Evaluation of the Care and Public Health Research Institute (CAPHRI) (2017–2022)

Report by the External Review Committee (version 17, 17.03.2024)

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Preface

This report presents the findings of the committee appointed to review the Care and Public Health Research Institute (CAPHRI), as part of the Strategy Evaluation Protocol 2021–2027. The committee's assessment drew upon a self-evaluation report prepared by the research institute and a site visit by the committee conducted on November 29 and 30, 2023. The committee reviewed a vast amount of written material and was impressed by the joint efforts of CAPHRI researchers to prepare and organise a successful two-day evaluation. The committee highly appreciated all of the hard work that was put into the evaluation process. The committee met a lot of enthusiastic and committed people who wish to contribute to a better health for all.

I speak for the entire committee in congratulating CAPHRI in ensuring a very good level of performance across the following assessment criteria: research quality, societal relevance, and viability. In addition, as required by the protocol, the committee has reported on the research institute's PhD programme, open science, academic culture, and human resource policies. Detailed findings and recommendations for consolidating and enhancing CAPHRI's performance in future are included in this report.

On behalf of the committee, I would like to thank all members of CAPHRI, whose contributions to the review were very helpful. We also thank the research institute's leadership for the excellent organisation of the review materials and the site visit. I would like to thank the committee members for their wisdom, thoroughness, commitment, and good humour throughout the review process. Finally, I thank our secretary, Petra Uittenbogaard, for her support during the review process and the preparation of this report.

Anna Petra Nieboer,
Committee chair, CAPHRI research review committee
February 7, 2024

1 EXECUTIVE SUMMARY

In this document, the external review committee reports its findings on the assessment of the Care and Public Health Research Institute (CAPHRI) in Maastricht. The external review committee, further referred to as the committee, was requested by the board of the Faculty of Health, Medicine, and Life Sciences (FHML) to conduct this assessment by taking into account the national Strategy Evaluation Protocol (2021–2027). This assessment report is drawn up in accordance with the guidelines and format of this protocol.

The review process included a self-evaluation report with annexes per research line (RL) (for an overview, see p. 5 of the Self-evaluation report: Part A) prepared by CAPHRI and a site visit by the committee on November 29 and 30, 2023 (see annex 3 for the full programme). The committee had interactive sessions with researchers from the six RLs, the science commission, the advisory board, various stakeholders and strategic partners, PhD coordinators and PhD representatives, people responsible for research integrity and quality assurance, the management team, and the boards of both the FHML/Maastricht University Medical Centre (Maastricht UMC+) and the institute. For a more extensive description of the outline of the review process and the procedures that were followed, see chapter 2 of this report.

Conclusions

1. The academic quality of the research by CAPHRI is very good.
2. The breadth of methodological and theoretical expertise enables CAPHRI to conduct multi-, inter-, and transdisciplinary projects addressing research questions on varied care and public health problems from identification of intervention type to evaluation and implementation methods.
3. The committee saw some exceptionally positive case studies and approaches indicative of “unique selling points” of CAPHRI, such as living labs and organisational partnerships contributing to societal impact.
4. The organisational charts and pictograms are useful for describing structures and outputs, but they do not help people understand what CAPRHI does, the methodological and disciplinary expertise within and between research lines, or how this research impacts the organisational infrastructure and makes changes to society and health. Therefore, more coherence is required.
5. The committee appreciates that CAPHRI has put in place structures for academic culture and open science, but these have not been sufficiently translated into practice or changed mindsets at all levels. CAPHRI lacks a clear open and responsible science programme that will be implemented in practice.
6. The academic culture is split between education and research career pathways, which are aligned to management needs rather than the development of an integrated academic identity that works across the organisational infrastructure.
7. The university schemes and promoting systems rely on the promotion of staff by line manager and supervisor recommendations. These reward and recognition schemes may not be equitable for all staff due to the role of unconscious bias in people’s judgements based on sex, ethnicity, and disciplinary perspectives.
8. CAPHRI has worked on many policies and the organisational infrastructure to manage a diverse research programme and alignment with an established education portfolio (e.g., the matrix and finance models), but data management, research integrity, and human resource policies are not clearly laid out and need further development and implementation.

Recommendations

The committee has three recommendations with regard to the research quality and research strategy. CAPHRI should,

1. Strengthen interdisciplinary coherence within the institute by developing a more coherent conceptual and methodological framework (research vision), based on the defined areas of impact, methodological strengths, theoretical framework, and strategic direction.

2. Give more in-depth attention to fully understand, integrate, and internalise concepts and theoretical frameworks from different disciplines, recognising the institute's inter- and transdisciplinary approach.
3. Further develop the strategic plans with a greater focus, clear goals related to impact, and articulation of "need" (in terms of scientific approaches) at specific stages from the identification of the problem to the design, implementation, and evaluation of interventions.

The committee has three recommendations with regard to societal relevance. CAPHRI should,

4. Take leadership, better harvest, and build more broadly on the already 25 years existing tradition in applying living labs to enhance societal impact, given current attention for research in living labs in academia.
5. Frame the objective of stakeholder and citizen involvement in a more productive way (not merely SMARTer, but also provide room for unpredictability, creativity, and out-of-the-box thinking), ensuring that interactions with societal partners are pushed to a higher level.
6. Make better use of its advisory board and formulate a clear mission/role, e.g., help the research institute strengthen its strategy and/or install more specific advisory groups to reflect on the research strategies of the RLs.

The committee has three recommendations with regard to viability. CAPHRI should,

7. Develop an identity everyone recognises and that translates into similar goals everyone is working for and, in turn, translates into a visible, recognisable branding of the research institute, supporting (inter)national visibility, force, and attractiveness to funders.
8. Put (more) effort in risk management: develop a strategy, with measurable goals, to improve the transparency of not only the research results but also the methodology (such as source data and code).
9. Strengthen incentives for high-quality, high-impact inter- and transdisciplinary output in order to meet the future needs of society and to increase viability.

The committee has four recommendations with regard to open science and academic culture. CAPHRI should,

10. Help early-career staff develop skills to deliver, lead, and innovate across educational and research activities to ensure that organisational priorities and business cases are appropriately justified, through transparent university schemes that help staff integrate the different components for equitable career development.
11. Actively manage risk related to research integrity, including the need for meticulous analysis of conflicts of interest, focusing on information exchange (how staff can get advice), governance (how the organisation deals with (potential) breaches), and culture. The development of a reflective culture on research integrity within CAPHRI is essential to put the structure into practice.
12. Spend more time/effort on governance concerning research data management, especially with the rapid progression of big and digital data as well as the demand for open science.
13. Create an open and responsible science community with a clear Open and Responsible Science programme that will be implemented in practice.

The committee has one recommendation with regard to education and training. CAPHRI should,

14. Adjust the PhD policy such that the quantity and quality of the training as well as the opportunities for the PhD students within the institute will be more equitable, allowing more involvement of PhD representatives to evaluate, monitor, and help develop policy, especially because PhD students seem to be dependent on individual supervisor interests and recommendations.

2 GENERAL SECTION

2.1 Background and outline of the review process

The review committee was asked by the board of the FHML to assess the research quality, relevance to society, and strategic targets of both the research institute as a whole as well as its research units: the six RLs. The evaluation was based on both CAPHRI's ambitions and strategy of the previous six years (2017–2022, backward-looking component) and the future strategy (forward-looking component). The board of the faculty specified the objectives and criteria of the assessment, the schedule of the assessment procedure and reporting, and the responsibilities of the committee in the terms of the reference (Annex 2) sent to the committee on October 3, 2023.

Specifically, the committee was asked to judge the performance of CAPHRI on the main assessment criteria described in the Strategy Evaluation Protocol and to offer its written conclusions as well as recommendations based on considerations and arguments. The main assessment criteria were as follows: 1) research quality, 2) societal relevance, and 3) viability of the unit. When evaluating these criteria, the committee was asked to incorporate four specific aspects: a) open science, b) PhD policy and training, c) academic culture, and d) human resource policy (e.g., diversity and talent management).

2.2 The review committee and the procedures

The review committee was composed of the following members:

- Professor Anna Petra Nieboer, Erasmus University Rotterdam, NL (chair),
- Professor Hilary Bekker, University of Leeds, UK
- Meindert Boysen, PharmD, MSc, National Institute for Health and Care Excellence (NICE), UK
- Professor Jacqueline Broerse, VU Amsterdam, NL
- Dr. Inge de Kok, Erasmus Medical Centre, NL
- Dipl.-Soz. Geront. Verena Leve, MA, Institute of General Practice (ifam), Medical Faculty, Heinrich Heine University Düsseldorf, DE
- Em. Professor Jan De Maeseneer, WHO Collaborating Centre for Family Medicine and Primary Health Care, Ghent University, B
- Petra Uittenbogaard, MSc, (appointed secretary to the review committee), The Hague, NL

Prior to the visit, the committee members signed a statement of impartiality to exclude any possible conflict of interest. Additional information on the committee members can be found in annex 1. The review process included a self-evaluation report prepared by the research institute and a site visit by the committee on November 29 and 30, 2023. The committee was formally installed by the dean of the FHML, Professor Annemie Schols, on November 29, 2023.

In preparation for the site visit, the committee had three online meetings. In their meetings, the committee agreed on a division of tasks for reading the report and additional documentation as well as for writing comments on it. The two-day visit concluded with a public feedback session in which a "snapshot" of the preliminary findings and recommendations were presented. Professor Jacqueline Broerse chaired the committee during the two-day visit, as Professor Anna Petra Nieboer could only participate online due to a COVID-19 infection.

Before the two-day site visit, the committee received and studied well-presented information meeting the standards of the Strategy Evaluation Protocol (2021–2027), including the following:

- Terms of reference for the external review of CAPHRI (2017–2022)
- Statement of impartiality
- Strategy Evaluation Protocol (2021–2027)
- Self-Evaluation Report (2017–2022)
  - Part A: Documentation at the level of the research institute

  - Part B1: Ageing and long-term care (ALTC)
  - Part B2: Creating value-based healthcare (VHC)
  - Part B3: Functioning, participation, and rehabilitation (FPR)
  - Part B4: Health inequities and societal participation (HISP)
  - Part B5: Optimising patient care (OPC)
  - Part B6: Promoting health and personalised care (PHPC)
  - Case studies
- Programme of the site visit

In the Self-Evaluation Report (2017–2022), CAPHRI presents its research strategy and strategic process over the past six years. Furthermore, CAPHRI reports on the accomplishments and results over the past six years as well as the follow-up of the recommendations of the previous assessment in 2017. Finally, CAPHRI presents its objectives for the next six-year period, based on strengths, weaknesses, opportunities, and threats (SWOT) analysis. In addition to studying CAPHRI's self-evaluation report, the committee also addresses the recommendations of the previous committee, in particular, what CAPHRI has said about making progress towards them in the assessment of the research institute and its RLs (see sections 3.1 and 3.4–3.9 in this report).

In a confidential meeting before the start of the site visit, the dean of the Faculty of Health, Medicine, and Life Sciences (FHML) informed the committee about a newspaper article that would appear in *NRC* in which the research activities of CAPHRI's former director were critically examined. Issues raised included the correct reporting of ancillary activities, their overlap with research embedded within the university, the expertise and composition of research teams involved in systematic reviews and meta-analyses, transparency of funding and processes to prevent conflicts of interest in contract research, dilemmas in research assignments for specific clients such as the chemical industry, and thus awareness of the wider implications of the scientific research conducted. The committee was informed that the board of the FHML, in consultation with the Maastricht University Medical Centre (MUMC+)/FHML Scientific Integrity Platform, will investigate the details of this specific case as well as examine whether CAPHRI as an institution has everything in place to manage registration and monitoring of ancillary activities. Without the details being presented to them, the committee could not judge the merit of the case or what the impact on the arrangements for 'open science' would be. As the case is so fundamental to open and responsible science and academic culture as well as critical for the governance of the research institute and faculty, we did examine related issues regarding openness, safety, inclusivity, and research integrity but did not address this case specifically (see sections 3.2.5 and 3.2.6 in this report).

