Module Handbook

for the continuing education
Master of Science program in
Global Health

as of: September 2026

Study Program Director	Prof. Dr. Walter Bruchhausen Section Global Health Medical Faculty, University of Bonn Venusberg-Campus 1 53127 Bonn	master.globalhealth@ukbonn.de
Study Program Coordination	Section Global Health Medical Faculty, University of Bonn Venusberg-Campus 1 53127 Bonn	master.globalhealth@ukbonn.de

Table of Contents

Compulsory Modules (‚Pflichtmodule‘)

PM1	Introduction to Global Health	3
PM2	Global Clinical Care and Non-Communicable Diseases	6
PM3	Infectious Diseases, Prevention and Control	9
PM4	Health Systems Management and Policies	12
PM5	Preparation for the Master’s Thesis	15
PM6	Master’s Thesis and Colloquium	17

Elective Modules (‚Wahlpflichtmodule‘)

WPM1	Food and Nutrition Security in the Framework of Global Health	19
WPM2	Humanitarian Aid and Development Cooperation in Health	22
WPM3	Spatial Health Assessment	25
WPM5	Sustainable Development as Guiding Principle for Health	27
WPM6	Global Oncology	30
WPM7	Global Surgery	32
WPM8	Global Child Health	34

Abbreviations:
E = excursion
L = lecture
o = online
prT = practical tutorial
S = seminar
T = tutorial
W = workshop

Notes:
Each credit point equals a workload of 25 hours.
(→ PM#) Indicates module for further study

Module:
Introduction to Global Health

Module ID/Code: PM1

UNIVERSITÄT BONN

1. Content and intended learning outcomes

Content

Theoretical and historical fundamentals

- Differences between Global Health, International Health, Public Health, Tropical Medicine (→ PM3)
- Definitions and Concepts in Global Health
- Conceptual sources of Global Health: Colonial medicine, Social medicine, development aid/cooperation, UN system, Humanitarianism (→ WPM2)
- Neighboring concepts: Planetary Health, One Health, Ecosystem Health (→ WPM1, WPM5)

Normative and political frameworks

- Global Health Ethics: Equity, Justice, Solidarity, Care
- Human Rights, particularly the Human Right to Health (Alma Ata, General Comment No 14, AAAQ approach) and Sexual & Reproductive Health Rights
- Vertical approaches: Disease control, SPHC/GOBI-FFF, MDGs
- Horizontal approaches: Social medicine, PHC, Sustainability, SDGs (incl. NCDs and UHC, → PM2, → PM4), HSS
- Governance of Global Health (WHA/WHO and UN vs. PPPs, national interest, fragmentation)
- The Big Global Health Players: UN, WHO, World Bank, GFAMT, GAVI
- Main actors in development and humanitarian aid (→ WPM2)

Empirical findings on health and disease

- Determinants of health (Lalonde, Dahlgreen/Whitehead, Bozorgmehr)
- Social determinants (Marmott/WHO Europe and worldwide)
- Economic determinants (Macroeconomics and Health, Preston Curve → PM4)
- Commercial determinants (food, drinks, tobacco, pharmaceuticals, health care → WPM1, → PM2, → PM4)
- Climate Change and Health (causality, nexus, mitigation/adaptation → WPM5)
- Measuring ill-health: epidemiology, DALY, QALY, mortality, morbidity, surveillance (→ PM2, → PM4)
- Measuring health care: infrastructure, performance, staffing, monitoring, quality (→ PM4)

Socio-cultural aspects/Medical Anthropology

- Medical pluralism: Medical System, Disease/Illness/Sickness, Religion/Spirituality and Health/Medicine, Social Lives of Medicines (→ PM4)
- Health-seeking behavior: Healer (s)hopping, Therapy managing group
- Traditional healing: comparison and interaction with bio-/modern medicine
- Corruption in health care

Public Health concepts

- History: Social reform, the example of water and sanitation
- Host-agent-environment paradigm
- Modes of prevention and health promotion (including Ottawa Charta)
- Environmental Health (→ WPM5)
- Hygiene and the example of Anti-microbial resistance (AMR → PM3)

Health Care Organization

- Quality management

	• Implementation and Evaluation Research Methods and Skills • Reading scientific texts • Summarizing scientific and non-scientific texts • Structuring thoughts and oral contributions Epidemiological Concepts: incidence/prevalence
Learning outcomes	The students are able to … • reproduce and describe the content mentioned above in their own words. • assign health interventions to corresponding institutions, motives, goals and effects. • classify and assess facts in the overall context with the help of normative and political frameworks as well as scientific knowledge. • abstract from individual cases, name the underlying socio-cultural, economic, political and historical structures and draw a connection to empirical findings. • transfer aspects of political and academic concepts on health and interventions to situations they are familiar and not familiar with. • understand, critically analyze, assess and summarize (in their own words) a scientific text. • analyze health policy documents with regard to objectives, values, means and arguments. • correlate their own professional experience and previous knowledge with scientific and health policy statements.

2. Teaching and learning methods

Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
S/oS, T/oT	Theoretical and historical fundamentals	English	<35	10	25
S/oS, T/oT	Empirical findings on health and disease	English	<35	12	30
S/oS, T/oT	Normative and political frameworks, socio-cultural aspects	English	<35	20	50
S/oS, T/oT	Public Health and Health care organization	English	<35	8	20

3. Prerequisites for the module

Compulsory	None
Recommended	None

4. Degree program allocation

Study program	compulsory/ elective	Semester
Global Health	compulsory	1
Humanmedizin	elective	5-10

5. Requirements for the award of credits (ECTS)		**6. Credits**
Required achievements	Presentation and critical assessment of a preset academic paper (“Journal Club”)	5
Assessment (incl. weighting) and examination language	100% oral exam English	

7. Frequency	**8. Workload**	**9. Duration**
☒ Winter semester ☐ Summer semester	Full-time students: 50h on-site teaching (incl. Journal Club)	Full-time students: 3,25 weeks

