Self-evaluation report for the Program evaluation of Health Economics, Policy, and Management (HEPM)

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Approved by the LIME Board of Education, 2024 01 31

The Assessment Panel's report for the Program evaluation of Health Economics, Policy, and Management (HEPM)

2023-06-26

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Self-evaluation and Assessment Panel's report for the programme evaluation of the master's programme: Health Economics, Policy, and Management (HEPM)

CONTENT

Introduction

Self-evaluation

The programme's responsible parties, together with representatives from the faculty and students, should conduct a reflective self-evaluation by identifying strengths and areas for improvement in the programme. They should also describe and evaluate how these areas are addressed to ensure high-quality education. The focus of the self-evaluation should be on reflection rather than description. The self-evaluation should be supported with examples if possible. It should be based on the current status of the programme at the time of submission. The self-evaluation should be based on the four assessment areas listed below, which include ten assessment criteria.

1. Preconditions
1.1. Staff
1.2. Learning environment

2. Design, implementation, and outcomes
2.1. Goal attainment
2.2. Equal opportunities
2.3. Sustainable development
2.4. Follow-up, measures, and feedback

3. Student perspective
3.1. Student perspective

4. Work-life and collaboration
4.1. Work-life and collaboration
4.2. Internationalisation
4.3. Interprofessional competence

The self-evaluation should follow the provided headings. The headings, including the assessment criteria in the template, must not be removed. Subheadings may be added if necessary. The template's formatting, such as margins, must not be changed. The programme's text should consist of 1-3 pages per section, with font size 11 points and single spacing. The self-evaluation should provide the assessment panel with a comprehensive overview of the programme without including links to additional information. It should begin with a brief description of the programme's organisation, structure, and overall focus, with justification in relation to the degree regulations. The self-evaluation should also explain how long the education has been provided at KI. In the self-evaluation for the assessment criterion "Follow-up, measures, and feedback" and "Student perspective," an overall description at the KI level should also be included. This description is already prepared centrally by KI in this templet. The self-evaluation should conclude with the section "Other aspects," where the programme can describe relevant areas that are not included in any of the assessment criteria, such as other generic competencies and forward-looking developments to enhance the programme's quality.

The following attachments are to be included in the self-evaluation:

- Teacher table for teacher competence and capacity. The table should provide an overview of the main teacher competence and capacity for the programme. It is not necessary to report all teachers who teach. The teacher table is compiled in an Excel file that contains additional instructions.

- Mapping of the outcomes of a master's degree to course learning outcomes, learning activities, and assessments. The mapping should provide an overview of which courses have learning outcomes related to the evaluated outcomes of a master's degree. The mapping should also indicate which learning activities are used to support student learning to achieve the learning outcomes and how the learning outcomes are assessed. The mapping is compiled in an Excel file that contains additional instructions.
- Programme curriculum.
- Course syllabi for all courses included in the programme.
- Compilation of key figures regarding application numbers per place, number of students starting the programme, number of full-time equivalent students, and number of graduates.

The programme should compile the information in the teacher table and the mapping of outcomes for a master's degree, while the programme curriculum, course syllabi, and key figures will be provided centrally by KI.

The academic advisor for the programme evaluation round, together with the coordinator for programme evaluations, should review that the programmes' submitted self-evaluations are complete before sending them to the assessment panel.

If necessary, the assessment panel may request additional supporting documents to ensure their assessment of the programme.

The self-evaluation should be approved by the committee responsible for the programme.

The Assessment Panel's Report

The Assessment Panel is required to summarise their assessment in a report that is written in the same document as the self-evaluation. For each assessment criterion, the programme's strengths and areas for improvement, as well as the Assessment Panel´s assessment, should be described under separate headings. Under the "Strengths" heading, the Assessment Panel should highlight the programme's strengths within the assessment criterion and describe them briefly, preferably in bullet points. Under the "Areas for Improvement" heading, the Assessment Panel should identify areas that are deemed in need of improvement and describe them briefly, also preferably in bullet points. Under the "Assessment" heading, the Assessment Panel should explain their assessment and motivate their conclusions.

A summary of the Assessment Panel´s work should be described under the "Assessment Panel´s Summary" heading. It should begin with a reflection on the conditions that the self-evaluation provided for assessing the programme's quality, such as whether the self-evaluation was easy to read, well-structured, provided answers to the questions posed, and followed the instructions. The summary should also briefly summarise the programme's most important strengths and areas for improvement. The Assessment Panel may also include any additional comments they wish to convey.

Once the Assessment Panel´s report has been submitted, the self-evaluation and the report should be published on KI's staff portal.

Self-evaluation

Programme: Hälsoekonomi, Policy och Management/Health Economics, Policy, and Management (HEPM)

Degree (120 credits): Medicine masterexamen med huvudområdet medical management/ Degree of Master of Medical Science with a Major in Medical Management

Description of the programme

Programme description

The Karolinska Institutet has a strong research focus with approximately 40% of national funding going to researchers at KI. The mission of the university is to improve health for all through knowledge and education. However, researchers have found the transition from bench to bedside requires more than simply walking across the street from the Institutet to the hospital. The translation requires wise economic decision-making, policy changes, and an understanding of how to better coordinate the way health care and health care professionals work. It was based on these insights that the Master's program in Health Economics, Policy, and Management (HEPM) was established at the Medical Management Centre (MMC) in 2011. Students receive a master's degree in medical sciences with a major in medical management focused on health economics, policy and management. Originally offered as a joint program with the Global Public Health department, in 2017, LIME took sole control for the program.

The focus and main strength of the program rests in the co-existence and integration of the three subject areas, health economics, policy, and management. These cover areas traditionally absent in health professions educations, but essential to functioning health systems. The purpose of the program is to *build students' competencies in health economics, policy, and management to be able to influence the development of health care in order to improve human health in the context of limited resources*. After graduation, alumni are able to contribute to improved decision-making in health care, in the face of limited resources and with the aim to improve health.

Health economics contributes to increased knowledge and understanding of how health economic methods can be used in prioritization and decision-making within healthcare, at the clinic, organizational, and societal levels, as well as which healthcare interventions and health improvement measures and methods should be used to achieve improved and equitable health with limited resources.

Drawing upon knowledge of healthcare systems and the epidemiology of health determinants, *health policy* contributes to increased knowledge about how to describe and measure population health, health risks, assess the health effects of disease-prevention and health-promoting interventions at the individual and population levels, as well as how evidence-based health policy can be formulated and implemented. This includes an evidence-based decision-making process made through the interaction between democratic decision-makers and medical and health science experts, as well as how health-promoting and preventive measures at the population level are implemented within the healthcare system.

Medical management contributes to increased knowledge of how decisions on interventions, resource utilization, work methods, and organization within healthcare are made based on knowledge of how to improve health outcomes, patient

experiences, and staff well-being, while at the same time reducing costs. Key components to achieve high-value health systems include the ability to apply evidence-based diagnostic and treatment strategies and to organize implementation so that the right staff with the right skills do the right things with patients at the right time and in a safe and cost-effective way. Non-value-adding steps and delays are to be avoided.

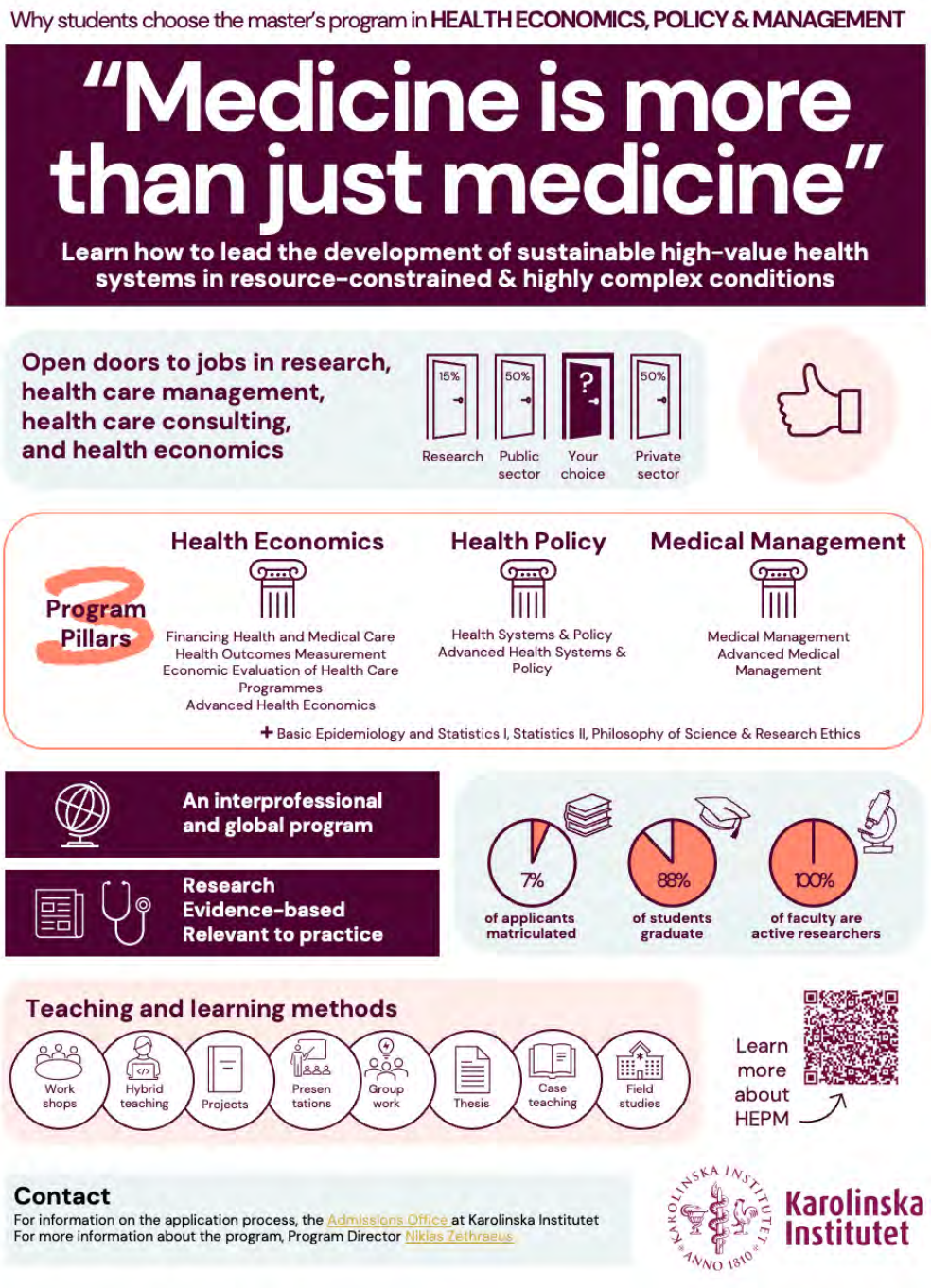
During the first academic year, students develop their understanding of how medical knowledge, individual and organisational competence, as well as material and financial resources can best be utilised to improve health. Basic methodological skills, including statistics and quantitative and qualitative methods, are developed. In the second year, students deepen their knowledge of health systems and health policy; health economic modelling; the management, leadership, and improvement of health organizations; advanced statistics; and philosophy of science and research ethics. The final semester enables students to explore an area of their choosing in a thesis project.

The two main sources of strength and inspiration in our program are our students and our faculty. About 250 of 600 yearly applicants to the program are deemed eligible. In total, approximately 7% of those who apply matriculate each fall. Ninety percent of students list the program as their first priority and apply due to their interest in the subject area, the reputation of KI, and the quality of the education. Students come from across the globe: 26% Sweden, 31% other European countries, and 43% outside Europe. The academic backgrounds of students include medical and caring sciences (45%), natural sciences/engineering (30%), and social sciences (26%). One third have plans for a research career. This rich diversity in experience and perspectives contributes to a high degree of internationalization and interprofessionalism.

Our faculty distinguish themselves in terms of their *research*, their *understanding of the future challenges* facing health and care due to strong links with the health sector, and their ability to *combine research and education*. Faculty are active researchers and MMC provides a dynamic environment where the research questions explored on a daily basis support the development of course content. Faculty have strong and relevant subject area knowledge (PhDs and/or associate professors/professors in relevant subject area) and strong collaborations with key stakeholders in the life sciences. Most teachers have formal pedagogical training and have extensive teaching experience on the bachelor's, master's, and doctoral educational levels, and in executive education. Faculty match the student volume, content, and delivery of the program. Long-term challenges exist in terms of faculty employment and reimbursement, and modern delivery channels, such as hybrid and online teaching.

Course content, teaching activities, and examination are constructively aligned with national and program specific outcomes. Teaching is anchored in and informed by research in medical education. The pedagogy is student-activating, linked to the WHO's Sustainable Development Goals, and faculty work to ensure the integration of equal opportunities in course content, design, and delivery. Courses are systematically reviewed and revised throughout the year through informal and formal feedback systems. Student influence and input is actively facilitated and sought out. We view learning as a co-creative process that actively involves collaboration between students and teachers. The education is designed and delivered in a manner to ensure its relevance for our graduates and to prepare our students for a dynamic work experience in future health systems around the world. The program has worked in a dedicated fashion to develop collaborations with relevant societal actors.

Programme Visualization: Infographic



1 Assessment area: Preconditions

1.1 Assessment area: Staff

In their education, students should receive high-quality teaching, which requires that the teachers collectively possess the necessary scientific/professional competence. However, teachers must also have pedagogical competence to support student learning. Furthermore, it is important that the teaching capacity is proportional to the scope of the programme, including teaching and assessment. A high-quality teaching resource is characterised by a stable supply of teachers. The department or committee responsible for the programme is responsible for designing and following up on course assignments for each course and allocating the assignments so that the programme's courses are conducted by the department that is best equipped to carry out the assignment with high quality, including strong research connection. The course responsible department is responsible, amongst other things, for staffing the department's courses in accordance with the course assignment and for developing, promoting, and ensuring the teachers' subject competence, research connection, and pedagogical ability. The programme, in collaboration with the course responsible departments, should therefore work long-term on both continuity and competence development among teachers in the specific programme, and there should also be strategies for how staff turnover is managed, for example, in the case of retirements. For a programme leading to a professional qualification, it is important that students have access to supervisors with adequate competence during practice-integrated learning in order to provide students with high-quality education.

Assessment criterion - Staff
The number of teachers and their combined expertise (scientific, professional, and pedagogical) is adequate and proportional to the volume, content, and implementation of the education in both the short and long term.