3 ASSESSMENT OF THE RESEARCH INSTITUTE AND ITS RESEARCH LINES

3.1 Brief description of CAPHRI's organisation

As a research institute, CAPHRI is a part of the FHML of Maastricht University (UM) and MUMC+. CAPHRI researchers are generally employed by UM/FHML (98% of full-time equivalents (FTEs)) or by the Maastricht academic hospital (2% of FTEs). CAPHRI's research is organised along six thematic RLs in which researchers from different discipline-oriented departments come together to work in multidisciplinary teams: ageing and long-term care (ALTC); creating value-based healthcare (VHC); functioning, participation, and rehabilitation (FPR); health inequities and societal participation (HISP); optimising patient care (OPC); and promoting health and personalised care (PHPC). Each RL is led by two RL leaders (chair and vice-chair). In addition, CAPHRI has established long-term partnerships with local public health and healthcare institutes in so-called living labs and centres.

The management board of CAPHRI consists of the scientific director and the managing director. The scientific director has the final responsibility for the institute and reports to the FHML board. As of November 2021, Professor Silvia Evers holds the position of scientific director. The organizational and financial structure of CAPHRI is complicated, with the responsibilities of department heads on

the one side and RL leaders on the other side (see Self-evaluation report: Part A, annexes 5 and 6). CAPHRI is a part of a matrix organization with individual researchers belonging to different organizational groups and having different organizational and financial responsibilities. Overall coordination of the research activities is achieved through meetings with RL leaders and department heads, joint projects, and collaborative publications.

CAPHRI seeks to achieve "a healthy society for everyone" by conducting "high-quality research in care and public health with societal relevance" (see p. 7, Self-evaluation report: Part A). CAPHRI has a key position in the healthcare sciences in the Netherlands and in specific fields internationally. In addition to its research and societal impact, CAPHRI offers a comprehensive doctoral (PhD) training programme and collaborates with three other institutes in the Netherlands School of Public Health and Care Research (see p. 65, Self-evaluation report: Part A).

3.2 Qualitative evaluation of the research institute and findings

3.2.1 General remarks

Mission and strategy
CAPHRI aims to conduct high-quality research in care and public health with societal relevance (see p. 7, Self-evaluation report). CAPHRI is designed to provide a structure enabling staff to integrate their different academic approaches to investigate and develop innovative solutions enabling care and public health to improve the health of all populations in society. The documentation and presentations illustrate that each of CAPHRI's six RLs have developed a mission and strategy aligning with CAPHRI's vision. Furthermore, they reveal that staff are working within each RL to ensure that their research is scientifically robust and impactful, enabling CAPHRI to build bridges between research methods and findings and societal relevance. The committee was able to see some exceptionally positive case studies and approaches indicative of "unique selling points" of CAPHRI, such as living labs, organisational partnerships (large cohort of external PhDs), and governance (science commission, advisory board, and communication commission).

The inclusion of SWOT analysis for the institute overall as well as for each of the RLs has been very useful and insightful for the committee. It allowed the committee to focus on the areas of challenge and opportunity. The five strategic plans for the next six years (see p. 26, Self-evaluation report) provide an important focus to support the management and organisation of staff across the RLs of CAPHRI. Ensuring that these strategic plans are communicated to staff across the RLs and that they are at the forefront of people's thinking when initiating and executing research is critical to further develop people's identity within CAPHRI. The committee recognises that the operationalisation of these strategic plans is likely to change depending on its external review, CAPHRI and RL leadership and staff changes, Maastricht University (UM) and health service organisational priorities, and societal needs. But at the same time, the committee encourages the management team of CAPHRI to further develop the strategic plans with a greater focus on what is likely to be achieved by when, along the lines of the specific, measurable, achievable, relevant, and time-bound (SMART) concept, with clear goals for every member of the CAPHRI community.

The committee suggests that a next step for CAPHRI should be to help others within Maastricht UMC+, UM and externally to understand the reason *why* CAPHRI exists, i.e., why it is important in health and societal research, and how it impacts on health and social care methodologists, organisations, and people's health practices and outcomes. More specifically, what CAPHRI stands for. Yes, "a healthy society for all" is important and laudable, but what does CAPHRI contribute? What are CAPHRI's strengths and unique selling points? The organisational charts (Matrix, CAPHRI) and pictograms are useful for describing structures and outputs, but they do not help people understand what CAPRHI does, what the methodological and disciplinary expertise within and

between RLs contributes, why collaboration with health and societal professionals and populations is essential for innovating current practice, or how this research impacts society and changes health.

Organisational and governance structure
It took the committee time to consider the matrix structure used to position CAPHRI as well as other research institutes within the broader institutional structure across FHML and MUMC+. As a result, the committee better understands the "why" and "how" CAPHRI is financed and manages staff across departments and aligned with the RLs. Within CAPHRI alone, researchers are drawn from 13 university departments, each with their own academic identity and scientific approach: Clinical Epidemiology & Medical Technology Assessment; Epidemiology; Family Medicine; Health, Ethics & Society; Health Promotion; Health Services Research; Internal Medicine (mainly Rheumatology); International Health; Medical Microbiology, Infectious Disease & Infection Prevention; Methodology & Statistics; Orthopaedic Surgery; Rehabilitation; and Social Medicine (Figure 1.1, p. 5, Self-evaluation report). This breadth of methodological and theoretical expertise enables CAPHRI to conduct multi-, inter-, and transdisciplinary (applied) projects addressing different research questions needed for the identification of problems as well as the design, evaluation, and implementation of interventions. The organisational and governance structure seems to have the advantage of enabling a cross-organisational culture proactively supporting inter- and transdisciplinary cooperation, which is seldom seen in Europe. The responsible, accountable, consulted, and informed (RACI) framework, which is used by some organisations, may help to further identify and outline governance by clarifying and defining roles in cross-departmental projects. In order to overcome possible fragmentation and to create cohesion and focus between RLs, CAPHRI aims to intensify active participation of its entire staff (the third of five strategic aims/objectives for the next six years; see section 6.2, p. 26, Self-evaluation report: Part A).

The committee suggests that it would be useful if CAPHRI can find a way to represent the strengths of their applied health and social care research expertise in order to help inform a narrative of needing different types of research-related methods, theoretical explanations, and multi-stakeholder approaches to deliver the aims and objectives of CAPHRI. The committee developed an example to illustrate an overall summary of CAPHRI's activities and suggested different RLs would highlight their particular expertise in this complex field and integrate the "sum of the parts" for others to see "the whole" (see annex 6).

Recognizing explicitly the academic home or theoretical identity of the scientific methods is important to help others see what is needed to ask questions and to find solutions by drawing on the expertise from another's perspective. These academic homes are key to delivering research that is inter-and transdisciplinary from multi-stakeholder perspectives. CAPHRI needs to find ways to recognise the expertise of all those collaborating in innovating healthcare, including academics and methodologists, patients and the public, and health and social care professionals.

To fully take advantage of the available expertise, there needs to be communication between academic departments and RLs to illustrate the education-research symbiosis as well as the organisational ownership of the scientific and societal impacts of staff activity. University schemes and promotion schemes should help staff integrate the different components (activities) and support equitable career development.

3.2.2 Research quality
CAPHRI produces a large volume of research output, mainly in the form of journal publications but also professional publications and book contributions. Many of these publications are of high scientific quality and range across different disciplines, as shown by the Category Normalised Citation Impact (CNCI) scores in the evaluation reports of the RLs. The committee was impressed by the quality of the high-impact publications it has reviewed in the table describing the most important scientific publications (2017–2022, top 10%) included in the self-evaluation reports of the RLs. For

example, 39.6% of CAPHRI's output receives more citations than expected based on the age, document type, and subject area. In addition, 13.9% of the total output belongs to the world's top 10% documents, according to citation impact (p. 56, Self-evaluation report: Part A). Nevertheless, for the majority of outputs, the CNCI lies close to 0 or 1, suggesting that publications are cited as frequently as the world average or less. Some may see a CNCI score of 0 or 1 as tipping the balance of quantity over quality.

The committee recognises that there are limitations to using citation indices as the only indicator of quality or impact. Furthermore, there is a risk to innovation in certain fields and people's career progression when using such indicators of quality as a reason for focusing on one type of research over and above another. It is likely that having a large number of PhD students will drive different types of research studies and publications in order to meet the objectives of the PhD process. A narrative that could be provided for each RL is that a key objective of a research unit/academic department is the effective training of future researchers and evidence-based practitioners, with amplification of the areas of innovation in the peer-reviewed publications of early-career researchers and academics, and evidence of quality of doctoral training. In addition, having researchers from different methodological areas asking different types of questions as well as finding different solutions to current practice (e.g., modelling data sets versus randomised trials versus cross-sectional mixed methods studies versus community-based participatory interventions) means that there will be different citation indices. CAPHRI and the RLs may want to identify narrative-based statements to help others understand the impact of their research for other methodologists, changes to health, and/or wider public impact.

The multi-, inter-, and transdisciplinary (applied) research with a strong emphasis on improving health for individuals and populations, across healthcare settings, and in society was clearly reflected in the output. The large variety of topics indeed suggests that the research may be too scattered. CAPHRI aims to build on theoretical and methodological excellence across multiple fields (the second of five strategic aims/objectives for the next six years; see section 6.2, p. 26). Therefore, more focus could help to further develop a clear identity of RLs and CAPHRI, as suggested by the previous assessment committee as well. A concern regarding the inter- and transdisciplinary approaches is the depth of the understanding of the concepts used from other (non-methodological) disciplines. The full understanding of concepts from other disciplines probably requires more time and exchange of expertise. Especially inter- and transdisciplinary research risks leading to less in-depth approaches. To people external to applied health research science, it may not be clear how and why this form of collaborative science is different from established models of clinical (laboratory) science, service audit, and innovation methods, or why it is more likely to impact change in practice. Making explicit the relevant theoretical frameworks to question the formulation, research design, and methods may be useful to help link seemingly disparate projects and strengthen the interpretation of findings for future research as well as service innovation.

The committee identified many collaborative publications between the RLs, a clear sign of cooperation and multidisciplinary work (see p. 58, Self-evaluation report: Part A). The number (and total amount of funding) of grants that CAPHRI has successfully received over the review period also is an indicator of its high research quality. Funding has been received from a diverse range of national and international sources (ZonMw, NWO, VWS, and EU).

Based on ten selected publications of each RL, the committee drew the following conclusions regarding the RLs' output:

1. The research quality of researchers from the ALTC RL is very good, with high-impact publications and CNCI scores.
2. Articles from the VHC RL illustrate well its different objectives to a) innovate methods needed to increase the effectiveness of economic and statistical modelling to inform evidence-based healthcare, b) demonstrate flexibility of their approach to identify relevant methods to

address disparate health service-led questions about treatment and illness trajectories, and c) collaborate with other methodologists and clinical teams to evaluate intervention integration into current health systems.
3. The FPR RL has strength of publications as their common focus. The articles represent an excellent illustration of translational research.
4. The HISP RL has a very varied output dealing with antimicrobial resistance, ethnicity, testing of an HIV app, and patient engagement in drug development, but only one publication (of the 10) is directly related to what is a very innovative asset of HISP: the living labs in the local communities with a focus on underserved groups.
5. The publications of the OPC RL are of outstanding quality. They are all published in high-impact journals. However, it is less clear why these journals were selected and how they showcase the RL's new actionable evidence-based insights.
6. The publications of the PHPC RL illustrate the leadership of the team in setting quality standards for a) varied methodological approaches to finding robust evidence, b) steps to design interventions from findings and theory, and c) knowledge translation enabling implementation of interventions within current health service practices.