☐ Winter and summer semester	75h self-study time Part-time students: 25h asynchronous online teaching 20h synchronous online or on-site teaching (incl. Journal Club) 80h self-study time	 Part-time students: up to 9,75 weeks
Module coordination		
Lecturer	Prof. Dr. Walter Bruchhausen, Prof. Dr. Andreas Schultz, Dr. Johannes Leidinger, Dr. Reinhard Klinkott, Dr. Eva Mertens, Monika Pohle, Juliette Papy et al.	
Module coordinator	Prof. Dr. Walter Bruchhausen	
Institute/Department	Section Global Health, University Hospital Bonn	
Further information		
(Reading lists, information links etc.)	• Barber, R. M. et al. (2017) Healthcare Access and Quality Index based on mortality from causes amenable to personal health care in 195 countries and territories, 1990–2015: A novel analysis from the Global Burden of Disease Study 2015. *The Lancet*. 390 (10091), 231-266. • Farmer, P., Kleinman A., Kim, J. & Basilico, M. (eds.) *Reimagining Global Health.* Berkeley, University of California Press, pp. 1-32, 245-286. • Kawachi, I., Lang, I. & Ricciardi, W. (eds.) (2020) *Oxford Handbook of Public Health Practice* (4th ed.). Oxford, Oxford University Press. • Koplan, J. P. et al. (2009) Towards a common definition of global health. *Lancet.* 373 (9679), 1993-1995. • Lalonde, M. (1981) *A New Perspective on the Health of Canadians*. Ottawa, Minister of Supply and Services Canada. Available from: http://www.phac-aspc.gc.ca/ph-sp/pdf/perspect-eng.pdf [Accessed 3rd February 2023]. • Nichter, M. (2008) Global Health. Why Cultural Perceptions, Social Representations, and Biopolitics Matter, The University of Arizona Press. • Skolnik, R. (various editions) Global Health 101. Jones & Bartlett Learning. • Tulchinsky, T, H. & Varavikova E. A. (2015) *The New Public Health* (3rd ed.). Cambridge, Elsevier Academic Press. • UN Committee on Economic, Social and Cultural Rights (2000), *General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12)*, CESCR 22. Sess, E/C.12/2000/4, No. 11. • WHO/UNICEF (1978) *Primary Health Care. Declaration of Alma Ata cdn.who.int/media/docs/default-source/documents/almaata-declaration-en.pdf?sfvrsn=7b3c2167_2* • WHO – Commission on Social Determinants of Health (2008) *Closing the gap in a generation. Health equity through action on the social determinants of health.* WHO/IER/CSDH/08.1. Geneva, World Health Organization. Available from: https://www.who.int/publications-detail-redirect/WHO-IER-CSDH-08.1	

Module: **Global Clinical Care and Non-Communicable Diseases** Module ID/Code: PM2	UNIVERSITÄT BONN

1. Content and intended learning outcomes	
Content	Introduction to global perspectives on non-communicable diseases (NCDs) • Overview • DALYs and QALYs (→ PM1) • Economic impact of NCDs Child Health • Integrated Management of Childhood Illness (IMCI) • Extended Programme on Immunisation (EPI) • Neonatology, Paediatric Critical Care and Emergencies • Paediatric infectious diseases (→PM3) Oncology • Global epidemiology • Screening and prevention • Access to treatment (→ PM4) Palliative Care • Global need for Palliative Care • Global morphine availability (→PM4) Cardio-Vascular and Respiratory Diseases • Global epidemiology • Access to treatment (→ PM4) • Environmental exposure Neurology, Psychiatry and Mental Health • Global epidemiology and impact • The example of epilepsy • Major depression • Stigma and discrimination (→ PM1) Maternal & Women's Health • Prevention in women's health – gender, inequality, screening for cancer, antenatal care • Obstetric services – maternal mortality, hemorrhage, over- and underuse of Caesarian section • Socio-cultural impact on maternal health – contraception, abortion, STDs, HIV, FGM, violence/rape Surgery • Primary, Essential, Emergency and Global Surgery: e.g., Bellwether Procedures • Challenges and opportunities of surgical super specializations • Ortho-plastic and reconstructive surgery under limited resources (→ WPM2) Research Methods and Skills • Interpretation of epidemiological tables, graphs and figures, DALYs, QALYs • Scientific presentation with slides
Learning outcomes	The students are able to …

	• reproduce and describe the content mentioned above in their own words. • explain preventive, curative, rehabilitative and palliative measures to address NCDs and injuries, women's and children's health. • understand and assess the impact of a disease or injury type on a society. • decide on need and suitable provision of preventive, curative, rehabilitative and palliative measures concerning NCDs and injuries, women's and children's health. • argue for urgency and socio-economic impact of respective interventions on diseases and injuries. • prioritize interventions according to criteria such as frequency of occurrence. • interpret epidemiological figures. • compare dimensions of impact, e.g., by appropriately estimating frequencies, dealing with relative numbers and thinking in numerical dimensions. • critically handle data and question their origin.

2. Teaching and learning methods

	Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
	S/oS, L/oL	Introduction to NCDs	English	<35	4	10
	S/oS, L/oL	Child Health	English	<35	8	20
	S/oS, L/oL	Oncology	English	<35	4	10
	S/oS, L/oL	Palliative Care	English	<35	6	15
	S/oS, L/oL	Cardio-Vascular and Respiratory Diseases	English	<35	4	10
	S/oS, L/oL	Neurology, Psychiatry and Mental Health	English	<35	10	25
	S/oS, L/oL	Maternal & Women's Health	English	<35	8	20
	S/oS, L/oL	Surgery	English	<35	6	15

3. Prerequisites for the module

compulsory	None
recommended	None

4. Degree program allocation

	Study program	compulsory/ elective	Semester
	Global Health	compulsory	1
	Humanmedizin	elective	5-10

5. Requirements for the award of credits (ECTS)		**6. Credits**
Required achievements	short presentation *or* short essay on a given topic	5
Assessment (incl. weighting) and examination language	100% oral exam English	

7. Frequency	**8. Workload**	**9. Duration**
☒ Winter semester ☐ Summer semester ☐ Winter and summer semester	Full-time students: 50h on-site teaching (incl. study achievement) 75h self-study time Part-time students: 25h asynchronous online teaching 20h synchronous online or on-site teaching (incl. study achievement) 80h self-study time	Full-time students: 3,25 weeks Part-time students: up to 9,75 weeks