Programme description:

In general, we are of the opinion that the number of teachers and their competence is adequate and proportional to the volume, content, and delivery of the program in its current state. However, in terms of long-term sustainability, we face challenges regarding employment. These are twofold. Firstly, within the health policy area, as this is not a forte of MMC, it requires collaboration with teachers outside of MMC. The policy courses have traditionally been run by the Global Public Health Department since the start of the program. We have built up a well-functioning collaboration from the beginning and see this as something to continue with.

In terms of engaging teachers who are affiliated with the university, we have come across reimbursement issues which require us to rethink how we work with those who are affiliated with us, especially those who are affiliated for teaching. Secondly, we also see a potential and a need to expand our offering in terms of delivery channels (for example with hybrid and online versions). This will also require new competencies and perhaps even resources to realize.

Strengths

The two main sources of strength and inspiration in our program are our students and our faculty. Our faculty distinguish themselves in terms of their *research*, their *understanding of the future challenges* facing health and care due to strong links with the health sector, and their ability to *combine research and education*.

Research

Our faculty are at the cutting edge of research in their respective fields in health economics, policy, and management and the majority are either associate professors or professors or have the equivalent in research and teaching expertise. They are firmly grounded in understanding the main principles of their area and are continually exploring questions that deepen our understanding as well as challenge accepted norms and conventional wisdom within health and care. These investigations, i.e. research projects, are internationally focused and involve networks that span over 80 universities and organizations and are mainly funded through external grants from agencies within Sweden and the EU. The current course directors have over 300 peer-reviewed publications with over 8000 citations among them. For example, faculty are investigating the health economic aspects in the diagnosis and treatment of pancreatic cancer, patient driven innovation, resilience in the workplace, leadership development, antibiotic resistance, artificial intelligence, etc. These research programs and projects employ doctoral students who are then also engaged in teaching and thesis supervision in the program.

Understand future challenges

Our faculty are uniquely positioned to understand the future societal challenges facing health and care due to their research activity and their strong links to key stakeholders in the life sciences sector, including industry and governmental agencies. Many of our faculty have joint or shared employment positions at KI and other professional organizations (WHO, Region Stockholm, The Dental and Pharmaceutical Benefits Agency (TLV), The Swedish Agency for Health Technology Assessment and Assessment of Social Services (SBU), as well as pharmaceutical industry, and various private consultancies). This provides both a deep understanding at both a theoretical and a practical level of real-world challenges that are capitalized on by faculty throughout the program in courses and in thesis projects. For example, these shared employments have provided faculty the opportunity to identify areas for exploration that students can pursue as their masters' thesis projects. The students' work has value for organizations wrestling with today's challenges and contributes to the attractiveness of the students as future employees. Organizations often become engaged in these students' projects, including as supervisors, and several students have ended up as employees in these or similar organizations after graduation. For example, one student wrote their thesis about how to incentivize development of innovative antibiotics to stimulate market entry. The findings contributed to a governmental report and the student was employed in the area of market access for a large MedTech company.

The further development of the alumni network is something which the program sees as important in understanding future challenges and is described in more detail in the section on the student perspective.

Combine research and education

The challenge with trying to offer cutting edge education to our students is that it is not enough to excel in research or relevance. Nor is it enough to excel in student

activating pedagogical practice. What our faculty have in common is a passion for their specific subject areas in terms of their research and desire to share this passion through their teaching. The program has a flat organization which allows for and encourages our faculty to voice and test ideas to continually improve and ensure the relevance of our program for our students and their future employers.

Most of our teachers not only have formal pedagogical training, but several have also been at the forefront of pedagogical development at KI. The statistics group pioneered the use of digital teaching by transferring large portions of traditional lecture-based teaching into a digital format which increases the flexibility of instruction for both students and teachers. During the covid pandemic, the program was one of two programs engaged in developing a course to support the teachers in the transition to online education which was initially designed for international master's programs. Due to its quality and success, it was then rolled out to all the educational programs at KI. Our program was also engaged in the development, definition, and testing of KI's pedagogical compass, plan, and philosophy. The program pioneered its application in its yearly quality report. The program also made use of pedagogical research conducted at KI in its own pedagogical improvement process as the aims and outcomes for the courses in the program were reviewed and revised by faculty.

The combination of research and educational expertise and passion has also manifested itself in several examples of seamless integration between research and education, something which is a challenge for many programs at KI. The traditional approach is often to teach based on research, but this may lead to student disengagement as researchers share their passion for obscure phenomena that students struggle to find relevant to their future work. In our program, research is integrated into education primarily through two mechanisms: case teaching and field assignments.

The program received KI internal pedagogical funding to develop its case teaching and hybrid teaching based on lessons learned from the online during the pandemic. This resulted in, among other things, instructions for how to convert primary research into teaching cases. The management courses, in particular the advanced course, have become primarily case-based using teaching cases written from previous or ongoing research projects.

Field assignments have involved the establishment of a learning relationship between faculty and a manager or organization within health care. The students are presented with an actual real-world challenge that they then explore within the context of the course, and as their final assignment, report back their findings to the manager or organization. Examples include a business model analysis of five newly acquired primary care centers, the improvement of care pathways for elderly in primary care, evaluation of the spread and effects of lean on ED and internal medicine throughput and learning capability. By working with actual challenges, students develop their HEPM competencies as well as their capabilities as future researchers and consultants to address the unexpected. Motivation and experienced relevance are high. The students' work also feeds back into research in the form of pilot studies that can help to identify questions for further inquiry.

Table 1 presents students' views on selected program indicators (range from 1 strongly disagree to 6 strongly agree) in the yearly exit poll. We see these results as an indication of how well staff are able to translate their understanding of the subject

areas into a learning process in which students can actively construct and develop the knowledge, skills, and attitudes relevant for their future health system roles. The results have improved somewhat over the last few years, with a dip most likely reflects the stress and distance learning of the pandemic period.

Table 1. Evaluation of key indicators of the HEPM-programme as perceived by graduating students

Question Exit Poll	VT19	VT20	VT21	VT22	VT23
There is a clear common thread from learning outcomes to examination in the education	4.6	4.9	4.2	5.5	4.8
The education's content was based on current research	5.3	5	5	5.8	5.6
I feel well-prepared to work within the area I have studied at KI	3.7	4.3	3.5	4.8	5.1
I feel well-prepared for my future role's requirements to:					
a. use scientific methods	4.1	4.7	4	5.4	4
b. work with other professions	4.7	4.1	4.7	5	5.6
c. cooperate in interprofessional teams			4.8	4.9	5.7
d. cooperate in diverse cultural environments			5.1	5.4	5.6
Overall, I am satisfied with my study period at KI	4.4	4.4	3.8	5.5	5.2
I would recommend KI to prospective students	4.4	4.3	3.9	5.8	5.3

Areas for improvement

A major threat to the program's continued livelihood relates to challenges regarding the program's long-term financial stability and faculty sustainability. When the program was split from the public health program, reimbursement was lowered as courses were categorized as belonging to the humanities subjects instead of to the medical and caring sciences as is actually the case. This created an immediate budget deficit. From January 2024, the reimbursement will be rectified, however, the deficit still needs to be paid off.

In terms of faculty sustainability, the challenge is related to identifying and keeping subject area expertise, particularly among course directors. The Teacher Table (Appendix 1) shows that there is not an immediate danger of retirements impeding teaching and that faculty have the necessary formal and real-teaching competency levels and experience. *However, the obvious and clear challenge facing the sustainability of the program is primarily related to the need to establish long-term employment positions that reflect the actual work of the course directors and key teaching faculty in the program.* We also face challenges related to the reimbursement of associated faculty employed outside of KI who we see as vital to the program's ability to provide topical and relevant connections to the world outside of academia.

We increased the number of students we matriculate to 40. This has led to challenges with creating space for students to ask their questions and receive the individual attention and support they may need. We now aim to matriculate 35 students instead, which previous years' experiences have shown to be an ideal size.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment*: Meets/Meets to a large extent/Meets to some extent/Does not meet.*
Strengths: ● The program benefits from a diverse pool of teachers with expertise spanning scientific, professional, and pedagogical domains. ● Actions are taken to preserve planned teacher-to-student ratio to ensures personalized attention and effective learning experiences (35 instead of 40 students). ● The expertise of teachers aligns well with the program's curriculum, enhancing the quality of education. ● The team encompass profound skills and competencies in online education, which creates the conditions for a need-based pedagogics. Skills have been applied in the program. ● The team show a strong commitment to pedagogical testing and improvement that builds on knowledge informed and skilled based curiosity. ● The team has attention to the basic prerequisites of the education, the availability of teachers, which is a good first step in dealing with the challenge to keep subject area expertise and course directors in the longer term. **Areas for improvement:** ● Encourage ongoing professional development for teachers to stay abreast of emerging trends and research. ● Ensuring that faculty members receive ongoing training in effective teaching methodologies is essential. Pedagogical skills directly impact student learning outcomes. Continue to consider long-term staffing needs to maintain expertise continuity. **Evaluation:** Overall, the program meets to a large extent the requirements of the assessment criterion. The justification for this evaluation is that the existing teacher expertise adequately supports the program's educational goals. The team also shows a well-founded desire to develop its educational applications to further adapt and improve learning and educational outcomes. There may be development potential in

further exploring the possibilities for broadened and deepened collaborations with industry to further strengthen the relevance and importance of education.

1.2 Assessment area: Learning Environment

The learning environment refers to the environment in which the education takes place and where students and teachers operate. A good learning environment is characterised by creativity and conditions for development, as well as a close connection between research and education. Guiding principles for KI's research-related education at first and second cycle are as follows:

1. Students are involved in ongoing research, which means that they gain knowledge about ongoing research in both theoretical and practical contexts, and have the opportunity to participate in it during their education,
2. Teachers are research-active and convey a scientific approach through appropriate pedagogical methods,
3. The main field and content of the education is grounded in scientific methods and updated research findings, and active research is conducted within the relevant field at the university and
4. Teaching is based on research in teaching and learning and is built on learning activities that contribute to the student's ability to understand, evaluate, and utilize the processes through which scientifically based knowledge is generated and constantly reassessed (the research process).

For a programme leading to a professional qualification, it is also important that students have access to a suitable practice-integrated learning environment.

Assessment criterion - Learning Environment

There is a scientific and profession-oriented environment for the education, and the activities are conducted in a way that establishes a close connection between research and education.

Programme description:

The HEPM program, while organizationally located within the LIME department, has historically been situated within the Medical Management Centrum (MMC). MMC thus provides a dynamic environment, where the research questions that are explored every day support the development of course content. The HEPM program draws upon core competencies across different research groups at MMC and LIME and beyond, particularly for health policy.

Our program is aligned with the pedagogical principles of KI: The educational experience should be student activating; characterized by curiosity and creativity and feel psychologically safe; teachers have pedagogical competence; the outcomes and teaching are relevant to health systems and future employment opportunities; and the education should take place in an organizational environment characterized by continual learning and improvement.

In line with KI's policy, students are involved in ongoing research, faculty are active researchers, and convey their scientific approach through the choice of pedagogical

methods such as field studies, case teaching, and the use of real-world examples. The subject area and the educational content are grounded in scientific methods and continually updated according to the latest research, of which faculty are actively engaged in. Teaching uses best-evidence in pedagogical research, which is continually updated through participation in pedagogical forums and networks within KI and LIME. Faculty have been involved in and driven pedagogical projects within the program and across KI. These projects have been related to the development of online teaching, hybrid pedagogy, case teaching, and the pedagogical principles and pedagogical compass of KI.

We strive to integrate our research and teaching such that they mutually benefit each other. The content of our teaching is based on research. And our teaching can involve the testing of future research ideas as students develop their research skills to address current health care challenges in field studies. Supporting teachers and our students to challenge themselves to move out of their teaching and learning comfort zones continues to be our greatest challenge.

We consider the physical teaching environment to be adequate. We make use of the different types of rooms available at KI, in particular the case-teaching room “Charles”, although there were previously a greater number of such rooms such as “Strix”. There are some aspects such as the lack of daylight in some rooms that are less desirable. For hybrid and distance teaching, most teachers use personal A/V equipment although we have excellent support from the A/V support group at KI when we need them.

Student involvement in current research projects

Curiosity and creativity stimulate students to actively engage in their learning. The thesis projects provide a clear, obvious, and straight forward opportunity to experience the research process. We have worked hard during the last few years to improve the readiness of the students for this semester-long experience by helping students develop the necessary qualitative and quantitative skill sets starting from the very beginning. We work to reinforce this skills development progression throughout the program.

For example, in the introductory course, students learn about how to cite and scientific writing. All the subsequent courses then have these as basic requirements to pass assignments. During the introduction and management courses, students learn about qualitative data collection and analysis. In the introduction to management course, this has included pre-recorded lectures and workshops on interview technique and traditional content analysis, project design, and scientific writing and revision. The final group assignment involves practicing these competencies by interviewing experts and analyzing the transcripts using as part of their final group assignment, which can take the form of a project or grant proposal, or a scientific article or report. One of these was successfully presented at an annual KI-Mayo conference and another was sent in as a grant application. Thesis topics themselves are often part of or spin-offs from ongoing research projects run by our faculty. A few years ago, the medical management and health economics faculty began hosting a seminar at the beginning of the second year, where current research projects that welcome the participation of masters’ students are presented. In 2023, this seminar was coordinated so that students from two other masters’ programs at LIME could also attend. It is our stated ambition to encourage and support students to publish their masters’ thesis as peer-reviewed scientific articles (e.g. Astnell et al., 2016; Karmelić et al., 2023; Lin et al., 2019; Sharma et al., 2022; Sundberg et al., 2021). We support high quality analysis by,

funding student licenses of NVivo qualitative analysis software and assisting them in the ethical application process. We see the results of these efforts in the high representation of program alumni among research assistants (n=3) and doctoral students (n=10) at LIME, as well as in other international programs.

Faculty research activity and attitudes on research

An analysis of the research production of the current course directors between 2000 and 2023 found that they have published more than 300 peer-reviewed scientific articles that have been cited about 8000 times, with an average publication frequency of about 14 per year, and an average journal impact factor of 5.1, which is high for this subject area. The course directors have conducted projects with researchers from over 80 different universities and organizations. Figure 1 illustrates how the course directors have published within the subject areas of the HEPM program. The strong connection to research among faculty is reflected in seminars where students evaluate sections of their own and each other's writing, quantitative and qualitative data collection and analysis in field studies. The introduction to health and care management course has a focus on knowledge generation within medical management, where students final course projects are presented as research reports, articles, grant proposals or literature reviews. Efforts are made to support a metacognitive process to help students become aware of their own learning process. This is done by actively facilitating reflections on the research process, revision of research questions, and the frustrating ups and downs of the research experience.

