PERIODIC EVALUATION REPORT

For the Master's Degree Programme in Clinical Nutrition 2014-2018

Dept Nutrition, University of Oslo

To the Medical Faculty of the University of Oslo

c/o Faculty director Unn-Hilde Grasmo-Wendler

Review prepared by

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The committee's mandate is as follows:

1. To gain an overview of the Master programme's goals as they are written in the programme plan and to determine if they are being met.

2. To evaluate whether the learning outcomes of the programme are well formulated and suitable.

3. To evaluate the quality of the study programme and possible recommendations for improvement.

4. To express an opinion on whether the programme should be continued, revised or cancelled.

The assessment should include reviews of:

a. The program's coherence

The master programme in clinical nutrition was the first of this type in Norway, and educates clinical dieticians who are authorized as health personal. Thus, this programme has set standards for other study programmes in clinical nutrition, which have been established at the University of Bergen (bachelor since 2005, first master degrees in 2010) and at the University of Tromsø (bachelor from 2016, master from 2019, first master degrees are expected in 2021). The long-standing experience and the continuous improvement are visible in the study programme, which overall shows a high degree of coherence and overall, is regarded as an excellent programme by the committee.

As the main idea of an external evaluation is the further improvement of a study programme, we have highlighted a number of points which indeed could be further improved, still keeping in mind the high quality of the study programme.

The report is written following the guidelines provided by the University of Oslo, and all committee members have contributed to this report and agreed on its conclusions.

The study programme in clinical nutrition at the University of Oslo is a coherent, excellent programme that takes the important mission to educate clinical dieticians who have an important role in the Norwegian specialist health care system, but who are also excellent researchers and also facilitators of nutrition messages to the public.

Recommendations for the further improvement of the study programme are provided at the end of each section of this report, and are in addition, summarized at the end of the report in a more comprehensive way.

b. Professional update and relevance to society and working life

Demographic changes, improved survival of many chronic diseases,the challenges of overnutrition and climate impact of food production and consumption have contributed to an increased awareness of the modern society to nutritional issues. These challenges require the commitment of professionals who are well educated in patients' care, in research and in communication and who are aware of the necessity of life-long learning, as today's knowledge may be outdated tomorrow.

The study programme in clinical nutrition is a 5-year, integrated master programme with the aim to educate clinical dieticians. It is a science based, research oriented study programme which is in part jointly taught with the medical and dentistry programmes. The programme is well established at the Medical faculty of the University of Oslo. The current structure was established in 2011 (5 years integrated master) and the programme has been revised in 2014 and 2015.

One positive aspect is that the students have contact with clinical dieticians from the first semester onwards, who may serve as a role model for undergraduate students. Close collaboration with the University Hospital Oslo further should establish an environment which gives a professional stimulus to the students. However, the students themselves judge the opportunities to establish contacts in the labour market as rather limited (mark 2.2 on a scale from 1 to 5 (best) at 'studiebarometeret', and the available information about relevant occupations/fields with 3.4 (http://studiebarometeret.no/en/student/studieprogram/1110_mfm5-klern/tidsserie).

Indeed, the programme does not contain a course that includes 'professional identity', this is rather taught in a number of courses that include clinical nutrition. It could be worth thinking about such an identity building course or such a topic as part of a course.

The information provided on the real job opportunities for candidates with a master degree in clinical nutrition is, however, limited. It would have been interesting to see how many of the candidates are working in relevant positions, and about their opinion on the education. Partly, the KEFF survey has taken up these questions (as mentioned in the report, p.41), which included a majority of graduates from UiO. However, this survey was directed only to members of the union, and thus a high percentage of respondents working in relevant positions could have been expected. An additional investigation on the whereabouts of the graduates would be useful.

Overall, there is a debate in Norway on the need for nutritional competence not only in the specialist health care, but also in primary health care, and it is expected that the number of positions in primary health care will increase in the near future. In principle, the current programme is directed to both primary and specialist health care, and candidates should be well suited to work in both areas.

