methods that are tailored to the learning outcomes, with a good mix of individual and group assessments.

The previous accreditation panel had advised the programme to replace attendance with other examination methods. In the panel's view, the proposed solutions of a core competence exam and portfolio for the Lifelong Learning Skills trajectory address this issue adequately for the first ESP and LLS courses. Although the set-up for the second ESP electives is not free of obligation, the panel advises the programme to explore alternative options of formal assessment that stimulate students to reflect on their learning in the second ESP.

Based on the materials in the course and thesis selection, the panel was satisfied to find that the reliability, independence and transparency of assessment are ensured by the use of answer keys and standardised assessment forms, and by appointing multiple examiners for the thesis. On the basis of the thesis samples, it found the grading to be fair and consistent, but it feels that the transparency of the grading process could be improved as it is now difficult to assess the scope and depth of the feedback provided. It advises providing more insight into the student's research process and the feedback given. An additional advantage of more insight into the student's learning process is that the individual contribution within the research group would become more apparent. The site visit discussions sufficiently reassured the panel that the thesis is written as an individual product, and it values the chosen set-up to work on a research project within a research group as this is very much in keeping with the nature and aims of a postgraduate programme.

In the panel's view, the Examination Board, as represented by the Chamber Research Masters, sufficiently safeguards the quality of assessment and the achievement of the ILOs and thus carries out its formal tasks. The introduction of an Assessment Committee provides a valuable supplement to the Examination Board's oversight on the quality of assessment in the programme. The panel is impressed with the constructive way in which the AC's assessment carousel is fashioned, and it considers this a fruitful practice.

The panel concludes that assessment is taken seriously in the Health Sciences programme. It encourages the programme's plans to professionalise and formalise the system further and trusts the Examination Board to carefully monitor its implementation.

Standard 4: Achieved learning outcomes

The panel is of the opinion that the theses reflect the postgraduate character of the programme and the high academic standard it sets. It concluded on the basis of the theses that graduates have attained the programme's intended learning outcomes. The theses generally range from very good to excellent in quality, at the level of an academic publication.

Alumni can be expected to find their way onto the labour market easily. The performance of alumni of the postgraduate master is generally very good, with most of them continuing in PhD positions. In fact, several former graduates have obtained professorships at universities in the Netherlands and abroad, further supporting the longstanding reputation of the master's programme Health Sciences. The programme maintains good contacts with alumni, yet the panel is pleased with the fact that the programme management intends to step up its activities in this respect even further.

The panel assesses the standards from the *Assessment framework for limited programme assessments* in the following way:

Master's programme Health Sciences

Standard 1: Intended learning outcomes	meets the standard
Standard 2: Teaching-learning environment	meets the standard
Standard 3: Student assessment	meets the standard
Standard 4: Achieved learning outcomes	meets the standard
General conclusion	positive

The chair, prof. dr L.J. (Louise) Gunning-Schepers, and the secretary, dr I.M. (Irene) Conradie, of the panel hereby declare that all panel members have studied this report and that they agree with the judgements laid down in the report. They confirm that the assessment has been conducted in accordance with the demands relating to independence.

Date: 25 March 2021.

DESCRIPTION OF THE STANDARDS FROM THE ASSESSMENT FRAMEWORK FOR LIMITED FRAMEWORK ASSESSMENTS

Standard 1: Intended learning outcomes

The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements.

Findings

Profile and mission

The academically oriented postgraduate master's programme Health Sciences is a 70 EC programme offered by the internationally renowned Netherlands Institute for Health Sciences (NIHES) at Erasmus MC. It aims for its students to become excellent scientific researchers in the field of quantitative health research. In preparation for a research career, the students are provided with a solid theoretical, methodological and statistical basis for designing and implementing a research project and guidance on how to successfully publish their research results. The Health Sciences programme consists of specialisations in seven different fields: Biostatistics, Clinical Epidemiology, Epidemiology, Genetic and Molecular Epidemiology, Health Decision Sciences, Medical Psychology, and Public Health Epidemiology. There are eight departments and institutes actively participating in the programme, with Epidemiology and Public Health being the main hosts.

The panel is very positive about the profile and mission of the programme. It notes that from an international perspective, the programme is quite unique with its focus on methodological training in quantitative research methods, applied to clinical epidemiology and public health in an international setting. There are only two other programmes that share a similar focus, the Master in Public Health at Harvard and the Master in Epidemiology at Berkeley. The programme capitalises on the vast number of departments involved and has strong ties with knowledge institutes outside Erasmus MC, such as the faculty of ESHPM, RIVM (National Institute for Public Health and the Environment), Harvard TH Chan School of Public Health, University Hospital Augsburg as well as many international professional societies of medical specialists. The involvement of different departments, the range of specialisations, and several shared classes ensure a multidisciplinary approach, while the strong focus on causal inference and modern statistical methods adds coherence to the Health Sciences profile. The panel thinks the programme's profile is also very relevant to the needs of society and to contemporary quantitative health research (see below under Intended learning outcomes).

The panel recognises that the emphasis on epidemiological research methods stems from a long history of epidemiological research in Rotterdam. It appreciates that the programme maintains a strong link with the professional field of epidemiology; the MSc Health Sciences programme was recently reaccredited by the Dutch Society for Epidemiology (*Vereniging voor Epidemiologie*, VvE). All students in the specialisations of Epidemiology, Clinical Epidemiology, Genetic Epidemiology, Public Health Epidemiology or Health Decision Sciences who have completed the core curriculum, electives, and performed their research under the guidance of a VvE-registered epidemiologist can be registered as Epidemiologist A (junior epidemiological researcher at master's level). The panel learnt that due to changes in the VvE requirements, not all specialisations still meet the criteria for registration. The programme intends to remedy this in the revised curriculum, which will be implemented in the 2021-2022 academic year, so students from all specialisations will fulfil the VvE requirements upon graduation. In the meantime, the programme is able to provide custom solutions where needed.