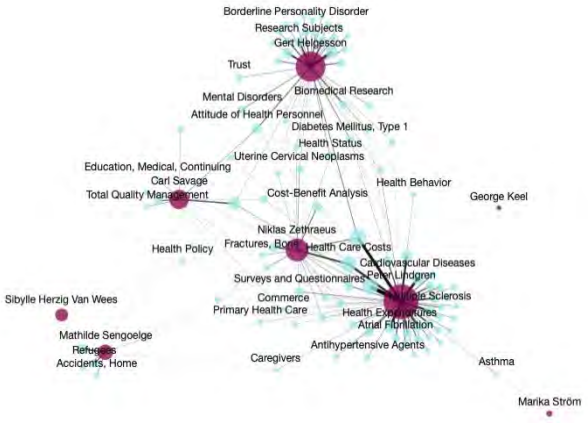


Figure 1. MeSH network for HEPM course directors' publications.
Authors with at least 2 publications (8 authors) and MeSH terms with at least 3 publications (100 terms) have been included. Included with permission of the Karolinska Institutet University Library.

Subject area link to research methodology and current research activity

We actively train students in research methodology and link to current research. We have defined a research competency development track that progresses from why, when, and how to cite in the introductory course. Competencies in quantitative research methodology are developed primarily in the statistics and health economics courses. Quantitative methodology includes, e.g. methods for analyzing uncertainty in economic evaluations, statistical analysis of economic and survival data, hypothesis testing, confidence interval estimation, analysis of categorical data, statistical tests, and regression analysis using the statistical program R.

Knowledge, skills, and attitudes related to qualitative methodology, together with a specific quantitative approach (Statistical Process Control), are developed in the medical management courses. Skills include how to conduct scoping reviews, how to develop a research proposal or article, and how to conduct and analyze interviews. Students are given opportunities to test and develop these skills in real-world situations.

We link to current research activity through the examples we use in teaching. Case-teaching is one example, where we have developed, using money from a pedagogical project grant, a stepwise method to transform research articles into teaching cases. This approach was piloted in the medical management courses and has generated most of the cases that are taught there. We plan to expand this further to other courses where it is most suitable.

Link to best evidence pedagogy and students' competency development on the research process

Research on pedagogy is integral to the effective development and revision of courses. The program has hosted several "quality improvement" meetings to encourage faculty to ground changes in best available evidence. We have applied for and received funding to run pedagogical improvement projects such as one on hybrid and case teaching. We have been involved in and made substantial contributions to evidence-based pedagogical projects, such as the Go! Online course and the pedagogical compass at KI. These are first steps, and as new teachers and course directors join the program, we need to make this thinking, the available courses, and the link to the pedagogical compass clear as part of the program's expressed wish. This dedication to pedagogical research is reflected in the use of references in this self-evaluation.

Link to future employment opportunities

We identified a need to improve our contributions to the field on an international arena and have begun a collaboration in "widening countries" that need to develop their domestic competency and capability, e.g. Czechia, to strengthen health care decision making in Europe, particularly in Central and Eastern Europe, through excellence in education and research. This includes teacher and student exchanges, summer schools, joint teaching, and collaborative research projects such as the EU application, SHERLOCK (Strengthening Health Economics Research Capacity by unlocking Knowledge-sharing in Europe) with Masaryk University in Czechia, Vrije Universiteit Amsterdam in The Netherlands, the University of Barcelona in Spain, and the University of Bologna in Italy.

We recognize that while many students may have research aspirations, most alumni will not become researchers. There are multiple factors that influence this, including language and immigration barriers. Therefore, we ensure that students develop the relevant knowledge, skillsets, and attitudes for employment outside of academia. The choice of "R" as a statistical program was made to ensure relevance both for academic and non-academic careers, for example. Regardless, we do see a value in developing a scientific mindset. For example, only 15% of published peer-reviewed quality improvement projects in health care make use of data (Taylor et al., 2014).

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify

areas that are assessed to need improvement and briefly describe them, preferably in bullet points.

Under the heading Evaluation: The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to some extent/Does not meet.*

Strengths:

- There is a strong emphasis on research, encouraging students to engage with cutting-edge knowledge and contribute to the field.
- To complement the academic focus, due to the fact that many of the students will aim for the job market, the education has a complementary focus on ensuring that students develop relevant knowledge, skillsets, and attitudes for employment outside of academia.
- The teachers are attentive to the fact that for a program leading to a professional qualification, it is also important that students have access to a suitable practice-integrated learning environment.
- Students have ample opportunities to collaborate with faculty and peers, bridging the gap between research and education.
- The program provides access to relevant resources, such as databases, journals, research centers and networks.
- Efforts are made to support a metacognitive process to help students become aware of their own learning process.
- Faculty members actively participate in both research and teaching, enriching the learning experience.
- The program effectively bridges research and education. Students have ample opportunities to engage with ongoing research projects, attend seminars, and collaborate with faculty members. This integration enhances students understanding of real-world health economics and policy challenges.

Areas for improvement:

- While the program emphasizes research, more practical application of concepts in real-world scenarios could enhance the learning experience. For example exploring the possibilities to incorporate case studies, internships, or fieldwork could enhance students' ability to apply concepts in real-world scenarios.
- The program might benefit from a continuously and systematic strengthening of the ties with industry and healthcare organizations to provide students with exposure to practical challenges.
- Encouraging student-led initiatives, seminars, and workshops could further enhance the learning environment.
- Regular feedback loops from students to faculty may help address any gaps in the learning process.
- Strengthening ties with healthcare organizations, government agencies, and private companies would provide students with exposure to current industry practices and foster networking opportunities.

Evaluation: Overall, the program meets to a large extent the requirements of the assessment criterion. The program's strong research-education connection and theoretical foundation contribute positively. Teachers pay attention to, and work actively to, create a supportive and empowering learning environment by focusing

on that students feel physically and mentally safe, are respected and that their input is valued. It was clearly evident from the interviews that the teachers strive for an open feedback environment where feedback is given continuously throughout the courses. The students confirmed this but also mentioned that there might be cultural differences that prevent all students from fully engaging in this dialogue. Teachers strive to know their students individually and use different teaching methods that encourage students' creativity and curiosity. Students are treated according to individual conditions to avoid inequalities and to promote an equal learning environment. Teachers acknowledge and work actively to continuously strengthen the close link between research and education. The education could have improvement potentials linked to exploring the possibilities for student-led initiatives. There might also be an opportunity to improve by creating more systematic feedback loops from students to faculty to continuously address gaps in the learning process.

2 Assessment area: Design, implementation, and outcomes

2.1 Assessment area: Goal attainment

For each degree, there are several formulated qualitative targets (outcomes for the degree) in the System of Qualifications (Appendix 2 to the Higher Education Ordinance). In addition to the national outcomes, programmes may also have local outcomes, which are described in the programme's curriculum. To delimit the scope of the evaluation, KI selects outcomes prior to each programme evaluation. The principle of selection is that at least one outcome per form of knowledge is included in the selection. For programmes that provide both a general qualification and a professional qualification, at least one outcome from each degree must be included. For programmes with local outcomes, at least one local outcome must be included. The total number of outcomes chosen should not exceed six.

The qualitative targets (outcomes for the degree) define what the student should have achieved when the degree is issued. The programme must describe how the education ensures that the student is given the opportunity to achieve the outcomes when the degree is issued. Such a report may include, for example, the nature of the progression, the link between outcomes for the degree, intended learning outcomes in course syllabi, learning activities and assessments, grading criteria and how they are used, appropriate teaching methods and activities and the way in which student learning is promoted, and how the student's conditions and needs are considered.

Assessment area: Goal fulfilment, the form of knowledge and understanding

Assessment criterion for Goal Fulfilment – Knowledge and understanding

Through design and implementation, the programme enables, and ensures through assessment, that the student, when the degree is issued, can achieve the selected outcomes within the knowledge form knowledge and understanding in the system of qualifications.

Target
For a Degree of Master (120 credits) the student shall demonstrate knowledge and understanding in the main field of study, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work.

Programme description:

During the first academic year, students develop their basic knowledge about how medical knowledge, individual and organisational competence, as well as material and financial resources can best be utilised to improve health. In the second year, students deepen their knowledge of health systems and health policy; health economic modelling; the management, leadership, and improvement of health organizations; advanced statistics; and philosophy of science and research ethics. The final semester enables students to explore at depth an area of their choosing through their thesis project.

Strengths

This outcome is addressed in all the courses throughout the program (Appendix 2). This reflects the intention to provide a solid theoretical basis for students, which enables them to conduct their master's thesis successfully. It also provides a breadth in terms of helping students realize the many ways in which the outcome can be achieved and is of relevance to their future careers. In terms of progression, where the first-year courses provide a breadth, the second-year courses offer students the opportunity to explore topics in more depth, both collectively in the courses and individually in their individually selected thesis topic area.

Teaching activities are varied and employ different modalities. Lectures are given in class, which is reflected in the course plans, but also online in pre-recorded form, a legacy of the pandemic that has been continued as a flipped-classroom structure. This is not currently reflected in all the course plans. The use of varied forms of presenting information is important to ensure an equitable educational experience that recognizes the diverse needs of students. Examinations generally involve individual written assignments, as well as written and oral presentations of group work.

Example from Health Policy

For example the health systems and policy courses are linked to the overall goals in that we focus the learning outcomes on knowledge translation, specifically in how

health policy is implemented in Sweden and other settings in order to understand how research knowledge generated can be effectively communicated to the general public or target groups (links to writing a health policy blog) and communicated to policy-makers (links to writing a health policy brief). In their writing assignments, the students familiarize themselves with the Swedish health system and policies, reflect how these have advantages and disadvantages to those in other settings, and critically analyze and provide insight on the link between research and implementation of systems thinking. Oral peer review is a key component of the courses as students are asked to provide constructive feedback on the work of another student and learn to receive that feedback in turn. This prepares students to realize the strengths of asking peers for input to improve their oral and written presentation of their analytical thinking processes. Teachers use interactive lectures, seminars, and group-work as teaching activities and the examination methods are individual and group assignments. In the advanced class they include a two-part group roleplay where students are randomly assigned to play a specific role (donor organization, patient group, NGO, government representative, etc.) and are presented with a health policy case to negotiate.

In the first year, the lecturers are professionals with extensive experience in various health systems as well as those who work in Swedish health policy and global health policy. Students learn about major theories and frameworks for health policy and systems analysis, how national health policy agenda is created and influenced by international organizations and global factors; how health policy is implemented and how the knowledge generated can effectively be communicated to policymakers. This helps students increase their knowledge and understanding of health systems, how they function, health policy formulation, and implementation.

Areas for improvement

Despite the clear progression in terms of the outcomes related to breadth and depth, we do see an opportunity for further development to identify better measurements to even more closely follow and support the development of student competencies (knowledge, skills, and attitudes) throughout the program. An improved specificity of learning indicators such as degree of involvement in class discussions (a key performance indicator) or better use of existing indicators such as individually mapping students' learning outcomes attainment, could support students in the construction of their knowledge and teachers to identify how they best can support students in their development.

We aim to further improve the link between the outcomes and the Sustainable Development Goals as well as individual professional development.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to some extent/Does not meet.*
Strengths: • Clear progression in terms of outcomes and subjects where the program emphasizes both broad knowledge of the field and specialized knowledge in specific areas, aligning with the requirements for a master's degree. • Teaching activities are varied and employ different modalities, and the program bridges theory and practice equipping students with tools applicable in real-world scenarios. • The program provides a global perspective on medical management, acknowledging the interconnectedness of health systems worldwide preparing graduates to work in diverse contexts. **Areas for improvement:** • Development of assessments that are more specific to the competences demonstrated in the learning activities (such as class discussions and group work). • Developments of learning activities and assessments related to professional development. **Evaluation:** Overall, the program meets to a large extent the requirements of the assessment criterion. The justification for that evaluation is that it effectively balances theoretical knowledge with practical skills, preparing graduates for meaningful contributions in the health sector. There is clear progression in the curriculum building a broad base in the first year and then deep diving into more specialized areas in the second year. While the program aims to ensure that students achieve the selected outcomes, there could be more robust mechanisms for assessing student performance. Clearer guidelines on assessment methods and criteria would enhance transparency.

Assessment area: Goal fulfilment, in the form of competence and skills

Assessment criterion: Achievement of objectives – competence and skills

Through design and implementation, the programme enables, and ensures through assessment, that the student, when the degree is issued, can achieve the selected outcomes within the knowledge form of competence and skills in the System of Qualifications.

Target
Degree of Master (120 credits) the student shall demonstrate the ability to identify and formulate issues critically, autonomously, and creatively as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work.

Programme description:

As is the case with knowledge and understanding, the progression that the program offers allows students to continually develop their breadth and depth in skills. During the first academic year, students develop basic methodological skills, including statistics and quantitative and qualitative methods. In the second year, students deepen their skills in advanced statistics, modelling, and quantitative and qualitative data collection and analysis, primarily through more hands-on practical activities. This progression allows students to then explore at depth an area of their choosing through their thesis project in the final semester.

Strengths

This outcome is addressed in all the courses throughout the program (Appendix 2). This reflects the intention to provide a values basis for students which enables them to conduct their master's thesis successfully.

Teaching activities here are more focused on reflective activities. The flipped classroom structure moves discussion beyond basic information transfer that allows a deeper reflective stance on the consequences of what this information and knowledge entails for health systems, patients, society, and the planet – a One Health perspective. To this end, the Philosophy of science and research ethics course is key, and concepts that are taught in this area need to be foreshadowed and reflected on in the preceding courses.

Examinations generally involve individual written assignments, as well as written and oral presentations of group work.

Example from Health Policy

As is the case with all the outcomes, there is a progression that occurs in the teaching and for the students throughout the program in terms of the level of skills attainment. First year students are introduced to the skill set necessary for health systems

research, evidence-informed policymaking, and implementation. One assignment is to critically analyze a health policy. In the Advanced Health Systems and Policy Course in the second year, lectures are shorter, and more emphasis is placed on application of the knowledge learned. Students are exposed to simulations of real-life health policy tasks. The assignments reflect this increased depth of skills and practice. Now students are asked to write a health policy blog, write a health policy brief, and to participate in a roleplay of a health policy case that requires negotiation between different stakeholders in the health system, including NGOs, patient groups, donors, etc. Students are able to test their skills in a simulated environment, with examiners, and an observer identifying the skills on display. The roleplay exercises are discussed between the different groups, as each group behaves and reacts differently. Students are encouraged to leave their comfort zone and become aware of the complexity involved. After the role play, the students are asked to reflect on how to influence health systems and policy, and the challenges involved. This raises the level of learning by asking students to engage in what is referred to as *extended abstract thinking*, where concepts are linked and then translated to a new context (Biggs, 2003).

