

The background features a solid blue upper half and a white lower half. A decorative graphic of overlapping, rounded, wavy shapes spans the horizontal boundary. The left side of this graphic is blue, and the right side is yellow. The text is centered horizontally across the boundary.

Report for the research review of
Amsterdam Public Health
Research Institute

APH research review according to the Strategy Evaluation Protocol

Report: June 2024

Review period: 2017-2022

Site visit: 24 & 25 January 2024



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Preface

As part of the merger of the Amsterdam University Medical Centres AMC and VUmc into Amsterdam UMC, the Amsterdam Public Health (APH) was launched in 2016 as one of eight research institutes. Its predecessor, EMGO⁺ (Institute for Research in Extramural Medicine), was an already existing institute from VUmc and Vrije Universiteit Amsterdam.

Over time, APH developed into a large research network, incorporating over 1.700 researchers. As research in The Netherlands requires an evaluation every six years, so APH prepared itself for such an evaluation in 2023: a self-evaluation report was composed, and a research review committee was established. This committee made an onsite visit in January 2024 in which the Strategy Evaluation Protocol (SEP) was leading and in which APH was reviewed. Here you will find the report of the committee.

The committee was highly impressed by what APH had achieved over time. The growth of the network was immense yet retained its stability through a combination of an excellent academic culture and pleasant working atmosphere. In particular the organisation of the APH-network intrigued the committee. It speaks of special talent if one can manage and connect eight already big research programmes with many researchers. Due to time restraints, the committee could not always go in-depth, for example in the interviews with the individual research programmes. Nevertheless, we got a fair picture of the quality of the research, its societal value and its viability. The committee embraces APH's choices around the future strategic themes.

Overall, we had pleasant discussions with various layers inside and outside the APH-network: critical questions led to mostly justifiable answers. Nevertheless, we have come up with a number of recommendations for the future of APH.

An immense effort was made by the secretary of the research review committee, dr. Meg van Bogaert in bringing all information together in a well-structured report. We experienced the evaluation as intense and educational and really hope you will enjoy reading the report.

On behalf of the research review committee
Em. prof. dr. J van der Velden, chair

Summary

In the evaluation period, Amsterdam Public Health (APH) played a major role in the merger of public health research of VUmc, AMC and VU, leading to a successful interdisciplinary and interfaculty research institute on public health. This network institute has a facilitating role towards the researchers employed at the affiliated departments. APH is a large research institute that has grown significantly in the evaluation period; the committee is of the opinion that limiting the growth and focus on consolidation is key for the upcoming years.

APH is organised in eight and (as from 2023 nine) research programmes, covering the area of public health. Where the direct responsibility for quality, execution and delivery and implementation of research products of the individual researchers lies at the department where they are employed, strategic research direction, support and training for quality, implementation, valorisation, networking and talent development lies within APH and its research programmes. Although the committee did not go into depth on the research quality within the research programmes during the site visit, it is positive about the missions and overall quality of the research within APH. Another strength is the various longitudinal cohort studies within APH as supporting pillars of the research.

In terms of societal relevance, good experiences are observed (in particular from the mental health and aging and later life research programmes). According to the committee, the cross-cutting new initiatives and themes (e.g., digital health, system resilience and environmental sustainability) are innovative and fresh. The coherence between the research programmes could be strengthened, for example by incorporating these initiatives in the organisational structure of APH. This will allow for more cross-collaboration between research programmes in APH as well as giving APH a clear identity that can be used to strengthen branding.

There are many and fine examples of research activities that originated based on questions from professional practice and society. The committee sees opportunities to build on this strength; as a spider in the web, APH can set the regional public health agenda incorporating the new themes and initiatives. This will then boost and strengthen the impact of the institute.

The committee is positive about the way APH is working on the various SEP-aspects. However, with regard to some of these aspects (like PhD supervision, Open Science and HRM) APH has limited control and influence. Strategy, decision-making and implementation lie more heavily with the departments at UMC and university level, with APH having influence through indirect activities such as nudging and persuasion.

The committee stimulates APH to take an active role in the Recognition and Reward initiative and be specific in its ambition and how this initiative is acknowledged in various researchers' profiles. This is in line with SEP and the national Recognition and Rewards programme, which assumes diversity of talents within a team, which transcends individual talent or monoculture.

Overall, viability is good with some points of attention going forward. Important in this respect is ambition towards branding of the institute, both internal and external. This includes a discussion within APH on its size as a network institute, including the number

and size of the research programmes and how to organise more cross-programme collaboration. It also requires an intra-faculty discussion cooperation (e.g. between clinical and public health research) and an inter-faculty discussion on cooperation (socio-economic-ecological conglomerate of Amsterdam UMC, VU and UvA).

Introduction

Scope of the evaluation

The Executive Boards of Vrije Universiteit Amsterdam and University of Amsterdam commissioned a review of the research conducted in the Amsterdam Public Health (APH) research institute. The review is part of the regular six-year quality assurance cycle of the universities and is intended to monitor and improve the quality of the research and fulfil the duty of accountability towards government and society. The quality assessment in this report is based on the assessment system in the Strategy Evaluation Protocol for Public Research Organizations 2021-2027 (SEP) drawn up by the Universities of the Netherlands, the Dutch Research Council (NWO) and the Royal Netherlands Academy of Arts and Sciences (KNAW).

The review committee

The Executive Boards have appointed a review committee (hereafter: committee) of nine external peers according to SEP. The committee consisted of:

- Em. prof. dr. Koos van der Velden (chair), Radboud UMC, The Netherlands
- Prof. Elaine Hay, Keele University, United Kingdom
- Monique van den Hoed MBA (PhD student), Maastricht University, The Netherlands
- Professor Arfan Ikram, Erasmus MC, The Netherlands
- Professor Janusz Janczukowicz, Medical University of Lodz, Poland
- Professor Manuela Joore, Maastricht University, The Netherlands
- Dr. Lonneke van Leeuwen, Julius Center, UMC Utrecht, The Netherlands
- Simone Kukenheim, former councillor and deputy Major of Amsterdam and Director of Public Health, GGD Flevoland
- Professor Martin Preisig, University Hospital of Lausanne, Switzerland

The Executive Boards appointed dr. Meg Van Bogaert as the secretary to the committee.

The evaluation criteria

The Strategy Evaluation Protocol was the starting point for the committee's evaluation. This protocol describes the objectives and methods for evaluating publicly funded research in the Netherlands. The SEP distinguishes three evaluation criteria: (1) quality of research, (2) societal relevance, and (3) viability. Additionally, the SEP asks committees to consider four specific aspects when evaluating the three central criteria. These aspects are: (1) Open Science, (2) PhD Policy and Training, (3) Academic Culture, and (4) Human Resources Policy. In addition to the guidelines and criteria in the SEP, the committee also considered its task established by the University Executive Boards.