During the online visit, the panel discussed the programme's choice of name because of its distinctive epidemiologic emphasis. The programme management indicated that the name Health Sciences was chosen at the time because of the wide range of specialisations included. Yet it also recognised that its primary target group is students with an interest in epidemiology and that Clinical Epidemiology and Public Health are keystones of the programme. For that

reason, it is open to a reconsideration of its choice of name and has started a dialogue within the programme on this topic. The panel supports this search for the best framing for the programme: while the programme does not necessarily train students to become epidemiologists in a strict sense, it believes a programme name that better reflects its content - to give just one example, 'Epidemiologic Methods in Health Science' - can be a valuable development, particularly as part of a refined strategic positioning. It believes the programme will succeed in this as it already has a strong and attractive profile.

Intended learning outcomes

The Health Sciences programme has formulated a set of twelve intended learning outcomes (ILOs; for an overview, see Appendix 1). This includes general research-oriented learning outcomes that are based on the common educational vision it shares with other (research) master programmes at the Erasmus MC. In addition, there are ILOs regarding domain-specific knowledge of epidemiologic research, as specified by the VvE, and regarding personal and professional development; both of these account for its postgraduate character. All ILOs are related to the Dublin descriptors (knowledge and insight, application of knowledge and insight, judgment, communication and learning skills), in line with international standards for the master's level. They are clearly formulated and sufficiently reflect the level and orientation of an academically oriented postgraduate master's programme according to the panel. They aim to train students to become good researchers at the level of a VvE-registered epidemiologist who can resolve health research problems in a professional practice. From the written materials, the panel gathered that the ILOs are regularly evaluated and have been revised since the previous accreditation in response to changing demands from the professional field.

In the panel's view, the attention to impact is sufficiently present in the curriculum (further discussed under Standard 2), without showing clearly in the ILOs. The panel considers it important that graduates can interact with the policy field and the wider public about health research, and also connect social developments to current and future health research problems. Both within and outside the academic field there is a growing need to reflect on the societal relevance of health research in terms of impact, public engagement and research uptake, as stressed as well by the renewed Strategy Evaluation Protocol (SEP 2021-2027). The panel recommends including societal relevance and impact in the ILOs so graduates know they will be prepared for something that will be expected from them in the future.

Relation to the professional field

The panel recognised that contacts with the professional field are naturally close, as the vast majority of staff works in the academic medical field, combining research, teaching and medical practice assignments. It is very satisfied with the extent to which the Health Sciences programme wants to prepare the students for a research career. The combination of theoretical and practical research training in the health sciences is also in line with the VvE criteria. Additionally, the programme asserts in its self-evaluation report that the acquired research skills and knowledge can be used in other professional roles, such as executive or advisory positions in clinical medicine, public health, pharmaceutical research, or health policy. The panel learnt from its discussions with the programme management that an executive or advisory position is feasible with a complementary background in policy or management, and it urges the programme to set the right expectations in this regard.

Considerations

From the written materials and interviews with the programme management, the panel concluded that the postgraduate master's programme Health Sciences has a distinctive epidemiologic research profile with a strong focus on causal inference and modern statistical methods. It finds this profile relevant to this contemporary and rapidly changing field, and recognisable in its seven specialisations. The students are trained to the level of VvE-registered epidemiologists who can resolve health research problems in a professional practice. The panel applauds the initiative of the programme to reconsider its name in light of its specific attention to epidemiological methods.

The panel has established that the ILOs are based on a common educational vision at Erasmus MC, in line with the Dublin descriptors and, for five out of seven specialisations, with the VvE requirements. It was pleased to hear that in the revised curriculum, which will be implemented in the 2021-2022 academic year, students from all specialisations will fulfil the VvE requirements upon graduation. According to the panel, the ILOs are clearly formulated and applicable to all specialisations. Although various courses in the curriculum already devote attention to social developments, societal relevance and impact, the panel considers this a requirement of growing importance for health sciences experts and recommends introducing societal relevance in the ILOs and, where needed, embedding it further in the curriculum. It concludes that the ILOs of the postgraduate master's programme Health Sciences meet the requirements of the discipline and correspond with the Dublin descriptors at the master's level. Their content, orientation and level, therefore, meet national and international requirements.

Conclusion

Master's programme Health Sciences: the panel assesses Standard 1 as 'meets the standard'.

Standard 2: Teaching-learning environment

The curriculum, the teaching-learning environment and the quality of the teaching staff enable the incoming students to achieve the intended learning outcomes.

Findings

The panel studied the curriculum described in the self-evaluation report. It looked at course outlines and reviewed several complete course portfolios (see Appendix 4). It also discussed the curriculum and the teaching-learning environment with the programme management, teaching staff, students and alumni.

Curriculum content and structure

Health Sciences is a 70 EC postgraduate programme, taught and assessed in English. The programme's curriculum starts and ends with attendance at the Erasmus Summer Programme, held yearly in August. It is a specialised, international event, organised by the NIHES and attended by hundreds of students, researchers and health professionals. The panel is enthusiastic about the interactive teaching here, as well as the opportunity to meet the experts in the field. For new Health Sciences students, it provides three weeks of introductory courses (4.2 EC) on the principles and methods used in quantitative medical and health research. The rest of the curriculum consists of a compulsory 14.3 EC core, 3 EC of academic skills training, a 33 EC research project, and a combined 15.5 EC of specialisation-specific courses, electives, and courses in the second Erasmus Summer Programme (ESP). In the compulsory core, the students follow courses on study design and biostatistics. For an overview of the curriculum, see Appendix 2. The programme translated the ILOs into learning goals per course. The panel confirmed on the basis of the provided competence matrix that the culmination of learning outcomes in the various courses allows the students to achieve the ILOs.