Area for improvement

Even here, when it comes to skills development, we also see an opportunity for further development to identify even better measurements to follow and support the development of students' skills throughout the program even more closely. Perhaps the use of frameworks like Miller's pyramid that describe skills development could further improve how we follow students' skills development and support them even further.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to some extent/Does not meet.*
Strengths: • Good progression in skills development going from general methodology in year 1 to in depth details in year 2. • Flipped classroom with an inherent reflective teaching structure improves skill development. • Strong case from health policy with a good example of progression in skill development using different teaching modalities. **Areas for improvement:**

- Development of learning activities and assessments to support students' development of skills.
- Assessing the way students structure their thesis projects can serve as a valuable metric to gauge their ability to develop research questions and comprehend the context of their study areas. Such evaluation can provide insights into students understanding of the subject matter and their capability to articulate relevant research inquiries within that specific field.
- Plan to teach ways to integrate AI into their professional future tasks.

Evaluation: Overall, the program meets to a large extent the requirements of the assessment criterion. The justification for that evaluation is that the pedagogical approach evolves to promote progression in skills development during the program, which aligns with the criterion. It is a strength that there is a clear alignment between the "competence and skills" goal and the "knowledge and understanding" goal as they ought to go hand in hand. An area for further reflections may be to clarify how

Assessment area: Goal fulfilment, in the form of judgement and approach

Assessment criterion for Goal Fulfilment – Judgement and approach

Through design and implementation, and through assessment, the programme ensures that the student, when the degree is awarded, can achieve the selected outcomes within the form of knowledge of judgement and approach in the System of Qualifications.

Target
For a Degree of Master (120 credits) the student shall demonstrate judgement and approach: Demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social, and ethical issues, and also to demonstrate awareness of ethical aspects of research and development work.

Programme description:

This outcome is addressed in all the courses throughout the program (Appendix 2). This reflects the intention to support students to develop the level of judgement and approach they need to conduct their master's thesis successfully and navigate their future professional roles.

The topics are continually visited and revisited throughout the entire program. Topics such as plagiarism and scientific integrity are introduced in the first course of the program. Prioritization and decision-making, which lie at the heart of the program, require continual consideration of ethical aspects. Teaching activities are varied, employ different modalities. Lectures are given in class, which is reflected in the course plans, but also online in pre-recorded form. The use of different ways of presenting information is important to ensure an equitable educational experience that recognizes the different needs of students. Examinations generally involve

individual written assignments, as well as written and oral presentations of group work.

Example from Philosophy of science and research ethics course

The penultimate course of the program, The Philosophy of Science and Research Ethics, provides an opportunity for students to revisit what they have learned and experienced in the program as well as connects this to a theoretical understanding. The thinking is that students will have an opportunity to test their knowledge and understanding in practice as they begin their thesis projects.

In the Philosophy of science and research ethics course, students are not only introduced to the theoretical aspects of science and research ethics. They are also asked to apply their judgements to reflect on philosophical and ethical aspects and approaches of their own thesis project that they will then work on during the last semester. This is an important part of the master's thesis. By reflecting on and describing key philosophical and ethical aspects of their thesis, students have an opportunity to practice their judgement and approach under the supervision of the course faculty. We believe this is an important step for students to take in terms of understanding and continuing to act throughout their careers with academic integrity.

Areas for improvement

At the moment, based on the efforts we have invested in this topic as it is so central to the program, our assessment is that the current offerings are for the most part sufficient. With the spread of generative AI, however, we do feel that aspects related to academic integrity would benefit from further emphasis for the students' future employments and as we as a university navigate our new ways forward.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to some extent/Does not meet.*
Strengths: • Topic and learning activities are continually revised and improved, including plagiarism and scientific integrity. • Ethical considerations are a central part of the program. Introduced in the first course and continuously assessed throughout courses. • The dedicated course in philosophy of science and research ethics.

Areas for improvement:

- The role of AI and how to integrate AI into teaching and learning together with professionalism and plagiarism.
- Transparency regarding AI in teaching towards students.

Evaluation: Overall, it is the evaluation that the programme meets to a large extent the requirements of the assessment criterion. The justification for this evaluation is that a specific course on the subject is part of the curriculum and that overarching research ethics is an integral part of the program. There is a clear awareness in faculty about the challenges with generative AI, although further work is required to establish its role in the teaching of the programme. The interview with students revealed some uncertainties regarding AI and how it is allowed to be used by students.

Assessment area: Goal fulfilment, local outcome

Assessment criterion Goal fulfilment – local outcome

The education enables through design and implementation and ensures through assessment that the student, when the degree is issued, can achieve the selected local outcome.

Outcome
Outcome of the study program (competence & skills): Demonstrate advanced skills in using methods within health economics, policy and management during the follow-up and evaluation of health-promotion work and medical methods.

Programme description:

This outcome is addressed similarly to the national outcome in judgement and skills in all courses (Appendix 2). This reflects the strong alignment between the outcomes in the courses, the local program outcomes, and the national outcomes.

Strengths

Teaching activities are varied, employ different modalities. Lectures are given in class, which is reflected in the course plans, but also online in pre-recorded form, a legacy of the pandemic that has been continued as a flipped-classroom structure. This is not currently reflected in all the course plans. These lectures need to be continually updated as well. The use of different ways of presenting information is important to ensure an equitable educational experience that recognizes the different needs of students. Students are also supported in their learning and skills development with tips from the library, checklists and guides, and recommendations for study techniques, such as the pomodoro technique. Examinations generally involve individual written assignments, as well as written and oral presentations of group work.

Example from health care management

In the first-year management course, students develop and test their ability to collect and analyze qualitative interview data. The skills they develop include how to plan and conduct and interview and then how to analyze that interview using traditional content analysis. In the advanced course during the second year, they need to support their analysis of teaching cases through the use of references. Their skills in conducting qualitative data collection and analysis from the first year are now translated into the development of a new skill of being able to quickly analyze the quality of an article in order to judge if it can be used to support their analysis of the real-world dilemma described in the teaching case.

Areas for improvement

What we see as an opportunity for further development is to identify good measurements to follow the development of student competencies (knowledge, skills, and attitudes) throughout the program. An improved specificity in indicators could support students in the construction of their knowledge and teachers to identify how they best can support students in their development. Furthermore, the subject areas are constantly changing due to research which requires us to continually update and modify examinations. More difficult exams, i.e. higher up on the Bloom's and SOLO taxonomy, can help to make it clearer which outcomes have been met. Transparency is a key value of the program. We are discussing making old exams readily available to students to support their examination preparation. There are some limitations using the LMS tool, Canvas, when it comes to more innovative tasks, such as drawing. ChatGPT also introduces new challenges as many of the (not just basic) exam questions can easily be answered with generative AI. This new development raises questions for serious consideration with writing assignments, not least the final master's thesis. One commonly used approach is to reactively increase control, such as having oral exams or exams in class. Another is to focus on reinforcing a culture of academic integrity among the students (Peters, 2023). It is important to recognize that ChatGPT can also be a useful tool for teachers. Final examinations are an area for future discussion and development in the program.

We aim to further improve the link between the outcomes and the Sustainable Development Goals as well as individual professional development.

Assessment panel's evaluation

For each assessment criterion, the assessment panel should describe their evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to*

some extent/Does not meet.
Strengths: • Strong awareness of challenges with follow-up and examination. • The use of different tools to aid reflections of students own learning style including study techniques and library services. **Areas for improvement:** • Revise assessments used and identify the key modes of examination in light of the AI development. • Transparency towards students when modes of examination have been updated and decided upon. **Evaluation:** Overall, it is the evaluation that the programme meets the assessment criterion. The justification for that evaluation is that progression of competence and skills is inherent in the curriculum where courses are given at a basic level in the first year of the programme, and advanced courses in the second year. This prepares the students for the ultimate demonstration of advanced skills in formulating a research problem and executing the methodology in their master thesis. The strategies employed by the education program for progressive knowledge development are fitting and play a significant role in enhancing the students' potential for learning and applying their knowledge. Nonetheless, there exists potential to fortify the systematic methodology in the course development, particularly in relation to this area of evaluation. This could further optimize the learning experience and outcomes for the students.

2.2 Assessment area: Equal opportunities

Integrating equal opportunities into all levels of the education is a natural part of how KI should work in accordance with applicable laws and regulations. The goal of KI's courses and programmes is as expressed in Strategy 2030: "It must be ensured that the programmes provide the knowledge about gender, power and equal opportunities required to provide the conditions for equal health and social care".
“Equal opportunities” is an umbrella term for KI's work to promote equal rights, opportunities, and obligations, and to counteract all forms of discrimination, harassment, sexual harassment, victimisation, and exclusion. The Equal Opportunities area includes the seven grounds of discrimination established in the Discrimination Act (2008:567): sex, transgender identity or expression, ethnicity, disability, sexual orientation, religion or other belief, and age. In addition, the area of socio-economic background is also included in the equal opportunities work. Broadened participation, i.e. a student’s opportunity to complete their studies regardless of their background and their circumstances, is also part of the equal opportunities work.

The integration of equal opportunities in KI's education will take place at three levels:

- Content – which means that equal opportunities is an area of knowledge that is taught and examined.
- Implementation (delivery) – which means that equal opportunities characterise the pedagogy so that the teaching becomes inclusive and accessible.
- Design – which means that there is a structure for how and where equal opportunities are to be integrated, and that there is progression.

Assessment criterion Equal opportunities
An equal opportunities perspective is taken into account, communicated and anchored in the content, design and implementation of the education.

Programme description:

The program strives to be and become aware of equity, and biases which can threaten that equity, in how it communicates, and anchors the content, design, and delivery of teaching. KI is continually striving to improve equal opportunities by continually monitoring and improving the working environment, leadership development, and development in education and pedagogy. These are all areas that the HEPM program is building upon in its own improvement efforts.

Strengths

The program has an expressed intention to meet students' varying needs with flexibility and tailored solutions to ensure their successful completion of the program. We achieve this through three main approaches: 1. Application process, 2. Course design and content, 3. Active efforts to identify students with needs early in the program.

Application process

In the application process, we have set requirements for English and included a motivation letter which carries a high weight in the overall assessment. However, we have seen some challenges with this as explained below.

Course design and content

The courses are designed to activate student learning and appreciate the diversity of the student body, health care, and future work environments. To that end, course directors and student representatives have been asked to attend (as a requirement for involvement in the program) KI's online course, "Equal Opportunities at KI", available at: https://ki.instructure.com/courses/18029. We have discussed suggesting the course to all students at the start of the program and contact information for the different types of issues in addition to the support that is available from the study counsellor.

The health policy courses exemplify the goal of using teaching examples and cases from around the world, especially developing countries. Students also continually reflect upon how their learnings can be used in the context they intend to work in. However, we feel that more can be done, and are exploring how additional examples from developing countries can be integrated into the curriculum. Students come from around the world with diverse ethnic, social, and cultural backgrounds as well as expectations on teaching methods. We also build upon these diverse backgrounds and experiences in class discussions as we analyze projects and cases. But this can also present challenges, for example related to students' views of gender roles. For this reason, we strive for gender balance in the representation of women and men as "main characters" in the teaching cases and examples. We also describe the legal foundations for the Swedish health system as well as reinforce the KI code of conduct.

One function of the introduction course is to identify students with needs by asking them to present using a modality of approaches (videos, presentations, class discussions, seminars, and written assignments).

Student-activating pedagogy requires students to take a larger share of responsibility for their own learning. Engagement, curiosity, and relevance are some of the factors that can support this greater level of responsibility. Reflecting the type of work we expect our students to engage in after graduation, the intention is to design complex tasks that need to be solved in groups. For this reason, many of the assignments are to be completed in groups. At the beginning of the program, we present the pedagogical approaches and will, if needed, reflect on how this may differ from previous university experiences, especially in terms of more passive teaching approaches. In team learning situations, it is additionally important to identify students who may have additional needs for support, as this will impact the group's effectiveness and social environment.

For this reason, we actively seek to identify students who potentially have specific needs for additional support. We have experimented with many approaches to group formation to avoid free-riding and ensure that everyone has an equal opportunity to learn. This has included, at the behest of student representatives, openly discussing the challenges with free-riding and the negative effect this has on an individual's learning. We do this at the start of the program. In addition, during the introduction course to the program, we group students after their level of ambition and schedule flexibility to ensure that they have the maximum opportunity to work together (e.g. students with children may have different time schedules compared to younger students without). Matching ambition levels and the amount of time students have to study improves learning (Davies, 2009; Harding, 2018). We try to keep these groups for the entire first semester.

We place most of the course material on Canvas, it allows students to progress at their own pace. We use a minimal number of books, preferring articles which are often easier to digest.

Midway through the program, we have a lecture on agile project management to support a good and flexible group learning experience. Previously, we had a scrum master track in the introduction to management course where the teachers would coach each group leader to ensure effective team performance. We work with psychological safety in the classroom and meeting situations. This is to ensure that students and teachers feel invited to speak up and more openly share their group experiences, and to further grow their curiosity. We see this as integral to learning and the development of scientific thinking, reasoning, and the use of evidence in policy discourses. It also makes it possible for teachers to identify where potential interventions may be needed.

Active efforts to identify students with needs early in the program

One approach we use to support this is through Worked Well/Do Differently reflection sessions which involve individual reflection, pair conversations, larger group discussions before a plenary session with the whole class. The student representatives are a good source for identifying issues that we should address as teachers and on a program level.

The program director, student counselor, course administrator, and the course director of the first introduction course regularly meet to discuss how students in need of support can be identified, offered support, and followed up on to ensure their continued success in the program. If they pick up signals from students or teachers, we often meet with the student in question with the purpose of finding ways to support them. We have now several examples of students who we have identified and have received additional support, tailored solutions, or even chosen to take a study break to deal with health and mental health issues and learning challenges, such as dyslexia, before returning to successfully complete the program. We make frequent use of additional resources such as KI's legal department, the KI library, the admissions office, Student Support Services in planning these interventions as well as refer students to these and other support services at KIB related to scientific writing and English language support, MF's Student Ombudsman, and additional services outside of KI. Students are made aware of these services as well. Our student counselor is very active with students from the point of their admission to the program, meeting them before the start and throughout the program. The Student Ombudsman also presents at the beginning of the program.