Module coordination

Lecturer	PD Dr. Oliver Henke, Prof. Dr. Andreas Schultz, Dr. Jan Wynands, Prof. Dr. Waltraut Merz, , Prof. Dr. Lukas Radbruch, Dr. Noa Freudenthal, Prof.Dr. Peter Kaiser, PD Dr. Theodor Rüber, Dr. Judith Hillner, Dr. Max Rost, PD Dr. Tobias Bauer, Dr. Hannah Bleichroth et al.
Module coordinator	Dr. Jakob von Herder
Institute/Department	Section Global Health, & Center for Pediatrics & Center for Obstetrics and Gynecology & Clinic for Palliative Medicine & Clinic for Epileptology, University Hospital Bonn
Further information	
(Reading lists, information links etc.)	• Green, R. J. & Wittenberg, D. F. (eds.) (2014) *Coovadia's Paediatrics and Child Health: A manual for health professionals in developing countries* (7th ed.). Oxford, Oxford University Press. • Henke, O. et al. (2023) International cooperation to fight cancer's late-stage presentation in low- and middle-income countries. *Clinical & Experimental Metastasis*. 40, 1-3. Available from: https://doi.org/10.1007/s10585-022-10196-1. • Howlett, W. (2012) *Neurology in Africa. Clinical Skills and Neurological Disorders*. Bergen, University of Bergen. • King, M. H. & Mola, G. (eds.) (2006) *The Marie Stopes International Partnership Guide to Safe Motherhood in Developing Countries* (2nd ed.). London, Marie Stopes International. • Lancet Commission on Palliative Care and Pain Relief Study Group (2017) Alleviating the access abyss in palliative care and pain relief – an imperative of universal health coverage: the Lancet Commission report. *The Lancet*. 391, No. 10135. • Myatra, S. N., Tripathy, S. & Einav, S. (2021) Global health inequality and women – beyond maternal health. *Anaesthesia 76* (Suppl. 4), 6-9. • Subrahmanian, K. & Swamy, P. (2018) *Global Child Health. A Toolkit to Address Health Disparities*. Cham, Springer. • Swaroop, M. & Krishnaswami, S. (eds.) (2016) *Academic Global Surgery*. Cham, Springer. • WHO & Johns Hopkins Bloomberg School of Public Health (eds.) (2018) *Family Planning – A global handbook for providers*. Baltimore and Geneva, CCP and WHO. Available from: https://www.who.int/publications/i/item/9780999203705 [Accessed 4th February 2023].

Module:
Infectious Diseases, Prevention and Control

Module ID/Code: PM3

UNIVERSITÄT BONN

1. Content and intended learning outcomes

Content

Basics in medical microbiology, infectious diseases, immunology, prevention/control

- Viruses, bacteria, fungi, parasites – definitions, transmission, stages
- Institutions and stakeholders (→ PM1), surveillance systems
- Theoretical frameworks (NTDs, One Health, Zoonotic Diseases, etc.)
- Socio-cultural and economic aspects (→ PM1)
- Vaccines and Immunization: Basics and specific vaccine-preventable diseases (e.g., Tetanus, Meningococcal meningitis, Anthrax, Measles); specific and unspecific defense, cells of the immune system
- Epidemiology: Epidemiological research methodology (e.g., description, interference/ correlation, confounders, hypothesis, odds ratio/relative risk, transmission, risk factors), study types – ecological, cross-sectional, case-control, cohort, randomized control trials
- Prevention and control of:

Antimicrobial resistance (AMR)

- Political actors, programs, initiatives, Antimicrobial stewardship
- AWaRe classification (WHO)
- Relevant pathogens (e.g., Carbapenem-resistant Enterobacteriaceae, MRSA incl. PVL, VRE)
- Antimicrobial substance pipeline

Diarrheal and other enteric pathogens

- Bacterial infections (Cholera, Campylobacter, Salmonella incl. typhoid fever, Yersinia, enteropathogenic *E. coli*)
- Viral infections (Rota, Noro, Hepatitis A and E, Polio)
- Protozoal/parasitic infections

Respiratory tract infections

- Influenza, RSV, Pertussis, Pneumococci, Scarlett fever

Neglected tropical diseases (NTDs), Vector-transmitted and Zoonotic infections

- Case vignettes incl. schistosomiasis, soil-transmitted helminths, African trypanosomiasis, leishmaniasis, scabies, *Echinococcus,* Dengue, Chagas, Toxoplasmosis, Malaria, Chikungunya, Zika, Lassa fever, yellow fever, rabies, brucellosis

Emerging infectious disease threads

- Selected case studies, e.g., Mpox, Coronaviruses (incl. COVID-19), Ebola

Sexually transmitted diseases

- Bacteria, e.g., Syphilis, Gonorrhea, Chlamydia and mycoplasma infections
- Viruses, e.g., HIV/AIDS, Hepatitis B and C (D), HPV

Occupational health

- Infectious disease risks of different pathogens
- Hygiene in different work environments
- Protection of healthcare workers

Environmental hygiene

- Air pollution
- Waste and waste management: Infectious and toxic waste; waste in health care institutions
- Water, Sanitation and Hygiene (WASH): Water-related diseases (Bradley classification), transmission pathways
- Water security

Learning outcomes	The students are able to … • reproduce and describe the content mentioned above in their own words. • assign suitable prevention and control strategies to corresponding infectious diseases. • classify and assess aspects in the overall context of disease prevention and control with the help of theoretical frameworks as well as the current state of evidence in the relevant field of medical research. • understand, critically analyze, assess and summarize (in their own words) different infection prevention and control strategies in the context of different infectious diseases in relationship to transmission, course of disease, vaccinations and therapeutic options. • identify gaps in tools and strategies to prevent and control infectious diseases in different settings and develop ideas for applicable counter-measures.