Recommended action:

- Starting a course focused on professional identity
- Survey on the whereabouts of alumnis

c. Learning outcomes

Learning outcomes are provided for the programme as such and for individual courses, and in line with requirements by the national qualifications framework, given as knowledge, skills and general competence. The learning outcomes of the individual courses were compared with the learning outcomes of the programme, whether all learning outcomes of the programme are covered by one or more courses (see Table in the appendix). Most learning outcomes on programme level are covered by at least one course. There is however no learning outcome on course level on 'maintain and develop their competence over time and contribute to knowledge development within the field of nutrition' (lifelong learning), thus it can be concluded that this outcome is not covered by any course.

However, the learning outcomes on programme level are not in line with the required use of language (https://www.nokut.no/norsk-utdanning/nkr/beskrivelser-av-laringsutbytte-for-nivaene-i-nkr/), and some topics from learning outcomes from courses are not included in the programme learning outcomes. These include (key words only):

Knowledge: clinical consultation, ethics, social inequality, microbiology, basics in pharmacokinetics, statistical methods

Skills: conduct statistical analyses, can write a scientific report

General competence: use of statistics, presentation of data

Indeed, it is not required that all learning outcomes of courses are also mentioned as learning outcomes of the programme, but statistics as a central tool for data analysis should be mentioned on programme level. However, the evaluation committee is aware that the current process of 'RETHOS' (guidelines for health and social education programmes in Norway) will formulate general learning outcomes for the study programmes of clinical nutrition, which will be implemented from 2021 onwards.

Recommended action:

- Consider statistics as learning outcomes on programme level
- Integrate the learning outcome 'lifelong learning' into the learning outcomes on course level. This could also be part of a course on professional identity.

d: Lecture and exam formats

The five-year programme is a full-time program. Students receive approximately 20 hrs of teaching each week and are expected to carry out independent work for 25 hrs/wk. As described in Table 3.3 of the report, all courses except ERN4500 and ERN4900 in the Curriculum 2015 include regular lectures and all courses in the Curriculum 2014 included lectures. Overall, lectures make up 8-12 hrs per wk. Most courses in the Curriculum 2015 also include seminars and group work. A few courses apply group teaching and include team-based learning, problem-based learning and learning-oriented, small-group teaching in basic subjects. Clinical teaching and skills training are carried out in the Centre of Clinical Nutrition at Oslo University Hospital, and at the skills centre for students in clinical nutrition. Practical training, eg cooking, laboratory work etc, only take place for a couple of hours to a week at a time.

Overall, the teaching seems to rely much on the traditional format of lectures. The active learning component is much smaller. Summaries of student evaluations between 2014-2018 reveal that students more highly appreciate individual written assignments and teaching in small groups, rather than lectures. The forms of lectures / contact teaching occasions are not specified.

The supervised practice is relatively limited, with 2.5 wks during the first two years. Short periods of practice takes place half way through the program, and at the end there is a four-week period of independent practice in the specialist health service. Still, four weeks of practice and practical learning is rather limited and this has been criticized in student evaluations 2014-2018 and by members of KEFF in 2018 (see below).

Ten of the 14 courses in the Curriculum 2015 include individual written assignments that the students must complete before being allowed to do the course exam. Also in total ten courses use

written examinations, either digital or paper based. The use of other types of examinations such as clinical cases etc seem to be quite limited. There are virtually no oral exams in the programme except the final master thesis exam.

Recommended action:

- It is a positive development that practical training takes place in a skills centrefor students in clinical nutrition.
- The teaching format could use more student active learning styles, such as flipped classroom, contact appointments instead of lectures and case-based learning. Longer periods of practice are recommended.

e. Alignment between learning outcome, lectures and exams

The expected learning outcomes of the programme are clearly described in section 3.3. These include knowledge in areas related to nutrition and statistics, and skills related to meeting, diagnosing and evaluating patients as well as conducting nutrition research. Overall, the students are expected to have a general competence to "*treat patients, teach, train and do research in the municipal, primary and specialist health services; work on preventive nutrition and planning in Norway and internationally; work as a researcher and/or teacher within basic, clinical and epidemiological nutrition; work independently and collaborate with colleagues and other professionals; reflect on relevant academic, occupational and research ethical issues; reflect on their role as a clinical dietician, at both the individual and the social level, and maintain and develop their competence over time and contribute to knowledge development within the field of nutrition*".