The academic reputation of a number of senior staff members reinforces the internationally leading position of CAPHRI in specific fields such as shared decision making, health literacy, supported self-management, healthy aging, cost effectiveness, and value of information. Their expertise, experience, and stature are internationally recognised. The academic quality of the research by CAPHRI is very good. As in all research institutes, there is variation in the quality of research within CAPHRI, but the committee judges that the quality across the board is of a very high level.

3.2.3 Societal relevance

CAPHRI has a lot to be proud of, such as the many projects that really have an impact on society. The committee considers the societal relevance of CAPHRI's research to be very good to excellent. Researchers reach out and work with many partners in the region to implement their findings in the health system. In this context, the various national and international collaborations that CAPHRI has will certainly help to support dissemination and to ensure the impact of its research, e.g., CAPHRI is a founding member and holds the secretariat of the Netherlands School of Public Health and Care Research (CaRe). Several of its staff members are also appointed at other universities and national organisations.

In accordance with CAPHRI's fifth of five strategic aims/objectives for the next six years (see section 6.2, p. 26, Part A Self-evaluation report: Part A) a more pro-active role having impact on agenda-setting and early development of policies of key organisations seems feasible. Its influence on policies and practice of funding and healthcare organisations is mostly incidental rather than on a continuous basis.

The committee thinks that the interaction of CAPHRI with societal partners could be brought to a higher level. Besides living lab and citizen science methods that are impactful and relevant, the expertise used at the project level should be recognised to ensure that research is carried out to meet the priorities of all stakeholders involved and to fully utilise stakeholders' role in disseminating impact through patient and professional organizations.

3.2.4 Viability

Funding and staff

Table 2.1 (see p. 39, Self-evaluation report: Part A) provides an overview of staff members throughout the period of review. It shows a stable total number of staff members between 2017 and 2022, except for the increase in external PhD candidates. CAPHRI's debt to the central level has been reduced in recent years (see p. 18 and p. 28, Self-evaluation report: Part A). After a reduction of staff

in 2011 and 2013, CAHPRI is now responsible for 335 employees (equalling 193.1 FTEs), including 51.5 FTE scientific staff, 43.6 FTE postdocs, 64.5 FTE (internal) PhD candidates, 33.4 FTE support staff, and 421 external PhD candidates. CAPHRI depends financially on direct governmental funding (26%), research funds (27%), contract research (44%), and other funds (3%). The number of FTEs on direct governmental funding has shown a slight decrease, whereas staff appointed on research funds has increased (see Table 2.3, annex 5). The number of permanent academic positions is not one-on-one linked to the amount of direct funding, making it vulnerable to changes in (temporary) research funds and contract research. In line with their ambitions to acquire prestigious (personal) grants and larger grant applications, CAPHRI has become less reliant on contract research and focuses more on research funding (see section 6.3, p. 28 and Table 2.3, p. 41, Self-evaluation report: Part A). They are commended for making progress on this. Possible changes in the funding model, both at the national and UM/FHML level, could have a negative impact on CAPHRI and are a potential threat in the longer run, as mentioned in the SWOT analysis (see p. 25, Self-evaluation report: Part A).

With the arrival of a new scientific director, many policy changes on the level of viability (e.g., strategic budget and composition of the advisory board) appear to have been implemented in 2023. It is not yet fully clear to the committee what the effect will be. In principle, the committee regards the viability of CAPHRI to be healthy, but all staff members need to recognise the increasing financial pressures that universities and research funders face. Early-career staff members need to develop skills to deliver, lead, and innovate across educational and research activities to ensure that organisational priorities and business cases are appropriately justified. It can be difficult for some organisations and project leaders to recognise explicitly the academic expertise of the methodological staff collaborating for small FTEs (5-20%) across several projects. In CAPHRI, the theoretical and methodological skills and knowledge are not linked to a clinical specialty, although they may work well in established clinical pathways. Without these academic approaches, FHML/MUMC+ is unlikely to achieve evidence-based and sustainable change to healthcare delivery and experience.

The committee was pleased to see the development of a healthier financial position in recent years. The CAPHRI management team shows much awareness to manage the finances of the research institute to a more sound and solid base. Their target is to have repaid the remaining debt in the next six years. Staff members have expressed their concern about the deficit. The committee noticed that CAPHRI's management team is taking these concerns seriously and that it has the intention to reassure staff by holding regular meetings to discuss progress (see section 6.3, p. 28, Self-evaluation report: Part A).

The committee acknowledges that CAPHRI is on the next inflection of transformation, with several senior people leaving (due to retirement). As part of this transformation, they will need to prioritise which research and interventions have to be innovated to meet future needs in society as well as which research and approaches are "good enough". More strategic leadership, vision, and overview as well as incentives for high-quality, high-impact, and inter- and transdisciplinary output are now needed. CAPHRI's director is only renumerated for 0.5 FTEs. The committee raised questions whether this transformation is achievable at the level currently set for this role. This might be a risk, but it can be done, provided that the CAPHRI management team has strong support, good mitigation strategies, and a decent management approach. The committee found that some of the risk management strategies are handled by the faculty of the university at large but would advise CAPHRI to make sure that it takes care of its own risks (first). The instance regarding conflicts of interest also should have been picked up much earlier, by CAPHRI itself.

3.2.5 Open science

Across the various themes and topics of the self-evaluation, CAPHRI recognises the importance of involving stakeholders, through their long-term partnerships with public health and health and care institutes in the region as well as (inter)nationally, which we welcome. The committee is particularly

impressed by the work of the living labs in this context to ensure CAPHRI's work has societal relevance (see section 3.2.3 above). In this context, the committee notes CAPHRI's first of five strategic aims/objectives for the next six years (see section 6.2, p. 26, Self-evaluation report: Part A):

- "*to align [its] research with the needs of citizens (local to global), [thus] contributing to the vitality of the citizens and reduction of inequality in health with a focused approach to prevention and health, and with due consideration to emerging challenges and opportunities in the field of health care and public health".*

The committee is encouraged by this focus on the needs of key stakeholders in the work by CAPHRI; we were presented with inspiring "citizen science" case studies, especially in the context of living labs and "University in the Neighbourhood", as well as collaboration with regional, national, and international stakeholders, with whom CAPHRI is clearly successful. However, the committee misses details on ***how*** the institute has structurally and systematically involved, and is intending to involve, citizens in the development of its strategic ambitions and its research programmes now and in future. The committee looks forward to further development of the plans for the creation of (see section 3.1, p. 8, Self-evaluation report: Part A)

- *"an independent forum in which various researchers and stakeholders with different backgrounds and of heterogeneous views can come together to discuss each other's ideas in order to facilitate transdisciplinary research to generate societal impact and to deliberate in terms of establishing priorities.*

Considering the importance of cohort studies as a strong asset for CAPHRI, the handling of data, including its reuse and storage, is critical to support "open science" activities. The committee understood from the self-evaluation (see section 3.5, p. 14, Self-evaluation report: Part A) and heard from academic leaders that CAPHRI

- "*tries to ensure that [our] research data is FAIR, openly available wherever possible to foster collaboration, offer transparency and improve trustworthiness of [our] research*".

We were not presented with a clear and unequivocal data management strategy for the research institute. Instead, a link was provided in the self-evaluation to the "Research Data Management Code of Conduct" of the University of Maastricht. Disappointingly, this code of conduct is from March 2014, without an indication of when it is due for review.[1] CAPHRI lacks a clear plan regarding what actions will be taken in the next few years to ensure the findable, accessible, interoperable, and reusable (FAIR) data principles. It would be helpful if CAPHRI would develop (measurable) goals as well as monitor and execute action plans to reach these goals. Clear examples or goals of how research results, other than publications and reports, will be made publicly available were not presented. We recommend the development of a strategy, with measurable goals, to improve the transparency of not only research results and data management but also methodology (such as source data and code). The committee considers Open and Responsible Science (ORS) a critical risk for the organization that needs appropriate management and mitigation strategies. This refers to creating an Open and Responsible Science community who are working on a clear Open and Responsible Science programme that will be implemented in practice (e.g., having a clear research code of conduct, ethical conduct, open access goals, a data management plan, and stakeholder engagement). CAPHRI itself should have a stronger commitment to this issue, including the development, distribution, and dissemination of a policy itself, especially in the context of an ever-increasing digital world.

[1] FHML added that the research Data Management code has been revised in 2024 and will be published soon.

The committee notes progress made by CAPHRI in delivering open access of its peer-reviewed publications: from 43.5% in 2017 to 66.1% in 2022 (up to 81.4% including green open access). Open science is reported as priority for the research institute and the university in general; however, we were not provided with CAPHRI's goal regarding increasing its open access publication rate. It is possible to make all short scientific works that are not directly published Open Access via a publisher, automatically publicly available after a 6-month embargo (e.g., through Pure). This policy is based on Article 25fa of the Dutch Copyright ActOpens external (Taverne Amendment). We advise CAPHRI to develop a target and plan to increase the open access publication rate. We welcome the establishment of an open science community and the appointment of an open science ambassador, although we did not have the opportunity to "interrogate" their work in much detail.

3.2.6 Academic culture

FHML and Maastricht UMC+ have institutionalised a Platform of Scientific Integrity with representatives of all Research Institutes. This platform has developed roadmaps on scientific integrity and social safety (posters) for researchers, students and PhD candidates. These roadmaps show where researchers and PhD students can go to start an open conversation for different types of integrity or social safety issues. Yet, the committee does have concerns regarding arrangements for governance that are in place regarding conflicts of interest. We were not presented with a conflict-of-interest policy, even though we did ask about possible integrity issues when working with industry. Only independence in publishing research results was mentioned as a condition in contracts that is not negotiable. Other processes to prevent conflicts of interest in contract research presented in the Maastricht UMC+ Research code 'secondary employment and conflict of interest'[2] seem to be lacking. The committee expected CAPHRI (or at least the faculty) to have translated this policy in clear instructions for its own staff and RLs, with examples of what is considered reasonable, how staff can get advice, and how the organisation deals with (potential) breaches. We also expected CAPHRI not only to put the structure in place but also to organise discussion and reflection on this topic, e.g., through internal workshops, to enhance the required change in mindset among its staff. Addressing research integrity not only takes setting-up an Open and Responsible Science programme, but also good governance in sustaining its implementation. Making ORS the norm takes translating it into reward systems, educational programs (e.g., obligatory PhD-courses), requirements for contracts with external parties and an infrastructure that supports it.

The culture of (academic) collaboration could be seen as a success of the matrix structure of the FHML research institutes bringing together researchers from different RLs and academic affiliations to develop networks within FHML as well as with external organisations, in line with CAPHRI's fourth of five strategic aims/objectives for the next six years (see section 6.2, p. 26, Self-evaluation report: Part A). The committee took note of the "heat map" of collaboration between the RLs of CAPHRI (p. 58, Fig. 9, Part A). In addition, the heat maps between FHML research institutes indicate CAPHRI's collaboration with FHML institutes across the "bench-patient" range of questions, methods, and innovations to practice. It was unclear to the committee how established and sustainable these partnerships between FHML institutes are and whether collaborations are aligned with the FMHL strategy.

The committee was provided with evidence of excellent teamwork within and across RLs. The matrix structure ensured that the line-management structure aligned with the academic department and FHML human resource policies as well as the reward and recognition schemes. The ways that RLs are financed and budgets are managed (PIs are not budget holders), encouraged a collaborative team-based approach to project delivery. There are pressures on (early-to-mid-career) staff to secure funding to "buy out" teaching activities and to work towards tenure. What was less clear is how early-to-mid-career staff members were supported in their academic development and encouraged to find their academic identity and networks through professional affiliations (e.g., methodological and

[2] https://www.maastrichtuniversity.nl/file/researchcodebrochureinteractief29012020pdf

professional societies). There were few examples given regarding how staff members were supported to develop academic skills that were over and above their research project expertise through staff reviews or mentoring within their academic departments. As associate and full professors, staff members need to have organisational oversight and skills to deliver, innovate, and lead staff from different disciplines as well as professionals across both education and core research UM activities. How, for example, is staff member training in academic procedures, leadership, and pedagogical principles for teaching at higher-education institutes as well as for continuing professional development organised? It was unclear how CAPHRI and the RLs helped staff members manage these different personal development needs equitably in the context of delivering research and navigating changes in life situations.

