



NVAO • THE NETHERLANDS

**PEER REVIEW NEW PROGRAMME**  
ACADEMIC MASTER  
POPULATION HEALTH MANAGEMENT  
Leiden University

SUMMARY REPORT  
6 January 2021



## 1 Peer Review

The quality of a new programme is assessed by means of peer review. A panel of independent peers including a student reviews the plans during a site visit to the institution. A discussion amongst peer experts forms the basis for the panel's final judgement and the advisory report. The focus is on the curriculum, the teaching and learning environment, and student assessment.

The Accreditation Organisation of the Netherlands and Flanders (NVAO) takes a formal decision on the quality of the new programme based on the outcome of the peer review. This decision can be positive, conditionally positive or negative. Following a positive NVAO decision with or without conditions the institution can proceed to offer the new programme. Upon completion of the programme graduates are entitled to receive a legally accredited degree.

This summary report contains the main outcomes of the peer review. A full report with more details including the panel's findings and analysis is also available. NVAO bases an accreditation decision on the full report. Both the full and summary reports of peer reviews are published on NVAO's website [www.nvao.net](http://www.nvao.net). There you can also find more information on NVAO and peer reviews of new programmes.

Because of COVID-19 temporary measures apply for this peer review.

## 2 Panel

### Peer experts

1. Prof. dr. Harry Hillen (*chair*), emeritus professor in Internal Medicine, Maastricht University Medical Centre, Maastricht University;
2. Prof. dr. Rick Grobbee, professor in Clinical Epidemiology University Medical Centre Utrecht, professor in International Health Sciences and Global Health, Utrecht University;
3. Prof. dr. Inge Hutter, Rector of the International Institute of Social Studies (ISS, Erasmus University Rotterdam), The Hague, professor in Participatory and Qualitative Research in Population and Development, ISS, honorary professor of Demography, University of Groningen (until September 2020);
4. Dr. Jitka Vseteckova, senior lecturer at the Faculty of Wellbeing, Education & Language Studies at the School of Health, Wellbeing and Social Care, Open University, UK;
5. Stijntje Dijk MD MSc (*student*), master student Health Sciences and PhD candidate, Erasmus University Rotterdam.

### Assisting staff

- Dr. Marianne van der Weiden, secretary;
- Michèle Wera MA, NVAO policy advisor and process coordinator.

### Site visit

1 December 2020 (online)

### 3 Outcome

The NVAO approved panel reaches a positive conclusion regarding the quality of the academic master in Population Health Management (PHM) offered by Leiden University. The two-year (120 EC) fulltime programme is offered at the University Campus in The Hague.

Graduates of the two-year academic master's programme Population Health Management are able to design, implement and evaluate science-based solutions that contribute to a sustainable health care system, directed at groups of citizens rather than individual patients. Students learn to do this by combining knowledge and skills of medicine, data science, governance and behavioural sciences. They will be able to connect parties such as physicians, insurance companies and municipalities in addressing health issues in the population. This innovative and interdisciplinary approach fits new ideas about public health and value-based care.

In the first year, students get acquainted with the knowledge base and research methods of governance, data analytics and behavioural science, while the second year is dedicated to applying this in practice by working on an authentic case and a scientific research project. In their second year, students choose one of four specialisations: epidemiology, governance, data science or syndemics, and design an individual study path, to be approved by the Board of Examiners. The specialisations still need to be further developed.

The didactical principles of the programme are competence-oriented learning, interdisciplinary learning, and blended learning. Each course consists of a two-week period of online education, followed by a week of intensive group work on campus and a final week of individual self-study to prepare for the assessment. In order to be admitted, students need to have a university bachelor's degree with sufficient knowledge of medicine, health care and quantitative methods. If one or two of these is lacking, the student can attend a bridging programme. Because the programme rests on two pillars, i.e. the medical and social sciences, the panel advises to offer a similar bridging programme for students who have no or little prior knowledge of social sciences. Academic support is given by a team of dedicated and experienced teachers. Mentors and a study advisor are available to help students in their personal and professional development.

Student assessment is based on individual knowledge tests, papers and group presentations. The exact form of the knowledge tests is not yet finalised and needs further attention. For the final assessment students write a master's thesis, based on an individual research project. The Board of Examiners will ensure the level of the individual study paths and the quality of assessments.

Overall, the panel considers the MSc in Population Health Management an innovative quality programme, meeting the demands of the changing health care system.