Terms of reference

In addition to the SEP-criteria, APH asked the committee to reflect on three additional strategic questions:

1. The mission for the coming years: What scientific and societal purpose/gap/problem does the research institute want to serve, solve or fill, and possibly with what positioning?
2. The strategy for the coming years:

- a. To what extent have actual strategic choices (think: scientific spearheads and/or societal themes) been made (prioritization/focus), for example, based on the SWOT, the current and desired positioning of the research institute?
 - b. What are the strategic opportunities for scientific innovation?
 - c. How does interfaculty collaboration fit within the design/expression of the strategy?
 - d. Is the strategy actually designed at the strategic level or more at the tactical and support level?
3. Policies on talent management: Evaluate the plurality of possible career paths, the opportunity and support for faculty members to identify a career path and be assessed according to their development within that path, the equity between career paths with regards to development and promotion opportunities, the sufficiency of opportunities for both vertical as well as lateral career development, the appropriate consideration of both individual- and team-based development- and assessment criteria. This is in line with SEP and the national Recognition and Rewards program, which assumes diversity of talents within a team, which transcends individual talent or monoculture.

Information provided to the committee

Prior to the site visit, the committee received the following information:

- Self-evaluation report;
- Report previous research review;
- Strategy Evaluation Protocol 2021-2027;
- Information on the website of APH.

Procedures followed by the committee

The site visit of APH took place on 24 and 25 January 2024. Before the site visit, the committee members were asked to read the documentation and formulate preliminary findings and questions for the interviews.

Prior to the site visit, the committee received a presentation with an introduction to the SEP, specifics about the Dutch research landscape and the working methods. In an online kick-off meeting, approximately two weeks prior to the site visit, the committee agreed upon procedural matters. On the evening before the site visit, the committee discussed its preliminary findings and prepared the site visit. The committee met with representatives of the institute and discussed its findings. To conclude the site visit, the committee presented the main preliminary conclusions to the institute. The schedule for the site visit is included in appendix 1. Quantitative information according to SEP is provided in appendix 2.

This report describes the findings, conclusions, and recommendations of the committee. APH is assessed based on its own objectives and strategies as well as in relation to departments and institutes worldwide in similar disciplines and on related topics. The texts for this evaluation report were finalised through e-mail exchanges. The final version of the report was presented to the APH Board of Directors, and Executive Boards of the Universities for factual corrections and comments. The report was finalised in June 2024.

Amsterdam Public Health

History of context Amsterdam Public Health

The multidisciplinary Amsterdam Public Health research institute was officially launched in 2016 as one of eight research institutes within Amsterdam UMC. The predecessor of APH was the EMGO+ (Institute for Research in Extramural Medicine), in which researchers from VUmc and VU were already connected. After the merger of the two medical centres VUmc and AMC, APH has further grown as a network institute in which researchers from Amsterdam UMC and two VU faculties join forces in eight research programmes. The focus on study design and methodology from the predecessor EMGO+ is well embedded in the current research programmes. During the evaluation period, the responsibilities between APH and Amsterdam UMC and VU departments have been aligned, and APH is now moving towards a consolidation phase.

Organisation and governance

During the site visit, APH was presented as a network institute connecting researchers from different organisations and multidisciplinary backgrounds in an effort towards improving public health. APH covers a broad range of topics and creates an important link between scientific research, inpatient clinical care, outpatient care, society and policy. APH researchers are employed in a university department at the VUmc, AMC or VU. APH pursues an open policy for partner organisations, implying that researchers in other VU or UvA faculties, or other organisations, are increasingly joining the network.

Amsterdam UMC has a principal investigator (PI) system that stimulates individual researchers to develop their own research lines. The VU Faculties have a different system and rather use the term (senior) researchers. In this report, the committee will use (senior) researcher with which it also implies PIs at Amsterdam UMC. Research is organised in eight research programmes, aligned with major public health themes. A ninth research programme, Digital Health, was recently added. The nine research programmes cover a wide scope of research topics within and somewhat beyond public health:

Health Behaviours and Chronic Diseases (HB&CD)

The aim of the HB&CD research programme is to create, disseminate, and exchange knowledge about health-related behaviours and interventions. The focus lies in particular on the mechanisms shaping these behaviours, their impact on health and appropriate health promotion strategies. The research programme initiated several thematic working groups, provided seeding grants and organised workshops including a writing retreat.

Mental Health (MH)

The MH research programme explores the development of both chronic and acute mental disorders, and its research extends to mental well-being and quality of life. The wide focus led to insights into resilience factors that can avert mental ill-health. The MH research programme organised a variety of events and workshops and has taken active part in societal mental health initiatives on local, regional or national levels.

Societal Participation and Health (SP&H)

The SP&H research programme aims to improve societal participation and avoid early exits from participation. Special focus lies on vulnerable groups. The research

programme further seeks to improve preventive and medical assessments in occupational contexts.

Global Health (GH)

The GH research programme is about worldwide health improvement, reduction of disparities and protection against global threats that disregard national borders. It engages in inter- and transdisciplinary research that fosters interaction between theory, policy and practice. The research programme organised a number of workshops, webinars and symposia.

Aging and Later Life (A&LL)

The A&LL research programme works to help people grow old and be old in the best possible way. Central concepts are resilience, quality of life and personalised care. The research programme organised varied meetings and events, including debate and knowledge exchange evenings for older people.

Quality of Care (QoC)

The QoC research programme acts in the context of major changes in the healthcare system and is designed to optimise quality of care for patients throughout the life cycle. The research programme aims to make healthcare more person-centred, sustainable and available to everyone, while taking ethical issues and legal aspects into consideration. The large and heterogeneous research programme invested in maturing its own identity and ambitions, fostering a sense of coherence and closer connection between individual researchers.

Personalised Medicine (PM)

The PM research programme has been designed to sharpen the focus on dimensions of diversity in the population and on the diverse identities of individuals. PM has established Special Interest Groups (SIG) on Patient-Centred Care, Responsible Innovation and Intersectionality. The research programme organised various gatherings, including a debate series.

Methodology (Me)

The Me research programme works to develop and evaluate quantitative and qualitative research methods for public health, healthcare and biomedical research, ranging from theories and frameworks to instruments and statistical techniques. The research programme organised multiple tutorials, in which methodology experts share their knowledge on specific topics.