2. Teaching and learning methods

	Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
	S/oS, T/oT, /oL	Basics	English	<35	10	35
	S/oS, T/oT, L/oL	Risk Factors, Treatment, Prevention and Control of Selected (Groups of) Diseases	English	<35	40	90

3. Prerequisites for the module

compulsory	None
recommended	None

4. Degree program allocation

	Study program	Compulsory/ elective	Semester
	Global Health	Compulsory	1
	Humanmedizin	Elective	5-10

5. Requirements for the award of credits (ECTS)		**6. Credits**
Required achievements	None	5
Assessment (incl. weighting) and examination language	100% written exam English	

7. Frequency	**8. Workload**	**9. Duration**
☒ Winter semester ☐ Summer semester ☐ Winter and summer semester	Full-time students: 50h on-site teaching (incl. course work) 75h self-study time Part-time students: 50h asynchronous online teaching 10h synchronous online or on-site teaching (incl. course work) 65h self-study time	Full-time students: 3,25 weeks Part-time students: up to 9,75 weeks

Module coordination

Teacher	Dr. Eva Mertens, Dr. Katharina Last, Prof. Cihan Papan, Dr. Ute Klarmann-Schultz et. al.
Module coordinator	Dr. Eva Mertens
Institute/Department	Section Global Health & Institute for Hygiene and Public Health & Institute for Medical Microbiology, Immunology and Parasitology & Institute for Virology, University Hospital Bonn

Further information

(Reading lists, information links etc.)	• Farrar, J. & Manson, P. (2014) *Manson's Tropical Diseases* (23rd ed). Edinburgh, Elsevier Saunders. • Prüss-Üstün, A., Kay, D., Fewtrell, L. & Bartram, J. (2004) Unsafe Water, Sanitation and Hygiene. In: Ezzati, M., Lopez, A.D., Rodgers, A. & Murray, C.J.L. (eds.) *Comparative Quantification of Health Risks – Global and Regional Burden of Diseases Attributable to Selected Major Risk Factors*, Volume 2. Available from: https://apps.who.int/iris/handle/10665/42770 [Accessed 26th March 2023]. • Roser, M., Ritchie, H. & Spooner, F. (2021) *Burden of Disease*. Available from: https://ourworldindata.org/burden-of-disease [Accessed 14th March 2022]. • Ryan, K. J. & Ray, C. G. (ed.) (2004) *Sherris Medical Microbiology: An Introduction to Infectious Diseases* (4th ed.). New York, McGraw-Hill. • UNAIDS (2022) *HIV prevention 2025 road map – Getting on track to end AIDS as a public health threat by 2030*. Available from: https://www.unaids.org/en/resources/documents/2022/prevention-2025-roadmap [Accessed 26th March 2023]. • WHO (2009) *WHO guidelines on hand hygiene in health care.* Geneva, World Health Organization. Available from: https://www.who.int/publications/i/item/9789241597906 [Accessed 26th March 2023]. • WHO (2015) *Improving nutrition outcomes with better water, sanitation and hygiene: Practical solutions for policy and programmes.* Geneva, World Health Organization. Available from: http://www.who.int/water_sanitation_health/publications/washandnutrition/en/ [Accessed 26th March 2023]. • WHO (2019) *WASH in Healthcare Facilities. Practical Steps to Achieve Universal Access to Quality Care*. Geneva, World Health Organization. Available from: https://www.who.int/publications/i/item/9789241515511 [Accessed 26th March 2023]. • WHO (2022) *Global Antimicrobial Resistance and Use Surveillance System (GLASS).* Geneva, World Health Organization. Available from: https://apps.who.int/iris/rest/bitstreams/1483639/retrieve [Accessed 26th March 2023].

Module: **Health Systems Management and Policies** Module ID/Code: PM4	UNIVERSITÄT BONN

1. Content and intended learning outcomes

Content	Definitions, Theories and Policies: • General Systems Theory – Functions, Self-Regulation, Path Dependency • Competing Definitions and Concepts of Health Systems (→ PM1) • 6 Building Blocks of Health Systems according to WHO (→ PM1) Health Systems Model beyond Building Blocks: • Interactions between health systems goals and output (i.e. the building blocks) and population needs and outcomes (effects, ageing society, people with disabilities, caregivers, consumers, solidarity groups, mothers, etc.) • Interacting cross-cutting issues on national, regional and global levels • Community- vs. Facility-Based Health Systems; Community Participation/ Engagement (Empowerment) Governance & Leadership: • Levels – National and District Health Systems • Health Systems Strengthening and Reasons for Failure • Leadership Training – relevance, personal and team leadership, leadership styles, delegation and motivation • Working moral & attitude (including corruption prevention) Health Financing: • General – Objectives, Functions, Principles • Domestic and External Financing – Health Insurance, Country Examples • Joint Financing – Global Public-Private-Partnerships, e.g., GAVI, Global Fund, Covax Health Information: • Health Information Systems (HIS) – Key Functions, Expectations, Examples (→ WPM3) • Epidemiology – Repetition of Indicators, Tools, Surveillance, and Priorities (→ PM1) • Health Literacy – Concept, Impact, Improvement, e.g., Prevention & Screening • Communication: Risk Communication, Crisis Management Healthcare Workforce: • Importance – Facts, Figures, Shortage • Policies – Task Shifting, Ideal Mix, Examples, Global Strategy • Challenges and Reactions – Brain Drain/ Care Drain/ Exit Routes, WHO Initiative 'Workforce 2030' Essential Medicines and Health Technologies: • Medicines – Concept, Supply Chains, Quality Assurance, Regulatory Environment Including Harmonization • Technology – Definitions, HTA, Priority Medical Devices, Capacity-Building Health Service Delivery (→ PM2): • Quality – Organization, Performance, Indicators (QI/QM/QA) • Levels – Primary, Secondary, Tertiary, Task Sharing and Referral • Responsiveness – Clients' Satisfaction, Gender Equality, Vulnerable Groups

	• Patient Safety – Patient Safety Culture, Medical Error, Adverse Event, System Performance, Patient Safety in medium and low resource setting, high reliable organizing Research Methods and Skills • Reading and contextualizing policy documents • Citation practice and good academic practice • Literature search • Multi-, inter- and transdisciplinary research • Writing minutes and a result protocol
Learning outcomes	The students are able to … • outline the different aims, types, constituents, origins and norms of health systems. • highlight the most important factors and their preconditions for each building block. • distinguish between structural and procedural, internal and external, collective and individual causes of insufficient functioning in health systems. • identify weaknesses and threats of health systems or their building blocks and deduce possible causes. • identify potential for change to address these deficiencies in accordance with scientific findings and relevant policy documents. • argue for their reflected positions on past, ongoing or necessary health system reforms. • interpret and discuss policy documents, particularly documents issued by UN organizations and national governments. • summarize the main aspects of a seminar/lecture briefly and to the point, both in writing (as a protocol/minutes) and orally. • question and critically reflect upon their own and others' leadership behavior.