### 4 Commendations

1. Societal relevance – Health problems in society are changing and costs are rising rapidly. The standard approach aimed at individual patients is ineffective and a value-based approach aimed at population groups is needed for a sustainable health care system. Graduates of the

MSc in Population Health Management will be able to get the relevant persons and organisations together for innovative solutions.

2. Interdisciplinary approach – For innovative solutions for a sustainable health care system, collaboration between different disciplines is needed, combining knowledge of medicine, data science, governance and behaviour. Students will learn to integrate these disciplines and their research methods.

3. Modern teaching methods – The programme uses a combination of online learning and intensive group work. Online courses, including MOOCs, provide the knowledge base and prepare the students for the group work on campus. Students work on authentic cases to develop their competences.

4. Teaching team – Teachers come from four different faculties and combine their expertise in the Population Health Management programme. They are an engaged and committed team of experienced lecturers.

## 5 Recommendations

1. Balance between medical and social sciences – The initiative for the Population Health Management programme comes from the medical faculty. Provide medical knowledge sufficient to understand the medical aspects of Population Health Management as an explicit part of the programme. Make sure that the contribution of the social sciences remains well-balanced with the medical sciences.

2. Learning objectives – Be more explicit about the transformative and leadership skills students should learn and about the international orientation of the programme.

3. Information on courses and specialisations – Elaborate all first-year courses and the specialisations in more detail before students can apply for the programme, so they know in advance what the programme will offer.

4. Knowledge tests – Design a valid way to assess the knowledge of individual students in each course.

5. Board of Examiners – Make sure that proposed members of the Board of Examiners are involved when the student assessment system is elaborated and finalised.

## 6 What comes next?

NVAO grants initial accreditation to a new programme on the basis of a panel's full report. The decision is valid for a maximum of six years. For conditional accreditation other regulations apply. Upon accreditation the new programme will follow the NVAO review procedures for existing programmes. NVAO publishes the accreditation decision together with the full report and this summary report.<sup>1</sup>

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<sup>1</sup> <https://www.nvao.net/nl/besluiten>

Each institution has a system of quality assurance in place ensuring continuous follow-up actions and periodic peer-review activities. Peer reviews help the institution to improve the quality of its programmes. The progress made since the last review is therefore taken into consideration when preparing for the next review. The follow-up activities are also part of the following peer-review report. For more information, visit the institution's website.<sup>2</sup>

## 7 Summary in Dutch

Het panel oordeelt positief over de kwaliteit van de wo-master Population Health Management van de Universiteit Leiden, Campus Den Haag. Dit is de uitkomst van de kwaliteitstoets uitgevoerd door een panel van *peers* op verzoek van de Nederlands-Vlaamse Accreditatieorganisatie (NVAO). Voor deze beoordeling heeft het panel gesprekken gevoerd met de opleiding op 1 december 2020.

In dit interdisciplinaire en innovatieve masterprogramma leren studenten kennis en onderzoeksmethoden te combineren over gezondheid, gedrag, bestuur en datawetenschap om zo bij te dragen aan een duurzame gezondheidszorg. Het zorgsysteem staat onder druk en oplossingen op het niveau van bevolkingsgroepen lijken effectiever dan individu-gerichte oplossingen om de algemene gezondheid te bevorderen. Afgestudeerden kunnen daarbij samenwerken met artsen, ziekenhuizen, verzekeringsmaatschappijen en overheden. Het tweejarige programma leidt op tot het beoogde masterniveau. In het eerste studiejaar leren studenten eerst de kennisbasis en methoden van de vier disciplines. Daarna leren ze die te integreren aan de hand van opdrachten en projecten. In het tweede jaar kiezen ze een specialisatie (epidemiologie, bestuur, datawetenschap of multimorbiditeit) en werken ze aan een authentieke casus en een onderzoeksproject. De opleiding moet de specialisaties nog in meer detail uitwerken. De onderwijsmethoden zijn een mooie combinatie van online learning in de eerste twee weken van een cursus, een week met intensief groepswork en een week van zelfstudie ter voorbereiding op de toets. Om toegelaten te worden moeten studenten een universitaire bachelor hebben met voldoende kennis over geneeskunde, gezondheidszorg en kwantitatieve onderzoeksmethoden. Een deficiëntiecursus is beschikbaar voor wie een of twee onderdelen daarvan mist. Het panel adviseert een dergelijke cursus ook aan te bieden aan studenten die geen kennis hebben van de sociale wetenschappen. Een team van betrokken en ervaren docenten begeleidt de studenten. Mentoren en een studieadviseur zijn beschikbaar voor hulp bij persoonlijke problemen. De toetsing is een combinatie van kennistesten, papers en groepspresentaties. De opleiding moet de opzet van de kennistesten nog nader uitwerken, waarbij een rol is weggelegd voor de examencommissie, die immers de kwaliteit van de toetsing en examinering bewaakt. Het toetssysteem, gebaseerd op dat van het Leids Universitair Medisch Centrum, is gedegen en biedt voldoende garanties voor goede toetskwaliteit. Op basis van bovenstaande concludeert het panel dat de masteropleiding Population Health Management aan de kwaliteitscriteria voldoet.