Digital Health (DH)

The DH research programme aims at contributing to prevent disease from happening and support those in current need of healthcare by fostering and governing research on development, evaluation and implementation of digital tools and by smart, fair and ethical use of data bringing equity for all.

Each research programme is led by two programme leaders (PL) chairing a Programme Council of 4-6 senior researchers and is supported by a programme secretary. All research programmes additionally appointed a Junior Council, providing programme management with recommendations and helping organising research programme specific activities and network events. The membership of APH is decided by individual researchers; each researcher can be a member of two research programmes. There were some differing opinions about whether it is helpful or restrictive to participate in more than one Amsterdam UMC research institute. From the institute's perspective, the

optimal situation is to have dedicated and active members who focus fully on one institute, while researchers might consider two (or more) institutes to be relevant in their research.

APH is led by one director and two vice-directors, forming the APH Board of Directors and representing the VUmc, AMC and VU. APH has a Scientific Quality Committee that co-develops and supports the implementation of APH-specific policies on research quality. In addition, APH has a PhD Education Committee coordinating APH-specific doctoral education activities, providing guidance and support to PhD candidates and supports the network of postdoctoral researchers within the institute. Late 2017, APH created an External Advisory Board, composed of 6-8 external advisers in senior positions of other organisations in the field of public health. This board regularly provides guidance and input on the overall strategy.

According to the committee, the governance structure is well described, though somewhat complicated to comprehend. The committee initially was somewhat misdirected by the term 'institute'. It considers APH to be very valuable as a network organisation or movement. During the site visit, it became clear to the committee that there is consensus on APH being a 'dynamic network' that facilitates and catalyses research through a 'nudging', soft touch approach, encouraging collaborations internally and externally. This implies that many processes and procedures, such as line organisation management, happen at departmental level in the Amsterdam UMC or VU faculties. The APH Board of Directors considers this an advantage, as the relationship between APH and the departments and department heads was reported as good, with no friction. Although the committee agrees to some extent, not being part of the line organisation also provides the institute with challenges. For instance, APH has a limited formal voice in the funding and recruitment strategy of the departments. At the same time, APH does receive some strategic funding to develop an independent strategy or implement innovations by itself. Taken together, according to the committee the structure of communication with line managers on appraisal and research performance remains vague.

The governance structure shows that APH is a facilitating organisation, although this is occasionally challenged by the size of several of the research programmes and the size of APH as a whole. APH grew from 750 researchers in 2016 to over 1.700 in 2022 and this high number of members represents a logistical challenge, such as organisationally. According to the committee, the scale of the research programmes allows for consideration of increasing protected time for research programme leaders to enable them to lead effectively. Current time allocation appears inadequate and does not reflect the importance of the roles. It became clear to the committee that there was a 'bottom-up' approach to decision making on, for example, research topics. This reliance on soft power dynamics served its purpose well during the merger years. It is worth, however, considering whether this structure remains optimally aligned with the future goals and challenges as it is making strategic planning at an institute level very challenging. The committee was unanimous in its praise of the strong and inspirational leadership of the research institute, which fosters a collaborative culture. The research programme leaders and the APH Board of Directors are appointed for fixed terms (once renewable), which discourages fossilisation and encourages career development of future leaders. At the same time, the success of APH is the result of the convincing and motivating characters in the current board. This makes timely succession planning and smooth continuation extremely important as future success depends on successful leadership.

Mission and strategy

The ambitions and activities of APH are driven by strategic themes, including *Communication and public relations, PhD and postdoctoral policy, Scientific quality (including Open science); Cohort studies and research infrastructure, Societal impact, Implementation and valorisation, Digitalization, Environmental sustainability, Human resources policy (including talent developments) and Academic culture (including research integrity, inclusivity and diversity)*. Many of these themes are part of the SEP-evaluation and will be discussed in this report. From the strategy perspective, the committee has some observations and suggestions.

In the evaluation period, the mission of APH was to conduct high-quality research to improve population health, reduce health inequalities, transform healthcare, and empower individuals. Although APH has a global focus, it leverages benefits from the urban context of the Amsterdam metropolitan area. Based on the self-evaluation report, the committee was somewhat unclear regarding the scope and content of APH. The breadth of content is extending beyond traditional public health domains to fundamental and translational clinical research. This is not necessarily a problem but makes branding of a clear profile more difficult. Although the focus on public health became more apparent during the site visit, the committee is of the opinion that it may be beneficial to revisit this aspect in terms of branding and focus on positioning APH as a public health institute.

Health and healthcare are undergoing major transformations, accompanied by changing expectations from the population. APH therefore formulated three aims: (1) aiding decision makers at all levels of the healthcare system in assessing health needs, fostering a healthy environment, strengthening the healthcare system, and safeguarding its sustainability; (2) supporting health professionals in maintaining and improving their performance; and (3) empowering patients and other persons in managing their health. In 2021, after the mid-term review, two strategic themes were added to APH's strategy: digitalization and environmental sustainability.

Based on the self-evaluation document and the interviews during the site visit, the committee concludes that although APH has an institute-wide strategy, it appears to have mainly been set at the programme level of the eight research programmes, and even at the level of the individual researchers. The research programmes are very broad, allowing nearly all research topics to fit in somewhere. This is in line with Amsterdam UMC's objective of promoting the merger of two UMCs, with all researchers joining one or two institutes. The merger was overall successful, and the committee recommends APH to now apply a stronger focus in its research programmes, overall steering towards a collective public health strategy at APH level. This includes challenging the research programmes to produce and share more clearly how they contribute and give value to APH, and how APH benefits them. It might help to produce examples of how to optimise opportunities within APH. According to the committee it is important that conversations on the added value and benefits of being part of APH are held at all levels within research programmes (not just programme leaders).

The committee was impressed with some of the innovative and fresh ideas of APH strategic initiatives around environmental sustainability, health system resilience and diversity, equity and inclusion (DEI). The committee recommends including these cross-cutting (new) initiatives and themes in the organisation structure of APH. An important condition is that these cross-cutting themes will need to be appropriately resourced.

This strength and opportunity of using themes was not clear in the documentation by APH, it only became clear in the discussions, e.g. the connection with citizens and external partners. The committee's suggestion is to clearly articulate the strategy around themes for external communication.