We note that future plans (p. 27, Self-evaluation report: Part A) are to support early-to-mid career staff in their development in line with reward and recognition practices. However, it seemed that these reward and recognition schemes may not be equitable for all staff, as they rely on recommendations from line managers and judgements made by leaders from across FMHL with different career experiences and professional training. The committee suggests that these types of schemes are open to inequity due to the role of unconscious bias in people's judgements based on sex, ethnicity, and also differences by professional type and scientific methods.

3.2.7 Education and training

The PhD programme offers candidates a solid basic structure for the successful realisation of their projects. In addition to a personal research plan and support from supervision teams, the programme offers a wide range of training opportunities. These can be individually compiled and adapted as required. The measures for assessing the quality of supervision through the online PhD-TRACK system and the monitoring of processes by the PhD coordinator are rated positively. The PhD-TRACK system is consistent with other university-based management systems to assure the quality of training that PhD candidates receive allows them to become well-rounded academic professionals. PhD-TRACK identifies nine areas for doctoral students to develop academic skills, knowledge, and experience. Overall, the PhD students seem happy. As with all doctoral students, supervisors play a significant role in identification of the research area as well as career development. Consequently, there is variation in how students' careers are supported and the likelihood of inequity of experience and opportunity (as in the preceding section). It was not clear to the committee if there was equity in opportunity for all PhD students or if there were differences in experience between "internal" and "external" students. Moreover, it was uncertain to the committee how PhD students developed to find their academic identity, especially when they were part of a RL team and academic department. Of course, we are aware that these conversations happen, and they occur at the PhD level within the PhD-TRACK system. We suspect that there may be differences in supervisory teams to support students' personal development over and above the delivery of their research training and outputs.

The large number of external PhD students must be evaluated critically in the context of the individual organisation. Some measures are already offered to them, e.g., online meetings and workshops. However, it remains unclear how external PhD students with multiple workloads, due to professional requirements in other work contexts and PhD students living abroad, can be specifically supported in their research projects. PhD representatives could be stronger advocates for external PhD students and ensure representation among those with differing needs. They could play a key role in more (independent) evaluations, monitoring, and policy development. In addition, education departments and RLs could ensure that the different needs and opportunities of internal and external PhD students are met in order to develop their careers and achieve the requirements of the PhD process by explicitly building these policies into the appraisal and career development plans. This approach is likely being adopted by some supervisors already, but there may be variations in practice between RLs as well as academic departments.

Overall, the committee had the impression that the supervision and possibilities for PhD students now mainly depend on their individual supervisors. Currently, each research team retains its autonomy in terms of selecting courses or conference visits. A clear goal of collecting a certain number of European Credit Transfer and Accumulation System (ECTS) points and obligatory courses for example on research integrity during the PhD period is lacking. The committee recommends adjusting the PhD policy at this point so that the quantity and quality of the training as well as the opportunities for the PhD students within the institute are more equitable.

3.2.8 Human resource policy

CAPHRI's staff is critical to its success: "People are CAPHRI, CAPHRI is made of people". In 2022, more than 80% of its expenditures were on personnel (up from 76% in 2017). A clear and extensive human resource policy that specifically addresses diversity, talent management, and organisational culture should be a high priority, especially when the organisation relies on matrix management across a variety of RLs, academic departments, and institutions, and when 64% of its staff members are PhD students (of which 85% are external). CAPHRI's own SWOT analysis notes the "increased—and still increasing work pressure, which is especially experienced in the area of education, possibly leading to less innovative initiatives in research" (see section 6.1, p. 25, Self-evaluation report: Part A). The committee notes CAPHRI's explicit focus on human resource policy in its strategy for the next six years (see introduction to chapter 6, p. 25, Self-evaluation report: Part A).

In its report, the previous committee commented on "diversity", noting a focus on gender and a rather narrow definition of "ethnicity" (i.e., the number of staff members recruited internationally), but did not formulate a specific recommendation to direct CAPHRI's activity in this regard over the past six years. Our committee was presented with a similar narrow definition of "diversity" (see Table 2.11 and section 2.12, p. 44, Self-evaluation report: Part A). We too would have wanted to see more data on other aspects of diversity such as ethnic and cultural background and disciplines, as per the Strategy Evaluation Protocol, especially when there may be a risk of unconscious bias. The committee considered that there would be merit in thinking more broadly about staff involvement, for example, using (regular) staff surveys and crowdsourcing as ways of engaging with staff, touching in on "wellbeing" and "social safety", among other aspects of organisational support.

3.3 Recommendations

Below, the committee summarises its recommendations. These recommendations should be read in the spirit of advice from "a critical friend" and are based on CAPHRI's own reflections on its strategy and actions in the past six years, its future plans, and the committee's findings as described in section 3.2.

3.3.1 Research quality and research strategy

The committee has three recommendations with regard to the research quality and research strategy. CAPHRI should,

1. Strengthen interdisciplinary coherence within the institute by developing a more coherent conceptual and methodological framework (research vision), based on the defined areas of impact, methodological strengths, theoretical framework, and strategic direction.
2. Give more in-depth attention to fully understand, integrate, and internalise concepts from different disciplines, recognising the institute's inter- and transdisciplinary approach.
3. Further develop the strategic plans with a greater focus, clear goals related to impact, and articulation of "need" (in terms of scientific approaches) at specific stages from the identification of the problem to the design, implementation, and evaluation of interventions.

3.3.2 Societal relevance

The committee has three recommendations with regard to societal relevance. CAPHRI should,

4. Take leadership, better harvest, and build more broadly on the already 25 years existing tradition in applying living labs to enhance societal impact, given current attention for research in living labs in academia.
5. Frame the objective of stakeholder and citizen involvement in a more productive way (not merely SMARTer, but also provide room for unpredictability, creativity, and out-of-the-box thinking), ensuring that interactions with societal partners are pushed to a higher level.
6. Make better use of its advisory board and formulate a clear mission/role, e.g., help the research institute strengthen its strategy and/or install more specific advisory groups to reflect on the research strategies of the RLs.

3.3.3 Viability

The committee has three recommendations with regard to viability. CAPHRI should,

7. Develop an identity everyone recognises and that translates into similar goals everyone is working for and, in turn, translates into a visible, recognisable branding of the research institute, supporting (inter)national visibility, force, and attractiveness to funders.
8. Put (more) effort in risk management: develop a strategy, with measurable goals, to improve the transparency of not only the research results but also the methodology (such as source data and code).
9. Strengthen incentives for high-quality, high-impact inter- and transdisciplinary output in order to meet the future needs of society and to increase viability.

3.3.4 Open Science and academic culture

The committee has four recommendations with regard to open science and academic culture. CAPHRI should,

10. Help early-career staff develop skills to deliver, lead, and innovate across educational and research activities to ensure that organisational priorities and business cases are appropriately justified, through transparent university schemes that help staff integrate the different components for equitable career development.
11. Actively manage risk related to research integrity, including the need for meticulous analysis of conflicts of interest, focusing on information exchange (how staff can get advice), governance (how the organisation deals with (potential) breaches), and culture. The development of a reflective culture on research integrity within CAPHRI is essential to put the structure into practice.
12. Spend more time/effort on governance concerning research data management, especially with the rapid progression of big and digital data as well as the demand for open science.
13. Create an open and responsible science community with a clear Open and Responsible Science programme that will be implemented in practice.

3.3.5 Education and training

The committee has one recommendation with regard to education and training. CAPHRI should,

14. Adjust the PhD policy such that the quantity and quality of the training as well as the opportunities for the PhD students within the institute will be more equitable, allowing more involvement of PhD representatives to evaluate, monitor, and help develop policy, especially because PhD students seem to be dependent on individual supervisor interests and recommendations.

3.4 Qualitative evaluation of RL 1: Ageing and Long-Term Care (ALTC)

3.4.1 General remarks

The ALTC RL is mainly focused on the field of healthy ageing and daily functioning of older people (irrespective of their living situation, abilities, and place of residence). This research group has published 109 papers per year, on average, over the reporting period and has delivered a total of 44 PhD theses (ranging from 2 to 12 per year) (see p. 6, Self-evaluation report: Part B1). Direct funding has decreased from 5.3 FTEs in 2017 to 4.4 FTEs in 2022 (23% vs. 17% of total funding), while research grants increased from 6.9 FTEs to 10 FTEs, contract research decreased from 10.7 FTEs to 8.3 FTEs, and other funds increased from 0 FTEs to 3.9 FTEs between 2017 and 2022, pointing to less secure funding in future.

3.4.2 Research quality

Overall, the research quality of this RL is excellent, with high-impact publications in the *Journal of the American Medical Association* and *Age and Ageing*, and 23% of the papers having a CNCI score of 2 or higher (see p. 6, Self-evaluation report: Part B1). The research quality is also demonstrated by prestigious personal grants and prizes, e.g., *Journal of the American Medical Directors Association* Morley Award.

3.4.3 Societal relevance

Undoubtedly, the work produced in this RL is of utmost relevance to society due to its impact on policy (e.g., COVID-19 monitoring) and guidelines such as the European Guideline for Sarcopenia. Since 1998, this RL has hosted a cohort study called the National Prevalence Assessment on Care Quality (Landelijke Preventiemeting Zorgkwaliteit, LPZ). The LPZ is being used internationally, and the National Health Service (NHS) indicated that this cohort was one of the NHS innovations in 2018. Furthermore, the Dutch registry for quality of care in Dutch emergency departments has been set up within this RL. Also, the living lab in Ageing and Long-Term Care Limburg is anchored in this RL. This lab has already existed for 25 years and is a good example of how transdisciplinary research based on a team science approach can be organised. Another strength of the living lab is the involvement of patients and family caregivers, which, in addition to the involvement of practitioners, leads to the development of relevant products for long-term care practice in this RL, such as assessment tools and staff training concepts.

3.4.4 Viability

The viability of this RL is very good. However, with reductions in direct funding and increasingly competitive (inter)national funding opportunities, securing permanent positions may be challenging in future. As the span of control of senior staff is currently already problematic, safeguarding enough senior staff is crucial. Ensuring adequate supervisor-to-PhD-student ratios will require further investment in senior staff as well as training early- and mid-career researchers for future leadership positions.

3.4.5 Recommendations for improvement

- With the loss of some key senior staff members, this RL will need to strengthen its expertise on social gerontology, geriatric medicine, and implementation sciences. Also, innovative research on technology and data sciences will require additional expertise. Recent personal grants do point to talent management that will help mid-career scientists excel and possibly take on more senior roles in future.
- More selective hiring of PhD students and a feasible supervisor-to-PhD-student ratio are needed. Moreover, collaboration with networks to co-organise the supervision of external PhD students and to reduce the workload for CAPHRI senior staff should be strengthened and expanded.

3.5 Qualitative evaluation of RL 2: Creating value-based healthcare (VHC)

3.5.1 General remarks

The VHC RL aims to contribute to the improvement of population health and wellbeing through better health systems, services, and products in all areas of the healthcare chain. Approximately two-thirds of all staff members in VHC are external PhD students. This ratio has increased significantly in the past six years, from about half of all staff in VHC. The self-evaluation notes that "VHC staff members have mixed feelings about this development, as they see both benefits (e.g., possibilities to cooperate with national and international organisations where external PhD candidates are employed) and drawbacks (e.g., increased supervision workload of internal (senior) staff members)". As with the overall aims of CAPHRI, those of the VHC RL are framed at a high and non-specific level. It would have been better to provide more SMART objectives, providing focus and priority, especially in the context of a high workload and the retirement of experienced staff members, and more competition in VHC-like research (see SWOT, p. 20, Self-evaluation report: Part B2). Furthermore, competition in VHC-like research requires a clear "value proposition" of the RL; the self-evaluation describes much of "how" the VHC RL operates and "what" it does, without being very specific of "why" others would want to commission work from them. The committee heard from leaders that they want the VHC RL to be recognised for its innovation in methodology, including its focus on digital technologies and new ways of paying for care. A clearer statement to describe CAHPRI's ambition in this area is critical. This would also support the ambition to facilitate a stronger media exposure, as expressed in the self-evaluation.

