

Thesis Labs
Leiden-Delft-Erasmus Universities

Global Women's Health

2025 - 2026



Universiteit
Leiden

 **TU**Delft

 ERASMUS UNIVERSITY ROTTERDAM

Interested in joining this Lab?

Get in touch with or submit your application online



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Caseholders



Leiden-Delft-Erasmus
Universities

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Challenge

Choose an assignment or bring your own!

You can **apply to one of the thesis assignments described below** or you can **apply with your own thesis theme or assignment** related to global women's health for which you already have your own supervisor at your home institution.

#A Postpartum haemorrhage (heavy bleeding after birth) treatment in low-resource settings

Postpartum haemorrhage (PPH) is one of the leading causes of maternal death worldwide. PPH means heavy bleeding after giving birth. While some bleeding is normal after childbirth, PPH is when the bleeding is much more than expected and can be dangerous if not treated quickly. While several interventions exist to manage PPH, they are not always effective or accessible. Medication is often the first line of treatment but doesn't work in all cases.

Assignment 1. Develop a balloon with haemostatic coating to manage PPH in low-resource settings

Research question:

How can we develop a balloon with haemostatic coating to manage PPH in low-resource settings?

About the assignment and caseholder:

The chair group of Obstetrics at LUMC wants to strengthen research into the prevention of health problems in women during pregnancy and childbirth. Previously a group of Technical Medicine students studied the development of a balloon with haemostatic coating to manage PPH. Haemostatic means something that promotes or accelerates the process of the body's own blood clotting, to stop or slow bleeding. The students didn't have enough time to explore this challenge in depth, and we are looking for a student to dive into this challenge.

Expected type of work:

Fieldwork, interviews, stakeholder analysis, design, statistics – but design in particular.

Available reports:

Yes available, can be sent when starting with the project.



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Assignment 2. Safe and effective use of a reusable vacuum pump for PPH treatment in low-resource settings

Research question:

Can vela®, the reusable vacuum pump, be safely and effectively used to treat PPH in low-resource settings?

About the assignment and caseholder:

In 2020, LAYCO established as a spin-off from the research group Surgery for All at TU Delft. Over the past years – and in co-creation with gynecologists from all over the world – LAYCO developed an innovative, reusable manual vacuum extractor called 'Vela'®. Since, Postpartum haemorrhage (PPH) is one of the leading causes of maternal death worldwide. PPH means heavy bleeding after giving birth. While several interventions exist to manage PPH, they are not always effective or accessible. We want to explore if we can be instrumental in solving this challenge by researching if the Vela can be safe and effectively used to stop the bleeding after giving birth.



Expected type of work:

Interviews, literature review, design.

The research challenge is still quite broad, depending on the student's expertise and interests, the research question and the scope of the work can be tailored accordingly.

Available reports:

<https://iosrjournals.org/iosr-jdms/papers/Vol13-issue11/Version-3/D0131131519.pdf>

<https://ojs.brazilianjournals.com.br/ojs/index.php/BJHR/article/view/68777/48749>

<https://pmc.ncbi.nlm.nih.gov/articles/PMC5371527/> <https://www.ncbi.nlm.nih.gov/books/NBK596675/>

#B (Female) cancer treatment

Assignment 3. Bridging gaps - digitalization to accelerate the elimination of cervical cancer

Research questions:

- What digital strategies can reduce disparities in cervical cancer prevention for marginalized groups?
- What low-cost and scalable digital innovation could improve HPV vaccination and screening coverage in low-resource settings?

About the assignment and caseholder:

Few diseases reflect global inequities as much as cervical cancer. Every two minutes a woman dies from cervical cancer, and over 90% of them lived in low- and middle-income countries. The Female Cancer Foundation (FCF) is a non-governmental organization focusing on cervical cancer prevention in low-resource settings through screening programmes. The programs are implemented by partners on national and local level to deliver respectful and effective screening services. FCF provides training for health staff, on-the-job coaching, technical advice and operational research.



FCF is a non-governmental organization, founded from a partnership of the departments of Gynaecology, Pathology, Immunohematology and Clinical Epidemiology from Leiden University Medical Center (LUMC). FCF is currently active in Bangladesh, Nepal, Uganda, Sierra Leone and Surinam.

Expected type of work:

Depending on your background this can be fieldwork, interviews, digital design and we welcome your own ideas.

Available reports:

Our annual reports are available on our website: <https://www.femalecancerfoundation.org/wp-content/uploads/2025/07/Annual-Report-2024-FCF-DEF-1.pdf>

#B (Female) cancer treatment

Assignment 4. Enhancing quality and access to cancer surgery in Sierra Leone

Research question:

How can we use technology to increase the quality of surgical education, and in which creative ways can we improve population awareness of the diverse types of cancer?