Meer informatie over de NVAO-werkwijze en de toetsing van nieuwe opleidingen is te vinden op [www.nvao.net](http://www.nvao.net). Voor informatie over de Universiteit Leiden verwijzen we naar de website van de instelling.<sup>3</sup> Als gevolg van de beperkende omstandigheden door COVID-19 geldt voor deze kwaliteitstoets een tijdelijke procedure.

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<sup>2</sup> <https://universiteitleiden.nl/en>

<sup>3</sup> <https://universiteitleiden.nl/>

The summary report was written at the request of NVAO and is the outcome of the peer review of the new programme Academic master Population Health Management of Leiden University

Application no: 009350



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# INITIAL ACCREDITATION

ACADEMIC MASTER

POPULATION HEALTH MANAGEMENT

Leiden University

FULL REPORT  
6 January 2021

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# 1 Peer review

The Accreditation Organisation of the Netherlands and Flanders (NVAO) determines the quality of a new programme on the basis of a peer review. This initial accreditation procedure is required when an institution wishes to award a recognised degree after the successful completion of a study programme.

The procedure for new programmes differs slightly from the approach to existing programmes that have already been accredited. Initial accreditation is in fact an ex ante assessment of a programme. Once accredited the new programme becomes subject to the regular review process.

The quality of a new programme is assessed by means of peer review. A panel of independent peers including a student reviews the plans during a site visit to the institution. A discussion amongst peer experts forms the basis for the panel's final judgement and the advisory report. The agenda for the panel visit and the documents reviewed are available from the NVAO office upon request.

The outcome of this peer review is based on the standards described and published in the limited NVAO Assessment framework for the higher education accreditation system of the Netherlands (Stcrt. 2019, nr. 3198). Each standard is judged on a three-point scale: meets, does not meet or partially meets the standard. The panel will reach a conclusion about the quality of the programme, also on a three-point scale: positive, conditionally positive or negative.

This report contains the findings, analysis and judgements of the panel resulting from the peer review. It also details the commendations as well as recommendations for follow-up actions. A summary report with the main outcomes of the peer review is also available.

NVAO takes an accreditation decision on the basis of the full report. The NVAO decision can be positive, conditionally positive or negative. Following a positive NVAO decision with or without conditions the institution can proceed to offer the new programme.

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Because of COVID-19 temporary measures apply for this peer review.

## 2 New programme

### 2.1 General data

Institution	: Leiden University
Programme	: Population Health Management
Mode of study	: fulltime
Degree	: Master of Science
Tracks	: not applicable
Location	: The Hague
Study load	: 120 EC <sup>1</sup>
Field of study	: Health (confirmed by the panel)

### 2.2 Profile

The master programme in Population Health Management intends to prepare health care professionals for a sustainable health care system: keeping costs down without lowering the quality of health care. Students are taught to consider health care from an interdisciplinary point of view, taking into account a solid base in medicine, a data-driven approach, new forms of governance and the behavioural component.

### 2.3 Panel

#### Peer experts

1. Prof. dr. Harry Hillen (*chair*), emeritus professor in Internal Medicine, Maastricht University Medical Centre, Maastricht University;
2. Prof. dr. Rick Grobbee, professor in Clinical Epidemiology University Medical Centre Utrecht, professor in International Health Sciences and Global Health, Utrecht University;
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5. Stijntje Dijk MD MSc (*student*), master student Health Sciences and PhD candidate, Erasmus University Rotterdam.

#### Assisting staff

- Dr. Marianne van der Weiden, secretary;
- Michèle Wera MA, NVAO policy advisor and process coordinator.