Regarding strategic aspects that also involve Amsterdam UMC and VU, the committee has several observations. The first concerns the ongoing discussion on the (strategy of) growth of the institute. The committee thinks that the current governance structure does not match the current size of APH, which is the largest of the Amsterdam UMC institutes. Further growth will increasingly put pressure on governance. According to the committee, APH should develop a strategy on how to manage (and probably limit) further internal growth, and how to develop stronger and more visible external academic and non-academic links (locally, nationally and internationally). The Deans of the participating faculties commented on this topic with the analogy of a dynamic net with birds flying in and out. However, the conclusion of the committee is that hardly any bird (researcher) is flying out, nor is it clear how decisions on terminating activities are made or how (potential) further growth is regulated.

The second observation is that the committee encountered opportunities in terms of APH more strongly influencing strategic decisions 'upwards' in terms of pushing the public health agenda of Amsterdam UMC and VU. The committee considers that attention to branding and visibility is a key priority, emphasising the public health research focus. It appears that currently APH is punching below its weight in terms of visibility of impact, both internal and external. The committee is convinced that APH has the full support of the Amsterdam UMC and VU to push the public health agenda, as the Deans were clear and positive on the role of APH in supporting the public health needs of Amsterdam.

Academic culture

Both Amsterdam UMC and VU have policies in place to ensure openness, safe working environments, research integrity, inclusivity, and diversity. APH complies with these policies and – where needed – develops additional policies or activities. From the interviews the committee concluded that there is not a distinct research culture within APH, researchers often perceive their research culture to be primarily influenced by their respective departments. In general, the committee has seen research staff enjoying their work in research and in the discussion. The committee suggests that APH assesses whether it has a distinct academic culture and, if so, consider how to distinguish its culture from that of the individual departments and/or how to have a positive impact on the academic culture at departments. The committee acknowledges APH's emphasis on integrity, evidenced by the offering of courses. The impact of its activities remains somewhat unclear to the committee, as the course participation and implementation status were not part of the documentation to the committee.

APH clearly pursues the academic standard for research integrity in line with the local, national and European Codes of Conduct for research integrity. APH provides new PhD candidates with information and training via the obligatory part of the PhD training programme. Furthermore, APH supports its researchers with extensive research information on the website and new developments via the Methodology research programme.

A point of attention is the fact that the merger appears to have intensified the competition for mid-career tenured positions, potentially impacting the academic culture

within APH. At least, this is the impression of the group of mid-career researchers. The committee recommends that APH closely monitors issues that may negatively influence the collaboration between APH researchers and the working ethos of individual APH researchers.

The committee commends APH for its transparency in reporting - in a survey study - about perceptions of discrimination. During the interviews, no evidence of any tension between researchers was observed. Overall, the committee experienced a lot of honesty and openness to express (different) views. At the same time, there were some signals that not everything is being discussed, particularly on sensitive topics such as diversity. A sound academic culture requires continuing attention and work. The APH Board of Directors seems well aware of this, and the committee is confident that attention will be given to this topic in the upcoming period.

Human Resources Policy

APH aims to support and encourage talented APH researchers to develop academic competencies and transferable professional competencies, both with the aim to conduct high-quality public health research with a societal impact.

Talent development

To improve the visibility and impact of early- and mid-career researchers, APH encourages international exchanges and research collaboration with academic and societal partners by awarding targeted travel and research grants and co-organising network events. Within the research school CaRe, an internationally oriented Public Health and Care Research Leadership programme (PHCR) was launched in 2021, a two-year programme for high-potential mid-career researchers with ambitions to refine their knowledge and skills in order to qualify as distinguished leaders in public health. Amsterdam UMC, VU and UvA also offer central-level talent programmes that APH researchers can benefit from. Amsterdam UMC has a Committee for Talent and Appointments, with the task to shape the talent policies for academic staff and to give advice on appointments of mid-career and top-level academics. This includes advice on the implementation of the Recognition and Rewards programme. The VU also re-shaped its rewarding system for academic career tracks.

Being a large institute, APH provides ample opportunities for researchers to collaborate, share experiences and learn from each other. The exchange within APH is reported as stimulating by the researchers. The committee encourages the institute to include diverse methods for, in particular mid-career researchers, to learn from others within APH, for example by work visits rather than only networking activities.

According to the mid-career researchers that the committee met during the site visit, APH provides several additional and appreciated benefits beyond what departments have to offer. These include a structured PhD Education Committee system and education initiatives (courses) for PhD candidates, but also the emphasis on interdisciplinary aspects through focused point and network meetings. APH offers small grants for collaboration and travel, but mostly directed at the PhD and postdoc level. At the mid-career level, APH offers opportunities for leadership roles, such as chair- and committee positions, along with courses to develop skills in acquiring grants, potentially aiding progression to the associate professor level. Unfortunately, not all mid-career researchers the committee met were familiar with what APH has to offer. The committee therefore recommends APH to work on an information strategy to specifically inform

(and with that engage) mid-career researchers. Despite this point of attention, the initiatives undertaken by APH to support mid-career researchers are experienced as helpful in the development of a successful career, in particular the Public Health and Care Research Leadership programme and the travel grants to stimulate exchange.

Societal impact, implementation of research and valorisation are relevant strategic topics for APH. The Recognition and Reward initiative might be used to increase structural appreciation and time for implementation, societal impact and valorisation within the portfolios of the young researchers, including PhD candidates and postdocs. The committee recommends that the Recognition and Reward initiative and ambition features more strongly in APH's training and courses and should be acknowledged in various researchers' profiles. According to several of the mid-career researchers, the diversity in profiles is not yet adequately reflected in the training offered.

Nationwide, mid-career researchers face the challenge of the large number of assistant professor positions and a relatively small number of associated professor positions. This bottleneck cannot be solved by APH alone, but the institute should play a leading role in monitoring and voicing the experiences of the APH mid-career community in their respective departments. The sense of competition for the limited number of associate professorship positions appears to have further increased after the merger. A perceived lack of transparency about promotion criteria is a point of concern. Decisions on promotion to the associate professor level are taken at the level of the employer university and not APH, which links to earlier points made about a lack of clarity regarding how APH feeds into appraisal and promotion processes. The overall picture was that, for most assistant professors, the criteria and process are not clear. Given that the situation for mid-career researchers in the Netherlands is difficult in general, APH is encouraged to support this group in its institute to identify what measures could help best. APH is also stimulated to discuss any issues with representatives of Amsterdam UMC and the affiliated universities to define clear promotion criteria and ensures that these are adhered to.

Senior career support

The senior researchers that the committee met during the site visit displayed high levels of satisfaction. They emphasised the added value of APH, in particular its stimulation of scientific exchange and multidisciplinary. One challenge that was mentioned, is the fact that the size of the institute makes it difficult for a researcher that is joining APH to find support and partners to collaborate with. This is particularly the case for researchers who are also new within the participating universities. The integration of new researchers in APH could be facilitated by better visibility and findability of research topics, researchers and activities.