About the assignment and caseholder:

The project you would contribute aims to strengthen the surgical care system in Sierra Leone by enhancing its self-reliance, thereby reducing the number of unmet surgical needs and preventing avoidable loss of life due to lack of access to essential surgical procedures. The initiative also focuses on improving the quality of gastrointestinal surgery, with the goal of reducing post-operative complications, particularly in the treatment of cancers and gastrointestinal diseases. In addition, the project seeks to raise awareness among healthcare providers and the general population about the early symptoms of gastrointestinal conditions and cancer, enabling timely referrals at stages when curative treatment is still possible.

**Expected type of work:**

Both fieldwork and data analysis in Sierra Leone and writing (scoping) reviews from home are good options.

#C Sustainability and Global Women's Health

Assignment 5. Assessing medical waste created during clinical procedures in low-, middle- and high-income countries

Research question:

What is the amount of medical waste that is created during clinical procedures, for example, C-section (or others)?

About the assignment and caseholder:

There is a need to identify the medical waste that is created during clinical procedures in both low-, middle- and high-income countries to create awareness of this impact on climate change and to plan waste reduction strategies.

The assignment is part of the research line of the TU Delft Biomedical Engineering for Global Health on sustainable healthcare practices of the faculty of Mechanical Engineering at TU Delft. For more information, please visit: www.bmeforglobalhealth.com

Expected type of work:

Fieldwork, observations, surveys, photographs.



#D Essential medical equipment

Assignment 6. Assessing the availability of medical equipment in different settings in low- and middle-income countries

Research question:

What is the availability of essential medical equipment (as listed by WHO) and current barriers to use essential medical equipment in various low- and middle-income settings?

About the assignment and caseholder:

Identify the availability of essential medical equipment (as listed by WHO) and current barriers to use in various low- and middle-income settings. Focus will be on availability, effective and intended use, maintenance and repair of medical equipment in each setting.

The assignment is part of the research line of the TU Delft Biomedical Engineering for Global Health on increasing worldwide availability of medical equipment from the faculty of Mechanical Engineering at TU Delft. For more information, please visit: www.bmeforglobalhealth.com

**Expected type of work:**

Fieldwork, surveys, interviews, observations.

Data will be collected through (online) surveys, observations and interviews with hospital staff.

Available reports:

<https://link.springer.com/article/10.1007/s12553-018-0275-x2>

<https://academic.oup.com/bjsopen/article/4/2/326/6061324?login=false>

#E Digitalization and global women's health

Assignment 7. Value, feasibility and ethics of leveraging digital behaviour data to improve maternal health outcomes

Research question:

What is the potential of using digital behaviour data in maternal health interventions in low- and middle-income countries?

About the assignment and caseholder:

Despite numerous interventions to improve maternal health in low- and middle-income countries, progress has stagnated. With recent changes in the funding landscape, smartly allocating limited resources becomes even more important. Research shows that socio-economic indicators and medical history strongly influence maternal health risks.



PharmAccess has tracked these types of indicators for over 80.000 women in our MomCare program, allowing us to monitor and improve quality of pregnancy journeys, influence behavior and smartly allocate financial resources for optimal outcomes. In today's world, Instagram is able to predict which shoes you will buy next. Similarly, we want to learn how digital behaviour of pregnant women would be useful and feasible as an additional data-source for our risk prediction models and financial allocation. This assignment will focus on literature research and interviews with experts in the fields of commercial data practices, public health, ethical data re-use, service design etc. The expected result is a report on the potential value, feasibility and ethics of using digital behaviour in maternal health interventions.

Expected type of work:

Literature research, interviews, stakeholder analysis, data variable selection

Available reports:

Internal reports are available for the matched student.

#E Digitalization and global women's health

Assignment 8. Digital reminders for histopathology results to improve treatment initiation in gynecological cancers at KCMC Hospital, Moshi, Tanzania

Research question:

Does a digital reminder system for histopathology results improve timely treatment initiation in women with gynecological cancers at KCMC Hospital?

About the assignment and caseholder:

Timely histopathology reporting is critical for diagnosis and initiation of treatment in gynecological cancers (cervical, ovarian, endometrial, vulvar cancers).

In many tertiary centers, including KCMC, delays occur due to:

- Limited pathology capacity and long turnaround times.
- Communication gaps between laboratories, clinicians, and patients.
- Patient loss to follow-up while awaiting results.



Digital reminder systems (SMS/voice notifications to patients and clinicians) could reduce these delays, leading to earlier treatment initiation and improved outcomes.

Objectives:

- To evaluate whether digital reminders of histopathology results reduce the time from biopsy to treatment initiation among women with gynecological cancers at KCMC also including a literature study on implementation of digital reminders in other sites;
- To explore patient and provider perceptions of digital communication for pathology results;
- Draft an implementation and validation plan together with KCMC.

Expected type of work:

Literature (desk) review, interviews/observations to detail the current patient journey, design possible interventions to mitigate delays and to reduce the number of patients-lost to follow up.

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