Areas for improvement

We feel it is important to address the "WEIRD" (White, Educated, Industrial, Rich, Democratic) bias problem of European and North American universities (National Academy of Sciences, 2018), we can explore the use of more examples from low- and middle-income countries and widening countries. The health outcomes course is Swedish focused, Adv management is European focused, and HE technologies are more often used in developed countries. In the basic management course, we have explored the possibility of using experiences from students' own contexts and will explore further how these experiences can be turned into teaching cases.

The impact of this program on health systems is mediated through our graduates, and therefore we stress the importance of admitting high caliber students to the program. We have therefore worked through how each of the assessment criteria are weighed in their relevance to study performance in the program. We have set threshold competencies, such as relevance of previous study areas/educational background. The main distinguishing features are work experience, research experience, and motivation. Therefore, the weight of the motivation letter was increased. Working and research experience is also highly valued. Some aspects we feel could be assessed in a better way is how to work well in groups. This is not a general problem but given the necessity of working in groups in health care, it is an area we would like to improve further. How to effectively work in a group is an essential skill that needs continual practice. It is our firm belief that complex problems in health and care require the competencies of several people working in groups to find adequate responses. While the scope of the problem is small, i.e. the frequency is about 1-2 students every other year, we do take these situations extremely seriously. Due to the amount of group work in the program, one student can have a detrimental effect on many groups.

We have in the past missed students during the first year and found them in the second year, when they have encountered serious challenges in their group work. We feel that this delay risks impacting their study experience. This delay can be caused by teachers who are too lenient or even students wanting to "protect one of their own" and not "squeal" on a fellow student. This has spurred us to actively work to create a safe environment to discuss these questions so that all students will develop their competencies. In the long-term, we have seen how a delay can negatively impact

learning for all involved. Therefore, we continually experiment with new approaches. There are, however, some barriers, including institutional hurdles. For example, we are sometimes unable to talk about students with the larger teacher group due to KI-internal routines designed to protect personal integrity.

We have also noticed an increase in the number of students (approximately 1-2 per year) with language difficulties, such as written or spoken English, which can create difficulties throughout the program. This is difficult to identify within the parameters of the current application process because these students have passed the prerequisite exams, written a letter of motivation, and a proficiency level equivalent to English B/English 6. Interviewing students as part of the matriculation process is one approach, but there are some potential bureaucratic and resource issues that limit the ability to interview about 250 eligible students who apply of the 600 that apply each year. One approach would be to raise the accepted TOEFL iBT test level or to raise the requirements to English 7 to be eligible for the master's program.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to some extent/Does not meet.*
Strengths: • Several tools are used to identify students with special needs for adaptation. • Through the different courses, carry out different elements to support the students to reflect on equality issues as part of their own and collective learning. • Strong awareness and systems in place to promote equality. **Areas for improvement:** • Lack of concrete examples where special adaptation has been used. • Awareness is strong and formal tools are clearly available, but further discussion could be warranted regarding how cultural differences impact equal opportunities. Are students from certain cultural backgrounds aware of and willing to seek help if required. **Evaluation:** Overall, it is the evaluation that the programme meets to a large extent the requirements of the assessment criterion. The justification for that evaluation is that there is a strong awareness of equal opportunities within the programme and

that KI has a large central organization to support students if needed. The principle of fairness is consistently upheld throughout the program through assessments, reflections and actions. There may be areas for improvement regarding tacit cultural causes of unequal opportunities. The audit team has discussed issues that may impact equal opportunities in terms of AI where students can pay for more advanced tools. It is difficult to assess if tacit cultural causes of unequal opportunities is an issue. This was also touched upon in the interviews with students.

2.3 Assessment area: Sustainable development

In their activities, higher education institutions must promote sustainable development, which means that present and future generations are ensured a healthy and good environment, economic and social well-being and justice.

Education conducted at KI should aim to contribute to improved health for all, which is an important prerequisite for sustainable social development. It is of particular importance that educational activities highlight the link between health, socio-economic factors and human environmental impact. In accordance with KI's climate strategy, by 2024 there will be intended learning outcomes in courses in all programmes at first and second cycle, which means that students will gain knowledge and skills about climate and sustainable development.

Students who graduate from KI must have worked with issues related to sustainable development and the UN's global goals during their education. It requires that the teachers have good knowledge in the area. Teachers need to teach about the goals and the underlying challenges. Students should also be challenged to develop an ability to create visions, use critical thinking, reflect on their own role in the development of society, apply systems thinking, create partnerships and be prepared to act.

Assessment criterion Sustainable development
Through design and implementation, the programme enables the student to have worked with issues related to sustainable development and the UN's Sustainable Development Goals (SDGs).

Programme description:

We work in a very explicit and open way with students to link their studies and future work in the health care sector with the development and actualization of questions related to the sustainable development goals. To that end, course directors and student representatives have been asked to take (as a requirement for involvement in the program), KI's online course on "Getting Started with SDGs", available at: https://ki.se/en/about/ki-web-course-getting-started-with-the-sdgs. A link to this course is also made available to students in the Introduction course.

Strengths

Sustainable development is something we take seriously in this program. This is due to the international diversity and richness of the student body as well as the diverse future workplaces in health systems around the world that our graduates will help develop and form. The first task students receive during the introduction course of the program is to present their motivation for applying to the program and link it to the program outcomes for their fellow students and the faculty. Their second task is to form groups and deepen their understanding of one of the SDGs and present it as well as how they as graduates of the program can contribute to achieving these goals in their health system of interest. We have found that this approach is much more student activating than lecturing the students.

In the health policy section of the introduction course, students discuss how the innovative software Gapminder can be used in global health to understand the situation, development, and sustainability of key health indicators and factors.

Areas for improvement

In the program, we have a focus on SDGs 3 (good health and well-being) and 17 (partnerships). We see two key areas for future development in the program. The first is to more closely connect and integrate the different SDGs into the content of the different courses in the program. This is a point for future discussions in the program and can simply be for faculty to explicitly point out the link between what is covered in a course and the SDGs. SDG 17 is naturally linked to a strength of the program, i.e. the partnerships faculty have with stakeholders within the life sciences. For those alumni with academic ambitions, many funding bodies are now requiring grant proposals to link to the SDGs. Alumni with intentions to work with the WHO and the UN and other international policy groups or with government agencies can be expected to work with and to link their work to the SDGs. A first step to reinforce the importance of this is by updating the course syllabus and learning outcomes for the introduction course to reflect our current and ongoing work and focus on the SDGs.

The second area to consider are two additional movements that relate to the SDGs. It is important to approach any such movement with a scientific mindset to ensure relevance and rigor for our educational program. The Internal Development Goals have been described as a prerequisite for our ability to strive for the SDGs and which KI was party to develop and promote. A similar social movement, the OneHealth movement, is also something to stay abreast of as it tries to unite sustainability with human and animal life and global preservation.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points.

Under the heading Evaluation: The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to some extent/Does not meet.*

Strengths:

- The program takes a comprehensive approach to sustainable development, integrating it into the design and implementation of the curriculum.
- The program explicitly aligns its goals with the UN's Sustainable Development Goals (SDGs), ensuring that the education provided is relevant to global sustainability efforts.
- The program encourages students to apply their knowledge and skills in real-world contexts, preparing them for future work in the health care sector related to the SDGs.

Areas for improvement:

- Find and determine the right balance regarding SDG.

Evaluation: Overall, it is the evaluation that the programme meets the requirements of the assessment criterion. The justification for that evaluation is that SDG are well integrated into the curriculum and that students actively work with sustainable development early on in the programme. In the interview with programme management some good clarifying examples of hands-on work with SDG was provided. It is important to not overdo this task just only to tick the boxes of sustainable development. Use and do what is useful and important.

2.4 Assessment area: Follow-up, measures, and feedback

In order to ensure that an education is of high quality in both the short and long term, follow-up of the education's design, implementation and results is required. It concerns how follow-up, action, and feedback routines in the systematic quality work at the educational level contribute in a systematic way to ensuring and developing the quality of the programme. The self-evaluation must describe how the various parts of the programme are continuously followed up and how the results are taken care of. An important part of taking care of results from follow-ups is to inform interested parties such as teachers, supervisors and students about any measures and changes to strengthen the quality and the continuous learning.

The assessment criterion for follow-up, measures and feedback also includes how those responsible for the programme work with student completion. The programme should therefore describe its analysis of student completion of the programme and the dropouts that occur. The programme must also describe the measures taken and the support provided, if necessary, to create the conditions for students to complete the education within the planned study time.

Assessment criterion Follow-up, measures, and feedback

The content, design, implementation, and examination of the programme are systematically monitored. The results of the follow-up are translated into quality development measures as necessary, and feedback is given to relevant stakeholders.

The programme works to ensure that the student completes the education within the planned study time.

The assessment criterion has two parts, quality work and student completion, and both must be included in the programme's report.

Presentation of Quality Assurance of first and second cycle education at KI – central level:

The quality assurance system for first and second cycle education at KI runs in annual cycles, with some components included each year while others are implemented at longer intervals. The system thus also allows for flexibility in question formulations, themes, and priorities between years. Overall, the system's components for quality assurance routines, regulations, follow-ups, reviews, feedback, and improvement, ensure continuous improvement of the education. To improve and develop the programmes, the education assignment at the departments is followed up annually. The feedback forms the basis for development and ensures that KI's educational activities are of high quality. The feedback consists of several questions within a strategic selection of the areas that the Committee for Higher Education identifies as important for the quality of education. The questions vary from year to year and over time new areas may be added. The purpose of the questions is to stimulate the quality development process locally and to provide KI's management with a basis for following up, developing, and assuring KI's educational activities.

The reporting of the education assignment is supplemented by quality plans at department level and programme level according to established templates, which is a tool for quality development at each level.

To clarify what the committee responsible for the programme expects from the department responsible for the course in terms of implementation and quality development of courses, course assignments within programmes must be established. After each course occasion, the department responsible for the course must carry out a final course evaluation. Based on the results of the course evaluation, the course coordinator must carry out a course analysis.

Perceived quality – Recurring surveys

1. **A survey** is conducted every two years among students who are just starting their studies on one of KI's programmes
2. **Course evaluations** consists of five mandatory questions, which provides an opportunity to follow the quality development over time and make comparisons between different courses and programmes. It is also possible to add programme- and department-specific questions.
3. **Practical placement (VFU) survey**, measures student experience of the learning environment, supervision, and work with patients (clients in clinical education) in health care.

4. **The student barometer** is conducted every four years through focus panel interviews. The aim is to provide strategic guidance to build student' engagement in studies and for KI.
5. **A graduate questionnaire (exit poll)** is sent to all programme students in connection with the completion of their education.
6. **Alumni survey** is conducted every four years among alumni who graduated three years earlier.
7. **Stakeholder survey**, conducted by the programmes every four years. The purpose is to investigate whether KI's educational programmes correspond to the needs of the labour market, i.e. whether recent graduates have developed useful skills.
8. **The "Equal Opportunities" survey** is planned to be carried out every four years from 2022, the aim is to measure student experience of risks of discrimination, harassment, sexual harassment, reprisals and victimisation in order to obtain a basis for following up and evaluating KI's work to prevent discrimination and work for an inclusive and good work environment for students.

Peer review and learning

1. In addition to our own analyses, peer review and learning is an important component of improvement and development work. Peer review and learning concerning quality plans is carried out every spring.

Programme description:

We systematically review and revise the content, design, delivery, and examination of the education at least twice per semester. The different sources of feedback are aggregated and used for quality development and these improvements as well as the results are discussed with student representatives and presented to students in each course. The program also works hard to support students so that they will be able to graduate from the program within the projected study period (2 years). However, in certain isolated and very specific situations, it may be better for students to take time off in order to return to their studies with the degree of focus and commitment that is required for the necessary level of competence development. This work is carried out by the program faculty in close collaboration with the program's study counselor.

Quality Improvement: Strengths

We have both formal and informal approaches to systematic evaluation, improvement, and feedback. The HEPM program is one of few programs at KI where quality improvement is part of the subject matter that is taught. The feedback data we collect therefore provides an opportunity for us to "practice what we preach" in both short and long-term perspectives. The main sources for our data come from course directors, teachers, students, and our alumni. And the process is based on an intention to create a culture of learning and improvement.

The formal approach involves the program's Quality plan, Program council, the quality council, the departmental educational committee, and tasks performed by the study counselor.

In the quality plan, we describe the focus for the coming year(s) quality improvement activities and evaluate the previous year's efforts. **The Quality plan** determines what the program and course directors will work with and the agenda for student-faculty

and faculty meetings specifically geared towards improving the quality of the program or innovating how our work is done. We have made use of a pedagogical framework developed at KI to guide our analysis of the feedback received during the year. This has allowed us to see other patterns in our data, such as societal relevance, that might otherwise have been missed.

In the program council meetings, the focus is on how student surveys and feedback can be used to improve the course. Course directors reflect in writing ahead of the meeting on what they learned from the examination results and the course evaluation survey responses and what possible changes they could make for the next year(s). During the meeting, these reflections and ideas are discussed together with the student representatives. This has both reinforced several of the ideas and interpretations of the course directors as well as challenged faculty to do more. Sometimes, the student representatives have added crucial contextual understandings which ensure the analyses are well-grounded and the changes on parity with the responses and response rates.

For several years, we have had specific quality council meetings regularly during the academic calendar year. These focused on specific themes and encouraged teachers to develop improvement ideas and innovate their courses and pedagogical approaches together. One example where improvement really benefitted from this structure has been the efforts to improve students' competencies in academic writing. Together, teachers mapped out the curricular pathway and identified how the different courses could contribute with knowledge, activities, and examinations. This was continually evaluated, specifically by looking at thesis assessments and grades. Outside support from the library (KIB) was brought in and then reinforced through course activities. For example, in the introduction course, students are taught the basics of academic writing and referencing. The examination requires fulfillment of these basic requirements. This is then followed up in subsequent courses. Qualitative and quantitative skills are successively developed in a similar intentional curricular process, culminating in the thesis project during the last semester. The interaction in the meetings made the necessity of the links more explicit and provided the context for them to be realized.

These meetings have been replaced by a close collaboration between the program director and course directors. One example of what these conversations on quality have led to is the shift from traditional statistics teaching with standard statistical software packages such as SPSS to software such as "R" that is more modern and relevant for future employment. This was started this year in the first and second statistics courses and will be evaluated and refined for next 2024.