#### Site visit (online)

1 December 2020

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<sup>1</sup> European Credits

### 3 Outcome

The NVAO approved panel reaches a positive conclusion regarding the quality of the academic master Population Health Management offered by Leiden University on its The Hague Campus. The programme complies with all standards of the limited NVAO framework.

Graduates of the two-year academic master's programme Population Health Management are able to design, implement and evaluate science-based solutions that contribute to a sustainable health care system, directed at groups of citizens rather than individual patients. Students learn to do this by combining knowledge and skills of medicine, data science, governance and behavioural sciences. They will be able to connect parties such as physicians, insurance companies and municipalities in addressing health issues in the population. This innovative and interdisciplinary approach fits new ideas about public health and value-based care.

In the first year, students get acquainted with the knowledge base and research methods of governance, data analytics and behavioural science, while the second year is dedicated to applying this in practice by working on an authentic case and a scientific research project. In their second year, students choose one of four specialisations: epidemiology, governance, data science or syndemics, and design an individual study path, to be approved by the Board of Examiners. The specialisations still need to be further developed.

The didactical principles of the programme are competence-oriented learning, interdisciplinary learning, and blended learning. Each course consists of a two-week period of online education, followed by a week of intensive group work on campus and a final week of individual self-study to prepare for the assessment. In order to be admitted, students need to have a university bachelor's degree with sufficient knowledge of medicine, health care and quantitative methods. If one or two of these is lacking, the student can attend a bridging programme. Because the programme rests on two pillars, i.e. the medical and social sciences, the panel advises to offer a similar bridging programme for students who have no or little prior knowledge of social sciences. Academic support is given by a team of dedicated and experienced teachers. Mentors and a study advisor are available to help students in their personal and professional development.

Student assessment is based on individual knowledge tests, papers and group presentations. The exact form of the knowledge tests is not yet finalised and needs further attention. For the final assessment students write a master's thesis, based on an individual research project. The Board of Examiners will ensure the level of the individual study paths and the quality of assessments.

Overall, the panel considers the MSc in Population Health Management an innovative quality programme, meeting the demands of the changing health care system.

Standard	Judgement
1 Intended learning outcomes	meets the standard
2 Teaching-learning environment	meets the standard
3 Student assessment	meets the standard
<b>Conclusion</b>	<b>positive</b>

## 4 Commendations

The programme is commended for the following features of good practice.

1. Societal relevance – Health problems in society are changing and costs are rising rapidly. The standard approach aimed at individual patients is ineffective and a value-based approach aimed at population groups is needed for a sustainable health care system. Graduates of the MSc in Population Health Management will be able to get the relevant persons and organisations together for innovative solutions.
2. Interdisciplinary approach – For innovative solutions for a sustainable health care system, collaboration between different disciplines is needed, combining knowledge of medicine, data science, governance and behaviour. Students will learn to integrate these disciplines and their research methods.
3. Modern teaching methods – The programme uses a combination of online learning and intensive group work. Online courses, including MOOCs, provide the knowledge base and prepare the students for the group work on campus. Students work on authentic cases to develop their competences.
4. Teaching team – Teachers come from four different faculties and combine their expertise in the Population Health Management programme. They are an engaged and committed team of experienced lecturers.

## 5 Recommendations

For further improvement to the programme, the panel recommends a number of follow-up actions.

1. Balance between medical and social sciences – The initiative for the Population Health Management programme comes from the medical faculty. Provide medical knowledge sufficient to understand the medical aspects of Population Health Management as an explicit part of the programme. Make sure that the contribution of the social sciences remains well-balanced with the medical sciences.
2. Learning objectives – Be more explicit about the transformative and leadership skills students should learn and about the international orientation of the programme.
3. Information on courses and specialisations – Elaborate all first-year courses and the specialisations in more detail before students can apply for the programme, so they know in advance what the programme will offer.
4. Knowledge tests – Design a valid way to assess the knowledge of individual students in each course.
5. Board of Examiners – Make sure that proposed members of the Board of Examiners are involved when the student assessment system is elaborated and finalised.

## 6 Assessment

### 6.1 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.*

#### **Judgement**

Meets the standard.