The curriculum has an explicit academic and professional orientation, focused on quantitative health research. The courses are structured according to the research cycle: starting with study design, data analysis, specialisation-specific research methods, advanced data analysis, and electives related to the chosen research project. During their studies, the students acquire broader and deeper theoretical knowledge and more in-depth research skills in their chosen specialisation. The academic orientation also shows from the fact that the majority of students attend this programme as a way to further develop their quantitative research skills targeted to a PhD project. Erasmus MC PhD candidates who are required to improve their quantitative research skills also attend the programme. The professional orientation is prominent in many courses and the ESP, through the many guest lecturers, the professional experience of lecturers from Erasmus MC, and the research experience students bring to the classes. In this regard, the research project is a valuable asset of the programme, and Erasmus MC offers a variety of research projects, including the large cohort studies Rotterdam Study or Generation R. During their research project for the

master thesis (discussed further under Standard 3), the students are embedded in a research environment where they are trained to work and interact in a research group, under the personal supervision of a leading researcher from the associated research departments and institutes. These elements of the programme ensure that the students gain professional skills that are essential in their future practice. The panel appreciates the clear professional and academic orientation as a strong point of the curriculum.

Skills development is well subsumed under the compulsory skills course in Medical Writing (referred to as SCO2 in Appendix 2) and the Lifelong Learning Skills (LLS) learning trajectory. In the latter, the students are trained in leadership skills, integrity, the impact of social developments, and personal and professional development, and this part of the curriculum is currently being developed further. The panel applauds this initiative to expand on these skills, also in line with ILO 12, and was pleased to hear that the interaction between social and scientific thinking was incorporated into several courses. To give an illustration, in Introduction to Global Public Health, the students meet in small groups and each group prepares a presentation in which they call for making a specific health target, such as mental health or emerging infectious diseases, a global health priority for Sustainable Development Goal 3 (Ensure healthy lives and promote well-being for all at all ages). Also, in Clinical Translation of Epidemiology, the students need to translate etiological and biological insights into clinical guidelines. The previous accreditation panel had suggested incorporating a course on research ethics into the curriculum. The self-evaluation report indicated that such a course was developed together with the Department of Medical Ethics of Erasmus MC, and as of 2018-2019 the one-day Scientific Integrity course is now a compulsory part of the LLS trajectory.

During the site visit, the panel discussed the plans to revise the curriculum as of 2021 with the management, staff and students. In the new structure, the core curriculum will be offered in the first semester and will be concluded with a core competences exam (see Standard 3). As a result, students can decide on their specialisation during the first semester rather than immediately upon enrolment. Additionally, the number of courses in the first semester will be reduced, and the topics will be offered in a more integrated framework. Finally, the course content of all specialisations will cover the VvE requirements. In the panel's opinion, the transition to the revised programme is not massive but includes sound efforts to improve the quality of education further.

Curriculum: teaching methods

The teaching-learning environment of the master's programme Health Sciences is designed around the educational principles of self-directed, active and personalised learning, supported by technology-enhanced learning activities. To further support this, the programme is involved in a three-year educational innovation project that started early 2019. This project aims to innovate the educational methods used by incorporating principles of blended learning in a structured manner. Throughout most of the curriculum, the students work in small cohorts with a student-teacher ratio of 16:1 on average for all courses, up to 30:1 in the larger core courses. The programme considers this an excellent learning environment to achieve its goals. In the panel's view, the group size should be related to the learning objectives and teaching methods. It is satisfied that the programme adheres to these principles and offers its courses accordingly.

The panel studied material from three sample courses, as listed in Appendix 4. It clearly recognised how these courses offer flexible and personalised learning through online preparation assignments or learning activities combined with in-class meetings. From the course materials, it concluded that the content of these courses is challenging and relevant, while employing various forms of active learning. For example, the Repeated Measurements course (2019-2020) includes both online modules and face-to-face classes. It starts with a short overview of simple methods for analysing repeated measurements data before turning to more advanced methods. Computer practicals in the statistical programming language R are used to acquire hands-on experience in applying these techniques to real data from clinical and epidemiological studies. All code used during the course is demonstrated live using a web app, which is made available to the students. Also, the students can receive direct feedback on their work when writing code.

The panel commends the programme's management, staff and education committee for having taken up the digitisation process so well as part of the larger educational innovation plan. Courses use a variety of tools and show alignment between their objectives, activities and assessments. The panel applauds the use of the digital learning environment Canvas. This platform provides the students with all of the study information for each course: learning objectives, staff, teaching methods, literature, assessment and credits. It is also used in more innovative ways, with engaging learning activities such as e-modules, interactive videos and online discussions. The panel reviewed several short video lectures and found that they are very well designed and structured. The students remarked during the site visit that they appreciated the increased digitalisation of the programme over the years and considered the blended courses the best ones. In particular, they valued the various forms of active learning, such as quizzes, polls or breakout rooms, and the flexibility to learn at their own pace.

Given the programme's area of interest, the COVID-19 pandemic has itself been discussed and used in assignments as a current research topic. In the panel's view, the negative impact of COVID-19 on the programme's education has been manageable, in part because the programme was already at an advanced level of digitalisation, and its management has closely monitored the effects of the conversion to online teaching. The panel also discussed the adjustments made during the COVID-19 period and their implications on the quality of education with the management, staff and students. It found that as of March 2020 all courses were offered online, that this accelerated the digitalisation process and did not adversely affect the study results achieved. The programme management noted from interim staff and student evaluations that it was important to focus on student interaction. In response, additional efforts were made in various courses to set up informal Zoom sessions during breaks, add live Q&A sessions to pre-recorded video lectures, and work on group assignments in breakout rooms. These measures have largely fulfilled the students' expectations, and the students valued the effort made by the teaching staff to get all the material online and make all the lectures available in a digital format. For example, the students were able to cover the content of a course better with the possibility to go back and forth over the online material. From speaking with the students, the panel concluded that although they would have preferred the educational impact of at least some in-class meetings and face-to-face discussions, overall they felt that there was adequate student interaction and that the programme paid attention to their well-being. This assessment is shared by the panel. Although digitalisation offers clear benefits with regard to flexibility and accessibility, it also feels that for many students, education is to a considerable extent a social affair. Face-to-face teaching is greatly appreciated because it deepens interaction and collaboration, both between the instructor and the student and between the students themselves. As such it thinks it best not to go fully digital in the future and continue along the path of blended learning, deviating from it only in special cases. The panel was very impressed by the steps taken to integrate blended learning into the curriculum.