Much of the curricula in the courses are aligned with these learning outcomes, with a strong basis of medical and scientific knowledge and an addition of clinical nutrition. Hence, the scientific content of the learning outcomes seems well covered by the courses and the written exams. However, the relatively modest volume of practical training, inter-professional learning (IPL) and focus on written examinations likely weakens other types of skills mentioned in the learning outcomes. Except the joint courses with the programme in medicine and odontology during semesters 2 and 4, IPL seems rather weak in that no practical training together with other professions exists during the program.

It is positive that digital examination platforms are being utilised. This would enable the use of e.g. interactive material. However, it is not specified whether the exams are traditional or have modern techniques/options been utilised. Exams should be a part of the learning process and the programme may consider 'case exams' (example from Kuopio: no classic exams, 'case exams', one patient per student, course, interview, nutritional therapy, written summary within 24 hours).

The evaluation report refers to a survey among members of KEFF in May 2018 (p 41). Here, "…*77% of respondents thought their education gave them enough knowledge for their professional work; however, 79% thought there were too little practice in hospitals and other institutions in the educations*." Of KEFF members completing the survey, 58% had graduated from University of Oslo.

This seems to have been a continuous comment also in student evaluations, already from the year 2014, ie that practice in hospital kitchen and nursing home ward is much less appreciated than practice among clinical dieticians. The student evaluation of the course ERN1010 conducted 15.02.17 reflects requests for increased practice and, in the course ERN4210 *Nutritional Biology* (Curriculum 2014) to have more student active learning, eg group teaching.

Recommended action:

- The current development in Norway of longer clinical practice for clinical dieticians, 14 weeks in the year 2021, is a step in the right direction.
- Students in Norway graduating from the programme are highly likely to later work as KEF in specialist hospitals. Hence, this should perhaps be stated as the first aim of the education. Activities to promote lifelong learning are not visible in the curriculum and could be further developed. The format of the examinations could become part of the learning process by using other formats than traditional written examinations.

f. Achieved results

The results achieved by students for the years 2014-2018 are presented in Table 4.3. For most courses in Curriculum 2015, over 95% of admitted students have passed their respective courses. Exception here is the course ERN1100 Nutrition Module 1, where only 79%, 50% and 78% of admitted students completed the course in the years 2015, 2016 and 2017, respectively. Also for Curriculum 2014, over 95% of admitted students have passed exams for most courses.

ERN1100 has 50-31% failed students—one likely explanation is that they switch to the medical program. Are even more active measures needed to prevent this? Are there other explanations? What is happening to the students after failure? What about the number of students admitted and the number of students examined (these numbers do not really fit in the report).

The examination and Master's thesis grades that have been given to students during 2014-2018 are shown in Figures 4.1 and 4.2. The cohort finishing their training in 2014-2015 have received more high grades than have students finishing their training in 2016-2018. What is the reason for this?

It is stated that there are more applicants than can be accepted (point 9). However, in Table 5.1 it is stated that the mean number of applicant offered admission is 97.6, but on average 55.8 applicant have accepted the admission offer.

However, despite the attractiveness of the programme, the report mentions that students switch to other study programmes either at the medical faculty or at UiO which results in a drop-out rate of about 20% (higher in 2018). The report however, does not mention the number of students who drop out without starting a new study programme or with unknown further activities. The report also does not mention the relation between no. of students starting the study programme and the no. of candidates who are fulfilling the programme, and the average time used to fulfil the master programme. From the appendices, it becomes clear that the number of drop-outs is substantially higher than the number of students switching to other study programmes.

The annual reports 2014 to 2017 also provide the number of students who fulfilled the study programme, and these numbers were 14, 14, 16 and 20 – thus substantially lower than the expected number calculated from students who started the programme and those who dropped out. Although there is no explanation provided, it can be assumed that there is either a massive change in the number of students taken up into the programme since 2014, or that students need substantially more time than 5 years to fulfil. This should be evaluated further.

Recommended action:

- The changes in the curricula from 2015 to decrease the number of students leaving the nutrition programme for the medical programme are good, but these need to be evaluated to see if they are sufficient.
- A more detailed evaluation of number of students leaving the programme for other programs or leaving the programme due to study failures, as well as time needed to complete the program, should be undertaken.

g. The programme's design

The studies are scheduled for five years of full-time studying. Semesters 2 and 4 are taught jointly with the medical and dentistry students.

The students have their first contact with patients in the course ERN1010 (*Introduction to clinical nutrition*). It is not specified how this is organized in practice, i.e. how many patients, meeting them individually or as a group, how to tie the experience in further studies.