#### **Findings, analysis and considerations**

The master's programme in Population Health Management (PHM) aims to educate professionals as academic trusted partners who see the importance of an interdisciplinary approach to meet today's and tomorrow's health care demands. Health inequalities within and between populations are increasing and epidemiologic, demographic and societal challenges put pressure on the sustainability of the health care system. The standard approach is inadequate when dealing with multimorbidity and needs to be replaced by a focus on a desired outcome rather than a diagnosis. Graduates will be able to connect health care managers and health care professionals on a strategic level, based on their ability to observe, analyse and approach issues from different perspectives: a solid base in medicine, a data-driven approach, new forms of governance and the behavioural component. Graduates will work as policy advisors and in executive health care delivery in a broad range of organisations, such as health insurance companies, primary care and public health organisations, hospitals, knowledge institutes and governances, or pursue a PhD project. They will have the tools to find their way in the continuously changing health care landscape (international, national, regional, local) to improve health and societal outcomes for citizens and patients. The panel appreciates this clear and innovative vision on PHM. The concept ties in with international and national opinions on the transition of volume-based to value-based population health care, expressed by e.g. the World Health Organisation (WHO) and the Netherlands Foundation of University Medical Centers (NFU).

The vision on PHM is translated in six competences as intended learning outcomes: PHM expert, academic skills, data-driven thinking and acting, eclectic thinking and acting, deliberative governance thinking and acting, and transformative skills. These six competences are divided in 32 clearly defined enabling competencies and convincingly linked to the Dublin descriptors at master level. The programme is based on the combination of medical and social sciences, which is a strong point. The panel notes that the programme is developed by Leiden University's Faculty of Medicine, which may (inadvertently) lead to a stronger focus on the medical sciences. Because the development of leadership and transformative skills are essential for the intended PHM graduates, the panel advises closely guarding and possibly reconsidering the balance between medical and social sciences.

While the initiative for the programme was taken by the Faculty of Medicine at Leiden University Medical Centre, the programme will be positioned at the campus at The Hague. Other faculties to be involved are the faculties of Social and Behavioural Sciences, of Governance and Global Affairs, and of Science. The panel recognises that this will contribute to a truly interdisciplinary programme. The programme management explained that being located in The Hague will facilitate the cooperation with non-academic hospitals and general practitioners and link the programme and its students to a more heterogeneous patient population, using the city of The Hague as a Living Lab. Cooperation will be sought also with

the municipality, public health authorities and insurance companies. Professionals will be able to join parts of the programme by taking the online MOOCs (Massive Open Online Courses) that will be part of the curriculum. In this way, the programme will give a substantial boost to the aims of the new strategic plan with its theme of societal relevance and outreach in public health. The representatives from the professional field confirmed the importance of this strategy and expressed their commitment to the programme. The panel commends this approach and advises involving an even broader group, such as patient and community representatives and other health professions such as nursing.

Because of its worldwide relevance, the programme is designed as an international programme, based on the international nature of the scientific field of PHM and directed at an international student population. The master's programme of applied sciences in PHM at Johns Hopkins University (Baltimore, USA) is worldwide the only English taught PHM master's programme. While agreeing with the international ambition, the panel believes that this requires more attention to global health issues and an awareness that the specifics of the Dutch health care system and the focus on the local context of the Netherlands could be less relevant to international students. It would be helpful to make the international orientation more explicit.

Summing up, the intended learning outcomes of the proposed PHM programme are clearly formulated at the intended master's level and truly interdisciplinary, with a strong combination of academic focus and transformative skills. The programme is innovative and in line with the transition to value-based medicine. The relevance for society, the connection with the professional field and the local environment, and the alignment with the university's strategy are positive points. Medical knowledge sufficient to understand the medical aspects of Population Health Management should be a more explicit part of the programme. Continued attention is advised for the balance between medical and social sciences, specifically the importance of leadership and transformative skills, and for the clarification of the international orientation. Overall, the panel concludes that the programme meets standard 1.

## 6.2 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.*

### **Judgement**

Meets the standard.

### **Findings, analysis and considerations**

The two-year (120 EC) curriculum is well-considered. In the first semester, students start with the introductory course 'Fundamentals of PHM', followed by four monodisciplinary courses on governance, data analytics and behaviour, which include the research methods of the various scientific traditions. In the second semester, students follow five increasingly interdisciplinary courses focusing on data analytics, governance and behaviour and one integrated course ('Implementation: putting PHM into action'). PHM cases are provided in each course, which students analyse from the viewpoint of the three basic PHM disciplines. In every course, the focus lies on one of the three disciplines. Each course runs during a period of four weeks. These periods consist of two weeks of online education, focused on

knowledge transfer, one on-campus week, devoted to in-depth interactive lectures and group work, and one week of individual study, to prepare the final assessment. Parallel to the courses, students participate in groups to work on project cases, one project per semester.