The departmental educational committee provides students with an opportunity for additional input and to approve and decide on major curricular changes in the syllabus.

The study counselor continually monitors student progress and convene teachers and students if there is a need to intervene prior to a student stumbling or failing in their studies.

The informal approach is based on what we learn from the program alumni network and PhD students. Students have, with the program's support, developed a LinkedIn alumni network. We have made use of this network by inviting alumni back to meet

the students and describe employment opportunities and how they have made use of their education in their current work. This has provided us with information about the relevance of the program and where things need to be changed, such as the need for R in the statistics curriculum.

We have recruited several PhD students from graduates of the program. Several of these have been involved in teaching and supervising during and after their studies. They have directly contributed to the program development based on their studies, i.e. getting research into teaching practice, and providing general feedback on the sustainable relevance of the program. Several teaching cases have come directly from articles in PhD theses. Students are also invited to attend dissertation *vivas*.

Quality Improvement: Areas for improvement

Since we rely heavily on the student evaluations surveys for data, the low and decreasing response rates over the last few years are something we would like to reverse. We have tried to address privacy concerns and stressed the importance they have for course improvement by inviting in representatives for the group that creates and analyzes the evaluation data. We have worked with the student representatives to reinforce this message, but we feel that there is additional work to be done. For example, it can be repeatedly clarified and stressed that student responses are anonymous.

The competence the program has on quality improvement may challenge more traditional views on quality that are commonly held in universities and tend to emphasize quality assurance over quality improvement (Biggs, 2003). We see the main difference being that improvement is a continual process, not something that is attained within one year. For example, it is natural for many teachers to hesitate before openly reflecting on the feedback they have received from students. It is therefore very important to create a safe atmosphere in order to make full use of this feedback. Moreover, teachers themselves may feel a need to improve or innovate their courses. If faculty feel supported by their peers, it is easier to turn critique into positive energy for improvement or to dare to do things differently from how they have been done before. And because faculty changes over time, this is something that is always an area for continual improvement as the group constellation shifts throughout the years.

The increased reimbursement the program will receive from 2024 offers an opportunity to further investigate how we can improve the program.

We realize that personal biases, which we are often unaware of, can impact our interactions with each other. We suggest that faculty and student representatives take KI's online course, "Bias in Assessment" to recognize and avoid potential systematic bias in assessment processes that disadvantage certain groups, available at: https://ki.eu-west.catalog.canvaslms.com/browse/oer/courses/bias-in-assessment.

Student throughput: Strengths

Key performance indicators

Key performance indicators are presented below (Table 2) related to the number of students who apply to the program, number who matriculate, number of full-time students who enroll in their studies each year, and the number of program graduates.

The data comes from KI's yearly reports. Seven percent of all applicants, and 14% of all eligible applicants, are matriculated as students.

Table 2. Number of students applying to the program.

	2022	2023
Applicants (total)	492	572
First priority applicants	253	284
Eligible applicants	246	254
Eligible, first priority applicants	122	158
Admitted applicants	100	111
Registered students	40	38

Not all students who are offered a place in the program accept, which is why the number of admitted applicants exceeds the number of spots available.

Student throughput: Areas for improvement

A strength of the program is the high student throughput, which is relatively stable and high (ranging between 86-96%). The average throughput between 2017 and 2023 was approximately 88%[1]. Those that leave do so for personal reasons or because they were admitted to a profession's education, such as dental school. A high proportion of students who start the program also graduate within the stipulated time. Our study counselor and program managements work closely together to proactively identify students in need of support and to support those students as needed.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to some extent/Does not meet.*
Strengths: • There is a systematic approach that includes a number of quantitative and qualitative methods to capture aspects of quality in education, carry out

[1] Preliminary data analysis.

analyses, plan for improvements, implement and follow up if changes lead to improvements. The work involves all actors involved in the training.
- Of specific note to above bullet is the formal quality plan that seems to be actively implemented to continuously follow up and improve the quality.
- Alumni input is continuously used to improve content and quality.
- Strong student throughput.

Areas for improvement:
- If possible, find ways to increase the response rate in course evaluations. Making the evaluations available together with the following course information/course platform may be a way to improve response rates.

Evaluation: Overall, it is the evaluation that the programme meets the requirements of the assessment criterion. The justification for that evaluation is that there is a strong assessment arsenal using different modes of assessment and through different channels. Thera might be improvement opportunities linked to the informal assessments from students that occur continuously during course work. Teachers clearly rely on these interactions as revealed by interviews. Furthermore, the students interview emphasized this feedback channels. The students also noted that one may have to considered students´ different cultural background to ensure feedback from all students can be channelled to course management and programme management.

3 Assessment area: Student perspective

3.1 Assessment criterion: Student perspective

The student perspective concerns the actual student influence in their education, both formally and informally. Formal influence means, amongst other things, student representation in various bodies and platforms. It is relevant how students participate in decision-making processes, including the preparation of issues related to the education, and what the information channels look like to reach out to students so that they can take an active role in the work of developing the education.

Student influence is also about individual influence, that which is more informal and that concerns the individual student, e.g. what the work looks like so that a student can take an active part in developing their education and their learning processes. The programme should describe a student's opportunities to participate in the quality work of the programme and in the development of the programme, as well as describe the information channels available to pick up and take student views into account.

Assessment criterion: Student perspective
The student is given the opportunity to take an active role in the work of developing the content and implementation of the education.

Presentation of the structure for student influence at KI

The students are co-actors in the university's QA-activities and thus also have a shared responsibility in influencing and developing the education. In order for student influence to be realised, students are expected to take an active and committed role both as individuals and as a collective. A prerequisite for this is that the students' views, opinions, and suggestions are asked for and met with respect. KI has a responsibility to facilitate and encourage the students' involvement in the development work.

KI's management meets regularly with the student unions for information exchange and consultation. At these meetings, it is discussed how student influence and collaboration with the student union works formally and in practice. To create a good study environment, it is required that the students' views on the education and the study environment are considered. The Academic Vice President for first and second cycle education meets regularly with representatives of the student unions for information exchange and consultation on these issues.

To ensure that student influence is realised at all levels, an agreement is reached annually between KI and the student unions on how student influence is to be secured in the bodies that deal with issues relating to education or the students' situation. The student unions are responsible for allocating places between the unions, conducting elections/appointing student representatives and that a gender equality perspective is considered. The student representatives who are appointed represent all students regardless of level of education, programme affiliation or union membership.

Programme description:

We take great pride in seeing that students have the space and ability to take an active role in developing the content and delivery of the program.

Strengths

Students have many channels **to develop and improve the program**. The point of departure for the program is that learning is a co-creative process that involves active collaboration between students and teachers. Teachers need to take upon themselves a facilitator role, not just one of content experts, to ensure that students are active in their own competency development. This is also the same when it comes to program development and improvement as related to the content of the instructional material, the learning process, and the context where this occurs.

By facilitating learning, rather than presenting what others have learned, students are invited to voice their curiosity and interests. This allows teachers to move their content and instructional process to where students actually are, which improves relevance and engagement.

Teaching using groups gives students the freedom to identify what they feel is important and to follow these interests by pursuing further knowledge through articles or interviews with relevant content experts as they prepare the assignments.

During and at the end of courses, faculty frequently employ a WW/DD feedback structure that provides data not always available from the formal course evaluation. When used during the course, it makes it possible to collect data that can be used to improve the current course, which avoids the frustration that feedback only contributes to improve the experience for next year’s students. The WW/DD

framework, developed at the Harvard School for Negotiation, makes use of four questions to identify specifically what should be kept (and why it works) and what should be done differently (and how it should be done).

In two of the courses (the introductory course and in the advanced course in health economics), alumni are invited to describe what they have done since graduation. This serves as an inspiration to help students network, become aware of different employment opportunities, as well as find thesis topics. In addition to this, the two chairs of the alumni network have taken the initiative to, with support of the program faculty, organize an alumni evening once per semester. This made it possible for current students to share their work experiences.

We have increased the number of student representatives, who now number two per class. This was done to reflect the larger student groups, to improve the volume of their voice, and maintain continuity to ensure their active participation.

We are also experimenting with engaging students to develop teaching cases based on their own international experiences in the basic health management course. Students are guided through a case study and teaching case development process and then the cases will be used for illustrating and teaching health care management competencies.

The videos which students produce as their first assignment in the program are a valuable source for understanding more about their previous experiences and competencies. These videos are available to the faculty, and all the course directors in the program, who receive access to the introductory course.

Areas for improvement

The international background of the students means that they come into the program filled with rich and detailed experiences which may be of interest for many. How to really make us of this is something that can be improved in all the courses. A key factor is to identify the competencies and experiences of the students when they enter the program. The first task to produce a video introduction of oneself is an important step in the process. Another is to ensure that these students are able to attend KI, and for that reason, there is a need for more stipends.

Alumni network and contributions to the program can expand. It is important current and new students become aware of their different career options, employment opportunities and possibilities to address health systems challenges, such as those program alumni are engaged in. Students have an opportunity to meet alumni and older students/class representatives at the start of the program. This can take the form of seasonal networking mingles for students and alumni or company visits. The student union (MF) organizes a networking event at KI, CHASE, to that end. Additional company visits relevant to course topics where they present specific career opportunities is something for course directors to consider moving forward. A third option is to develop teaching cases based on projects alumni have conducted or companies they have developed.

We need to continually improve opportunities for reflective discussions with our online lectures. The advantage for learning for students is clear from the pedagogical research evidence. Introducing asynchronous teaching, such as pre-recorded lectures, however, often requires an opportunity for reflection on these lectures to ensure effective learning. This can be improved through in-class space for group reflections

during on-site seminars or through reflection activities during and after the pre-recorded lectures on Canvas. Engaging students to record lectures as some student representatives have done was another approach to update the pre-recorded lectures. This requires discussing with and coaching faculty so that they will be willing to participate.

To ensure sustainable relevance of the program, it is important to continually revisit what competencies graduates should have to ensure their relevance for future employers and health system challenges. Our alumni network is key partner in this.

We have also considered involving student representatives in the matriculation process to the program as is done at many other leading international universities.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to some extent/Does not meet.*
Strengths: • A strong formal organization for students' participation in the development of the program. • A declared ambition from teachers to have a more informal dialogue with students. **Areas for improvement:** • Many students have a background in more "old fashioned" education systems and are not used to participate in the development in courses and programs. We think particular measures are necessary to convince these students to fully use the opportunities for influence. **Evaluation:** Overall, it is the evaluation that the program meet to a large extent the requirements of the assessment criterion. The justification for that evaluation is the strong formal organization and the declared ambition from the teachers. However, the panel is not convinced that students used to other education systems fully exploits these opportunities.

4 Assessment area: Working life and collaboration

4.1 Assessment area: Working life and collaboration

Working life and collaboration concerns whether the education is useful in the labour market and in what way the education prepares the student for a changing working life. This means that after graduation, a student should be able to use the knowledge and skills that the student has gained through their education and develop them throughout their professional life and in different work contexts. This requires that the student acquires both subject-specific knowledge and general skills and abilities during the education. Within this assessment area, the programme shall describe the way in which the education is updated and adapted to working life, and in what way information is obtained that is relevant to the quality assurance and development of the education regarding the education's usability and preparation for working life. The programme should also describe how collaboration with the surrounding society takes place in order to ensure high quality in the education. This assessment area also includes how the programme works to utilise alumni's experiences in the development of the programme.

Assessment criterion Working life and collaboration
The programme is designed and implemented in such a way that it is useful and develops the student's preparedness to meet changes in working life. Relevant collaboration takes place with the surrounding community.

Programme description:

The education is designed and delivered in a manner to ensure its relevance for our graduates and to prepare our students for a dynamic work experience in future health systems around the world. The program has worked in a dedicated fashion to develop collaborations with relevant societal actors.

Strengths

Our point of departure is that the sustainable relevance of our program is dependent upon the program’s ability to stay current with and adapt to future health system needs. Therefore, there is a need for the program leadership and course directors to be in touch with current demands as well as build in the flexibility to adapt to the changing needs expressed in health systems. Moreover, we want our students to develop more than the competencies needed to work in today’s system or the near future, we want them to develop the capabilities to form future health systems. To this end, we have worked to design and deliver the program and courses in alignment with the current and future work environment for our students. This begins with understanding the current and future needs of our health systems and our students.

To understand the current and future needs of health systems, we make use of official reports, collaborations, our alumni network, and current and planned research projects. In terms of official reports, the WHO, and other entities such as Region Stockholm, have released reports on competencies needed for health systems. For example, in analyzing the future competency needs of Region Stockholm, competencies we teach in the HEPM program were highlighted:

> *Competence in healthcare will be required to handle the political dilemma of priorities and residents' expectations. Healthcare needs to clarify the long-term economic and patient safety consequences of different choices and actions. Health economics is a skill that will be required to a greater extent than today* (translated freely from Lettermark, 2020).

We have placed great effort on developing and maintaining well-developed collaborations with industry, government agencies, and health care provider organizations. These allow us and our students to identify and capture current and future needs. For example, one of the tasks of TLV (The Dental and Pharmaceutical Benefits Agency) has been to identify future educational needs and how agency-academia collaborations can meet these needs. Study visits with TLV, SBU (Swedish Agency for Health Technology Assessment and Assessment of Social Services), pharma and care provider organizations (e.g. primary care centers, Legevisitten, Astrid Lindgren's children's hospital, Capio S:t Göran's hospital, Stockholm Southern hospital) help students identify future needs and career paths. We have also collaborated through teaching cases where students work to address real world problems of some of these organizations. This has included conducting a business model analysis of five newly acquired and very different primary care centers for a health care provider, improving care at a geriatric primary care clinic, analyzing the effectiveness of a lean implementation effort and how it could be improved at a hospital, or the applicability of Value-Based Health Care for community health services (SLSO). Master theses are also an important tool as they allow students to work closely with practitioners in the field.

Our alumni network provides a good insight into where our students end up and consequently, key insights into which competencies are key for their success (Figures 2 and 3). For example, the changing nature of programming and statistics has made it clear that newer analysis packages such as "R" are much more suited to their needs compared with traditional software packages such as SPSS. Students and alumni as well certain faculty made this observation, and after some lobbying efforts, the statistics curriculum was adapted to better meet this need. Alumni have also reached out to the program for additional support and "refreshers" regarding specific methods and skills we teach. This provides a receipt for their relevance in practice.