Diversity and Inclusion

The committee was not only able to meet the APH Diversity, Equity and Inclusion (DEI) Committee, but also brought the topic of DEI to all meetings during the site visit. From the perspective of the self-evaluation report, the diversity aspect is included in the Human Resources pillar. Moreover, it was stated that "with regard to inclusivity and diversity, APH is convinced that science is best pursued with a wide diversity of staff members and teams: different people who bring their own knowledge, values, and experiences to the task and who respect one another within the context of team science. This implies an environment in which people are treated equally and are all included."

During the conversations with APH representatives, the committee was pleased to hear multiple staff members praising the trust-based culture of APH. The friendly environment forms the foundation for further implementation of DEI principles. While the trust-based culture was unanimously reported, the committee noticed that not all groups interviewed felt comfortable discussing the issue of proper representation of ethnic-background and other diversities. The committee understands the complexities related to providing information on ethnic background-related inclusiveness, linked to the lack of policies allowing collection of the necessary data. While this does not solve this problem entirely, the committee suggests using proxy measures as an interim measure (e.g. parents' education) when the direct indicators of inclusiveness are missing. Notwithstanding the lack of measurable data, the diversity of APH does not seem to reflect the diversity of the population APH serves. Although international PhD candidates have added value, they do not solve the diversity issue of underrepresentation of Dutch citizens of diverse backgrounds at APH.

The committee wants to clarify that the overall focus in this section on the ethnic background, does not reduce its attention to other dimensions of diversity and inclusion. The committee strongly appreciates that DEI is identified in as important themes and advises constantly reviewing a focus on intersectional approach to research design and to prioritise health inequalities linked to gender, sex, ethnicity and the other dimensions of diversity as leading themes for research projects. The same intersectional approach could be adopted for the internal HR-related policies and processes.

The committee commended initiatives like the Diversity and Inclusion Talent Fellowship. Such vertical (focused) interventions can be effective only if supported by horizontal strengthening of DEI policies and transversal interventions. The committee emphasizes that it is very important to transform the DEI mission statements into policies and actions that will result in measurable outcomes, adding the dimension of inclusion to the already existing trust and to continue building the APH staff sense of belonging.

The committee is aware that that inclusivity is a general, higher-level challenge affecting many Dutch educational institutions, and that Amsterdam UMC and VU have policies in place to ensure openness, safe working environments, research integrity, and inclusivity and diversity. APH complies with such institution-level policies. It is highly recommended that APH should focus on establishing local, APH-focused solutions to complement and enhance Amsterdam UMC and VU policies.

Finally, the committee praises the commitment of the Diversity, Equity and Inclusion (DEI) Committee. Meeting this enthusiastic and competent team convinces the committee that the complexities indicated above are being properly identified and that the essential change process already has a dedicated leadership team. When it comes to diversity, the committee is of the opinion that issues and challenges should be clearly identified and accompanied by a strategy to start solving them. In this respect, it is important that the DEI committee is strongly supported and resourced, as it aims at making the APH community of researchers as diverse as society deserves.

Cohort network

Within APH more than twenty-five large- or smaller-scale longitudinal cohort studies and health and healthcare registries are coordinated and maintained. These studies provide access to unique cross-sections of society and include often nation-wide long-term data. The strengthening and sustaining of such cohort studies is prioritized by APH as they are

under constant pressure due to a lack of long-term funding to safeguard and improve infrastructure. A successful example of APH investment is the Geoscience and Health Cohort Consortium (GECCO).

In 2019 a booster plan was developed with a focus on developing a blueprint for linking cohorts to external data registers (e.g. from Statistics Netherlands) and data from general practitioners, hospitals and pharmacists. The objective was to make the data more findable and accessible. In 2022 financial investments by the Dutch government enabled APH to initiate the Amsterdam Cohort Hub (ACH), accommodating long-running, active and sustainable cohort studies and registries.

Research quality

The committee learned during the site visit that the APH network is mainly facilitating the researchers employed at the affiliated departments. Direct responsibility for quality, execution and delivery and implementation of research products of the individual researchers lies at the department where the researchers are employed. According to APH, strategic research direction, support and training for quality, implementation, valorisation, networking and talent development lies within APH and its research programmes. However, the committee noticed that the level of influence and control by APH strongly differs between topics. There is, for example, indeed a clear and convincing support and training for quality while valorisation is also part of the Amsterdam UMC Board and no clear APH strategy is visible.

The committee has insight into missions and input/output of the institute and research programmes, which is overall very good. However, due to time constraints and lack of detailed information, the committee did not get a clear in-depth view of the quality and execution of the research during the site visit. For example, the committee learned about various, often impressive cohorts that are supporting pillars of the research at APH but did not gain detailed insight into the quality of those cohorts (i.e. data, representativeness, validity, data analyses). This makes it not possible to provide an in-depth assessment of the research quality in the different research programmes. The committee therefore focuses more on an overall assessment of the research quality and related aspects.

Quality assurance

APH seeks to provide a learning community environment that encourages transparency and good conduct in research and discourages misconduct. The Scientific Quality Committee (SQC) was created to aid and monitor the development and maintenance of a range of instruments to facilitate research integrity and scientific quality. In the evaluation period, APH developed a number of strategic procedures and instruments to shape and define the fundamental quality structure and culture within APH. Activities that create conditions for good quality research included a comprehensive update of the APH Quality Handbook in 2021 and the initiation of research quality visits in 2022.

Research quality

The information provided in the self-evaluation report made it difficult to distinguish between the results of the research programmes. In fact, it remained unclear to the committee what is required to be considered APH output, beyond individual researchers being affiliated with APH. This should be made clear for external peers to be able to

provide an in-depth assessment. Based on the information provided to the committee, it considers that overall, the quality of the research seems impressive. All individual research programmes seem to be functioning well and producing very good output, which is reflected in 18% of publications in top journals. Despite the merger and pandemic, the number of outputs is relatively stable. Furthermore, APH provided a long list of impressive recognition markers in the self-evaluation report. From the meetings at the site visit the added value of APH was clearer for some research programmes than for others. The committee did notice some missed opportunities for links and cross-fertilisation between research programmes, e.g., methodology and personalised medicine.

The committee encountered several nice examples emerging of co-created external strategic initiatives, although it seems that the strategy is for choosing collaborations with external academic and non-academic partners, is mainly driven by individual researchers. A similar observation is valid for the development of new themes within APH (e.g., digital health) that often seems to be driven by individual researchers.