During the second year, the focus is on the application of the various components. In the third semester, students choose one of the four fields (epidemiology, data sciences, governance or syndemics) and create their own individual programme. They can take courses at Leiden University, but are also allowed to follow courses at other Dutch or non-Dutch universities. Students use two weeks in the first year programme to prepare their second-year plan, which needs approval of the specialisation coordinator and the Board of Examiners. In the final semester, students carry out an individual research project and write a master's thesis. The topic must be PHM-related and interdisciplinary and address all six competences. Preferably, the cases of research projects are introduced by real-life health care organisations or research institutes. The panel notes that the four specialisations are not yet fully developed and need further attention. It should be clear to students what they can expect from each specialisation and what they will be able to achieve through them.

In preparation of the site visit, the panel studied the course syllabi and available materials of most of the first-year courses. On this basis, the panel concludes that the courses are at the required master level. The course 'Fundamentals of PHM' is more basic, but this is justified, considering its aim to get all students, with their different disciplinary backgrounds, on the same page. The panel suggests clarifying the concept of 'population', distinguishing it from e.g. a demographic approach. The panel also advises ensuring sufficient attention to the development of leadership skills and the international orientation.

The programme uses a combination of modern didactical principles, making full use of the online possibilities. The approach is competence-oriented, using authentic and real-life cases as much as possible. The use of different perspectives and knowledge from various professions leads to interdisciplinary learning. This integral approach is further stimulated through the mixed composition of student groups that work on assignments during the on-campus weeks. The groups will not only consist of regular students, but also of PhD students, health care professionals and managers. Blended learning uses the flipped classroom, a combination of online education to establish the knowledge base and offline learning during the on-campus week. Both online and offline, students are stimulated to learn actively and in collaboration with their peers, participating in discussions and supplying peer feedback. The panel agrees that blended learning increases flexibility and effectiveness. Part of the online teaching is already available as MOOCs. These are accessible not only to students, but to professionals as well. It appears that they are well-received and appreciated.

The panel fully agrees that the international student population and the international nature of the scientific field of PHM demands that the programme is taught in the English language. PHM is still a new development in the Netherlands, which makes it important to exchange experience internationally. The international scope of the programme allows students to become acquainted with a broad range of perspectives. An international classroom, in which students from different backgrounds and with different values and world views come together and learn from each other, will contribute to the skills to work in the complex and changing health care landscape. The programme expects that students will have good career perspectives in the international job market. Appropriate language requirements are



demanded from students (to be proven by an approved English language test) and teachers (C1 level).

The master's programme will be open for students with an academic bachelor's degree from a research university, either in the Netherlands or abroad. Applicants should have sufficient knowledge of medicine, health care and quantitative methods. The admission criteria contain a list of possible bachelor programmes. The Board of Admissions will assess whether the content of a candidate's bachelor programme meets the required domain knowledge. Tailor-made bridging programmes of 12 EC will be developed for students who lack knowledge from one or two of these disciplines. The panel suggests that a similar bridging programme in social sciences be offered to those who have no knowledge of sociological or behavioural sciences. The first-year courses will be open to PhD candidates and health care professionals (physician assistants, physicians, managers) who want to follow one or several courses as part of their professional development. The panel appreciates this as a valuable contribution to a broad and interdisciplinary learning environment.

The student support system is well-developed. Academic support is provided by the teachers. Mentors will be available to guide students in their personal and professional development. These mentors are PhD students in the field of PHM, with proper substantive and didactic training and supervised by one of the professors in the programme. Mentors can refer students with problems (study delay, personal problems) to the study advisor. The mentors will organise mentoring groups and intervision sessions. They will also hold individual meetings at least once per semester to support a student's personal learning goals. Students document these learning goals in an Individual Development Plan (IDP), which is reviewed at the end of the first year by the IDP Committee. This committee advises the student on how to develop further.

During the online site visit, the panel met dedicated, engaged and reflective teachers with relevant expertise and common goals. These qualities are commendable, since they are important for the programme to fall or fly. The staff's qualifications and experience are documented in one of the annexes of the dossier and show that they are experts in their field and certainly able to teach this new programme. Guest lecturers from the professional field will be involved to provide authentic cases. Staff members of the Johns Hopkins University (see standard 1) will be represented in the programme as guest lecturers and one staff member will have a double appointment at both Johns Hopkins and Leiden University. All course coordinators are active researchers holding a PhD degree, all lecturers are experienced educators. The required staff qualifications include a University Teaching Qualification (UTQ) and English proficiency at C1 level. It seems that not all teachers have achieved their UTQ, which is a point of attention, especially in an innovative and ambitious teaching programme as PHM intends to offer. The panel also advises ensuring that teachers have formal dedicated teaching time for the programme.