3.5.2 Research quality

This research group has an impressive amount of scientific output, including 1632 papers published throughout the reporting period (approximately 300 per year). The research quality is high, with high-impact publications in the *British Medical Journal* and 13% of papers having a CNCI score of 2 or higher. The topics of the papers chosen as the most important scientific publications were very diverse. The committee respects the diversity of the research output presented in the selected publications, since it shows the broadness of expertise in the RL. It does, however, make it difficult to identify the major strengths of the RL. VHC should not be reduced to technical value, allocative value, or personal value, but rather it should focus in an integrated way on "societal value", such as the contribution of healthcare to social participation and connectedness.

3.5.3 Societal relevance

Membership in scientific committees, boards, journal editorship, and civil society advisory bodies ensures that the work of CAPHRI in general, and the VHC RL in particular, has impact on policy development and day-to-day health and social care. The committee was impressed with the breadth of engagement of the VHC staff. With experienced staff retiring, developing staff to take up these roles will be critical to the success of the RL. Most important societal outputs were listed, but it was difficult to assess how these reports improved (public) health. It would have been beneficial to provide clear examples where and how their research contributed to an improvement of health (e.g., through guideline development or implementation of interventions), instead of giving a list of report titles.

3.5.4 Viability

The VHC RL relies to a larger extent on "contact research" (50%) than CAPHRI overall (44%), although it has been declining over the past six years (from 55%). As recognised by the VHC team, the area of VHC is a priority topic for important stakeholders and funding bodies (see SWOT, p. 20, Self-evaluation report: Part B2). This provides significant opportunities for the RL, as long as it manages to focus its work and presents its "unique selling points" (see above).

3.5.5 Recommendations for improvement

- Work towards a clear and coherent vision and strategy.

- Focus on its strengths (max 3). Create milestones for the coming years to improve the visibility of strengths and make strategic choices.

3.6 Qualitative evaluation of RL 3: Functioning, participation, and rehabilitation (FPR)

3.6.1 General remarks

The FPR RL aims to foster and improve patient social and labour participation and well-being. Direct funding (23% of funding in 2017) remained stable (6.37 FTEs in 2017 to 6.6 FTEs in 2022), whereas contract research (48% in 2017) was relatively high and increased over the reporting period (range: 48–66% of funding). The FPR RL has 129 staff members, half of whom are external PhD students. This RL combines different disciplines and settings, including basic research (in movement and web labs), pre-clinical research (living labs, GP), clinical research (rheumatology, rehabilitation, physiotherapy, and orthopaedics), and research on labour and social participation throughout the lifespan. With many clinicians involved, this RL covers the continuum of care from prevention to cure and re-integration and is embedded in (care) networks and living labs, making its scope very broad (see p. 16, Self-evaluation report: Part B3). The broadness of the research scope may be a threat for coherence of the research, as described in the SWOT analysis (see p. 17, Self-evaluation report: Part B3).

3.6.2 Research quality

This research group has published 176 papers per year over the reporting period, which is relatively high compared to the other RLs. This RL has delivered 96 PhD theses (ranging from 5 to 15 per year) (see p. 7, Self-evaluation report: Part B3). The lack of new vacancies for permanent positions is seen as a threat to career attractiveness of talented researchers. The research quality is very high, with high-impact publications in *The Lancet*, but the number of papers having a CNCI score of 2 or higher was not reported, making it difficult to assess the overall research quality of the refereed articles. However, the research quality is also demonstrated by prestigious NWO and ZonMw grants and a Marie-Curie fellowship.

This RL is very strict when it comes to contracts; they refuse to do research if the reporting of results is hampered in any way. Less clear is the extent to which data are available to others. The committee was told that data management policies are being implemented with the help of a data steward, but previously gathered datasets have not been set up in this manner. CAPHRI and the RLs are working on the safe storage of data according to FAIR principles, but a lot of work still needs to be done (see section 3.2.5 for the general discussion of open science).

3.6.3 Societal relevance

The cohort facilities across subunits are a strength, but they are also very expensive. Strong regional collaborations and a living lab rehabilitation are key contributors to the RL's possibilities for societal impact.

3.6.4 Viability

This RL certainly has a lot of assets to address future challenges (including epidemio-demographic transitions). This RL's cohort facilities strongly contribute to its viability.

3.6.5 Recommendations for improvement

- Further develop strategic plans with a greater focus and with clear goals to strengthen coherence.
- Look at commonalities in the underpinning paradigms (e.g., focus on "goal-oriented care") of ALTC RL.
- Further develop and implement data management and research integrity policies.

3.7 Qualitative evaluation of RL 4: Health inequities and societal participation (HISP)

3.7.1 General remarks

The HISP RL aims to reduce health inequities and to increase societal participation in public health to strengthen local and global biosocial ecologies of health. In a previous evaluation report, this RL was named “Inequity, Participation and Globalisation”. This has now shifted to “Health Inequities and Societal Participation”. Historically, this RL is the amalgamation of four research programmes. The previous review committee recognised a serious effort to produce a new RL that replaces the old research programmes rather than accommodates them. The RL leadership explicitly wanted “to make sure that the whole would be more than just the sum of its individual parts”. The current RL illustrates a further development towards more integration, although some “historical streams” are still recognisable: infectious diseases and microbiology, social epidemiology, occupational health sciences, and community development addressing the social determinants of health. This last focus has become stronger, thanks to the appropriate use of living labs and an emphasis on societal participation and citizen involvement and ownership, with special attention for vulnerable, disadvantaged, and less literate groups. HISP is the only RL that explicitly mentions important actual developments like the (in)direct effects on health by climate change, migration, and war. It also explicitly mentions “environmental health”. A challenge for this RL will be how to integrate the actual projects and “new” orientations in future, without creating more fragmentation of the programmes.

3.7.2 Research quality

The research output is excellent and highly relevant (see the paper by Helberg-Proctor on the political development of “ethnicity” in the Netherlands, the paper by Simons on stigma and low socioeconomic status, and the paper by Knibbe on the role of micro public places in inclusion and exclusion). This last paper is also conceptually very relevant and innovative. Figure 3.1 (see p. 7, Self-evaluation report: Part B4) illustrates the high number of publications with a CNCI greater than 1.

3.7.3 Societal relevance

The cohorts and living labs contribute to societal relevance of the research work. The Maastricht study includes a cohort of >9,000 participants with different projects on social networks and (preventive) behaviours, the impact of physical activity on people’s health, and the contextual social determinants of diabetes. It is likely that these projects will help to close/reduce the social gap in health and increase our understanding of the role of social connectedness and cohesion, social capital, and financial poverty in social inequalities. Table 3 (see p. 10, Self-evaluation report: Part B4) gives an excellent illustration of the societal relevance of publications. This, complemented by a high degree of interaction with and commitment for people living in poverty, enhances the societal relevance of this RL.

Several questions remain unanswered. First, how do the insights of this RL find their way into the Health Professional Education Programs for different disciplines at UM? Second, is there some cooperation with the Schools for Health in Europe network foundation (SHE)? Finally, is the interaction with local primary care and family medicine sufficiently strong in order to enhance the social accountability of future generations of providers?

3.7.4 Viability

This RL is very optimistic about its viability, considering the enthusiasm of the staff. The quality of the staff is good, the financial position is sound, and the group is well connected in the region and has an extensive international network (Global Health Master Programme). One could wonder if developments in the EU towards more right-wing political representation will have an impact on the funding of “equity”-oriented research projects.

3.7.5 Recommendations for improvement

- Further develop international collaborations with groups working on social inequalities in health (Ghent University, African universities) to create new opportunities.
- Avoid creating more fragmentation given the already wide scope of research interests and new research topics (e.g., on planetary health).

3.8 Qualitative evaluation of RL 5: Optimising patient care (OPC)

3.8.1 General remarks

The OPC RL aims to conduct research that enables doctors and public health workers to deliver care and care-related prevention that is optimally suited to every individual. They do this by identifying new targets for prevention and treatment as well as the development and evaluation of diagnostic tools. The OPC RL conducts research on population-based cohorts to uncover novel prevention targets, with a particular emphasis on strengthening prevention efforts in the region. The committee was impressed by the diversity and impact of the research conducted, mainly the work on the validation and implementation of prediction models. Also, the number of cohort studies performed by this RL serves as an important contribution to science and society. The broad range of research expertise and interests could prove to be a challenge in the next years, particularly with regard to the profiling of the RL and its viability. For example, a joint strategy in the provision of research infrastructure seems only partially realisable.

3.8.2 Research quality

The quality of research is very high, with publications in high-impact journals (*The Lancet*, *New England Journal of Medicine*, and *British Medical Journal*). Approximately 41.5% of the publications by the OPC RL have a CNCI of 1 or higher. The committee did notice that article output decreased in recent years (from 258 in 2017 to 190 in 2022), but the number of PhDs increased. Based on the tables listing scientific contributions in the Strategy Evaluation Protocol, it is rather difficult to assess the scientific contributions of this RL. It would have been helpful if the committee was provided with the reasoning behind the selected most important scientific publications.

3.8.3 Relevance to society

The staff members of the OPC RL are co-authors of advisory reports as well as invited speakers at public events. They serve as advisors and members of civil society bodies, such as the Dutch Health Council. They have a strong relationship with stakeholders in the region to ensure implementation of OPC's research results (e.g., from large cohort studies with unique data). The population-based cohorts managed by the RL (The Netherlands Cohort Study on Nutrition and Cancer, the KOALA birth cohort study, the LucKi birth cohort study, etc.) enable broad research on population-relevant topics. The Research Network Family Medicine enables direct access to research in primary care and thus to the practical development, testing, and implementation of tools and interventions. As such, the expertise of this RL finds its way into political decision-making processes and clinical guidelines. The participants of this RL network at MUMC+ as well as regionally and nationally, indicating its broad impact.

3.8.4 Viability

We assessed the viability of the OPC RL as very good. The large cohort studies and methodological expertise ensure the viability of this RL. It does seem that this RL is currently in a transition phase. Currently, the research topics are quite diverse, which makes it difficult to identify the research focus (and strengths) of this RL. For the next few years, they need to choose what they are going to focus on. It might be challenging to fill the gap in knowledge and experience after the retirement of some professors with a strong track record. How the generational change will be utilised to attract innovative young scientists to the site must also be addressed. Furthermore, this RL receives a rather large amount of direct funding (40%). A potential threat that the committee recognises is consolidation of research funds in future. Securing new research grants may be difficult with the

retirement of experienced professors. In principle, however, the work and methodological expertise established in this RL can also make a significant contribution to improving care in future, in collaboration with network partners.

3.8.5 Recommendations for improvement

- Expand existing initiatives to promote competences and networking in order to apply for funding and to support young researchers in building up their own networks.
- Determine which methodological competences are actually viable in future and to focus even more on them as well as to develop a common strategic goal.

3.9 Qualitative evaluation of RL 6: Promoting health and personalised care (PHPC)

3.9.1 General remarks

The PHPC RL aims to develop and apply theories, interventions, and research methods to promote health and personalised care through the integration of scientific theories and evidence with the values of individuals. Research strategies include quantitative and qualitative studies, mixed methods, as well as participatory approaches involving stakeholders in the design and implementation of personalised prevention and care. This RL comprises four units: Health Communication and Health Promotion, Interprofessional Collaboration and Shared Decision making, Health Ethics and Society, and Design and Analysis. A goal of the past six years included the alignment of population-based methods with tailor-made approaches using innovative, participatory research designs. It was unclear to the committee what the purposes of the research units were as well as if and how the structure helped staff to meet the RL objectives and to develop their academic careers.