Societal relevance

Impact on society starts with looking at the challenges that exist in society at large. These challenges require innovative, interdisciplinary research. Themes to be studied at APH mainly originate from practice, making the research societally relevant and the committee encountered several impressive examples (for example in the mental health and aging and later life research programmes). The committee thinks that the APH ambitions towards impact to society are very good and relevant and it commends the recent strategic choices and directions, for example environmental sustainability, digital health and health system resilience) as well as the more organised attention to diversity, equity and inclusion among staff.

APH is of value in getting stakeholders or 'the system' in the room at the start of and during research projects, and in giving information and backup via scientific research, with the objective of changing society by influencing policy. It is important for societal partners to find APH as the go-to institute when looking for a certain expertise to address public health issues in an interdisciplinary way. In this respect, APH clearly has added value to the departmental structure. APH is a big institute that is cross-cutting departments with a Board of Directors that has good overview on the research that is performed. It can act as a counter to the outside world and connect to (societal) organisations and stimulate valorisation from an interdisciplinary perspective, by aligning the agenda of APH with, for example, Amsterdam Vitaal & Gezond. The committee encourages APH to further develop, nurture and cherish links with non-academic partners, particularly in the voluntary and community sectors, and highlight them more prominently and proactively to APH researchers. This will clarify that such engagement is expected in APH research. Co-innovation and co-production opportunities should be capitalised upon, and resourced. Community-led training events for APH researchers would increase awareness and opportunities for public engagement in research throughout the research cycle.

While within the affiliated organisations APH is well known, external branding could improve. From the interviews, the committee learned that a lot of co-creation and public involvement takes place at the project level of individual researchers. The APH Board of

Directors is extremely important in this respect, by continuously connecting researchers with the outside world. However, one of the challenges for APH is the vast number of research topics and size of the institute, lacking focus and a clear identity. It is difficult to see the public health relevance of some of the research attributed to APH and research groups need to rise to the challenge of clarifying their public health story. According to the committee, APH is a unique institute in the region and City of Amsterdam and has the potential to serve as a connector in the scientific field as well as the societal field. To really realise its full potential in public health, and to increase its visibility the branding of the institute needs to be strengthened internally and externally. Such a plan requires a strategy and goal of APH as a whole; is it a network institute of Amsterdam UMC and VU researchers, or is the ambition to be more than that?

According to the committee, impact requires a solid public health agenda. The committee is convinced that APH can influence the agenda setting of Amsterdam UMC and VU and UvA. The Deans of the participating faculties are clearly open to and supportive of upward influence and agenda setting by APH. Subsequently, APH could more explicitly cooperate with authorities in the Amsterdam region and work on a public health agenda in consultation with all stakeholders.

Open Science

Overall, open science is considered a strong aspect of APH. It is an active topic of discussion at APH, for example reflected in the training of PhD candidates in various concepts of open science. The APH Quality Handbook is also a useful tool, it integrates principles of open science. The level of open access publications is a strength as this is favoured by agreements with academic publishers. Furthermore, various open data repositories are available. The challenge for APH is to implement and make available tools visible, as not all PhD candidates and postdocs were aware of these useful tools, e.g., the website and Quality Handbook. The committee also points out to APH to be aware of the newly formed Regie Orgaan Open Science at NWO, which can greatly facilitate and/or fund several of the APH activities and link them to national developments.

The committee expects that the Amsterdam Cohort Hub will give a huge boost to further promotion of open science. This hub is supported by national funding and has the potential to serve as best practice for Open Science and FAIR data in the field of cohort studies.

A specific recommendation is targeted at the Methodology research programme. According to the committee, open science also includes open education and open methods. The committee reinforces the importance to optimise active dissemination by the Methodology research programme of (newly developed) methods within APH.

Viability

Given the challenges of the last few years, with the merger of the two UMC's and the pandemic, APH seems to have developed well in the evaluation period. During the site visit, the committee heard a plea for a period of consolidation and stability and agrees with this approach. The committee is overall very positive about the viability of APH, which is reflected in high quality research, enthusiastic and motivated researchers, and attention to impact and valorisation. The committee commends the impressive leadership of APH, resulting in a positive atmosphere and culture of trust. Considering

the self-evaluation report, the conversations during the site visit and the findings on other criteria, the committee has the following conclusions with regard to viability:

The quality of the research is impressive and should be maintained. To keep this high level of research quality, it would be helpful to put the research in a frame of a public health research agenda, aiming at finding the necessary balance between responding to local needs and the transferability of the research findings to other contexts. It is important to continuously evaluate the current research programmes and ensure that APH and the research programmes remain proactively responsive to newly emerging (public) health needs. One of the (potential) strengths of APH is its broad and diverse expertise in public health. By continuing to work – and even intensify the efforts – on cross-cutting themes like personalised medicine, methodology, and new themes like health systems resilience, sustainability and climate change, and digital health, the collaborations and interdisciplinary aspects of the research will be further strengthened. The committee encourages APH to continue the ongoing shift from a federation of research programmes towards a coherent public health-oriented network serving the community. This shift requires APH to have a debate about its size and function as a network institute in relation to the departments. This should include the view of the research programmes and their view on what APH brings them and what they can bring to APH.

According to the committee, it is important that the institute works on its branding, including its vision and mission with a clear focus on (urban) public health. When developing the public health agenda, it is important to connect to Amsterdam UMC and VU, the city of Amsterdam, the country, and the world. This will help to increase the international visibility of APH as the leading public health pool of experts that the committee encountered. The recommendation is to be explicit about and utilize the connection to the outside world. External stakeholders are clearly willing to be an APH ambassador and need to be fed information and expertise to do so.

Although mid-career researchers stated to the committee that they adhere to the request to include *APH* in their papers and email signatures, they clarified that they did not consider the institute a significant part of their research identity. Their identity is primarily associated with their respective departments. Assuming that APH's aims and intention is to have all researchers actively support and represent the institute, the committee recommends that a strategy is developed to enhance the incorporation of APH into the researchers' overall identity.

A lot of the added value of APH links to informal activities that result from the extensive and long-term experience of the current director and board. The current director is considered to be a connector and does impressive work. Keeping in mind that the terms for board members are limited, the committee thinks that it is important to capture and formalise activities of the current leadership to ensure that the trust-based culture is supported by the APH formal structure. This will provide smooth transitions and continuous development towards the next generations of APH leadership. To the committee it was less clear to what extent APH has a connector role to international bodies and organisation, like the European Union (EU) and WHO. Although there are clear connections between individual researchers and international bodies, the relationships with these international bodies, could be exploited better at the APH board level.