Internationalisation

The Health Sciences programme attracts not only Dutch, but also many international students. Between 2014 and 2019, approximately a third of the students came from outside the Netherlands. The panel considers the 2020-2021 cohort without any external inflow an exception, most likely due to the COVID-19 pandemic and related travel restrictions. It noted that the international student composition is diverse in terms of educational and cultural background and experience. Most courses can be attended by external participants as well, which adds to an even greater variety of backgrounds and viewpoints. The programme values its international classroom because it adds diversity, and it considers an international scientific environment one of its key characteristics. The panel shares the opinion that this is an attractive feature of the programme succeeded in accommodating these diverse backgrounds and enabling the students to learn from each other in an international context. First of all, attendance at the Erasmus Summer Programme and shared core courses bring students from different backgrounds to the same baseline of understanding with regard to the core knowledge areas of health sciences and academic skills. The online content offers students the flexibility to bridge knowledge gaps at their own pace. Also, attendance during initial basic-level lectures on biostatistics is not compulsory as long as the assignments and assessment tasks are completed successfully. Secondly, the programme pays attention to individual differences and shared experiences, for instance, with the introduction of a workshop on intercultural communication in 2020 and compulsory tutored peer-support

groups in which the students can share their problems and support each other under the guidance of a psychologist. The panel is satisfied that diversity in the classroom is actively explored in these ways.

The use of English as the language of instruction not only facilitates an international classroom, it also allows the international staff to thoroughly convey their knowledge. This provides students with the opportunity to get in touch with a broad range of researchers in an international field. The students are also stimulated to contribute to academic articles in international journals. The panel agrees with this motivation to adopt English as the language of instruction and to use a foreign language name for the programme.

Feasibility

Health Sciences can be studied as a 13-month, full-time programme, or as a part-time programme, in which case the same programme is spread over a longer period. The admissions procedure is quite selective. Admission is possible for candidates with a master's degree from a discipline related to clinical medicine or public health, who have a good working command of the English language with a minimum Cambridge Proficiency score of C1. In addition, they should have experience with performing research and be interested in performing quantitative research.

The programme aims to attract excellent students from both foreign and national universities to create a stimulating, high-quality, international learning environment. It has an intake of approximately 40 students per year, though student numbers have fallen somewhat over the last few years. The self-evaluation report outlines several initiatives to increase student numbers, including a marketing strategy and information measures for alumni, single-course participants and faculty.

From the written materials, the panel gathered that the programme's final success rate is high, with over 90% completing the programme successfully. At the same time, the study progress can take several years, as most students opt for a part-time mode in which they combine their studies with a PhD or clinical work. In the panel's view, it is understandable to offer these postgraduate students ample flexibility to follow the programme alongside their work, as is most often the case. It feels this flexibility is one its strong points. The students reported to the panel that they feel adequately supported by the programme, and the panel found no evidence of feasibility issues.

Teaching staff

The professional orientation and high academic standards of the programme are also reflected in the qualifications of all staff involved. The teaching staff consists of Erasmus MC staff and guest lecturers affiliated with other research institutions. Guest lecturers are selected for their specialised knowledge; their knowledge of English and didactic skills are also taken into account. From the teaching staff overview, self-evaluation report and meetings with staff members, the panel concluded that the teaching staff of the Health Sciences programme is dedicated and qualified for teaching in the master's programme. Their expertise covers all specific areas of the specialisations. The vast majority, 86%, holds at least a PhD and 38% a professorship. Of the teaching staff appointed at Erasmus MC, 64% has a University Teaching Qualification (UTQ) or is in the process of acquiring one; 11% holds or is training for a Senior University Teaching Qualification (SUTQ). Preparing for and obtaining the UTQ is part of the staff development policy for faculty appointed at Erasmus MC or Erasmus University. The panel appreciates the faculty's efforts to invest in the professionalisation of its teaching staff. Moreover, a course coordinator is appointed for each course. S/he is part of the academic staff of the faculty and ensures the quality and level of the teaching.

The students and alumni whom the panel interviewed indicated their satisfaction with the quality of the staff, both in terms of content and didactics. This appreciation also extended to the thesis supervision, and they acknowledged the active implementation of the principles of scaffolding, in which a supervisor challenges students to find their limits and go further. A point of attention already noted by the programme and raised in the student chapter concerns improving the logistics of teaching, such as uploading online study materials in time and setting and meeting reasonable response time expectations for students. During the site visit, representatives of the education

committee noted that it had entered into dialogue with the NIHES management on this issue and that some improvements have become visible. The panel encourages the management to monitor this.

In the panel's view, the level of English is sufficient: the majority of the staff has been teaching in English-taught programmes for several years and/or has been working in an English-spoken environment. Erasmus University Rotterdam is a bilingual university, which uses both Dutch and English. It encourages all staff to be able to speak and write English at a satisfactory level, according to its importance for their job. Language courses are offered if need be. In addition, course evaluations confirmed the lecturers' adequate use of English in class.