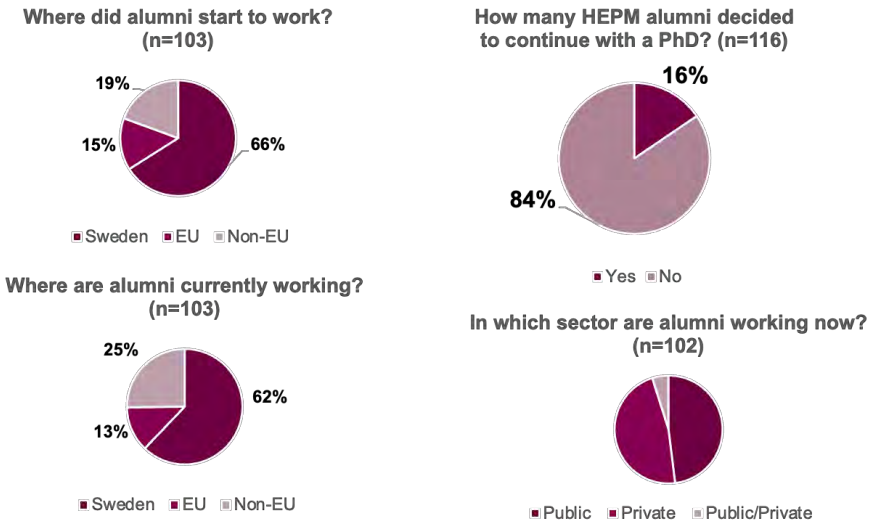


Figure 2. Analysis of alumni employment

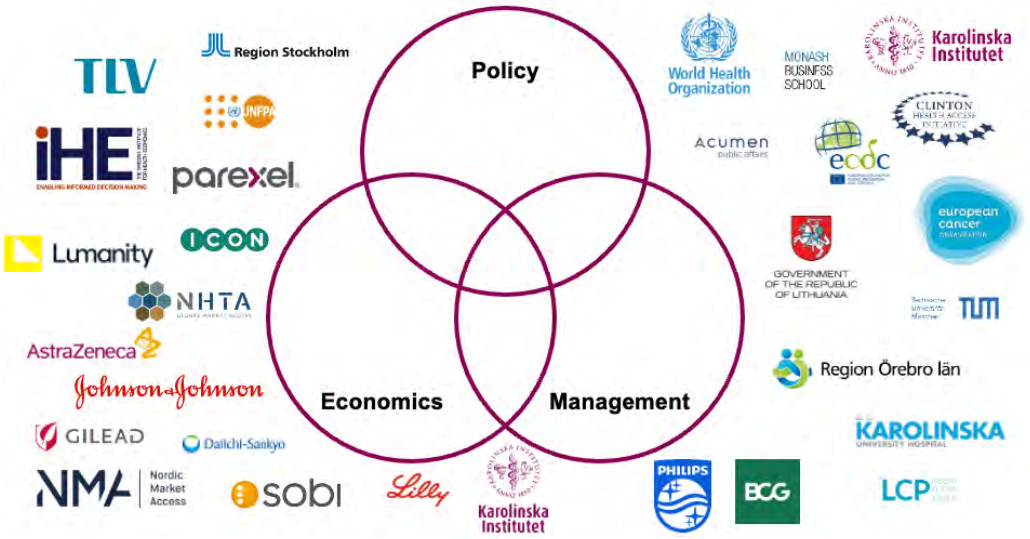


Figure 3. Examples of HEPM alumni employers for the areas of health economics, policy, and management

Our current and planned research projects provide a strong link between the program and students' preparedness for the labor market. Often, these projects can provide smaller projects that can be delivered upon as master's theses. For some, the thesis can provide an entry point for doctoral studies, as approximately 15% of our alumni go on to complete a doctoral thesis. Some research groups have affiliated members who are and represent key stakeholders within the local and international health systems. Their engagement in teaching, in problem identification, and as supervisors is a key resource and quality indicator for the program.

The pandemic and generative AI are two examples with high impact events that force us to reevaluate how and what we teach. During the pandemic, the curriculum for the entire introduction to medical management was revamped together with the students within two-weeks. Using the same learning outcomes, the course content and examination was changed to optimize the "opportunities" that arose with the pandemic in terms of understanding health economics, health policy, and medical management. This was an example of a rapid adaptation to a new health system environment.

Areas for improvement

Generative AI and the transition to "R" also exemplify the challenges we face in sustaining curricular relevance. Generative AI, like the pandemic, is transformative and just like the pandemic, the consequences are not immediately evident. Generative AI raises two key questions related to how we teach, and how we prepare our students for a world in which how we work will radically change. In terms of teaching, we are facing the uncertainty of how to determine what the student has done and how to ensure that they have truly developed their competencies and reached the learning outcomes. This can naturally lead to a propensity to restrict. In terms of preparing our students, they need to learn how to effectively employ generative AI in their future work. This requires embracing the very technology one as a teacher is tempted to restrict. We think it is important to provide students with clear and general instructions on how AI can be used in different course. Even more important is to establish and reinforce a culture of *academic integrity*, i.e. doing the right thing academically, when using AI (Peters, 2023). The challenges we faced with moving from SPSS to R can provide some lessons learned – for while the need was evident, and the students and alumni were clear with this need, it still took us time to adapt, and that

adaptation has not been challenge-free. There is a strong aspiration among faculty to prepare students for the future, and we often use ourselves as a reference point, teaching what is important to us, and what has worked for us. Moving into unknown territory can feel uncertain, and teaching from uncertainty is not always a comfortable experience. So, the necessity for the transition needs to be understood, and when it was, it was clear that tradition needed to be broken. This insight could have been arrived at sooner, which is why collaboration with others is so important because it provides additional input which can help faculty arrive change their minds. The other need is for faculty to develop the requisite competencies or employ new faculty with these competencies. When confronted by the need for online teaching during the pandemic, we were integral to the development of the successful “GO-Online” course developed by the Unit for Teaching and Learning at KI that provided support for teachers to make that transition. Faculty development is, therefore, sometimes essential to support a transition once the need for that transition has been understood and accepted. This is something that the program leadership needs to take responsibility and advocate for when it is needed. In the case of Generative AI, there is a lot to be learned. Continual concrete and reflective dialogue are needed among faculty to effectively meet the threats and possibilities and ensure an optimal educational experience that allows students to develop their competencies.

Due to the proven importance of the alumni network, we feel that more can be done to support its long-term development and sustainability. While we feel it is important that the alumni network be driven by the alumni themselves to ensure its relevance, there is more that we can do to support them. This can include central KI support to contact alumni and career support to further prepare our students for the job market. We have a budget post to support alumni gatherings. We support the transition of student representatives to take over responsibility for the network to maintain a high level of engagement. We could do more to announce research opportunities to the network, present relevant research publications, and utilize the network to identify topics for master’s theses, supervisors, teaching cases, and research projects. We have invited in alumni to speak during courses as well as supported the alumni network to organize such evenings with alumni and current students.

We have also begun to develop an international university network with comparable programs by applying for international funding to support the spread of the subject area in widening countries, such as in Czechia.

We do not have a formalized feedback loop with those we collaborate to provide feedback on program curricula and alumni performance to identify strengths and areas for further development and improvement. While we do not see internships as an area to develop, there are other ways to improve the interaction between the organizations we collaborate with and our students and alumni. Study visits are one such way as well as actively seeking out challenges they are wrestling with to turn them into field teaching cases. We could also develop more formally structured “refreshers” to ensure that our alumni can adapt to changes we see throughout our network as well as bring in such competencies from our alumni.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to some extent/Does not meet.*
Strengths: • Systematic collaborations with industry, authorities and care givers. • The combination of economics, management and policy are certainly attractive in the labour market. **Areas for improvement:** • There is a “Swedish” bias in the collaborations which of course is difficult to avoid. However, it is not clear how representative Swedish employers are for the global situation and how the education acts to compensate for such issues. • We don’t know the background of the teachers but think a faculty with experiences from different parts of working life would give valuable input to the program. • The outside EU labour market could have a better representation in the alumni network **Evaluation:** Overall, it is the evaluation that the programme meets to a large extent the requirements of the assessment criterion. The borders for “working life” and “surrounding society” could be further clarified. Does it refer so Sweden, then the criteria is completely met but does it refer to a more global working life there are a need for improvements.

4.2 Assessment area: Internationalisation

According to Chapter 1 § 5 of the Higher Education Act, the overall international activities at each university shall contribute to strengthening the quality of education and research, as well as promoting sustainable development both nationally and globally in the areas of higher education. The challenges of the future are global and must be solved in collaboration across national borders. Working in healthcare, in business or in academia requires intercultural competences. KI therefore has a responsibility to prepare all students for global citizenship, i.e. a global social

responsibility and an ability and willingness to contribute. This requires a well-integrated education in global health and training in intercultural competences.

Internationalisation at home (IaH), which involves integrating intercultural and global perspectives into education, provides good conditions for sustainable and integrated internationalisation that reaches everyone. This can be done, for example, by utilising and sharing the experiences of students and teaching staff from different international contexts. The environment at KI is international and this, in itself, can be used as a resource. The rapid development of digitalisation offers great opportunities for international teaching without physical travel, for example through guest lectures digitally or group work online with students from partner universities. However, mobility remains an important part of internationalisation and programmes should actively create opportunities for this. Teaching in English provides an opportunity to receive and integrate exchange students and local students, but above all it strengthens students in their profession, prepares them for research, a global job market and a professional life in a multicultural society.

Assessment criterion: Internationalisation
The programme is designed and implemented in such a way that it develops the student's intercultural competence and the student's readiness to work in a global labour market.

Programme description:

The program is designed and delivered in a manner that supports the development of students' intercultural competence and prepares them to work on the global stage. However, we feel that we could do more to further internationalize the case examples as well as to make even better use of students' competencies and experiences from other settings in our program.

Strengths

The student body is highly international, which is reflected in where students received their bachelor's degrees, approximately:

- 26% Sweden
- 31% other European countries
- 43% outside of Europe.

Bringing these different cultures, perspectives, and traditions together is both a challenge and a unique hallmark of this program. Due to the research conducted by the different groups, Health policy has a natural focus on internationalization as the context for most of the research lies outside in developing countries. Health economics has had a large international collaborative project which has compared the efficiency of different health systems, although most cases use Swedish examples. The medical management track has a clear European and Anglo-American focus. However, the models and methods used in all the subject areas are applicable in international settings. The flexibility of these models and methods is integral to students' ability to work in other settings upon graduation.

During the week before the formal start of the program, all admitted students (national and international) are invited to partake in several seminars to support their transition to Sweden and the educational experience here. This is something most of

our students partake in (especially the international students), and it helps them meet each other and recognize their different backgrounds and experiences.

The Unit for Teaching and Learning has worked to create support for internationalization at home as a resource for our faculty.

We strongly support students who want to conduct their thesis projects abroad, so that both students and faculty can widen their perspectives and understandings to support internationalization. In addition, we have exchange agreements with Makerere University in Uganda, National University of Singapore, the University of Sydney, Universidad de Chile, so students can also study in other settings and have in, for example, Singapore.

Our research and teaching make us an attractive place for international visits, such as by representatives from the WHO, who we have invited to meet with and present for our students. International projects that our researchers are involved in also provide an educational opportunity when they return home, such as from the conflict in Ukraine.

Areas for improvement

The challenge is how faculty can make better use of the different backgrounds in the classroom situation, and here we feel that we have a many exciting possibilities that can be developed. For example, there is the possibility to work with students to develop teaching cases based on their own experience from “home”. We have explored this in the context of the introduction to medical management course. We could do even more in terms of master’s theses by connecting the work of former students with current students, as well as helping alumni connect with students as supervisors.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: Meets/Meets to a large extent/Meets to some extent/Does not meet.
Strengths: • The mix of students in itself constitutes a multicultural environment that the teachers effectively capture and enhance. **Areas for improvement:**

- We have no information about the teacher's international networks, an international faculty would facilitate internationalization.
- Within the frames of WHO, a significant amount of cost-effectiveness studies have been done. Also, methods proper for LM-income countries has been developed (WHO-Choice) and deserve some attention in the HE-courses.

Evaluation: Overall, it is the evaluation that the programme meets to a large extent meet the requirements of the assessment criterion. To educate for a global labour market is a great challenge. In this case it includes both high tech companies in Europe and ministries of health in low-income countries. The students are certainly well prepared for the European labour market while the preparedness for labour markets in low-income countries are more unclear.

4.3 Assessment area: Interprofessional competence

Interprofessional competence is part of the generic competence that is necessary for employees, not only in current and future health and medical care, but also in other areas of employment relevant to KI's education. KI's vision is that the education is designed and implemented in such a way that the student, after completing the education, has the best possible conditions to work within and continuously develop an activity in close collaboration with other professions and disciplines. Intended learning outcomes and educational activities to achieve interprofessional knowledge, competence and approach must therefore be included and assessed within KI's programmes at first and second cycle.

Interprofessional competencies include communication, collaboration, teamwork, roles and responsibilities, conflict resolution, patient safety and patient/client centeredness.

Assessment criterion: Interprofessional competence
The programme is designed and carried out in such a way that it develops the student's competence to work within and continuously develop an activity in close collaboration with other professions and disciplines.

Programme description:

The program is designed and delivered in a manner to support students in developing competencies to work and continually develop their future workplace in close collaboration with different professions and disciplines. This is also reflected in the Exit polls that show students think they are well prepared to a high degree to work with other professions and to cooperate in interprofessional teams and diverse cultural environments.

Strengths

The program brings together and facilitates the interaction of students from many different professional backgrounds, primarily through group work and the design of assignments. Students have educational backgrounds in the medical sciences (45%), natural sciences/engineering (30%), and social sciences (25%). This variation is a

strength, but also presents challenges, particularly during the first year. For example, Students can experience the same course content and assignments as challenging or too easy and repetitive, based on their *a priori* knowledge related to their background.

Throughout the program, students need to work together and utilize their different backgrounds and related perspectives to address complex challenges in health care. Complicated and complex challenges require interprofessional approaches because no one perspective alone is enough to encompass the competencies needed to effectively diagnose and develop relevant, effective, and efficient responses (Fraser & Greenhalgh, 2001). We therefore strive to select and design real-world assignments that are complex enough that they require the students to bring their different backgrounds to bear.