At this stage in the institute's development, it is crucial that APH should debate its size and function as an institute. Concerning size, further growth is not recommended, especially in relation to current governance. Concerning function, part of this challenging recommendation is to ask the research programmes what and how they can contribute to APH, be clear on the responsibilities at different levels (institute versus departments) and what is expected from research programmes within the public health agenda.

Finally, in the documentation and – in particular – during the site visit, the committee encountered many best practices throughout the institute. Up to a certain level, these best practices are being shared, although APH as a whole would further benefit from a more structured approach to sharing of best practices. It is important to remain supportive to the research staff at all levels and help them to share their best practices and learn from each other. This includes the continuation of open and productive interactions and the effective way of working.

PhD policy and training

From the meeting with PhD candidates, the committee concludes that they are overall happy to work and learn about research in the APH institute context. The PhD candidates clearly see the added value of APH in their training and research. For example, multiple PhD candidates mentioned that there are many opportunities, like events and tutorials, to build a personal network. APH provides them with connections that otherwise may not have been established.

For the committee, it was a challenge to get a good overview of the PhD training and supervision, as the structure of the overall support of PhD candidates seems to be scattered with differences between faculties, universities and some overlapping requirements. The formal merger of the two UMC's in Amsterdam UMC will most likely smoothen out some differences, although the requirements and approach of the two universities remain different. According to the committee, it is important for APH – and other Amsterdam UMC institutes – that the University of Amsterdam and Vrije Universiteit Amsterdam work towards a single approach for PhD candidates in Amsterdam UMC.

The Training Plan (TP) system is in place and evaluated by the PhD Education Committee for part of the PhD population. The committee was impressed by the activities undertaken by the PhD Education Committee, which add to the quality of PhD training, although it seemed rather labour intensive. As multiple faculties and universities are involved, unfortunate differences in the way TP's have to be dealt with. It would be preferable if the PhD Education Committee could be involved in all TP's, regardless of the faculty of the PhD candidate. Within the TP, PhD candidates are trained to look across traditional boundaries and learn from researchers in other departments and disciplines when working on their ambitions and projects. There is a large and diverse selection of courses and training opportunities. One of the few critical remarks the committee received, was the limited number of required methodological courses to fully equip public health professionals. The training of PhD candidates furthermore focuses on important topics, such as open science, personal developments and mental health. To the extent that APH can influence the broader education of PhD candidates, initiatives aimed at increasing their knowledge on data and diversity aspects is welcomed but could

be further strengthened by ensuring they are included within the structure of all doctoral schemes.

Based on the interview with PhD candidates, they are not represented - as a group - at APH level. There is a Junior Council for each research programme, the committee recommends extending this to the level of APH for PhD candidates to connect across the research programmes. Not only would this make it easier for PhD candidates to have their voice heard in the institute, but it would also provide them with a peer-support community.

It was difficult for the committee to get specific, and uniform information on the PhD supervision, due to the fact that this is not primarily part of APH and the supervision differs between the different levels of the organisations. It was mentioned that supervisors are required to follow specific training for supervisors, which the committee approves. Whilst there appears to be some attention to future career opportunities, given that the prospects within academia will remain limited, it is recommended that APH focuses on a broader preparation of PhD candidates for the next step in their careers, academic or otherwise.

Postdocs

In the documentation not much information is available about the group of postdoctoral researchers. The limited attention is recognised by the PhD Education Committee, which has broadened its mission, aimed at helping the creation of a postdocs network. The committee recommends that APH further supports the Education Committee to extend its activities to this postdoc network, so that this potentially vulnerable group can have a voice within APH and be represented towards the APH Board of Directors.

Recommendations

Overall, the committee is positive about the many initiatives and activities at APH that are aimed at improving the quality of the research, stimulating outreach and societal impact and creating a supportive and stimulating research environment. Throughout this report, the committee provides APH with suggestions to continue doing high quality research. In this chapter, the committee emphasises several important recommendations that will help APH in the upcoming years.

Branding

APH is a unique institute in the region and City of Amsterdam with the potential to serve as a connector in the scientific field as well as the societal field. To really realise its full potential in public health, and to increase its visibility the branding of the institute needs to be strengthened internally and externally. External organisations and individuals who are familiar with APH, are enthusiastic about the research, interaction and societal impact. At the same time, the committee sensed that awareness of 'APH being the place to go regarding public health' could and should be more widely distributed to have more impact. The branding of APH as an institute requires a joint decision on what APH is: a network institute of Amsterdam UMC and VU researchers or more than that? Subsequently a strategy is required to brand APH according to the ambitions.

In this respect, APH will benefit from more cohesion within the institute, with a clear focus around public health. Make use of cross-cutting themes and initiatives, obtaining coherence between the research programmes in the organisational structure. Clearly articulate the APH strategy for external communication around common themes and ask the research programmes to make clear how they will contribute to this strategy.

Size and function of APH

The committee is of the opinion that further growth is not recommended, especially in relation to current governance. Concerning function, part of this challenging recommendation is to ask the research programmes what and how they can contribute to APH, the expectation that the institute may have of its members and be clear on the responsibilities at different levels (institute versus departments).

Public Health agenda

Impact requires a solid public health agenda, and the committee is of the opinion that APH is perfectly positioned to influence and set this public health agenda in the region, by emphasizing the importance of the *public health research* focus at Amsterdam UMC and VU and connecting it to the public health needs in the region.

Culture and atmosphere

APH should assess whether it has a distinct academic culture from the departments of participating researchers and if so, how to distinguish this culture and / or to have a positive impact on the academic culture of departments. It is furthermore important that APH closely monitors issues within Amsterdam UMC and VU that may negatively influence the collaboration between APH researchers and the working ethos of individual researchers.

Career development

Although the topic of career development mostly lies beyond the control of APH, it is important to work on an information strategy to inform (and engage) researchers, in particular mid-career and junior researchers. The committee also stimulates APH to take an active role in the Recognition and Reward initiative and ambition and how this initiative is acknowledged in various researchers' profiles.

Diversity and inclusion

Despite efforts, the diversity of APH does not seem to reflect the diversity of the population APH serves. The committee recommends that APH focuses on establishing local, APH-focused solutions to complement and enhance institutional diversity and inclusion policies.

PhD and postdoc strategy

It is recommended that APH supports PhD candidates with a broader preparation for the next step in their careers, academic or otherwise.

Postdocs would benefit from extending the support function of the PhD Education Committee to this group of (often) vulnerable research staff.