The panel is pleased to see that the programme has a qualified team of core staff members as well as a large international network from which it attracts leading experts. It wants to point out that given the diverse backgrounds and combination of medical, research and teaching priorities, it is important to make sure the team spirit is fostered. It applauds the plans to repeat the successful retreat with programme directors, core teaching faculty and NIHES staff annually and welcomed signals of cross-fertilisation among courses.

Material facilities

Erasmus MC offers a wide range of student facilities, such as lecture rooms, project group areas and quiet self-study places. For Health Sciences in particular, the computer facilities have the necessary modern applications available. The medical library offers students assistance in conducting systematic literature research. The panel considers that Erasmus MC has succeeded in providing modern and well-maintained facilities which support the students in their learning process.

Considerations

MSc Health Sciences is a 70 EC postgraduate programme, taught in English. The panel concluded that the content and structure of the programme enable the students to achieve the intended learning outcomes. Its mandatory core structure ensures that all students undergo the consecutive stages of the research cycle and gain an advanced level in their knowledge and understanding of quantitative health research. The panel subscribes to the planned restructuring of the curriculum as of 2021 and expects it will add further focus and coherence to the programme. This will help students to get a clearer view of the set of core competencies acquired in the programme and to fulfil the VvE requirements upon graduation. In its view, the flexibility of the programme is one of its strong points, and it appreciates how the wide range of electives, the research project leading to the master thesis, and the assignments during the courses offer the students ample room to pursue their individual interests. It reviewed a sample of the courses and found them to be relevant, up to date and of an academic master level. It considers the academic and professional orientation, focused on quantitative health research, to be clearly visible in the curriculum structure, the courses and Erasmus Summer Programme, and staff composition, including the involvement of renowned guest lecturers. It also appreciated that skills training is being further developed as part of the Lifelong Skills learning trajectory.

The small scale of the programme and the smart use of technology-enhanced learning activities allow for interactive and very intensive teaching. The students value this highly, as well as the strong focus on research, as the panel learned during the site visit. The advanced process of digitalisation helped to curb the negative impact of COVID-19 on the programme's education, along with its management's focused attention on the effects of a full conversion to online teaching. In the panel's view, the programme has sufficiently succeeded in safeguarding student interaction in this online setting. Still, the panel thinks it is best not to go fully digital in the future and continue along the path of blended learning.

The panel concludes that the entry requirements of the programme are fitting for an advanced level master's programme. It noted that the international student composition is diverse in terms of educational and cultural background and experience. It believes that this is an attractive feature of the programme and found the programme

succeeded in accommodating these diverse backgrounds and enabling the students to learn from each other in an international context.

Based on the staff overview and the discussions during the site visit, the panel concluded that the teaching staff consists of experts in the respective fields who are well qualified and able to assist the students in the development of their competences. It fully supports the use of English in the master's programme, given its international scientific environment. The programme management is responsive to the needs of the students, and the panel asks the programme management and staff to continue their efforts to further streamline the teaching logistics. The facilities are state of the art.

Conclusion

Master's programme Health Sciences: the panel assesses Standard 2 as 'meets the standard'.

Standard 3: Student assessment

The programme has an adequate system of student assessment in place.

Findings

To assess the quality, validity and transparency of assessment within the programme, the panel considered the assessment policy and practice, the assessment of the theses and the functioning of the Examination Board. It also discussed the student assessment with representatives of the Examination Board, programme management, teaching staff, students and alumni.

Assessment policy and practice

The programme adheres to its *Assessment Policy and Assessment Plan (2020-2021)*, which describes various provisions and measures to promote and monitor the quality of assessment. The document also describes how the programme's educational principles have been translated into its vision on assessment. For example, active and personalised learning is translated into activating and engaging assessments. Some notable examples are asking students to extrapolate course material to their own research project or making a video on a specific competence. General principles are that criteria of assessment are clear in advance to the staff and students, that there is constructive alignment in assessment design (i.e. demonstrating coherence between assessment, teaching strategies and intended learning outcomes) and that frequent assessments (both formative and summative) and feedback support the students' learning process. The *Assessment Policy and Assessment Plan* also contains a generic table in which the courses of the core curriculum are shown with their assessment type(s) and relation to the intended learning outcomes (ILOs). Additionally, the *Teaching and Examination Regulations (TER)* outline the programme's objective, rules and requirements.

In response to the changed assessment circumstances as a result of the COVID-19 crisis, the programme drafted the *Addendum to TER MSc Health Sciences (70EC) 2020-2021*. This document stated various proportional adjustments, mainly concerned with conditionally admitting master students to the MSc Health Sciences (70 EC) programme who, due to the COVID-19 measures, were delayed in the final phase of their master's programme. In addition, the Examination Board and NIHES wrote a meeting report in September 2020 that was intended as an interim evaluation of the impact of COVID-19 measures on the teaching and assessment of its programmes. From this report the panel gathered that most course assessments do not require on-site administration, while only a limited number of courses needed rescheduling, and some traditional tests were converted to a digital version and administered with the support of online proctoring. The assessments that have been modified due to the COVID-19 measures were submitted to the Examination Board for approval in advance. The relatively small group sizes of these programmes were advantageous for making adjustments. The panel was pleased to find that the courses and assessments have continued and respects the dedication of all staff involved to find ways to do so quickly and diligently.

Various assessment instruments are used to test the achievement of the ILOs. Knowledge and the application of knowledge, for instance, are tested in written exams, assignments, presentations and the thesis. Individual assignments and presentations are generally graded using a numerical grade, whereas group assignments and presentations can only be graded using pass/fail. Cum laude restrictions prevent group assignments being counted towards the final grade average. Based on the materials in the course and thesis selection, the panel was satisfied to find that the reliability, independence and transparency of assessment are ensured by the use of answer keys and standardised assessment forms, and by appointing multiple examiners for the thesis. It studied several exams during the site visit and noted that they were of a very high level. They required critical thinking, and even the multiple choice questions involved extensive calculations by the students. The panel also noted that course descriptions and additional documentation contained information on the learning outcomes and assessment instruments. The students also appreciate the feedback they receive on their various assessments, as became clear during the site visit.