Early contact with patients may be too early if the period between more intense contact with patients is too long.

In the course ERN1100 (*Nutrition module 1*) thoracic cavity and gross anatomy of thoracic wall is included. It remains unclear, why this part is not included in the course ERN2200R (*Physiology, nutrition and medical biochemistry*), since it includes the anatomical structure of the human body. How is it justified to have thoracic area in another course?

Furthermore, an ability to assess an acutely sick or injured person is one of the aims of this course. What is meant by this? Is it relevant for a dietitian? Probably this reflects that the course is together with the medical students. Basic first-aid skills are important for all health care professionals, but is it a relevant ability to assess these patients?

One very positive aspect in the curriculum is orientation to research. There are several courses in which this aspect is covered, e.g. ERN3100, ERN4200 and ERN4300.

Regarding course ERN3200 (*Preventive and clinical nutrition*) it is difficult to find the rationale of the order within the course. Why do e.g. cancer patients precede pregnant women? Shouldn't the more general topics be handled first followed by the very specific ones?

Regarding the Master's thesis, the topics for the Master's theses are approved by the programme Board at the Department of Nutrition. How is this done in practice? What happens if a topic is not accepted? These procedures are not explained.

The Master's thesis is a two-semester full time course, and gives 60 ECTS. Is it necessary for the thesis to be this large? It is of similar ECTS in Bergen and Gothenburg, but in Kuopio it is 30 ECTS.

The practical training periods are very short, 2.5 weeks altogether. As a comparison it is 14 weeks in Kuopio.

<u>Recommended action:</u>

- The design is generally very good and thorough. However, there are some parts that seem not that logical, pls. see text above.
- In point 14 it is considered to have more practical training in the curriculum. One way could be to have the Master's thesis being less extensive.

H. Facilitation of student-active learning

A few courses apply an active learning environment and include group teaching such as team-based learning, problem-based learning and learning-oriented, small-group teaching in basic subjects. These are ERN1100 (*Nutrition Module 1*), ERN22200R (*Physiology, nutrition and medical biochemistry, Module 2*), ERN3100 (*Dietary methods, metabolism and clinical nutrition*), and ERN3200 (*Preventive and clinical nutrition*). No details are provided on these activities, ie volume, facilities, students' comments etc. Seminars are used in many courses and these are appreciated by the students. E-learning moduls have been included in some courses also, and seminars where students present group work are included as part of most courses. In ERN4300 (*Clinical nutrition research and knowledge summary*) the students learn to conduct a clinical intervention study and produce a scientific article.

Mathjelpen is a very innovative part of the Master's degree programme, as well as the lectures organised by the student committee twice a year.

Ernæringspoliklinikken was in place in 2014 and this is a major achievement that strengthens the programme. It seems to be flourishing, with almost 3000 consultations in the year 2017. Further, the programme has developed a skills centre in clinical nutrition, where modern equipment that are key to clinical nutrition skills are housed. This strengthens the skills training of the programme considerably.

Recommended action:

- The use of a skills centre for training skills in clinical nutrition is excellent.
- Less emphasis could be places on traditional lectures and more teaching could be based on student active learning styles.

i. Student target group and recruitment

Similar to many other programmes in nutrition, the programme attracts mainly female students, with a relation of gender of about 90:10. There have been efforts to attract more male students (Equality project, 2015-17), however, results are so far not evident and there are still less than 10% male students (1-3 male students per year (out of 30 students).

The programme is quite attractive and the number of applicants is by far exceeding the number of available spaces (Table 5.1 in the report), meaning that a high grade point average is required from high school graduation.

In light of the attractiveness and overbooking of the study programme, it is important to prevent unrealistic expectations among future students (for example many students may be surprised by the focus on science in the first 2 years). It is therefore welcomed that efforts are being taken to inform potential applicants about this study programme, its focus and the high expectations. This is achieved by participating in open days, school visits and at education fairs.

Recommended action:

- From the report, the handling of supplementary uptake does not become clear. What are the rules for supplementary uptake, and how is it guaranteed that students entering the programme as late as in the 7th or 9th semester have sufficient nutritional knowledge and skills?

j. Internationalization

Student exchange and spending at least one semester at another (European) university is nowadays common in many study programmes. Therefore, it is quite surprising that internationalization does not really play a role at the master of clinical nutrition at the University of Oslo. The reasons for this are unclear, but perhaps, the 5 years integrated master education could contribute to this, as it fits less suitable into the common 3+2 model (bachelor + master) that is followed by many universities now.