2. Teaching and learning methods

Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
L/oL, S/oS	Introduction & Cross-Cutting Issues	English	<35	8	16
L/oL, W	Governance, incl. Leadership Training	English	<35	10	19
L/oL, S/oS	Financing	English	<35	8	20
L/oL, S/oS	Health Information	English	<35	6	15
L/oL, S/oS	Health Workforce	English	<35	4	10
L/oL, S/oS	Essential Medicines and Health Technologies	English	<35	6	20
L/oL, S/oS	Health Service Delivery	English	<35	8	25

3. Prerequisites for the module

compulsory	None
recommended	None

4. Degree program allocation

Study program	compulsory/ elective	Semester
Global Health	compulsory	1
Humanmedizin	elective	5-10

5. Requirements for the award of credits (ECTS)		6. Credits
Required achievements	Protocol	5
Assessment (incl. weighting) and examination language	100% presentation with paper English	

7. Frequency	8. Workload	9. Duration
☒ Winter semester ☐ Summer semester ☐ Winter and summer semester	Full-time students: 50h on-site teaching (incl. study achievement) 75h self-study time Part-time students: 24h asynchronous online teaching 16h synchronous on-site teaching (incl. study achievement) 85h self-study time	Full-time students: 3,25 weeks Part-time students: 9,75 weeks

Module coordination	
Teacher	Prof. Dr. Walter Bruchhausen, Prof. Dr. Andreas Schultz, Dr. Jan Wynands, Kathryn Hauschild, PD Dr. Oliver Henke, Prof. Dr. Matthias Weigl, Dr. Nikoloz Gambashidze, Dr. Sibylle Gerstl, Dr. Daniel Opoku, Dr. C. Strupat, Dr. P. Marschall et al.
Module coordinator	Prof. Dr. Andreas Schultz
Institute/Department	Section Global Child Health, University Hospital Bonn

Further information	
(Reading lists, information links etc.)	• Amonoo-Lartson, R., Ebrahim, G. J., Lovel, H.J. & Ranken, J. P. (1984) *District health care: Challenges for planning, organization, and evaluation in developing countries.* London, Macmillan Publishers. • Farmer, P., Kleinman A., Kim, J. & Basilico, M. (eds.) (2013) *Reimagining Global Health*. Berkeley, University of California Press, pp. 133-211. • Lankester, T. & Grills, N. J. (2019) *Setting up community health and development programmes in low and middle income settings* (4th ed.). Oxford, Oxford University Press. • Pencheon, D., Guest, C. & Melzer, D. (eds.) (2006) *Oxford Handbook of Public Health Practice* (2nd ed.). Oxford, Oxford University Press. • Skolnik, R. (2019). *Global Health 101* (4th ed.). Burlington, Jones & Bartlett, pp. 117-163. • Stockman, D. (1994) *Community assessment: Guidelines for developing countries*. Rugby, Practical Action Publishing. • Walley, J. & Wright, J. (2010) *Public Health: An action guide to improving health* (2nd ed.). Oxford, Oxford University Press. • WHO (2016) Global strategy on human resources for health: Workforce 2030. Geneva, World Health Organization. Available from: Global strategy on human resources for health: Workforce 2030 [Accessed 04.10.2026]. • WHO (2000) *The world health report 2000: health systems- improving performance.* Geneva, World Health Organization. Available from: https://apps.who.int/iris/handle/10665/42281 [Accessed 15th February 2023]. • WHO (2012) *The world health report 2010: health systems financing – the path to universal coverage*. Geneva, World Health Organization. Available from: https://apps.who.int/iris/handle/10665/44371 [Accessed 15th February 2023]. • WHO (2013) *The world health report 2013: Research for universal health coverage*. Geneva, World Health Organization. Available from: https://www.who.int/publications/i/item/9789240690837 [Accessed 15th February 2023]. • Witter, S., Ensor, T., Jowett, M. & Thompson, R. (2000) *Health economics for developing countries: A practical guide*. London, Macmillan Education.

Module: **Preparation for the Master's Thesis** Module ID/Code: PM5	UNIVERSITÄT BONN

1. Content and intended learning outcomes	
Content	Presentation Skills & Scientific Communication: • Academic Writing (→ Pre-Campus) • Scientific Presentations • Effective Feedback and Moderation Techniques Scientific Writing • Introduction to the master's thesis and writing guidelines • Good academic practice: avoiding plagiarism • Introduction to literature search and literature review, dealing with scholarly and grey literature • Citation and Reference Lists, Management tools • Generative AI in Academic Work • Time management (→ Pre-Campus) Research Methodologies for the Master's Thesis: • Study Design: questionnaire/survey-based research, qualitative vs. quantitative studies, primary vs. secondary data analysis, natural experiments, ecological, cross-sectional, case-control, cohort, experimental studies • Literature Reviews, Scoping Reviews and Mixed methodology research • Systematic Reviews including PRISMA Systematic approaches to problems in Global Heatlh • Policy analysis, stakeholder mapping, and prioritization (→ PM4) • Translating knowledge into policy and policy into practice (→ PM1 → PM2 → PM3 → PM4) • Research Ethics (→ PM1) • Interdisciplinary and intersectoral approaches in Global Health research (→ PM4)
Learning outcomes	The students are able to .. • use appropriate tools to organize their scientific research and writing according to the principles of good academic practices. • use appropriate tools and methods for a scientific presentation. • answer questions by others concerning their presentation topic. • give sound feedback to others' presentations. • critically reflect on their master's thesis topic, methodology and overall approach, taking into account any critical comments provided while developing the research question.