The majority of courses include a formal assessment. However, attendance is compulsory for most courses in the ESP and most skills courses, and the attendance rate is the only examination method used. From the assessment policy the panel gathered that attendance also requires active participation during the course in order to pass it. During the site visit, it discussed the topic of attendance more extensively, as the previous accreditation panel had advised the programme to apply other examination methods. The programme management explained that all topics that are introduced in the first ESP are also covered in the core courses and formally assessed during the first semester; the Examination Board confirmed this as well. In the revised curriculum, a core competence exam will be added to assess all the knowledge obtained during the core courses. The exam can be taken twice per year, and full-time students will be required to pass the exam before starting on their master thesis. Additionally, for the assessment in the renewed LLS courses, the students will be asked to reflect on these courses in a portfolio. The panel was satisfied to learn about these planned adjustments to the first ESP and LLS assessments and feels they are suitable solutions.

Finally, the panel looked at the second ESP courses, at the end of the study programme. These electives require attendance, active participation and fulfilling several assignments during the courses. Although this is not free of obligation, the panel advises the programme to explore alternative options of formal assessment that stimulate the students to reflect on their learning in the second ESP. For example, they could write a short application letter in advance explaining their interest or a reflective report on the added value of the chosen ESP electives. It could also take the form of a more integrated assignment on the context in which the knowledge obtained by the student (or the combination of their two masters) can best be applied, e.g., if it is directed to a specific target group. Any such addition would invite the students to look ahead and consider the potential impact.

Linked to the revised curriculum, the programme has formulated other assessment ambitions for the near future: following the successful introduction of rubrics as an assessment tool for the master thesis in 2019, it intends to use rubrics for every summative assignment, to develop a rubric for group and individual presentations, and to expand the use of assessment matrices for written assignments. The self-evaluation report indicated that around 20% of all written exams currently use assessment matrices, which indicate how the learning goals per course match specific forms of assessment and the ILOs. The panel applauds this initiative for a broader implementation of assessment tools which will add to the transparency, validity and reliability of assessment practices.

Thesis assessment

The final project is the culmination of the master's programme and aims to show the student's level of proficiency in the programme's ILOs. It takes the form of a research project in the field of quantitative health research. The panel established that the final project (33 EC) starts with a research proposal, followed by a research project, mid-term presentation, master thesis and final presentation. This covers the entire research cycle: starting from study design, research methods, to data analysis and interpretation, resulting in an individually written thesis. It read a

representative sample of 15 theses and the accompanying assessment forms and concluded that it can agree on the final grades given by the examiners. The final grade is determined by the assessment of the student's performance during the project (1/3) and of the thesis (supervisor 1/3; independent second assessor 1/3). These are recorded on the standardised *Research Assessment Form*. The supervisor fills in two pages: one for the research project, one for the research paper; the second assessor fills in a separate form for the research paper. As formal examiner of the research part of the programme, the Programme Director validates the grade. In the case of more than one point difference between the supervisor and second assessor, she decides on a final grade within the range of grades awarded by the supervisor and second assessor. All staff members who supervise a master's thesis are senior researchers and are selected on the basis of their methodological and supervision skills.

The panel is satisfied with the marked improvements made over the last years with regard to thesis assessment: calculation of the end grade is specified, the students can follow the progress of the grading process in Osiris Case, and, in line with the recommendation from the previous accreditation panel, each master thesis is also assessed by an independent second assessor. It specifically praises the initiative for an 'assessment exchange' with the Epidemiology programme at VUmc in the summer of 2019. Each programme assessed several research papers from the other programme's students, using their own assessment methods. The Health Sciences programme valued the use of rubrics by VUmc, leading to a more transparent evaluation process. In response, it decided to introduce rubrics for the assessment of the master project and thesis. In the panel's view, these improvements have added to a more transparent grading process.

At the same time, there are still opportunities for further improvement. From the theses and assessment forms, it was unclear to the panel how students reflect on their thesis and what feedback they receive during the research process. The research project assessment consists only of a rubric in which criteria such as effort, motivation, and self-guidance/level of independence are graded without further explanation. The research paper assessment does offer room for a clarification, but the panel found this often contained only summary remarks, and the visible feedback was very minimal. It gathered from its on-site discussions that there are several feedback processes throughout the research project in which students receive feedback, and the students and alumni confirmed this as well, but these are not documented. It advises providing more insight into the research process and the feedback given. For instance, the students could keep a logbook in which they record their learning process, or the supervisor could add a short evaluation at the end of the student's learning process and note where it was necessary to make adjustments.

An additional advantage of more insight into the student's learning process is that the individual contribution within the research group would become more apparent. This had been an initial concern of the panel, given the polished character of the reviewed research papers. However, during the discussions with the management, staff, students and alumni, the panel was sufficiently reassured that the thesis is written as an individual product. Afterwards, the paper is further refined in collaboration with co-authors, before it is actually submitted for publication. Moreover, the panel thinks the chosen set-up to work on a research project within a research group is very much in keeping with the nature and aims of a postgraduate programme.

Examination Board

In 2018, the Research Master Examination Board joined forces with the Board of Examiners of the Medical programme, and has become the Chamber Research Masters of the Examination Board Erasmus MC (CRM EB). The CRM EB safeguards the quality and level of the assessments, assessment system and achievement of learning outcomes, determines whether students meet the requirements set out in the *Teaching and Examination Regulations* (TERs), and sets the rules and guidelines that are supplementary to the TERs for the five research master programmes and postgraduate master programme.