The number of students who study at least one semester abroad is very low, and in 2017 and 2018, it appears that there were no outgoing students at all (Table 8.1).

The annual reports mention exchange agreements with Stellenbosch University in South Africa, and from 2017, with Ghent University in Belgium. Still, it does not appear that internationalization is a prioritized activity in the nutrition programme.

Indeed, Erasmus+ agreements would not only allow for students exchange, but also for staff exchange. This could be a favourable opportunity to increase the international awareness of both staff and students. There are several other study programmes of clinical nutrition in Europe which would be suitable for exchange programmes.

Indeed, also the mobility within Norway is not very distinct. Here, more synergies with the corresponding study programmes in Bergen and Tromsø could be identified and exploited.

Recommended action:

- setting internationalization as a high priority
- more exchange agreements within the Erasmus+ programme

k. Learning environment, resources and infrastructure

The learning environment seems to be appropriate and up-to-date. The human resources seem also very appropriate taken the number of students into account. There should be sufficient time resources per a member of a teaching staff to run thoroughly the courses they are involved in.

There is close collaboration with Oslo University Hospital. This Centre for Clinical Nutrition includes the out-patient nutrition clinic, that is essential for fruitful clinical teaching. In addition, there are the Skills centre and the national advisory unit on disease related malnutrition.

There seems to be a high level of joint actions with the students. The students are represented in the Programme Board and the Admissions Committee. Mathjelpen seems specifically innovative, giving the students a practical way to familiarise themselves with general questions on nutrition.

Recommended action:

- The learning environment is impressive. It could be used more intensively, though. In point 14 it is brought up that malnutrition is a topic that could be covered more intensively in the curriculum. So, more intensive collaboration with the national advisory unit on disease related malnutrition is warranted. Furthermore, could the out-patient nutrition clinic be

used more from the practical training point of view, that is also mentioned as a point to be developed?

I. Student satisfaction

The Norwegian Agency for Quality Assurance in Education (NOKUT) carries out student surveys each year that measures how satisfied Norwegian students are with the quality of their study programmes. The data available on Clinical nutrition include data from 2nd and 6th semester students, and are available from the NOKUT website (in 2016, and 37 students (57,8 % of eligible students) answered the questionnaire). The information can be found here: http://www.studiebarometeret.no/en/student/studieprogram/1110_mfm5-klern/

In the survey, the students were asked to what extent they agree on a statement on a scale from 1-5, where 1= do not agree and 5 = fully agree.

The students are asked about

1) Overall assessment: students overall satisfaction with the study programme
2) Inspiration: whether the study programme engages and challenges students
3) Expectations: the academic staffs expectations of the students
4) Study environment: social and academic environment, facilities and equipment
5) Teaching: teaching and dissemination of knowledge
6) Organization: information, administration and academic coherence
7) Working life: information about and contact with working life
8) Feedback: feedback from academic staff

The following table shows the results from UiO, and for comparison, the results from the study programme at UiB in Bergen, and the average rating for health, welfare and sport studies. It can be seen that UiO ranks quite similar to UiB and above the average in most domains.

Table 1: Ratings from Study barometer in 2017 from UiO and UiB, and average ratings in the main domains

Theme	Rating for clinical nutrition UIO (37 respondents)	Rating clinical nutrition UIB (10 respondents)	Average rating for health, welfare and sport studies
Overall assessment	4,1	3,8	3,9
Inspiration	4,0	3,6	4,0
Expectations	3,9	3,2	3,7
Study environment	3,8	4,0	3,8
Teaching	3,5	3,7	3,8
Organization	3,4	3,4	3,4
Working life	3,4	2,9	3,2
Feedback	3,2	2,5	3,2

Within the surveys, data from 2016, 2017 and 2018 are available for Clinical nutrition at UiO. http://www.studiebarometeret.no/en/student/studieprogram/1110_mfm5-klern/ A comparison with older data from studiebarometeret back to 2016 shows that the evaluation by the students was mainly unchanged over the last 3 years (note that some questions have been changed, thus no comparison was available). Again, results from UiB, Bergen are shown for comparison.