2. Teaching and learning methods						
	Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
	O / S/oS, W	Presentation Skills & Scientific Communication	English	<35	15	37,5
	T/oT	Scientific Writing	English	<35	15	37.5
	T/oT	Research Methodologies	English	<35	10	25
	S/oS/E	Systematic approaches to problems in Global Heatlh	English	<35	10	25

3. Prerequisites for the module	
compulsory	Successful completion of modules PM1 to PM4
recommended	Successful acquisition of 30 ECTS

4. Degree program allocation			
	Study program	compulsory/ elective	Semester
	Global Health	Compulsory	2

5. Requirements for the award of credits (ECTS)		6. Credits
Required achievements	Written Research Proposal	5
Assessment (incl. weighting) and examination language	100% Exposé Presentation English	

7. Frequency	8. Workload	9. Duration
☒ Winter semester ☐ Summer semester ☐ Winter and summer semester	Full- and part-time students: 50h hybrid teaching 75h self-study time	Full-time students: 7 months Part-time students: 12-31 months

Module coordination	
Instructor	Prof. Dr. Walter Bruchhausen, Katharina Gries, Dr. Eva Mertens, Monika Pohle, supervisors individually appointed by the Examination Board
Module coordinator	Prof. Dr. Walter Bruchhausen
Institute/Department	Section Global Health, Institute for Hygiene and Public Health, University Hospital Bonn

Further information	
(Reading lists, information links etc.)	• Illingworth, S. & Allen, G. (2020) *Effective science communication: a practical guide to surviving as a scientist* (2nd ed.). Bristol, IOP Publishing. • Jamieson, K. H., Kahan, D. M. & Scheufele, D. A. (eds.) (2017) *The Oxford handbook of the science of science communication*. New York, Oxford University Press. • Medmissio. (2023) *MEDBOX. The Aid Library*. Available from: https://medbox.org/ [Accessed 5th February 2023]. • Swales, J. M. & Feak, C. B. (2012) *Academic writing for graduate students: essential tasks and skills* (3rd ed.). Ann Arbor, Mich., University of Michigan Press. • PRISMA Checklist from: https://www.prisma-statement.org/ • PRISMA- Scoping Reviews here: https://www.prisma-statement.org/scoping

Module:
Master's Thesis and Colloquium

Module ID/Code: PM6

UNIVERSITÄT BONN

1. Content and intended learning outcomes

Content	The topic of the master's thesis must be clearly linked to the content of Global Health and be of interdisciplinary or intersectoral nature. The practical relevance of the thesis must be demonstrated. During the thesis phase, the supervisor and the student equally are responsible for • regular contact to discuss the thesis progress (at least once per month), • timely submission of a proposed title to the examination board, • selection of suitable strategies for research and for the writing of the manuscript (inclusion and exclusion criteria, material and methods, research question, bibliography, tables and figures).
Learning outcomes	The students are able to … • independently execute a well-defined and practically relevant research project. • independently apply techniques of scientific work and good academic practice. • appropriately use scholarly literature and grey literature (particularly UN and WHO documents or unpublished reports). • critically reflect on current political and scientific developments. • present the results of their master's thesis research in a target-group oriented manner in the form of a professional presentation during the Thesis Colloquium. The students are aware of the central issues, practical impacts and various challenges of the field they work in. The students demonstrate a solutions-oriented approach to answer the research question.

2. Teaching and learning methods

	Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
	T/oT	Research and Writing under Supervision	English	1	8	375

3. Prerequisites for the module

compulsory	Successful completion of modules PM1 to PM4
recommended	Successful acquisition of 45 ECTS

4. Degree program allocation

	Study program	compulsory/ elective	Semester
	Global Health	Compulsory	2

5. Requirements for the award of credits (ECTS)		6. Credits
Required achievements	Colloquium presentation	15
Assessment (incl. weighting) and examination language	100% Master's thesis English	

7. Frequency	8. Workload	9. Duration
☐ Winter semester ☐ Summer semester ☒ Winter and summer semester	Full- and part-time students: 375h thesis	Full-time students: 5 months Part-time students: 5-17 months

Module coordination

Instructor	Supervisors individually appointed by the Examination Board

Module coordinator	Prof. Dr. Walter Bruchhausen
Institute/Department	Section Global Health, Institute for Hygiene and Public Health, University Hospital Bonn
Further information	
(Reading lists, information links etc.)	• Bui, Y. N. (2019) *How to Write a Master's Thesis* (3rd ed.). Los Angeles, SAGE. • Lea, D., Bull V., Webb S.S. & Duncan R. (ed.) (2014) *Oxford Learner's Dictionary of Academic English*. Oxford, Oxford University Press. • Parija, S. C. & Kate, V. (eds.) (2018) *Thesis Writing for Master's and Ph.D. Program*. Singapore, Springer.

Module: **Food and Nutrition Security in the Framework of Global Health** Module ID/Code: WPM1	UNIVERSITÄT BONN

1. Content and intended learning outcomes	
Content	International food and nutrition security • Basic concept of food and nutrition security (FNS) • Basic concepts and measures of epidemiology • Importance for Public Health and prevention of diseases • Learning and applying various concepts of FNS: including Triple Burden of Malnutrition, UNICEF Framework • One Health approach and sustainanle diets Nutrition transition & micronutrient deficiencies • History and impact of the Nutrition Transition • Measures to combat micronutrient deficiencies Biodiversity and -security along the value chain • Biodiversity along the value chain • Factors along the value chain that influence disease incidence: Biotic and abiotic, environment, genetics • Biosecurity and hygiene along the value chain Non-governmental work in the field of international FNS • Emergency aid in food crisis situations • Current projects in the field of site-appropriate agriculture Farm visit • Forage production • Dairy cow husbandry Research Methods and Skills • Collection and evaluation of anthropometric parameters, dietary assessments, and biomarkers in the context of scientific studies • Project planning covering current topics of nutrition and food security in Global Health
Learning outcomes	The students are able to … • reproduce and apply the definition of FNS, its concepts, disease prevention and interventions taking into account the One Health approach. • explain the Triple Burden of Malnutrition, describe and apply measures to address micronutrient deficiencies. • describe the tasks and roles of actors and research centers in the field of food security. • assess the basic concepts for planning and conducting nutritional studies with a special focus on dietary assessment instruments and biomarkers in low-and middle-income countries. • collect and evaluate anthropometric parameters and assess their informative value. • plan and prepare a project related to nutrition and/or food security.
2. Teaching and learning methods	

	Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
	L/oL, prT, T	International food and nutrition security	English	<35	22	47
	L/oL, prT, T	Nutrition transition, sustainable diets & micronutrient deficiencies	English	<35	6	15
	L/oL, S/oS	Biodiversity and -security along the value chain	English	<35	10	25
	L/oL	Non-governmental work in the field of international FNS	English	<35	4	8
	E	Farm visit	English	<35	4	5
	T	Collection and evaluation of anthropometric parameters and biomarkers	English	<35	4	25

