Needs assessment
The Netherlands

1. **Overview of the needs assessment and partners involved**

As agreed in the HEAL consortium and following the instructions in the Need Analysis Guide, Maastricht University has conducted a Needs Assessment (NA) procedure with the aim to better understand the current situation, challenges and desires for future health care internships among students and teaching staff. The guiding research questions for this procedure were:
   1. What needs do the students who are carrying out their hospital internships have, in academic and psychosocial terms?
   2. And arising from those needs, what are their demands and how can such requirements be addressed?

The needs assessment engaged medical students in their clinical years of studying, teaching staff from various clinical disciplines and educational coordinators.

In this NA, the partners involved included:
- Maastricht University, in particular the School of Health Professions Education (SHE) at the Faculty of Health, Medicine and Life Sciences (FHML). FHML is the largest faculty of Maastricht University, with 5100 students and 3000 staff members, 30% of them non-Dutch. The faculty covers 4 BSc and 12 MSc programmes covering a broad range of health sciences. SHE is FHML's graduate school for education, research and innovation in health professions education. SHE provides high quality multidisciplinary research and teaching aimed at the improvement of health professions education.
- Maastricht University Medical Centre (MUMC+) is the academic hospital that in addition to tertiary referral care and top-level clinical patient care, includes research, education and training, and valorization in its core tasks.
- Catharina Hospital Eindhoven is one of the main peripheral teaching hospitals that Maastricht students visit as part of their clinical rotations.

As a brief background information, we'd like to highlight some key characteristics of the Maastricht medical curriculum:
- 3 year BSc preclinical education, competency based, Problem Based Learning, integrated modules with increasing intensity of (simulated and real) patient contact throughout the years. Heavy focus on (physical examination, communication and procedural) skills education in our low-tech skillslab. Assessment through integrated modules exams (MCQ & Open-ended), assignments, portfolio reflections on competency development guided by a mentor.
- 3 year MSc clinical education. Compulsory rotations in Internal Medicine (12 weeks), Surgery (12 weeks), Gynaecology & Obstetrics & Paediatrics (10 weeks), Neurosciences (Neurology and ENT or ophthalmology) (18 weeks), Social Medicine & General Practice (12 weeks). 2 electives (8 and 10 weeks). 18 weeks research internship and 18 weeks transition rotation ('senior clerkship') in a field of choice. Programmatic assessment (no summative exams, frequent formative feedback collected in an online portfolio, guided by a mentor). Students rotate through different academic and peripheral hospitals. They spend a minimum of 6 weeks on the same ward to become a part of the health care team and join in patient care rather than observing.

2. **Methods used to gather information**

Some particularities to the local context at Maastricht University and the Maastricht University Medical Centre (MUMC) included the availability and seniority of students and the planning of their academic calendar, the holiday season in July/August, a scheduled Medical Education conference late August, and the (incompatible)

busy calendars of clinicians. After considering these limitations and opportunities, we have decided to conduct the NA employing a mix of focus group discussions, semi-structured and informal individual interviews.

Focus Group Discussions (FGD)
We conducted two Focus Group Discussions on the 22nd and 23rd of June 2022, with a total of 10 medical students. Students were recruited through convenience sampling through the network of one of the researchers (JvdB). A group of 20 students towards the end of their 5th year of training was approached by WhatsApp and invited to participate in a FGD during the final week of their General Practice / Social Medicine rotation. 12 students agreed to participate of which 10 could eventually join the sessions.
The FGD covered topics as suggested in the Question Book (Annex 8.1 of the NA Guide), discussing the students' teaching and learning experience, their expectations of good clinical education, their ideas on the implementation of innovations and technologies and their vision for the future of clinical education.
Next, the discussion delved deeper in the particularities of one specific proposed innovation, exploring its benefits, risks and requirements – loosely based on the De Bono's thinking hats framework.
FGD lasted between 50 and 65 minutes. Participants did not receive any compensation for their participation but were invited to join the next phases of the project.

Individual interviews
Between August and October 2022, interviews took place with clinical teaching staff members and education coordinators from a variety of clinical rotations from two or Maastricht's main teaching hospitals. Staff was recruited based on their formal role in clinical rotation coordination and/or their affiliation with SHE.
The individual interviews were semi-structured, following the themes of the Question Book while leaving room to address specific challenges and concerns related to the individual departmental contexts.

All interviews and discussions were led by a facilitator (EB) and a scribe (JvdB). The FGDs were also recorded.

Data analysis
All FGD and interviews were comprehensively summarized based on notes taken during the interviews and by reviewing the tape recordings, within a day after the session. Both authors then highlighted the main findings and JvdB structured them using the templates provided. EB wrote the first draft of the narrative findings in this report, and both authors went over the summaries, coding templates and narrative findings iteratively until they agreed on the content and scope of the report.

3. Description of the participants

Students
Ten medical students (6 female, 4 male) participated in the FGDs. They were all studying in the fifth (and pre-final) year of the medical programme at Maastricht University and had at the time of the FGD completed all their clinical rotations. These included Internal Medicine (usually within 2 or 3 sub-specialties including among others: cardiology, pulmonology, gastro-enterology, nephrology, dermatology, oncology, emergency room); Surgery (including among others: general, orthopedics, trauma, urology, emergency room); Gynecology & Obstetrics; Pediatrics; Neurology; ENT or ophthalmology; Social Medicine and General Practice.