In 2018-2019 an Assessment Committee (AC) was introduced for the three NIHES master programmes. It supports the CRM EB in overseeing the quality assurance of the assessments. This committee is a joint effort between the

CRM EB and examiners, NIHES programme directors and NIHES programme coordinator, with support from independent educational experts. The panel was pleased with the assessment carousel which the committee has set up and which takes place four times per year. Each time, two examiners are invited for an open, constructive peer review of their assessment(s) and the assessment process. The committee reviews the assessment files, formats, procedures and course evaluations. Best practices are shared in a newsletter sent to all examiners. A sample report of the assessment carousel's findings provided an accurate picture of the committee's assessment analysis in a supportive context. The panel considers this a fruitful practice and understood that the reduction of assessments in the revised curriculum will be of help in overseeing the quality of all assessments.

In the panel's opinion, the CRM EB adequately handles all of its legally mandated tasks and has a clear view of its responsibilities. The panel discussed the programme's assessment with the CRM EB representatives. It is positive about the steps that the CRM EB and the AC have taken in recent times in the field of quality assurance of assessments, in productive cooperation with NIHES. It shares the CRM EB's positive view on the programme's assessment system, and it trusts that the CRM EB will supervise the programme in the process of implementing its assessment ambitions for the near future (as described above).

Considerations

The panel concludes that the programme has an adequate assessment system in place, with careful procedures that are in a continuous process of further refinement. Course descriptions give the students a clear idea of how the assessment will take place. The programme uses a variety of assessment methods that are tailored to the learning outcomes, with a good mix of individual and group assessments.

The previous accreditation panel had advised the programme to replace attendance with other examination methods. In the panel's view, the proposed solutions of a core competence exam and portfolio for the Lifelong Learning Skills trajectory address this issue adequately for the first ESP and LLS courses. Although the set-up for the second ESP electives is not free of obligation, the panel advises the programme to explore alternative options of formal assessment that stimulate students to reflect on their learning in the second ESP.

Based on the materials in the course and thesis selection, the panel was satisfied to find that the reliability, independence and transparency of assessment are ensured by the use of answer keys and standardised assessment forms, and by appointing multiple examiners for the thesis. On the basis of the thesis samples, it found the grading to be fair and consistent, but it feels that the transparency of the grading process could be improved as it is now difficult to assess the scope and depth of the feedback provided. It advises providing more insight into the student's research process and the feedback given. An additional advantage of more insight into the student's learning process is that the individual contribution within the research group would become more apparent. The site visit discussions sufficiently reassured the panel that the thesis is written as an individual product, and it values the chosen set-up to work on a research project within a research group as this is very much in keeping with the nature and aims of a postgraduate programme.

In the panel's view, the Examination Board, as represented by the Chamber Research Masters, sufficiently safeguards the quality of assessment and the achievement of the ILOs and thus carries out its formal tasks. The introduction of an Assessment Committee provides a valuable supplement to the Examination Board's oversight on the quality of assessment in the programme. The panel is impressed with the constructive way in which the AC's assessment carousel is fashioned, and it considers this a fruitful practice. The panel concludes that assessment is taken seriously in the Health Sciences programme. It encourages the programme's plans to professionalise and formalise the system further and trusts the Examination Board to carefully monitor its implementation.

Conclusion

Master's programme Health Sciences: the panel assesses Standard 3 as 'meets the standard'.

Standard 4: Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Findings*Quality of theses*

Prior to the site visit, the panel reviewed a representative sample of 15 master's theses (see Appendix 4). It concludes that the average quality of the studied theses of the master's programme in Health Sciences is very high. Without exception, they sufficiently demonstrated that graduates of the programme achieve the postgraduate level. The panel noted that the theses can take various forms, including that of a research paper, an extensive study protocol, research proposal or literature review. It supports the conscious choice to make this possible because the same skills are needed in the case of a systematic review or meta-analysis. The programme aims for the theses to be of publishable quality, and the panel found that the studied theses succeeded in this aim; without exception they were well written and concise.

Alumni success

The final success rate of the programme is over 90%, and the performance of the postgraduate master's alumni is very positive. A LinkedIn data analysis overview showed that close to 90% of the graduates pursue a PhD degree. The rest work in a variety of professions, for instance as data manager, medical doctor, researcher at a pharmaceutical company or as consultant. From the self-evaluation report the panel learned that although the programme uses LinkedIn and its newsletter to keep in contact with its graduates, there is not yet a formal follow-up system for alumni. With the establishment of the Graduate School and alumni officer position, the programme intends to improve this in the years ahead. The panel encourages the programme to continue in this direction and to foster an alumni community, also as a point of contact for future students.

Considerations

The panel is of the opinion that the theses reflect the postgraduate character of the programme and the high academic standard it sets. It concluded on the basis of the theses that graduates have attained the programme's intended learning outcomes. The theses generally range from very good to excellent in quality, at the level of an academic publication.

Alumni can be expected to find their way onto the labour market easily. The performance of alumni of the postgraduate master is generally very good, with most of them continuing in PhD positions. In fact, several former graduates have obtained professorships at universities in the Netherlands and abroad, further supporting the longstanding reputation of the master's programme Health Sciences. The programme maintains good contacts with alumni, yet the panel is pleased with the fact that the programme management intends to step up its activities in this respect even further.

Conclusion

Master's programme Health Sciences: the panel assesses Standard 4 as 'meets the standard'.

GENERAL CONCLUSION

The panel assessed standards 1, 2, 3, and 4 as 'meets the standard'. Based on the NVAO decision rules regarding limited programme assessments, the panel therefore assesses the programme as 'positive'.

Conclusion

The panel assesses the *master's programme Health Sciences* as 'positive'.