3. Prerequisites for the module	
compulsory	None
recommended	None

4. Degree program allocation			
	Study program	compulsory/ elective	Semester
	Global Health	elective	1
	Humanmedizin	elective	5-10

5. Requirements for the award of credits (ECTS)		**6. Credits**
Required achievements	Group presentation	5
Assessment (incl. weighting) and examination language	100% written exam English	

7. Frequency	**8. Workload**	**9. Duration**
☒ Winter semester ☐ Summer semester ☐ Winter and summer semester	Full-time & part-time students: 50h on-site teaching (incl. course work) 75h self-study time	Full-time & part-time students: 12 weeks

Module coordination	
Teacher	Prof. Dr. Ina Danquah, Dr. Lukas Kurniawan, Dr. Joshua Ntajal, Dr. Maike Albers, Jayson Hayer et al.
Module coordinator	Prof. Dr. Ina Danquah
Institute/Department	Nutrition and Planetary Health, Center for Development Research (ZEF), University of Bonn

Further information	
(Reading lists, information links etc.)	• WHO (2017) *The double burden of malnutrition: policy brief*. Geneva, World Health Organization. Available from: https://www.who.int/publications/i/item/WHO-NMH-NHD-17.3 [Accessed 8th March 2023]. • FAO (2016) *Minimum Dietary Diversity for Women – A Guide to Measurement.* Rome, FAO & FANTA. Available from: https://www.fao.org/3/i5486e/i5486e.pdf [Accessed 8th March 2023]. • FAO (2018) *Dietary Assessment: A resource guide to method selection and application in low resource settings.* Rome, FAO. Available from: https://www.fao.org/3/i9940en/I9940EN.pdf [Accessed 8th March 2023].

	• FAO, IFAD, UNICEF, WFP & WHO (2022) *The State of Food Security and Nutrition in the World 2022: Repurposing food and agricultural policies to make healthy diets more affordable.* Rome, FAO. Available from: https://data.unicef.org/resources/sofi-2022/ [Accessed 8th March 2023]. • FAO (2022) *The State of Food and Agriculture 2022: Leveraging automation in agriculture for transforming agrifood systems.* Rome, FAO. Available from: https://www.fao.org/3/cb9479en/cb9479en.pdf [Accessed 8th March 2023]. • Gross, R., Schöneberger, H.G., Pfeifer, H. & Preuss, H. (2000) *Four Dimensions of Food and Nutrition Security: Definitions and Concepts.* Available from: http://fpmu.gov.bd/agridrupal/sites/default/files/Four_Dimension_of_FS.pdf [Accessed 8th March 2023]. • Popkin, B. M. (2006) Global nutrition dynamics: the world is shifting rapidly toward a diet linked with noncommunicable diseases. *The American Journal of Clinical Nutrition*. 84 (2), 289-298. Available from: https://doi.org/10.1093/ajcn/84.2.289 [Accessed 8th March 2023]. • Hutton, G. & Chase, C. (2016) The Knowledge Base for Achieving the Sustainable Development Goal Targets on Water Supply, Sanitation and Hygiene. *Int J Environ Res Public Health*. 13(6), 536. Available from: https://doi.org/10.3390/ijerph13060536 [Accessed 8th March 2023]. • Pérez-Escamilla, R. & Segall-Corrêa, A. M. (2008) Food insecurity measurement and indicators. *Revista de Nutrição* 21.

Module: **Humanitarian Aid and Development Cooperation in Health** Module ID/Code: WPM2	UNIVERSITÄT BONN

1. Content and intended learning outcomes	
Content	Introduction • History and Ethics of Humanitarian Assistance and Development Cooperation • Humanitarian Emergency Aid: Actors and Coordination (e.g., ICRC, MSF, Malteser; UN system, UN OCHA/UNDAC; EU Civil Protection Mechanism) • Reflection of the Role of Healthcare Professionals and their Preparation Humanitarian Negotiation • Challenges and Dilemmas • Typology of Negotiations • Identification of Priorities and Objectives Intercultural Sensitivity in Medical Contexts • Scales and Dimensions of Culture • Intercultural Challenges in Healthcare Health Services in Disasters, Crises and Armed Conflicts • Emergency epidemiology • Healthcare in armed conflicts (e.g., war surgery) • Violence against Healthcare • Misinformation and coping mechanisms • Evaluation of Humanitarian Aid • Refugee Health – Camps, Mobility/Continuity of Care • The Sphere Project Health Services and Risks in Development Programs • Linking Relief, Rehabilitation and Development (LRRD) includ. Interventions, Transition Assistance & Development-Oriented Emergency Relief • Example of German Development Politics in Health (focus UHC, One Health) • Building Resilience and Reducing Post-disaster Complexity in Health Systems • Streamlining Donor Aid with in-country Programs • Quality of Care as Neglected Drive for Development
Learning outcomes	The students are able to … • replicate the main components and functions of the international humanitarian system and development policies. • identify most urgent health needs in disasters and armed conflicts to recommend, design and coordinate respective responses. • take a constructive and critical stance towards the hidden agendas of different stakeholders involved in humanitarian response. • distinguish and differentiate the roles of the different humanitarian agencies during sudden onset and long-term responses. • analyze a complex, multi-faceted context and map the network of actors involved in a certain scenario. • adapt their communication to the circumstances given (e.g., by applying de-escalation skills and/or knowledge on intercultural sensitivity). • identify and critically evaluate various sources and channels of information from different stakeholders.
2. Teaching and learning methods	

	Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
	L/oL, S/oS	Introduction	English	<35	6	15
	L/oL, W/oW	Humanitarian Negotiation	English	<35	14	40
	L/oL, S/oS	Intercultural Sensitivity in Medical Contexts	English	<35	4	10
	L/oL, S/oS	Health Services in Disasters, Crises and Armed Conflicts	English	<35	11	30
	L/oL, S/oS	Health Services and Risks in Development Programs	English	<35	15	30

3. Prerequisites for the module	
compulsory	None
recommended	None

4. Degree program allocation			
	Study program	compulsory/ elective	Semester
	Global Health	elective	1
	Humanmedizin	elective	5-10