Teaching staff
We conducted individual interviews with a total of six (2 female, 4 male) staff members, representing clinical rotations in two hospitals, and 5 departments (Internal Medicine, Pulmonology, Surgery, Neurosciences and ENT). Five staff members are practicing clinicians and clinical supervisors and one is an education coordinator.

4. Strengths and limitations of the needs assessment

Strengths/
- Multi-centre & covering most hospital based disciplines
- Dedicated & motivated participants who are keen to take part in the follow-up

- Flexible approach to address participants' knowledge and interests

Limitations/
- Individual interviews rather than group discussions at staff level
- Limited number of participants in total
- Student group rather homogenous in terms of age & experience.
- De Bono loosely followed with student FGD but not enough participants to strictly adhere to proposed process

5. Key findings

Annex 1 and 2 to this report (based on Annex 2 and 3 of the NA Guide, respectively) present the main findings of the combined analysis of the FGD and Interviews conducted. Aggregated, the main themes discussed are presented here narratively.

Overall strengths
The overall picture that students and staff paint is that of a high quality, well-organized and effective organization and content of the clinical rotations. Strengths of the program, that may inspire others, include:
- Prolonged time in one workplace, where students play an active role in patient care including increased levels of responsibility throughout the clinical phase of their studies. They thus become a valued member of the health care teams. As a result, the learning moments for students are easier to see and grasp, and teaching becomes part of day to day patient care.
- Frequent individual supervision, observation and feedback, well-structured by the faculty through the 'programmatic assessment' e-portfolio tool that guides asking for and giving feedback
- Strong integration between theory and practice through smooth collaboration between university and teaching hospital(s)
- Students experience current rotations overall as a good preparation for practice, including the advantage of being 'visible' in the workplace which often leads to job offers upon graduation.
- Peer groups of (+- 10) students who share education session, schedules and coach sessions throughout the 3Y program offer support and opportunities for personal development.
- A dedicated mentor for each students guides competency development and addresses hiatuses in a students' learning.

Concerns
Here, the students and staff differ quite significantly in their perspectives. To students, the main concerns include the strong focus on the hospital setting whereas a majority of medical graduates in the Netherlands works beyond hospital walls (in general practice, primary care, public health, elderly care, etc). They feel there is an imbalance between the context where they train and the future work context, and ask for more community based education in the clinical phase of their studies. They also fear that they miss out on certain (sub-)specialties during their rotations. The other concern students widely express is the high workload (estimated +- 50 hours/week) in the clinical phase.

Teaching staff expresses other concerns that do address changes in the hospital context and organization, including:
- Increasing numbers of students against increasing staff shortages. The staff workload (both for specialists and specialty trainees) is higher than ever which limits the time and opportunities for (bedside) teaching.
- Increasing numbers of patients / case load (as a result of ageing, treatment complexity and related complications, care seeking behavior) further contributes to high staff workload and pressing on teaching and learning opportunities for students.
- Staff dropout through illness and burnout is another, related, concern

- Super-specialization is becoming more common and valued, but there is a tension between this and preparing generic, 'basic' medical doctors for the labour market. It is sometimes difficult for a hepato-oncologist to guide the students to revise the physical examination of the thorax, for example.
- Increasingly 'defensive' medicine and "protocolisation" of care, limiting opportunities to challenge students to engage in critical thinking and clinical reasoning.
- Increasing administrative burden. One staff member described how, as a result, 'students show copy-cat behavior by spending a lot of valuable learning time behind a computer instead of near the bedside'

Resulting from all this, the main consequence for education quality is the lower frequency and quality of individual observation and feedback that students receive, and need for (tailored) professional development.

Current and proposed interventions / innovations
The different participants discussed a number and wide variety of potential interventions to 'tackle' the challenges discussed above. A few are mentioned under recommendations below. Generally, the suggestions mostly address a change in the way education and clinical training is organized and scheduled, and better guidance and preparation of supervising clinicians. An overall impression was that all participants are eager to join the follow-up process of 'co-creation' and to pilot any proposed intervention as part of the project.

6. Recommendations

Based on the current local Needs Analysis, opportunities for innovations mostly appear on the organizational and educational aspects of clinical training. Suggestions that seem promising and deserve further exploration, include:
- Stronger integration between out-of-hospital and in-hospital care in the education program. For example, can students, during their rotation in surgery, visit a patient at home one week post-op to assess their rehab, social situation, primary care needs?
- Develop and offer interactive e-learning or simulation modules that offer exposure to patients/clinical presentations/diseases/sub-specialties that are not covered in the rotation schedule for all students.
- Experiment with scheduling of education (more "just in time" teaching to reduce workload for students in the workplace)
- Consider flexible schedules in the workplace to reduce 'teaching work load' and allow time for reflection and assignments; 4 days per week in the workplace, including shifts, and 1 day for self-study would contribute to lifting a lot of the concerns addressed above

For any intervention or innovation to be successful, the participants in our NA interviews highlight the following considerations:
- Any intervention should, beyond the development, *not* lead to additional workload for staff *nor* students.
- A flexible set-up of any intervention to allow for asynchronous learning (eg an e-learning module that can be taken independently)
- Keep the desired integrated approach in mind (inpatient and primary care) and keep the strengths of the program
- Consider & allow for (more) staff training in education/teaching skills to facilitate 'low burden' education in the workplace.

7. Annexes

Annex A/ Data collection Tables - Students (annex 2 & 3 to the NA Guide)
Annex B/ Data collection tables – Staff (annex 2 & 3 to the NA Guide)
Annex C (executive summaries FGDs) and **Annex D** (executive summaries individual interviews) are available upon request.