Despite stating that theories are central to their research, there was little explicit discussion of theoretical explanations of people's behaviour, decisions, and/or engagement with healthcare. Implicit in several articles is the medico-sociological rationale for "professional-patient communication" as the core ingredient within these types of interventions, with components ensuring people's autonomy and patient involvement. However, decision science and health psychology draw on (several) theories to investigate people's decision making and behaviour as well as to identify different components and active ingredients when designing interventions with multiple decision makers to change healthcare practice. It is likely that some of these theories are useful in explaining components needed to enhance people's health literacy, decision making, and behaviour change as well as professionals' clinical reasoning, inter-professional collaboration, and delivery of healthcare.

3.9.2 Research quality

The research output of this RL is high, and articles have been published in both broad high-impact journals, such as *British Medical Journal* and *Nature*, as well as in more focused journals. About 40% of the publications have a CNCI>1. The research fields with the highest citation scores are in the fields of health promotion (smoking cessation, physical activity, and alcohol use) and shared decision making. The research and outputs presented focused on the teams' expertise in creating standards and guidelines for methods, developing interventions, and adopting interventions in practice.

3.9.3 Relevance to society

The usually collaborative research conducted for and with societal partners as well as memberships in civil society advisory bodies are clear signs of the societal relevance of PHPC research. It is also noteworthy to mention that many of the projects have resulted in innovative products, e.g., guidelines, digital interventions, decision aids, and staff-training products.

3.9.4 Viability

As mentioned in the SWOT analysis (see p. 14, Self-evaluation report: Part B6), "some highly successful senior staff are reaching retirement age"; therefore, this RL is concerned about the

possibility of attracting talented new staff in the current job market, which is very competitive while the geographical location of Maastricht is not necessarily an attractor. We understand the concern. Nevertheless, such staff changes provide opportunities to move into new directions, such as more systemic approaches to health promotion, multiple decision-maker support, health literacy, implementation science, and technologies to support the personalization of healthcare.

3.9.5 Recommendations for improvement

- Create a long-term vision on how the PHPC RL should position itself within the field.
- More explicit integration of theoretical frameworks, research methods, and intervention design to ensure that the various objectives of different decision makers in these complex interventions are met.

Annex 1 Bio-sketches of members of the external review committee

Professor Anna Petra Nieboer
Erasmus School of Health Policy & Management (ESHPM), Erasmus University Rotterdam (EUR)
Email address: nieboer@eshpm.eur.nl
https://www.eur.nl/people/anna-petra-nieboer

Anna Nieboer is a professor and department head of Socio-Medical Sciences at the Erasmus School of Health Policy & Management, Erasmus University Rotterdam. Her work has focused on quality of care; innovation in health and social care; and wellbeing of community-dwelling, (frail) older people. The author of more than 180 peer-reviewed articles, Nieboer has extensive experience with the evaluation of large-scale, complex, and multidisciplinary interventions and mixed-methods research approaches. Much of her research is aimed at theory building, instrument development, and impacting science and society, especially among vulnerable populations for whom our healthcare system is not optimised. She holds a Master's degree in sociology from the University of Groningen, the Netherlands, and a doctorate from the same institution upon completing the doctoral programme in sociology at the Interuniversity Centre for Social Science, Theory, and Methodology. Fields of interest include well-being, quality of care, innovations in health and social care, healthy ageing, and ageing in place.

Professor Hilary L. Bekker
University of Leeds (UK), School of Medicine
Email address: H.L.Bekker@leeds.ac.uk
https://medicinehealth.leeds.ac.uk/medicine/staff/120/professor-hilary-l-bekker

Hilary Bekker is a professor of Medical Decision Making, Leeds Institute of Health Sciences, School of Medicine, University of Leeds (UK). Her research investigates how patient and professionals make healthcare decisions, what factors boost or bias their judgments, and which interventions support multiple stakeholders to Make Informed Decisions Individually and Together in healthcare (MIND-IT, Bekker 2015). She draws on a mix of methods from the decision sciences, health psychology and health services research to design, implement and evaluate these complex interventions facilitating patient involvement in healthcare. She is a steering group member of the International Patient Decision Aid Standards (IPDAS) collaboration, and provides shared decision making and patient decision aid guidance to numerous research project, and health policy organisations (e.g. NHS, NICE, KDIGO).

Hilary joined the School of Medicine, University of Leeds (UK), in 2001 as a Lecturer in Behavioural Science, and was awarded a personal Chair in Medical Decision Making in 2016. Recently she was employed to lead the Research Centre for Patient Involvement, Central Denmark Region (https://ph.au.dk/en/research-centre-for-patient-involvement/) (2019-2023). Hilary is a Chartered Psychologist (BPS, 1999), Fellow of the Higher Education Academy (2004), and member of the Society for Medical Decision Making and International Shared Decision Making Society.

Meindert Boysen, PharmD, MSc
National Institute for Health and Care Excellence (NICE)
Email address: Meindert.boysen@nice.org.uk
https://www.ispor.org/about/our-leaders/meindert-boysen

Meindert Boysen, PharmD, MSC is Head of International Affairs at the National Institute for Health and Care Excellence (NICE) in England, UK. Until 2020 he was the director for the technology appraisal and the highly specialized technologies programs at NICE. Meindert is also responsible for the Patient Access Schemes Liaison Unit, and the NICE side of the Cancer Drugs Fund.

Meindert graduated as a pharmacist in the Netherlands and has since completed a master's in health policy planning and financing at the London School of Hygiene and Tropical Medicine and the London School of Economics and Political Science. He has worked in hospital pharmacy, in pharmaceutical industry (Eli Lilly & Co), for the King's Fund, and NICE. In his time at NICE, Meindert has been leading on the move to 'single technology appraisals.' on bringing in the program for 'ultra-orphan' drugs, on the development of the plans for value-based assessment, on the arrangements for the new cancer drugs fund, and most recently on
the proposals regarding consideration of budget impact, fast-track appraisals and highly specialized technologies. The latter two in close collaboration with the commissioner (payer) of care; NHS England. Meindert is a skilled communicator, effective negotiator, and extremely dedicated to ensuring that the programs he leads deliver on their key performance targets and budgets.

Em. Professor Jan De Maeseneer
Head of WHO Collaborating Centre for Family Medicine and Primary Health Care – Ghent University
Email address: Jan.DeMaeseneer@UGent.be
https://research.com/u/jan-de-maeseneer

Emeritus professor, Head of WHO Collaborating Centre for Family Medicine and Primary Health Care. Jan De Maeseneer (°1952, Ghent) graduated as a Medical Doctor in 1977 at Ghent University (Belgium). From 1978-2017, he has been working part-time as a family physician in the community health center Botermarkt in Ledeberg (www.wgcbotermarkt.be), a deprived area in the city of Ghent. From 1978 to 1981, he worked as a part-time research-assistant in health promotion at the Department of Public Health at Ghent University (Prof. Dr. K. Vuylsteek). In 1989 he was the first MD to obtain a PhD in Family Medicine in Belgium and from 1991-2017, he chaired the department of Family Medicine and PHC. From 2008 – 2017, he was the vice-dean for strategic planning at the Faculty of Medicine and Health Sciences (Ghent University). Further information regarding the extent of his career can be found in his c.v. https://biblio.ugent.be/person/801000395434

Prof. dr. Jacqueline E.W. Broerse
Athena Institute, Faculty of Science, Vrije Universiteit Amsterdam
Email address: j.e.w.broerse@vu.nl

Professor of innovation and communication in the health and life sciences (with focus on diversity and social inclusion) and Director of the Athena Institute, Fac. of Science, Vrije Universiteit Amsterdam. She holds a master's degree in biomedical sciences (cum laude, 1988) and obtained her PhD degree on the development of an interactive approach to include users in research agenda setting processes on biotechnology (1998). Her current research is focused on (1) methodology development to facilitate public engagement and multi-stakeholder involvement in science (transdisciplinary research, Open Science) and policy (deliberative governance), (2) patient participation in research, care and policy, and (3) understanding and facilitating sustainability system innovations, in order to contribute to more equitable and inclusive innovation processes that address societal challenges. Her research projects are in the domain of (global) health, food and sustainable development. She is coordinator of the EU-funded FOODCLIC project (2022-2027), which aims to contribute to urban food environments that make healthy and sustainable food available, affordable and attractive to all citizens (including deprived and vulnerable groups). Until 2021, she was leader of the Amsterdam Public Health research institute's Global Health Program and still is a member of the program's board. Until 2023 she was Program Director of the research master's degree program 'Global Health'.

Dr. Inge M.C.M. de Kok
Erasmus MC, department of Public Health, Erasmus Medical Center Rotterdam
Email address: i.dekok@erasmusmc.nl

As an epidemiologist, Dr. de Kok is an expert in the development and use of microsimulation models to quantify effects of interventions on population health and translate these findings in policy relevant outcomes. Her main area of research is the evaluation of cervical cancer prevention strategies (HPV vaccination and screening), which is still her main research topic. She has evaluated harms, benefits and costs of HPV vaccination and multiple cervical cancer screening methods for national guidelines, but also for various European countries, the U.S., and Ontario. She is a member of the national programme committee for cervical cancer screening, and responsible for the national evaluation of the Dutch cervical cancer screening programme. She is also co-PI in the NCI funded Cancer Intervention and Surveillance Modelling Network (CISNET) and WP leader in two EU funded projects 'EU-TOPIA' and 'EU-TOPIA-EAST'. Recently, Dr. de Kok expanded her area of research towards other diseases, like dementia and mental health problems. In 2018, she received a Veni grant to develop the first population-based microsimulation model for dementia. This model has been used to project how dementia will develop in the near future, and to evaluate effects of primary and secondary prevention of dementia.

Dipl.-Soz. Geront. Verena Leve, MA
Institute of General Practice (ifam), Centre for Health and Society (chs), Medical Faculty, Heinrich Heine University Düsseldorf
Email address: verena.leve@med.uni-duesseldorf.de

Verena Leve (1975), studied English, Philosophy, Sociology (M.A.) and Social Gerontology (Dipl.-Soz. Geront) in Cologne and Dortmund. After working in community-based work with the elderly and at the Dementia Service Centre Cologne, she worked as a research assistant at the Institute of Gerontology at TU Dortmund University from 2006 to 2012. Since 2012, she has worked as a senior researcher at the Institute for General Practice (ifam), Medical Faculty, Heinrich Heine University Düsseldorf and as a lecturer at Rhine-Waal University of Applied Sciences, Kamp-Lintfort.

As spokesperson for the research focus "Dealing with health and illness in old age" at ifam and spokesperson for the working group "Qualitative Methods" at the centre for health and society (chs), she has many years of experience in conducting research projects using qualitative methods and developing interventions with peer education elements.
Her current research focusses on dementia care and multimorbid patients in general practice (fitness to drive with dementia (DAlzG), Zorg verbindt (INTERREG), Accountable Care in Germany (G-BA Innovation Fund)) and PSY-KOMO - Improving the quality of treatment for severe mental ill people to reduce somatic comorbidity and prevent increased mortality (G-BA Innovation Fund)).

Petra Uittenbogaard, MSc
In 2007 Petra Uittenbogaard (1974) received a master's degree in Health Sciences at Maastricht University. After having worked as a quality manager in the Sint Antonius Hospital in Nieuwegein from 1997 till 2000, she moved back to Maastricht and worked as a policy advisor and organizational consultant in a large organization for elderly care in Heerlen, and as a strategic consultant in various health care organizations. In 2002 she was contracted as an advisor to the Executive Board of the academic hospital in Maastricht, nowadays Maastricht UMC+. Her project portfolio mainly consisted of projects in the field of strategic alliances, academic cooperation with other regional hospitals and care suppliers in the Maastricht region, organizational development, and projects shared by both hospital and the medical faculty on translational medicine, and the development of a university medical center in Maastricht. In February 2018 she started to obtain a bachelor's degree in primary education at Inholland University of Applied Sciences in The Hague. In April 2020, she completed her aptitude test and bachelor's degree. Since then, she has been working as a primary school teacher and tries to combine her advisory skills and experience with meaningful work in primary (Montessori) education.