Creating an environment for students to share the perspectives they have developed in their education can be a challenge. We feel it is not enough to just hand out difficult assignments to the students. This is because sharing a perspective requires becoming aware of that perspective in the first place. Developing into a professional such as a pharmacist, nurse, physiotherapist, dentist, doctor, or economist, invariably involves being socialized into a particular mindset. We are often unaware of these mindsets and how they influence our thoughts and interactions. Thus, students would benefit from becoming aware of the paradigmatic lenses they carry. Questions are a powerful tool to aid the reflective process, but their formulation and students' ability to answer is impacted by students' perceptions of how psychologically safe the teaching environment is. This refers to the ability to speak one's mind without fear of reprisal. It can range from speaking up in class to expressing concern for a fellow student, to calling out offensive behavior. For this reason, the ability of faculty to establish psychological safety is an important pedagogical activity, especially if group work is to be an effective teaching experience. The program leadership therefore dedicates a lot of time and effort to quickly identifying, exploring, and addressing issues if they should arise in a teaching session or as reported to or by faculty.

Areas for improvement

To "even out" the playing field for students with different professional backgrounds, we have explored the idea of developing pre-program refresher modules, particularly related to skills in Excel, basic statistics, or HE. These could be designed for online self-study. However, we have only made preliminary forays to explore this so more can be developed. We have recommended literature to those who have asked how they can prepare prior to coming to the program.

While students have a lot of opportunities to interact and build upon each other's backgrounds, there is, as has been pointed out by the students, an opportunity to develop teaching modules that more fully integrate the HEPM subject areas of Health economics, health policy, and medical management. In the first course of the program, students get an introduction in all three areas and work through a case, "OrthoChoice", about hip and knee replacement in Region Stockholm that integrates all three aspects. We have discussed that it would be beneficial for students to work on a similar integrated case as the penultimate course prior to the thesis. This would function as a reminder for the mutual benefit of addressing and developing responses in all areas for complex health and care challenges. Faculty have identified potential cases that could provide a good backdrop for such a course.

Assessment panel's evaluation

Instruction
For each assessment criterion, the assessment panel should describe their evaluation under the following three headings below: **Under the heading Strengths:** The assessment panel should highlight the programme's strengths within the assessment criterion and briefly describe them, preferably in bullet points. **Under the heading Areas for improvement:** The assessment panel should identify areas that are assessed to need improvement and briefly describe them, preferably in bullet points. **Under the heading Evaluation:** The assessment panel should explain their assessment and motivate their conclusion. The evaluation should be specified in one of four levels of fulfilment: *Meets/Meets to a large extent/Meets to some extent/Does not meet.*
Strengths: • In group settings, students with diverse educational backgrounds can collaborate and work on case studies that require a range of competencies. • Assessment, reflections and actions taken in order to identify and improve the education with respect to collaboration between professions and disciplines. **Areas for improvement:** • The approach to improve the education with respect to collaboration with other professions and disciplines could be performed more systematically throughout the programme. **Evaluation:** Overall, it is the evaluation that the programme meets the requirements of the assessment criterion. The justification for that evaluation is that the case studies described above probably is a very effective measure to develop interpersonal competence.

Other aspects

Programme description:

KI developed a Pedagogical Compass to guide the development and improvement of learning and educational activities in 2022 (Figure 4).

Figure 4. KI's Pedagogical Compass

The Pedagogical Compass consists of five interrelated components:

- *Sustainable relevance*: How can a program ensure that it is relevant for its students and society over the long haul?
- *Faculty development/Scholarship of teaching and learning*: How can faculty continually develop their teaching competencies and contribute to pedagogical (self-)development?
- *Curiosity, Creativity, Courage* (C^3): How to stimulate or maintain curiosity, creativity, and courage among students and faculty? These three concepts were a common reason for seeking out KI and a prerequisite for effective learning and innovative research.
- *Psychological Safety*: The feeling that it is safe to speak up without fear of reprisal. It is a prerequisite for learning, particularly learning from failure. It is also a necessity for the next component.
- *Learning Organization*: To continually improve, an organization must be able to learn from its successes and failures.

An analysis of the program, using the information from the self-evaluation described in the previous sections and then applied to the Pedagogical Compass framework has provided insights into the strengths of the program as well as areas that can be developed further to better align our activities with our ambitions. The main strength that emerged was the relationship between research and the program.

Sustainable Relevance

The analysis made it clear that we should be more open about our ambition: our HEPM students will impact the future of health care. This ambition can be further refined, communicated more effectively, and the program reviewed, so that all the activities and decision-making principles are aligned. The teaching activities that contribute the most to this ambition are clearly anchored in real world examples and situations and make use of real-world tools. They focus on decision-making, and when they work best, they help students not only develop requisite competencies (knowledge, skills, and attitudes) but also the capability to make similar decisions in contexts that differ from the case. For this reason, the focus needs to be on both *what* one does and *how* one does it.

In discussing the most relevant teaching scenarios, we found that they were largely facilitated through our research and collaborations. Our national and international network makes us aware of the needs of the current and future labor market. Our research activity allows us to explore these needs in depth, as much of our research builds upon practical needs and questions. This suggests that one key to making our organization a learning organization is research and collaboration. The affiliation and close working relationships with key stakeholders and key movers and shakers is therefore not only nice, but also essential to the program.

Our students also need to develop their research competencies, but here we have worked to contextualize this. We have no courses specifically on qualitative or quantitative research methodology. Instead, research methods are presented as a strategy to generate knowledge in the context of how to improve health in the context of limited resources. Quantitative methodologies are integrated into health economics and statistics, qualitative methodologies are integrated into medical management and health policy courses and aligned in a progression designed to prepare students for their thesis project.

We also see student-centered learning as following this progression. A master's degree represents a broad mastery of a subject area, something that students develop during the first year. The third semester facilitates an in-depth understanding of the health economics, health policy, and medical management subject areas. Specialization begins during the thesis project. This provides students with a strong and broad base, in-depth understanding, and a choice about what they want to specialize on based on their future interests. This can help alumni differentiate themselves when they apply for future employment opportunities. The program could further support this specialization, as well as further improve the sustainable relevance of the program to the challenges facing health care, by increasing the awareness and dissemination of the learnings of the thesis projects by working to published more of them as peer-reviewed articles and reports. Given the importance of research to the practical relevance of the program, this is an important area for improvement.

The alumni network could play a much larger part in supporting sustainable relevance by becoming a source for thesis topics and supervisors, teaching scenarios, and employment opportunities. Our access to other stakeholders through the numerous affiliations we have to the research groups could also contribute to sustaining our relevance.

Learning Organization

A learning organization continually develops itself and its members. Administrative "tasks", such as this self-evaluation may be considered, can instead become opportunities for faculty and students to explore what we do vs. what we want to achieve with the goal to improve the *way* we work and to develop new innovative ways to do that. Given our emerging understanding about the pivotal role that research has in our program as a result of this self-evaluation report, we see value in facilitating research collaborations within the faculty as a clear future direction. We also see a need to review our scheduled meetings to make more room for faculty development and support feedback for learning and improvement. A focus on preparing our students for decision-making in their future endeavors can also help us

ensure relevance in what and how we teach. The further development of the alumni network is an important source of input in this.

Faculty development and the Scholarship of Teaching and Learning

We have made efforts to support the pedagogical development of our faculty beyond the requirements of KI. This has included the GO!Online course which provides a framework and experience for course directors and faculty to review, revise, and refine their courses or specific teaching activities. While originally intended to ease the pandemic driven transition to online teaching, much of the content and tasks are applicable to both hybrid and classroom-based teaching.

What has emerged clearly through this self-evaluation is the importance of the research and the collaborations our faculty are engaged in for the development and selection of teaching content and to establish and sustain the relevance of the program to meet real world needs. This raises the possibility to further support research through cross-fertilization of subject areas by encouraging faculty to develop research and practice collaboratives with other faculty members. To this end, a stable faculty group is necessary. We have therefore worked hard to ensure a long-term stability among the faculty as a prerequisite for further development and improvement by reviewing employments and contracts. When this does not work, we also see a need to develop material to support new faculty coming into the program as course directors.

Psychological Safety

The two groups we focus on regarding establishing and maintaining psychological safety are the students and faculty. We work to identify students with needs as early as possible in the program such as for reading challenges, language support, note-taking, etc. We direct students to the relevant support services at KI or create space to meet individual needs in each of the program courses. We will present information about these opportunities to students at the start of the program. Students also receive education and training in psychological safety during the management courses. The training is based on the work of Edmondson and others which we have summarized in an article exploring the concept in the health care setting that was published in the Swedish Medical Journal (Savage et al., 2023). We see this is as a necessity for all students given the large amount of group work in the program.

We work to support our teachers to seek out and build upon feedback from students. This is important because if we are to improve, we need specific feedback, however scary it may feel. To this end, we also discuss how to provide and receive feedback.

Curiosity, Creativity, Courage

These are three characteristics that are easier to reinforce than to create. We choose teaching scenarios that stimulate curiosity about paradoxes and challenges in health systems. We try and separate lectures that focus on information transfer and provide them in a pre-recorded digital format and prioritize live interactions around challenging questions that promote curiosity and engagement in seminars and case discussions. In these classroom teaching situations, we try to engage all the students in the discussions. The hope is that this prioritization and the engagement of students will stimulate interest among the students to prepare for the discussions by exploring the concepts beyond the material provided. We also offer assignments, such as “Your HEPM future” to stimulate students to develop the courage and confidence to become aware of and make use of the competencies they are developing during the program

to drive change and improvement at a practical level when they graduate from the program. Live cases and field studies provide an opportunity for students to see the impact that their input can already have on health care today.

We also encourage our students to experiment and risk failure, because in an educational setting, the safety nets are much larger than in the world outside academia. To that end, we have experimented with the concept of “Give everyone an A”, developed by Zander and Zander (2000), to help students move out of their comfort zones and learn from the mistakes they have dared to make. In their groups, students write a letter to themselves at the beginning of the course, describing how they developed their competencies and pushed themselves out of their comfort zones. At the conclusion of the course, students reflect back on their learning journey and their ambitions and grade their performance. This type of task requires deep and honest reflection, which is why the ability of faculty to establish and maintain psychological safety is vital.

The assessment panel's reflection

Instruction
Under the heading *Reflection*, the assessment panel shall present the assessment panel's reflections on the programme's description of other aspects.
Reflection: Overall, the program’s integration of research, collaboration, and student-centered learning creates a robust foundation for graduates to excel in the healthcare field. The emphasis on psychological safety and a learning organization culture further ensures that both students and faculty can thrive and contribute to the program’s evolution. Improvements could include enhancing the alumni network’s role and increasing the dissemination of thesis projects to strengthen the program’s practical relevance and impact. Some of the qualities that the assessment team particularly wants to highlight are that the report highlights the program's main strengths, such as: - The co-existence and integration of the three subject areas of health economics, policy, and management, which cover areas essential for functioning health systems and improving human health in the context of limited resources. - The diversity and quality of the students and faculty, who come from various academic, professional, and cultural backgrounds and have strong research and pedagogical competencies and connections to the health sector and key stakeholders. - The alignment of the program with the pedagogical principles of KI, such as student activation, creativity, curiosity, research connection, relevance, and continual learning and improvement. - The use of varied and innovative teaching and assessment methods, such as case teaching, field assignments, role play, peer review, digital and hybrid learning, and the development of research skills and scientific mindset. - The collaboration with relevant societal actors, such as other universities, organizations, and agencies, both nationally and internationally, to enhance the program's quality and impact. The report also identifies the program's main areas for improvement, such as:

- The development of the alumni network, which is seen as important for understanding future challenges, providing feedback, and creating opportunities for students and graduates.
- The expansion of the delivery channels, such as hybrid and online versions of the program, which will require new competencies and resources to realize.
- The updating of the course plans, which should reflect the current teaching activities and modalities, such as the use of pre-recorded lectures and flipped-classroom structure.
- The support for students' individual needs and attention, which may be affected by the increased number of students and the stress and distance learning of the pandemic period.

During the interviews, the assessment team’s perception that the described activities accurately reflect reality was reinforced. Several clarifications and positive inputs further bolstered the team’s favorable impression of the high quality of the education and the ongoing efforts to enhance its outcomes. Consequently, it is our unanimous opinion that the education meets the high expectations and standards set by KI.

Summary of the assessment panel

Instruction
The assessment panel's summary should begin with a reflection on the conditions provided by the self-evaluation to assess the quality of the programme, i.e. whether the self-evaluation was easy to read, well-structured, provided answers to the questions asked and followed the instructions. The summary should also briefly summarize the program's key strengths and areas for improvement. The assessment panel can also add other points of view that the assessment panel wishes to present.
About the self-evaluation document and the process of evaluation The program’s self-assessment constituted an excellent basis for the evaluation. The evaluation process, which included both recurring reflections in the evaluation team and well-prepared interviews with students, teachers, and management, provided sufficient and good opportunities to clarify those parts of the self-assessment that the assessment team considered unclearly described or where there were gaps in the description. Overall, the assessment team believes that we have had access to the information needed to carry out a good review of the education. The process also includes opportunities for the reviewed education to return to KI with additional clarifying questions. This quality assurance ensures that the assessment basis is appropriate. **Assessment teams summary of evaluation** Karolinska Institutet's program exhibits a robust alignment with educational goals, supported by a strong foundation of teacher expertise and a commitment to continuous improvement. The program's pedagogical approach effectively balances theoretical knowledge with practical skills, fostering a progression that prepares graduates for significant contributions to the health sector.

The program's integration of research and education is commendable, with a focus on creating a supportive learning environment that values student input and encourages creativity. A well-structured curriculum offers a broad base in the initial year, followed by specialized areas, culminating in a master thesis that demonstrates advanced skills. Ethical awareness is evident, with a specific course on research ethics and ongoing consideration of AI's role in teaching.
However, exploring opportunities for student-led initiatives could enhance the educational experience. Implementing clearer assessment methods and criteria would improve transparency and student performance evaluation. Addressing tacit cultural causes of inequality and the use of AI tools could further promote equal opportunities within the program.
Overall, the program meets the requirements of the assessment criterions to a large extent. It stands out for its strong formal organization, awareness of examination challenges, and integration of sustainable development goals. While there are areas for improvement, the program's strengths provide a solid foundation for future enhancements. It is the assessment teams unanimous opinion that the education meets the high expectations and standards set by KI.

Appendices

A1. Teacher table for teacher competence and capacity

A2. Map of the outcomes of the master’s degree to course learning outcomes, learning activities, and assessments

A3. Programme curriculum

A4. Course syllabi for all courses included in the programme

A5. Compilation of key figures regarding application numbers per place, number of students starting the programme, number of full-time equivalent students, and number of graduates