Ample teaching and research facilities are available at the University Campus in The Hague. To support the online learning, the programme uses the online learning environment Brightspace as a user interface. Teachers are requested to organise an active online community and create interactivity. The online courses are developed in collaboration with the university's Centre for Innovation. A MOOC studio is available to record online lectures. Further support is provided by the department of Educational Expertise. A strong point is the

collaboration with health care organisations in The Hague, the so-called Living Lab. Students will be offered possibilities to join relevant research projects.

Summarising, the panel considers the curriculum well-designed, with clear learning objectives per course, an increase in complexity and interdisciplinarity, modern educational methods, strong student support, a dedicated and experienced teaching staff and good facilities. The panel advises to fully develop all first-year courses and the specialisations of the second year before the start of the programme, in order that prospective students know in advance what to expect. The panel also advises to organise a bridging course in social studies similar to the one in medical science, and to guarantee teachers sufficient dedicated time for the programme. Overall, the panel concludes that the programme meets standard 2.

### 6.3 Standard 3: Student assessment

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

#### **Judgement**

Meets the standard.

#### **Findings, analysis and considerations**

The student assessment plan of PHM follows the Assessment Framework 2019 of the Leiden University Medical Centre (LUMC). Principles for assessment are constructive alignment of learning objectives, teaching and assessment, a combination of formative and summative assessment, authentic testing for the assessment of competences, and multiple tests per course. The validity and reliability of tests are ensured by drawing up assessment plans and rubrics, using a variety of assessment methods, using formats and guidelines for the construction of tests and giving feedback, providing model answers and grading rubrics, and applying the 'four-eyes principle' for the grading of the thesis. A comprehensive set of measures is in place to prevent fraud and plagiarism. Students are informed about the assessment methods and criteria per course in Brightspace and in class.

The assessment plan states that assessment methods in all first-year courses are an online knowledge test (pass) and an online assignment (20% of the final grade) at the end of week 2, a group assignment to be presented at the end of week 3 (30% of the final grade) and a final individual assignment at the end of week 4 (50% of the final grade). Peer reviews will be used by the lecturer to determine the final grade of the first three assessments. The two project cases of the first year are assessed on the basis of a written report per group. The available course descriptions give different information for some of the courses. E.g. oral exams are planned in two courses (Study Design, Predictive Analytics). When the panel expressed its doubts about this assessment method, the Board of Examiners (BoE) assured that the four-eyes principle will be used for oral exams and that an oral exam may give students a better and more creative opportunity to perform than a written test.

The panel noted that the information on the online knowledge test was not quite clear and this unclarity persisted throughout the interviews. The teachers explained that this has been a discussion among staff and that they are not yet clear about this. The BoE's view, as expressed to the panel, is that students need to pass at least 45% before they start the on-campus week and at the end must have 80% to pass the course, and that the test result is part of the final grade. The panel concludes that (information on) the assessment methods

needs further elaboration and clarification before the start of the programme. The panel also advises to reconsider other aspects of the knowledge test: it seems that students can take the test (40 questions drawn from a limited database of MC questions) at any time and as many times as they wish. This makes it possible for them to exchange answers as well as use other available resources, which raises questions about the validity of knowledge testing at the individual level and about the readily available knowledge of students. Although the BoE – correctly - emphasised that the programme is not about gaining knowledge but about competences and soft skills, the panel thinks that graduates must have a sufficient level of knowledge of the various disciplines and is doubtful that the knowledge testing at the moment is suitable. The BoE confirmed that it will yet look into the PHM assessment in more detail and develop appropriate rules.

In the master's thesis research project, students must prove that they have achieved all six competences. The student conducts a research and writes an individual thesis with the quality of a scientific publication. The thesis must reflect the integrative perspective of the PHM programme by combining theories, concepts and tools from different disciplines, with the principles of PHM at its core. A grading rubric describes what is expected from students. The intended research is subject to approval by a scientific council. The thesis will be supervised by one and assessed by two staff members. The examiners are appointed by the BoE. The second examiner is independent and not directly involved in student supervision. In cases of extensive differences between the two examiners, an insufficient or excellent result, a third examiner will be involved.