Annex 2 Terms of Reference External Review CAPHRI 2017-2022

The board of the Faculty of Health, Medicine & Life Sciences (FHML) hereby issues the following Terms of Reference to the assessment committee of CAPHRI, chaired by Prof. dr. Anna P. Nieboer.

Research assessments in the Netherlands

In the Netherlands, the boards of the universities are responsible for the quality of the research at their institution. As part of their quality assurance cycle, all academic research in the Netherlands is evaluated every six years. The executive board of the relevant university commissions the research assessment and determines which research units are to be evaluated each year. For the coordination of the assessment, the Strategic Evaluation Protocol (SEP) 2021-2027 is used (enclosed in this letter). The main goal of a SEP evaluation is to evaluate a research unit in light of its own aims and strategy. In the self-evaluation, the unit reflects on its ambitions and strategy during the previous six years as well as for the future in a coherent, narrative argument, supported wherever possible with factual evidence. This fact means that there should be a direct relationship between the arguments with regard to the aims and strategy on the one hand and the type of robust data underpinning the self-evaluation on the other. The SEP assessments help to monitor and improve the quality of the research conducted by the research unit. Additionally, the assessments of the research quality and societal relevance of research contribute to fulfil the duty of accountability towards government and society. The boards of the institutes may use the outcomes of the research evaluations for quality assurance purposes and institutional strategy development.

Major changes of the new Strategy Evaluation Protocol (SEP) 2021-2027

The SEP protocol itself is reviewed every six years in order to move along with important developments in research. The new Strategy Evaluation Protocol (SEP) 2021-2027, which was previously called the Standard Evaluation Protocol, provides a new and more flexible framework for assessing the research quality, viability and societal relevance of research units for the period of 2021-2027. Below the main differences between the new and the previous SEP 2015-2021 and what this means for the current research assessment process are highlighted.

- The structure and readability of the new SEP has been improved for all the stakeholders. There is now a greater distinction to what role the Executive Board, research unit or review committee have in this process. The SEP also includes a clear overview of the assessment process in its entirety (chapter 2).
- The new SEP offers more flexibility and leaves room for plurality with respect to the application and interpretation of the different elements, depending on the institutional context, the discipline or field of the research and the nature of the unit, among other things.
- Four new specific aspects are defined: 1) Open science, 2) PhD Policy and Training, 3) Academic Culture and 4) Human Resources Policy. These were previously 1) PhD programmes, 2) Research Integrity and 3) Diversity.
- There are no longer quantitative assessment categories, such as world leading, very good, good and satisfactory. The focus is now largely on a qualitative assessment by the committee, given in the assessment report with sharp, fair, but discerning texts providing clear arguments.
- In addition to the previous criteria defined for the composition of a committee with regards to expertise, knowledge and impartiality, several additional criteria are defined. An international review committee should:
    - o Cover the width of the research area;
    - o Consist of at least one PhD candidate and one early-/mid-career researcher;
    - o Be appropriately diverse, in gender as well as cultural, national and disciplinary background.

Objectives of the research assessment of CAPHRI

The committee is requested to assess the quality, relevance to society, strategic targets of CAPHRI as well as the six research lines. The performance of both CAPHRI and its research lines has to be judged on the three SEP assessment criteria below. The evaluation includes a backward-looking and a forward-looking component.

Specifically, the committee is asked to judge the performance of CAPHRI on the main assessment criteria and offer its written conclusions as well as recommendations based on considerations and arguments. The main assessment criteria are:

1) research quality;

2) societal relevance;

3) viability of the unit.

During the evaluation of these criteria, the assessment committee is asked to incorporate four specific aspects. These aspects are included, as they are becoming increasingly important in the current scientific context and help to shape the past as well as future quality of the research unit.

These aspects are as follows:

1) Open Science: availability of research output, reuse of data, involvement of societal stakeholders;

2) PhD Policy and Training: supervision and instruction of PhD candidates;

3) Academic Culture: openness, (social) safety and inclusivity; and research integrity;

4) Human Resources Policy: diversity and talent management.

The main assessment criteria and the four specific aspects are described in detail within the Strategic Evaluation Protocol 2021-2027.

Committee requirements: statement of impartiality

The members of the committee have signed a statement of impartiality. In this statement, the members declare that they have no direct relationship or connection with CAPHRI.

Schedule of the assessment and reporting

The self-evaluation and the site visit form the main sources of information for the committee, on which basis it draws up its report. The self-evaluation (with appendices) of CAPHRI is attached in this letter and additional information about CAPHRI is available on the website.
The site visit at CAPHRI will take place on November 29-30, 2023. CAPHRI will contact you about logistical matters and other relevant issues related to the research assessment approximately two months prior to the site visit. The programme of the site visit is enclosed with this letter.

The committee is requested to report its findings in an assessment report drawn up in accordance with the SEP guidelines and format. The committee is asked to send the dean of the Faculty Board (not to CAPHRI) no more than eight weeks after the site visit. The Faculty Board will, together with CAPHRI, check the report for factual inaccuracies; if such inaccuracies are detected, the committee will ensure that they are corrected. The committee will then send the final version of the assessment report to the Faculty Board.

Attachments:

- SEP protocol 2021-2027
- Self-assessment CAPHRI 2017-2022
- Programme of the site visit

Annex 3 Site visit programme

Programme External Review CAPHRI
ERC CAPHRI 29-30 November 2023
Location: MECC/SAAM

Organized by CAPHRI
Care and Public Health Research Institute
Telephone: +31 43 388 2314 / secretariaat-caphri@maastrichtuniversity.nl

Tuesday, November 28, 2023

Afternoon Arrival members External Review Committee in Maastricht
Hotel: NH Hotel Maastricht - Forum 110, 6229 GV Maastricht

17.00	Arrival of the committee
17.30-20.00	Dinner and closed session ERC on procedures and reporting

Wednesday, November 29, 2023

Location: MECC – room 1.3
MECC Maastricht, Forum 100, 6229 GV Maastricht

8.45-9.00	Welcome and installation External Review Committee members by Prof. A. Schols, Dean of the Faculty of Health, Medicine and Life Sciences (FHML). Start of the public morning programme
9.00-9.20	Introduction to FHML and Maastricht UMC+ by Prof. A. Schols
9.20-9.40	Introduction to CAPHRI by Prof. S. Evers
9.40-10.00	Discussion and Q&A
10.00-10.15	Coffee break
10.15-10.45	Interactive session ALTC and Q&A (short 5 min. pitch followed by a discussion) Prof. H. Verbeek, chair Prof. S. Zwakhalen, vice-chair and 2 or 3 other members of the Research Line
10.45-11.15	Interactive session VHC and Q&A (short 5 min. pitch followed by a discussion) Prof. A. Paulus, chair Dr. T. Clemens, vice-chair and 2 or 3 other members of the Research Line
11.15-11.30	Healthy break
11:30-12:00	Interactive session OPC and Q&A (short 5 min. pitch followed by a discussion) Dr. M. Spigt, chair Prof. L. Smits, vice-chair and 2 or 3 other members of the Research Line
12.00-12.30	Interactive session PHPC and Q&A (short 5 min. pitch followed by a discussion) Prof. T. van der Weijden, chair Prof. R. Crutzen, vice-chair and 2 or 3 other members of the Research Line
12.30-13.45	Lunchbreak at SAAM with the Science Commission (with the possibility for the ERC to withdraw for a closed session until 13:45) Prof. A. de Rijk (HISP/Soc.Med.), Chair Science Commission

	Dr. Silke Metzelthin PhD (ALTC/HSR) Dr. Daan Westra PhD (VHC/HSR) Dr. Mickaël Hiligsmann PhD (VHC/HSR) Dr. Tim Boymans MD, PhD (FPR/ORTHO) Dr. Nicole Dukers-Muijrers PhD (HISP/GB) Dr. Sander van Kuijk PhD (OPC/EPI) Dr. Monique Mommers PhD (OPC/EPI) Dr. Jesse Jansen PhD (PHPC/HAG)
13.45-14.15	Interactive session FPR and Q&A (short 5 min. pitch followed by a discussion) Prof. R. de Bie, chair Prof IJ. Kant, vice-chair and 2 or 3 other members of the Research Line
14.15-14.45	Interactive session HISP and Q&A (short 5 min. pitch followed by a discussion) Dr. P. Wolffs, chair Prof. C. Hoebe, vice-chair and 2 or 3 other members of the Research Line
14.45-15.00	Healthy break
15.00-16.00	Research Lines and stakeholders (combined session + members CAPHRI Advisory Board – 1 hour room for discussion) CAPHRI Advisory Board Prof. A. Timen (RadboudUMC) Dr. E. Leers (Zuyd School for Applied Sciences) Prof. J. van Weert (UVA) Prof. P. Jeurissen (RadboudUMC) Dr. R. Goffin (Zuyderland) S. van der Spiegel MD, MBA (DG Sante, European Commission)
16.00-17.00	Closed session ERC - reflection and preliminary conclusions
19.15	Taxi from hotel to restaurant - Informal dinner (Restaurant SOFA, Maastricht)

Thursday, November 30, 2023
Location: MECC – SAAM
Bar bistro SAAM, Forum 100, 6229 GV Maastricht

	Morning session (closed sessions)
8.45-9.00	Welcome + coffee
9.00-9.45	Meeting regarding PhD Policy and Training PhD coordinators and PhD-REPS Francine Schneider- PhD Community Coordinator Chantal Claessens - PhD Administrative Coordinator PhD Representatives: Diogo Lopes Leao (VHC/HSR) Quincy Merx (ALTC/HSR) Chrissy Moonen (HISP/Soc.Med) Ken Peeters (OPC/HAG) Frederike Mulder (FPR/ORT) Lieve Vonken (PHPC/GB)
9.45-10.30	Open science & Academic culture (integrity) Prof. M. Zeegers (OPC/EPI), Chair of FHML Platform Research Integrity Dr. B. Penders (HISP/HES), member of FHML Platform Research Integrity Dr. L. Wynants (OPC/EPI), Chair of the Quality Assurance Committee Dr. D. Shaw (HISP/HES), Quality Assurance Officer
10.30-10.45	Coffee break
10.45-12.00	Strategic Partnerships: -10.45-11.15 Introduction Living Labs and centers – Prof. S. Evers + Q&A -11.15-11.35 CaRe + Leadership Programme + Q&A Prof. O. van Schayck (OPC/HAG), Scientific Director CaRe (Netherlands School of Public Health and CaRe Research) -11.35-12.00 Internationalisation Commission + ASPHER Prof. K. Czabanowska (VHC/IH), Chair Committee International Collaboration
12.00 – 13.15	Lunchbreak at SAAM
13.15-13.45	Closed session ERC + Management Team CAPHRI Prof. S. Evers S. Bulic Prof. H. Verbeek (ALTC/HSR) Prof. S. Zwakhalen (ALTC/HSR) Prof. A. Paulus (VHC/HSR) Dr. T. Clemens (VHC/IH) Dr. M. Spigt (OPC/HAG) Prof. L. Smits (OPC/EPI) Prof. T. van der Weijden (PHPC/HAG) Prof. R. Crutzen (PHPC/GB) Prof. R. de Bie (FPR/EPI) Prof IJ. Kant (FPR/EPI) Dr. P. Wolffs (HISP/MMI) Prof. C. Hoebe (HISP/Soc.Med.)
13.45-14.15	Closed session ERC + Management Board CAPHRI Prof. S. Evers S. Bulić
14.15-15.00	Healthy break
15.00-15.30	Meeting with the Maastricht UMC+ board Prof. A. Schols, Dean FHML Prof. S. Kremers, Vice-Dean FHML