Table 2: comparison of studiebarometeret results in clinical nutrition at UiO and all health educations, 2016 to 2018

Theme	Rating from 2016, UiO	Rating from 2017, UiO	Rating from 2018, UiO	Rating from UiB, 2018
Overall assessment	4,0	3,6	4,1	3,8
Inspiration	4,2	3,7	4,0	3,6
Expectations	3,8	3,8	3,9	3,2
Study environment	3,8	3,5	3,8	4,0
Teaching	-	-	3,5	3,7
Organization	-	3,0	3,4	3,4
Working life	-	-	3,4	2,9
Feedback	2,9	3,1	3,2	2,5

Recommended action:

- Follow up the areas with the weakest results in the study barometer (working life, feedback, organisation)Follow up the areas that became weaker in the study barometer

m. Access for disabled students

The educational activity is primarily held at Domus Medica, where the medical faculty resides. Practice is carried out at the university hospitals; Aker, Rikshospitalet, Ullevål, Radiumhospitalet and various nursing homes and kinder gardens.

Educational activity is mostly conducted in public buildings. Pursuant to Norwegian building regulations public buildings are required to be accessible for persons with disabilities.

Domus Medica

The committee asked The Norwegian Association of Disabled to consider the facilities at Domus Medica, and their general feedback was that the building is well catered to disabled persons. One thing they noted that is not satisfying is the lack of an audio-frequency induction loop, as this excludes someone who is hard of hearing.

The building has two main entrances, and both are wheelchair accessible. Near the entrance on the south side there are two parking lots reserved for people with disabilities. There are five elevators in the building, and the inner measurements are 140 x 216 cm leaving enough room for most wheelchairs. Not all doors have a motorized door opener, something that makes it difficult for disabled persons to go through them. Most doors in the common areas are wheelchair accessible, however some deviate from the regulations regarding the height of thresholds and door width. There are six toilets tailored to disabled persons, one in each floor. None of the auditoriums or group rooms have audio-frequency induction loops installed. There are no designated resting rooms available.

The University states that facilitation for students with disabilities will be considered if there is a need for it.

Aker, Rikshospitalet, Ullevål, Radiumhospitalet and nursing homes

Practice is carried out at the university hospitals; Aker, Rikshospitalet, Ullevål and Radiumhospitalet as well as various nursing homes and kinder gardens in Oslo. No research has been conducted into the accessibility of the buildings, however the general compliance with building regulation is high in Norway and it is assumed that the buildings are accessible for people with disabilities. Students should therefore have little problems in these environments. However it may be necessary to plan ahead to make sure that a disabled student has a practice in the most accessible location.

Recommended action:

- Evaluation of the access of disabled students to the collaborating hospitals Exploration of the job opportunities for students with disabilities

o. Ongoing improvements

The programme currently runs in two versions and this is because changes were made to the programme with start 2013, so that some students still follow the previous curriculum. The implemented changes, which focused on minimizing drop-outs of students from the nutrition programme to the medical and dentistry programmes, should be evaluated when fully implemented.

The use of e-learning modules has increased and new modules were produced in 2018, for example in teaching the Nutrition Care Process.

The programme is continuously evaluated in that students evaluate their courses and moduls throughout their programme, and the Nutrition Programme Board reviews these evaluations and file a report on actions taken to the Faculty of Medicine. The appended reports demonstrate that actions are indeed taken when issues have been raised by students, such as too little practical training.

Recommended action:

- It is stated in the self-evaluation that results from the 2018 survey among KEFs in Norway will be integrated in future revisions of the programmeand this is a good sign. The survey results to a large extent reflect the Oslo program, and again comments on too little hospital practice was raised.
- The future perspectives raised in section 14 are commendable and should be implemented. Important points include more frequent and longer periods of clinical practice, more inter-professional training, and increased international exchange. Also, changes of the teaching and examination styles to incorporate more student active learning are important future actions.

p. Proposed improvements

Overall conclusions and recommendations: Overall, the curriculum and the design of the integrated master study in clinical nutrition at UiO is generally very good and thorough. It is embedded into an impressive learning environment, which includes the use the skills centre and the outpatient unit for training – this has to be highlighted as excellent. Still, the skills centre and the outpatient unit as well as the national advisory unit on disease related malnutrition could even be more intensively be used for training.