Embedding in Amsterdam UMC and VU

Each researcher can participate in more than one Amsterdam UMC or VU-faculty related research institute. The committee understands the benefits this has for the researchers and the Amsterdam UMC and VU as a whole. Downside is that the institutes have to deal with active and less active (dormant) members as well as with the focus and strategy of other institutes. This limits/inhibits the branding and profile of each institute.

Positioning of APH in the Amsterdam UMC and VU strategy

Not being part of the line organisation of Amsterdam UMC and VU limits APH's influence and decision-making power with regard to factors it does have to deal with, e.g. HR policy, supervision of PhD students and financial streams. Currently, all is going well because the APH Board of Directors is aware of this and is committed to the good relationship. However, if decisions and policies at the departments impact the institutes, the institute should have a say regardless of the individual relationship.

Appendices

Appendix 1: Programme site visit

Tuesday January 23, 2024

- 18.00 Meet & Greet committee and committee meeting
- 19.00 Welcome dinner committee

Wednesday January 24, 2024

- 08.15 Kick-off meeting committee
- 09.30 Opening session with APH Board of Directors
- 10.15 Short break
- 10.30 Presentations of the APH research programmes
 - 60 minutes plenary session
 - 80 minutes parallel sessions
- 13.00 Lunch break
- 13.30 Interim committee meeting
- 14.00 Perspectives of junior, mid-career and senior researchers
 - Parallel sessions
- 15.45 Short break
- 16.15 APH's upcoming strategic plans
- 16.45 Interim committee meeting
- 19.30 Committee dinner

Thursday January 25, 2024

- 08.30 Interim committee meeting
- 09.00 Conversation with APH's Board of Deans and Board of Division 10
- 09.30 PhD programme and postdocs within APH
- 10.30 Short break
- 10.45 APH's impact and societal relevance
- 11.45 Lunch break
- 13.00 Focus on APH's strategic themes
 - Cohort studies; societal impact, implementation & valorisation; scientific quality; environmental sustainability; and Diversity, Equity & Inclusion
- 14.45 Final meeting committee
- 17.15 Oral feedback by committee chair and closing

Appendix 2: Quantitative information

APH Research staff

	2017			2018			2019			2020			2021			2022		
	VU	VUmc	AMC	VU	VUmc	AMC	VU	VUmc	AMC	VU	VUmc	AMC	VU	VUmc	AMC	VU	VUmc	AMC
Core research staff	321	71	118	346	80	121	353	80	128	145	362	84	129	149	351	78	125	148
PhD candidates	710	72	171	739	72	194	689	83	180	426	650	85	174	391	638	85	185	368
Other research staff	649	67	322	662	86	312	629	72	280	277	608	63	279	266	604	61	264	279
Total	1,680	210	611	1,747	238	627	1,671	235	588	848	1,620	232	582	806	1,593	224	574	795

* Core Research Staff includes full professors, associate professors, assistant professors, professors emeriti, and visiting professors. The category PhD Candidates encompasses standard candidates (employed by APH institutions) and adjunct candidates (externally or internally funded, but not officially employed by APH institutions). Other Research Staff includes senior researchers, postdocs, junior researchers, visiting fellows, medical specialists or physicians, and other research support staff.

Figure 1: APH research staff affiliated with APH institute 2017-2022

	Total*	HBCD	MH	SPH	GH	ALL	QoC	PM	Me
Core research staff	366	62	98	31	40	69	102	66	88
PhD candidates	654	75	192	40	86	101	194	125	113
Other research staff	699	75	169	74	38	112	265	90	102
Total	1,719	212	459	145	164	282	561	281	303

* The sum of researchers in the programs is greater than the APH total, because a researcher can be affiliated with one or two programs.

Figure 2: Research staff affiliated with APH institute in 2022 by research programme

Funding

	Total	HB&CD	MH	SP&H	GH	A&LL	QoC	PM	Me
2nd flow	€ 150,333,845	€ 18,128,439	€ 40,122,866	€ 10,382,730	€ 8,391,564	€ 16,671,685	€ 29,266,861	€ 8,481,748	€ 18,887,952
3rd flow	€ 96,669,266	€ 6,294,070	€ 22,256,219	€ 8,444,062	€ 8,821,033	€ 7,652,594	€ 39,677,310	€ 2,265,052	€ 1,258,926
4th flow	€ 7,441,379	€ 999,077	€ 1,897,968	€ 103,075	-	€ 376,802	€ 3,575,230	€ 256,520	€ 232,707
Total	€ 254,444,490	€ 25,421,586	€ 64,277,053	€ 18,929,867	€ 17,212,597	€ 24,701,081	€ 72,519,401	€ 11,003,320	€ 20,379,585

* Funding sources: "2nd flow" involves conditional funding by intermediary public bodies and agencies (NWO, ZonMw, KNAW, EU); "3rd flow" concerns private funding by non-profit organizations; "4th flow" refers to private funding from commercial sources (such as for contract research or for clinical research funded by the biopharma industry).

Figure 3: External funding obtained by APH researchers by funding source and research programme 2017-2022

	Total	HB&CD	MH	SP&H	GH	A&LL	QoC	PM	Me
2017	€ 46,475,527	€ 6,041,201	€ 10,114,149	€ 1,917,605	€ 3,688,900	€ 5,751,751	€ 12,770,129	€ 1,923,817	€ 4,267,975
2018	€ 44,239,897	€ 4,992,655	€ 12,605,748	€ 3,161,933	€ 2,525,709	€ 3,155,864	€ 9,093,963	€ 5,818,496	€ 2,885,529
2019	€ 40,298,012	€ 5,328,883	€ 10,899,851	€ 1,673,571	€ 1,101,198	€ 1,883,401	€ 13,238,567	€ 493,071	€ 5,679,470
2020	€ 43,736,032	€ 3,129,608	€ 15,011,183	€ 5,450,286	€ 2,251,370	€ 4,965,402	€ 9,288,720	€ 391,906	€ 3,247,557
2021	€ 37,083,187	€ 3,440,333	€ 8,179,651	€ 2,541,261	€ 2,010,295	€ 5,083,050	€ 14,405,558	€ 1,020,990	€ 402,049
2022	€ 42,611,835	€ 2,488,906	€ 7,466,471	€ 4,185,211	€ 5,635,125	€ 3,861,613	€ 13,722,464	€ 1,355,040	€ 3,897,005
Total	€ 254,402,490	€ 25,421,586	€ 64,277,053	€ 18,929,867	€ 17,212,597	€ 24,701,081	€ 72,519,401	€ 11,003,320	€ 20,379,585

Figure 4: External funding obtained by APH researchers by year and by research programme 2017-2022