APPENDICES

APPENDIX 1: INTENDED LEARNING OUTCOMES

Master's programme Health Sciences:

1. The student is able to translate a problem into a scientific research question.
2. The student is able to translate a scientific research question into a research protocol and/or proposal.
3. The student is able to conduct a systematic literature review of a clinical or public health issue.
4. The student has knowledge about quantitative methods and the ability to apply this knowledge in preparing, performing, analysing and interpreting research.
5. The student understands core concepts of etiologic (causality), prognostic, diagnostic, prevention, and intervention research.
6. The student has knowledge of regulations and ethical rules applicable to the fields of clinical and public health research, and is able to apply this knowledge.
7. The student is able to collaborate with fellow members of a research group in order to set up and conduct a research project, to collect data, and to analyse these data to draw conclusions.
8. The student is able to write a draft manuscript or Master of Science thesis.
9. The student is able to present the research findings in an engaging way.
10. The student is able to respond to criticism in a constructive and productive manner.
11. The student is able to critically review and assess the relevance of scientific results.
12. The student engages in personal and professional development.

APPENDIX 2: OVERVIEW OF THE CURRICULUM

Master's programme Health Sciences (full time):

AUGUST		DECEMBER			JANUARY		AUGUST
First semester					Second semester		
Erasmus Summer Programme (4.2 EC)	Study Design (4.3 EC)	Bio-statistics I (5.7 EC)	Specialisation specific courses (A)	Bio-statistics II (4.3 EC)	Specialisation specific courses/Electives (B) A + B + C = 15.5 EC		Erasmus Summer Programme (C)
	Selection of supervisor and research project, start preparation research proposal				Research: finalisation research proposal, midterm presentation, writing master thesis (33 EC)		
	LIFELONG LEARNING SKILLS AND SC02 (3 EC)						

APPENDIX 3: PROGRAMME OF THE SITE VISIT

Monday 16 November 2020

15.00 – 16.00	Preparation, private panel meeting and documentation review
16.00 – 16.10	Break
16.10 – 17.00	Welcome and meeting with programme management (in Dutch)
17.00 – 17.30	Private panel meeting

Tuesday 17 November 2020

08.30 – 09.00	Private panel meeting
09.00 – 09.45	Meeting with students and alumni (in English)
09.45 – 10.00	Private panel meeting
10.00 – 10.15	Break
10.15 – 11.00	Meeting with staff (in English)
11.00 – 11.15	Private panel meeting
11.15 – 11.45	Open consultation (or documentation review)
11.45 – 12.00	Break
12.00 – 12.45	Meeting with Examination Board (in Dutch)
12.45 – 13.00	Private panel meeting
13.00 – 13.45	Lunch break
13.45 – 14.00	Private panel meeting
14.00 – 14.45	Concluding meeting programme management (in Dutch)
14.45 – 15.15	Break
15.15 – 16.15	Private panel meeting to formulate conclusions of the visit
16.15 – 16.30	Preparation oral feedback
16.30 – 16.45	Feedback and preliminary findings by panel chair to all interested parties
16.45	End of the site visit

APPENDIX 4: THESES AND DOCUMENTS STUDIED BY THE PANEL

Thesis selection

The panel studied 15 theses of the master's programme Health Sciences. The selection was based on a provided list of 60 graduates between 2017 and 2019, including information on the 7 specialisations and 2 study modes (full-time and part-time, the latter being the most commonly chosen option). The specialisation Health Decision Sciences, started in 2019, was not yet represented in the provided list, while the specialisation Pharmacoepidemiology, offered between 2015 and 2018, was included in the selection. A variety of topics and a diversity of examiners were included in the selection. The project manager and panel chair assured that the distribution of grades in the selection matched the distribution of grades of all available theses. This resulted in the following distribution:

Specialisation	Total number of theses 2016-2018	Thesis selection
Biostatistics	1	1
Clinical Epidemiology	42	8
Epidemiology	4	1
Genetic and Molecular Epidemiology	5	2
Pharmacoepidemiology	3	1
Medical Psychology	1	1
Public Health Epidemiology	4	1
Total	60	15

Modes of study	Thesis selection
full-time	2
part-time	13
Total	15

Documents studied

During the site visit, the panel studied, among other things, the following documents (partly as hard copies, partly via the institute's electronic learning environment):

- Critical reflection Master of Science in Health Sciences 70 EC
- Teaching and Examination Regulations Health Sciences 70 EC 2020-2021 (TER, including Appendices)
- Addendum to TER Health Sciences 70 EC 2020-2021
- Rules and Regulations of the Exams for the Research Master Programs Erasmus MC 2019-2020
- *Jaarverslag Examencommissie 2018-2019*
- Description of the specialisations
- Programme schedules 2020-2021 MSc Health Sciences regular and executive
- Assessment policy Health Sciences 2020-2021
- Overview of examiners and lecturers Health Sciences 2019-2020
- Educational vision research masters Erasmus MC
- Anonymised list of graduates 2017-2018 and 2018-2019 (used for the thesis selection)
- NIHES revised curriculum MSc Health Sciences
- Core competences
- Learning outcomes per course
- NIHES Studyguide 2020-2021
- *Verslag Evaluatiegesprek Examencommissie - NIHES*
- NIHES Assessment Form Group Presentation (Draft)
- NIHES Assessment Form Individual Presentation (Draft)
- NIHES Assessment Form Group Assignment (Draft)
- Overview assessment learning outcomes

- Research project assessment form - first assessor
- Research project assessment form - second assessor
- Timeline developments MSc Health Sciences since previous accreditation
- *Toetscaroussel notulen 20200213*

Of the following courses, the panel studied complete portfolios (course guide, relevant course documents and study materials, assignments, exams and exam answer keys, and course evaluations):

- EP01: Principles in Causal Inference (2019-2020)
- HS02c: Public Health Research (2019-2020)
- CE08: Repeated Measurements (2019-2020)