However, during the process of the evaluation, some weaknesses have been identified. The committee agrees upon that the short duration of practice periods and quite limited patient contact is among the main issues that could be improved. The committee members, however, are aware that practice periods are intended to be increased to 14 weeks upon the implementation of the so called 'RETHOS' guidelines. Indeed, when increasing the length of practical periods, this will require adaptations to reduce the work load in other courses. One suggestion from the evaluation team was to consider to reduce the master thesis, which is now 60 ECTS.

Other things that could relatively easily be improved are the use of modern learning/teaching and examination techniques and inter-professional training. The committee members recommend to increase the use of interactive learning methods, contact appointments instead of lectures and case-based learning, and flipped classrooms. Concerning the examinations, we recommend to use more oral exams (with or without patients, or use of 'paper patients'). Here, the facilities of the student outpatient unit and the skills centre could be also used.

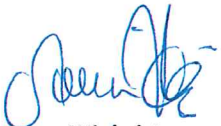
Specific points that could be considered for improvement:

- There is not specific course on building professional identity. However, most students who are graduating from the programme will work as dietician in a specialist hospital, and quite often they would be the only dietician in a hospital or be member of a small team. Such a course would for sure strengthen their professional identity.
- Consider to have a specific learning outcome for biomedical statistics or nutritional statistics.
- On programme level, there is a learning outcome on 'lifelong learning', however, this is not covered by learning outcomes from courses. Thus, integrate lifelong learning into one of the courses, or into a potential new course on professional identity.
- It should be considered that students in Norway graduating from the programme are highly likely to later work as KEF in specialist hospitals. Hence, this could be stated as the first aim of the education.
- It was difficult to evaluate the number of students leaving the programme in detail, and to know about their whereabouts. This should be followed up in detail, to clarify the mismatch between uptake and fulfilment. In this respect, the changes in the curricula from 2015 to decrease the number of students leaving the nutrition programme for the medical programme are good, but these need to be evaluated to see if they are sufficient.
  It would also be good to know in more detail the time needed to complete the program. In addition, it seems to be limited knowledge on the whereabouts of the alumnis. Here, a survey could be undertaken.
- From the report, the handling of supplementary uptake does not become clear. What are the rules for supplementary uptake, and how it is guaranteed that students entering the programme as late as in the 7th or 9th semester have enough nutritional knowledge and skills?
- Internationalisation seems to be low priority right now, taking the low number of exchange students into account. Here, the evaluation team recommends to set internationalization as a high priority and sign more exchange agreements, for example within the Erasmus+ programme
- Regarding disabled students, we recommend to further evaluate the access of disabled students to the collaborating hospitals and other facilities, also for those who would not require a wheel chair, but have other disabilities. Here, further exploration of the job opportunities for students with disabilities would be desirable.

The committee recommends to continue this excellent, coherent programme, and apply the suggested measures for further improvement of the programme. The committee is unanimously in its conclusion.