15.30-16.30	Closed session of the External Review Committee
16.30-16.45	Public Presentation of preliminary conclusions by the chair of the External Review Committee
16.45	End of programme and informal get together

Annex 4 CAPHRI organogram

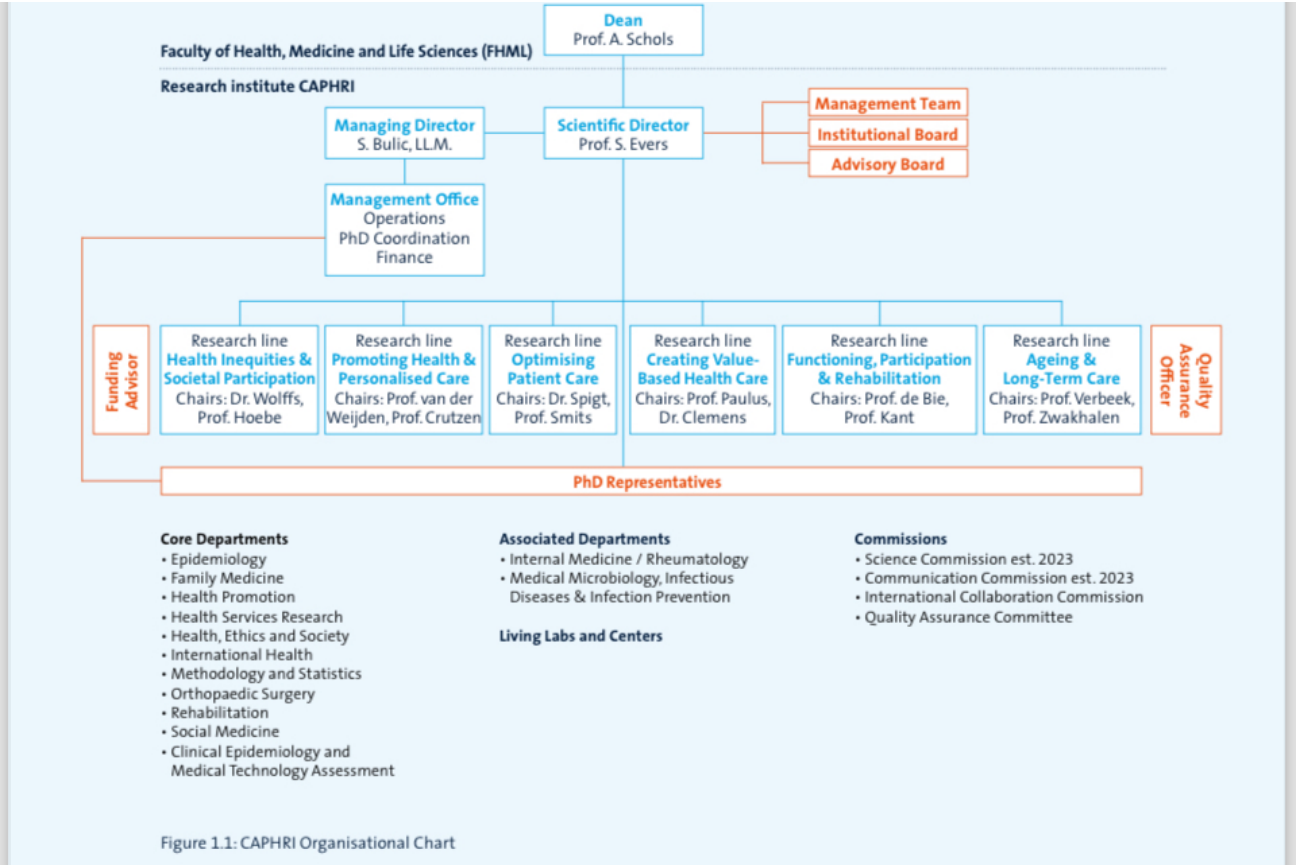


Figure 1.1: CAPHRI Organisational Chart

Annex 5 Composition and funding

Table 2.1 Research staff at CAPHRI level

CAPHRI	2017	2018	2019	2020	2021	2022
Scientific staff FHML[1]	46,3 / 121	48,4 / 127	45,4 / 147	46,7/119	46,0 / 124	48,7 / 128
Scientific staff academic hospital	7,0 /22	7,0 / 22	6,2 / 18	3,6 / 14	3,1 / 13	3 / 13
Post-docs [2]	35,7 / 61	33,8 / 59	36,2 / 73	35,3 / 62	44,6 / 81	43,6 / 73
Internal PhD-candidates [3]	70,3 / 76	78,0 / 81	77,2 / 84 *(100)	74,7 / 80	71,8 / 79	64,5 / 70
Total research staff	**159,3 / 280**	**167,2 / 289**	**165,1 / 322**	**160,6 / 275**	**165,4 / 297**	**159,8 / 284**
Support staff (research)[4]	26,7 / 44	28,0 / 46	29,3 / 69	25,0 / 43	25,9 / 42	24,4 / 39
Support staff (managerial)[5]	10,0 / 12	9,8 / 12	9,7 / 12	9,7 / 12	8,5 / 11	9 / 12
Total staff incl academic hospital	**196,0 / 336**	**205,0 / 347**	**204,1 / 403**	**195,0 / 330**	**199,7 / 350**	**193,1 / 335**
Total staff excl academic hospital	**189,0 / 314**	**198,1 / 325**	**197,8 / 385**	**191,4 / 316**	**196,6 / 337**	**190,1 / 322**
External PhD candidates [6]	320	310	340*(323)	353	373	421
Honorary professor [7]	nb	nb	15	11	16	12

FTE: Sum of actual fte-factors (in fulltime equivalents) labelled on the research programme on 31-dec on any year
#: Number of persons active on the research programme on 31-dec of any year

Comparable with WOPI-categories HGL, UHD and UD; tenured and non-tenured staff appointed at the FHML.
Comparable with WOPI-category 'Onderzoeker' ([1,2,3,4]), with completed PhD, not belonging to scientific staff (with WOPI-categories HGL, UHD and UD)
Standard PhD (employed)
All support staff working on research (research assistants, lab technicians, and other support staff not working at the management office)
Support staff working at the School's management office including the scientific director
External PhD (externally or internally funded but not employed)
Scientific Staff, employed_unpaid professor
Visiting fellows are researchers/professors who visit the research programme for a period of typically one week up to three months to work with research programme staff members.

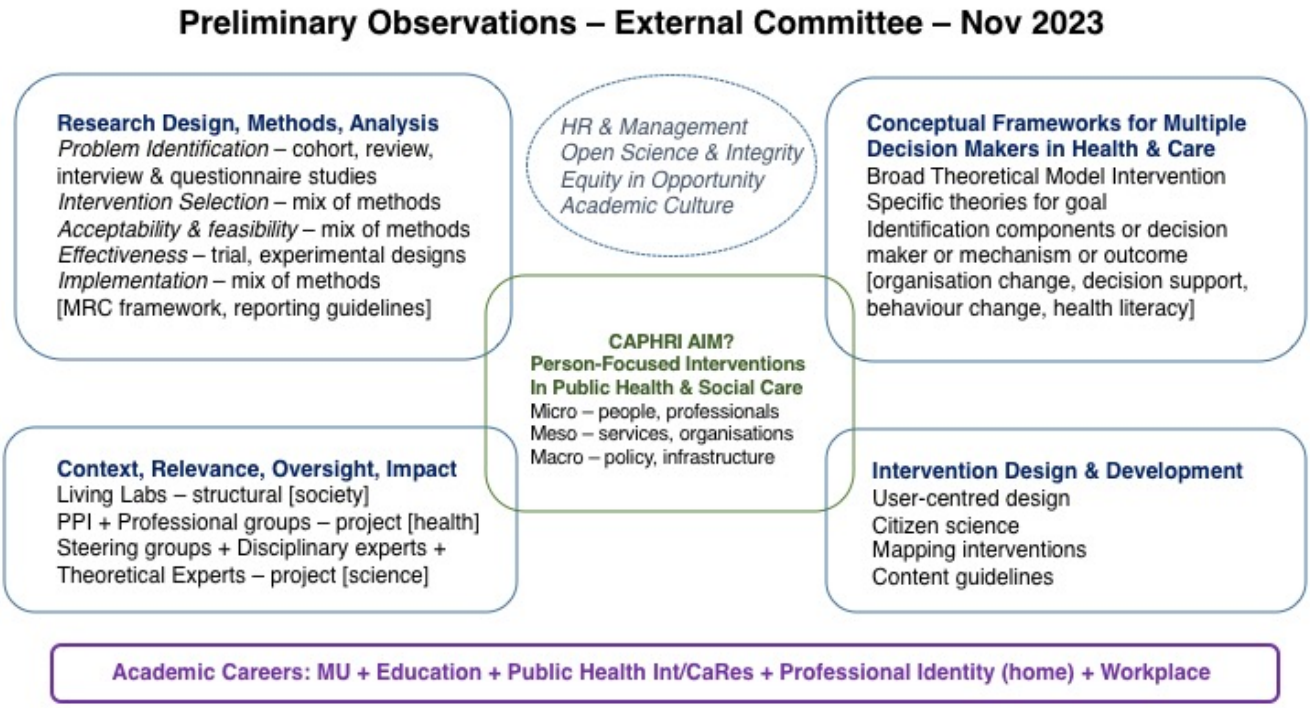
* There were 100 Internal PhD candidates of which 83 still had a paid position, the other 17 internal PhD Candidates 17 were not employed and therefore shown as external PhD Candidate.

Table 2.3 Funding at CAPHRI level

CAPHRI	2017		2018		2019		2020		2021		2022	
Funding	**fte[5]**	**%[6]**	**fte**	**%**	**fte**	**%**	**fte**	**%**	**fte**	**%**	**fte**	**%**
- Direct funding[1]	42,0	28	45,3	28	43	27	44,3	28	41,3	25	40.3	26
- Research funds[2]	27,2	18	31,2	19	35,3	22	38,5	25	39,3	24	42.0	27
- Contract research[3]	74,7	49	79,8	50	81,3	50	72,5	46	78,7	48	69.5	44
- Other	8,4	5	4,0	2	2,3	1	1,2	1	3,2	2	5.5	3
Total funding (excl. hospital)[4]	**152,3**	**100**	**160,3**	**100**	**161,9**	**100**	**156,4**	**100**	**162,5**	**100**	**157.3**	**100**
Expenditure	**k€**	**%**	**K€**	**%**	**K€**	**%**	**K€**	**%**	**K€**	**%**	**K€**	**%**
- Personnel costs	13.164	76	14.273	79	14.780	79	14.792	83	16.162	84	16.032	81
- Other costs	4.181	24	3.706	21	3.851	21	2.995	17	3.008	16	3.851	19
Total expenditure	**17.345**	**100**	**17.979**	**100**	**18.631**	**100**	**17.787**	**100**	**19.170**	**100**	**19.883**	**100**

[1] Direct funding by FHML/ Maastricht University ('basis financiering' / lump sum budget).
[2] Research grants obtained in national scientific competition (e.g. grants from NWO, ZonMw and KNAW)
[3] Research contracts for specific research projects obtained from external organisations, such as industry, governmental ministries, European organisations, including ERC, and charity organisations
[4] Funds that do not fit the other categories.
[5] The funding in fte includes the total research staff but excludes the academic hospital-staff
[6] the funding in % in the research programme should be compared to the total within each research programme
Remark: Funding including clinical research (CTCM/academic hospital or other) is included in table 2.3 (in k€ per year)

Annex 6 Example model to illustrate CAPHRI's activities



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This report was finalised on March 17, 2024
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