The BoE will consist of at least four staff members from different disciplines, one of whom was present at the online site visit. The chair position of the BoE was taken ad interim by an experienced BoE chair from the medical faculty, due to illness of the proposed chair. The BoE will be responsible, together with the course coordinators, for the quality of the assessments. The BoE checks the quality of all tests before they are administered, either by itself or by mandating it to an assessment committee, by assessing the validity, reliability and grading schemes. Annually, a selection of at least six master's theses will be evaluated, making sure that a range of results and a range of different examiners is covered. The BoE also guarantees the level of the students' individual specialisation plans for the second year. The panel was satisfied that the proposed BoE member was already involved in the discussions about proper assessment, and strongly advises that the other proposed BoE members, including the chair, be involved as soon as possible to sort out the questions raised above. The Dean confirmed at the end of the site visit that this is a priority and will be taken on board.

Summing up, the panel considers that the assessment system is well-thought-out, based on the LUMC assessment policy with its quality mechanisms. The assessment methods are in line with the learning objectives and are an appropriate mix. The main issues are the methodology and grading rules of the knowledge testing. Based on the constructive discussion with the BoE and the confirmation of the Dean during the site visit, the panel trusts that this issue will be resolved before the start of the programme. Therefore, the panel concludes that the programme meets standard 3.

#### 6.4 Degree and field of study

The panel advises awarding the following degree to the new programme: Master of Science. The panel supports the programme's preference for the following field of study: Health.

#### 6.5 Advice on two-year duration of programme

The proposed programme has a total of 120 EC and consists of four semesters. The university argues that the 120 EC programme is a result of the proposed master's level and the combination of competences as expressed by the employers of the students.

The need for a two-year programme is justified by several arguments:

- a) The depth and complexity of the intended learning outcomes (PHM competences) in combination with the interdisciplinary character of the programme;
- b) The development of a broad range of skills;
- c) The execution of an academic research in an empirical setting related to the future work environment;
- d) The international perspective.

Ad a. As expressed in the intended learning outcomes, students need to obtain knowledge and skills from a broad range of academic disciplines and need to combine these disciplines to a master's level of interdisciplinarity:

- Students need to obtain a thorough understanding and application of research methods of various scientific traditions such as medicine, epidemiology, biostatistics, data sciences and social sciences (in particular health behaviour and psychology);
- the programme teaches students how to give effective direction to complex decision-making processes. This requires knowledge and understanding from different scientific fields including public administration, behavioural sciences and (health) economics.

Ad b. The time span of two years is necessary to acquire skills needed to work effectively in the complex changing interdisciplinary working environment graduates will be confronted with. The graduates will become the trusted partners who can build bridges between the disciplines and therefore need to be able to speak multiple 'scientific languages' and connect specialists effectively in multidisciplinary and interdisciplinary groups. In addition, students need to obtain advanced competences in governance, organisational, planning and leadership skills as required in a transformative environment. Therefore the programme uses an integrated and continuous approach, providing students ample opportunities to develop their skills by working in various interdisciplinary project teams.

Ad c. Doing actual academic research is seen as one of the core competences of the graduates. Since the programme is an academic, data-driven oriented programme, the thesis should be the result of a substantive research project. To enable students to conduct a research project with the desired combination of breadth and depth, a research internship of at least 30 EC is required.

Ad d. The learning outcomes to be attained by the students should be consistent with the (inter)national requirements for the domain. The international orientation mainly takes place in the first semester of the second year of the Master's programme. Worldwide, there is only one English taught master's programme that entirely focusses on PHM: a master of applied

sciences in Population Health Management at Johns Hopkins Bloomberg School of Public Health (Baltimore, USA). Because this Johns Hopkins programme concerns a professional master, this programme is not considered to be fully comparable to the proposed academic master's programme of Leiden University. The university is convinced that master's programmes with an interdisciplinary character need a duration of at least two years.

Given these strong arguments in favour of a duration of two years, the panel advises to grant the programme the right to offer a two-year master's programme (120 EC).

## Abbreviations

BoE	Board of Examiners
EC	European Credit
IDP	Individual Development Plan
LUMC	Leiden University Medical Centre
MC	Multiple Choice
MOOC	Massive Open Online Course
MSc	Master of Science
PHM	Population Health Management
UTQ	University Teaching Qualification

The full report was written at the request of NVAO and is the outcome of the peer review of the new programme Academic master Population Health Management of Leiden University

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