Bergen, 28. June 2019 Gothenburg June 28, 2019 Kuopio Jun 28, 2019 Oslo

Jutta Dierkes



Anna Winkvist

Ursula Schwab

signed

Astrid Andersen

Appendix 1: Learning outcomes on programme level and on course level

Learning outcomes Programme – courses

	1. sem.	2. + 3. semester		4. semester		5. sem.	6. semester			7. semester			8. semester		9. + 10. Semester
								Elective courses							
	ERN 1010	ERN 1100	Exphil 03	ERN 2200R	ERN 2300	ERN 3100	ERN 3200	ERN 3300	ERN 3400	ERN 4110	ERN 4200	ERN 4300	ERN 4400	ERN 4500	ERN4900
KNOWLEDGE															
describe human cells and the structure, functions and processes of different types of tissue		X													
describe human genetics, anatomy and physiology, the function and interactions of different organs, including the physiological, biochemical, cellular, genetic and immunological processes that control the body's functions		X													
describe changes in the normal processes in the body in connection with disease							X								
describe the structure, conversion and effect of micro-and macronutrients on the body's normal functions	X	x		X	(x)	X									
describe the pathophysiological significance of micro- and macronutrients in the initiation and development of the most common lifestyle diseases	(x)				X	X	X								
describe nutrition-relevant laboratory techniques, laboratory safety, ethical principles and statutory regulations												X			
describe the properties and nutrient content of foods and sources of nutrients in different diets	X	X				X	X								
explain central concepts and principles within modern epidemiology in general and nutritional epidemiology in particular		X									X				
explain the development of nutrition-related diseases over time, in Norway and globally		x		X		X									
explain how preventive nutrition and nutrition policy have developed and are organised nationally and internationally, incl methods for changing diet behaviour in different population groups and methods for evaluating public health interventions	(x)						X								
describe the knowledge base for the official dietary advice and nutritional recommendations	(x)				X									X	
describe methods for monitoring and evaluating nutritional status in different groups of patients	(x)					x	X						x		
describe nutritional problems related to surgery and intensive nutrition, including indications, contraindications and complications of enteral and parenteral nutrition													X		
describe the responsibilities and tasks of clinical dietitians, including the main provisions of the Norwegian Act relating to Health Personnel													X	X	
explain how nutrition work is organised in the health and care sector													X		
explain key types of study designs used in nutrition and medicine research, and the main statistical analysis methods		x								x		X			

Skills

	1. sem.	2. + 3. semester		4. semester		5. sem.	6. semester			7. semester			8. semester		9. + 10. Semester
								Elective courses							
	ERN 1010	ERN 1100	Exphil 03	ERN 2200R	ERN 2300	ERN 3100	ERN 3200	ERN 3300	ERN 3400	ERN 4110	ERN 4200	ERN 4300	ERN 4400	ERN 4500	ERN4900
SKILLS															
communicate with patients and their relatives		X													
use different screening tools to chart nutritional risk	X						X						X		
chart nutritional status, based on food intake, anthropometry, clinical and biochemical measurements, physical findings and patient background	X			X	X	X							X	X	
analyse and interpret collected information, compare this with criteria, recommendations and guidelines, and apply this knowledge to make a nutritional diagnosis				X										X	
discuss the study design of dietary surveys and apply different types of dietary assessment methods in different study designs						X									
discuss and assess the structure of food databases and apply them in the light of methodological designs and limitations	(x)														
recognise and discuss different epidemiological study designs											X				
discuss how societal and individual factors affect diet-related behaviour in different population groups, nationally and internationally		(x)													
discuss and explain the reasoning behind dietary recommendations, nutritional recommendations and nutritional needs for different populations						X									
use nutrition-related medical diagnosis codes														X	
provide adapted nutritional treatment for juvenile and adult patients with nutritional problems related to food intake, clinical condition and psychosocial circumstances							X							X	
provide dietary guidance to individuals and groups to prevent and treat lifestyle diseases					X	X	X								
monitor, evaluate and document the efficacy of nutritional treatment					X		x						X	X	
formulate a scientific research question, compare and discuss literature that casts light on the problem, and draw a conclusion															X
plan and carry out an independent, limited research project in accordance with research ethical norms, under supervision	(x)											X			X
communicate the results from literature reviews and project and research work, in writing and orally							X					X			x
use modelling tools to plan, implement and evaluate theory- and evidence-based nutritional interventions in different population groups															
communicate dietary advice to the general public and to different population groups to prevent nutrition-related diseases	X														

General competence

	1. sem.	2. + 3. semester		4. semester		5. sem.	6. semester			7. semester			8. semester		9. + 10. Semester
								Elective courses							
	ERN 1010	ERN 1100	Exphil 03	ERN 2200R	ERN 2300	ERN 3100	ERN 3200	ERN 3300	ERN 3400	ERN 4110	ERN 4200	ERN 4300	ERN 4400	ERN 4500	ERN4900
GENERAL COMPETENCE													X	X	
treat patients, teach, train and do research in the municipal, primary and specialist health services	(x)											X			(x)
work on preventive nutrition and planning in Norway and internationally	(x)	(x)			X		X								
work as a researcher and/or teacher within basic, clinical and epidemiological nutrition						X	x				X	X	X		(x)
work independently and collaborate with colleagues and other professionals						X					X			X	
reflect on relevant academic, occupational and research ethical issues	(x)					X	X								(x)
reflect on their own role as a clinical dietitian, at both the individual and the social level		(x)				X							X		
maintain and develop their competence over time and contribute to knowledge development within the field of nutrition															