5. Requirements for the award of credits (ECTS)		**6. Credits**
Required achievements	Presentation	5
Assessment (incl. weighting) and examination language	100% Written Exam English	

7. Frequency	**8. Workload**	**9. Duration**
☒ Winter semester ☐ Summer semester ☐ Winter and summer semester	Full-time students: 50h on-site teaching (incl. study achievement) 75h self-study time Part-time students: 30h asynchronous online teaching 20h synchronous online/on-site teaching (incl. study achievement) 75h self-study time	Full-time students: 3,25 weeks Part-time students: up to 9,75 weeks

Module coordination	
Teacher	Dr. Jan Wynands, Prof. Dr. Walter Bruchhausen, Dr. Peter Schmitz, Sophie-Bo Heinkel, Prof. Dr. Andreas Schultz, Prof. Dr. Tom Potokar, Dr. Sophie de Vries, Dr. Sibylle Gerstl, Edo Lihic et al.
Module coordinator	Dr. Jan Wynands
Institute/Department	Section Global Health, University Hospital Bonn ICRC, Centre of Competence on Humanitarian Negotiation (CCHN)

Further information	
(Reading lists, information links etc.)	● Druce, P., Bogatyreva, E., Siem, F. F., Gates, S., Kaade, H., Sundby, J., Rostrup, M., Andersen, C., Rustad, S. C. A., Tchie, A., Mood, R., Nygård, H. M., Urdal, H. & Winkler, A. S. (2019) Approaches to protect and maintain health care services in armed conflict – meeting SDGs 3 and 16. *Conflict and Health*. 13 (2). Available from: https://doi.org/10.1186/s13031-019-0186-0 [Accessed 8th March 2023]. ● Garry, S., & Checchi, F. (2020). Armed conflict and public health: Into the 21st century. *Journal of Public Health*. 42 (3), e287-e298. Available from: https://doi.org/10.1093/pubmed/fdz095 [Accessed 8th March 2023].

	● WHO (2019) *Health Emergency and Disaster Risk Management Framework*. Geneva, World Health Organization. Available from: https://apps.who.int/iris/bitstream/handle/10665/326106/9789241516181-eng.pdf [Accessed 8th March 2023]. ● ICRC/Center of Competence for Humanitarian Negotiation (2020) *CCHN Negotiator Handbook.* Available from: https://www.icrc.org/en/publication/nh-cchn-negotiator-handbook [Accessed 8th March 2023]. ● IFRC (2020*) World Disasters Report 2020*. Available from: https://www.ifrc.org/document/world-disasters-report-2020 [Accessed 3rd February, 2023]. ● IFRC (2022) *Code of Conduct for the Movement and NGOs in Disaster Relief*. Available from: https://www.ifrc.org/our-promise/do-good/code-conduct-movement-ngos [Accessed 3rd February 2023]. ● Benner, M.T., Schmitz, K.P. (2009) *Indicators and Reference Data: A Practical Tool for Project Managers in Humanitarian Aid*. Cologne, Malteser International. Available from: https://reliefweb.int/report/world/indicators-and-reference-data-practical-tool-project-managers-humanitarian-aid [Accessed 8th March 2023]. ● MapAction (2011) *Field Guide to Humanitarian Mapping.* Available from: http://www.mapaction.org/component/mapcat/download/2426.html?fmt=pdf [Accessed 8th March 2023]. ● OCHA - United Nations (2022) *Disaster Response in Asia and the Pacific* Available from: https://asiadisasterguide.unocha.org/III-humanitarian-actors.html [Accessed 3rd February 2023]. ● Spiegel, P.B., Checchi, F., Colombo, S. & Paik, E. (2010) Health-care needs of people affected by conflict: future trends and changing frameworks. *The Lancet.* 375 (9711), 341-45. Available from: https://doi.org/10.1016/S0140-6736(09)61873-0. ● The International Charter Space and Major Disasters. (n.d) *Charter activations*. Available from: https://www.disasterscharter.org/web/guest/activations/charter-activations [Accessed 8th March 2023]. ● IFRC, Johns Hopkins University (2008) *The Johns Hopkins and Red Cross Red Crescent Public Health Guide in Emergencies*. Available from: https://reliefweb.int/report/world/johns-hopkins-and-red-cross-red-crescent-public-health-guide-emergencies-second-edition [Accessed 8th March 2023]. ● Sphere Association (2018) *The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response*. Available from: https://reliefweb.int/report/world/sphere-handbook-humanitarian-charter-and-minimum-standards-humanitarian-response-2018 [Accessed 8th March 2023].

Module:
Spatial Health Assessment

Module ID/Code: WPM3

UNIVERSITÄT BONN

1. Content and intended learning outcomes

Content	General aspects of Health Geography
	• General definition of Geography and Health
	• History of Medical Geography
	• Use of maps in epidemiology and surveillance
	• Synopsis of technical background (GIS systems)
	• Overview of geostatistical methods
	• Introduction to remote sensing
	
	Reading and interpretation of health maps
	• Basic concepts of cartography
	  ○ Projections
	  ○ Scales and complexity
	  ○ Importance of target group
	• Understanding maps
	• Data visualization
	• Scope and advantages of interactive dashboards
	
	Mapping health data
	• Sources of health data
	• Sources of health maps
	• Data sampling; challenges of global data sources
	• Data and graphic representation
	  ○ Respective statistical methods
	  ○ Methods of classification

Learning outcomes	The students are able to … • reproduce and describe general aspects of Health Geography in their own words. • describe the basic rules of reading and interpreting spatial visualization of health-related events and risks. • read, interpret and evaluate health data and health maps. • replicate the principles of acquiring, classifying and processing health data for mapping. • assess the suitability of data sets for visual representation. • understand, critically analyze and summarize (in their own words) health data sets and their visualization.

2. Teaching and learning methods

	Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
	S/oS	General aspects of Health Geography	English	<35	10	25
	S/oS, T/oT	Reading and interpretation of health maps	English	<35	20	50
	S/oS, T/oT	Mapping Health Data	English	<35	20	50

3. Prerequisites for the module

compulsory	None
recommended	None

4. Degree program allocation

	Study program	compulsory/ elective	Semester
	Global Health	elective	2
	Humanmedizin	elective	all

5. Requirements for the award of credits (ECTS)		**6. Credits**
Required achievements	Active participation in the group work, compulsory attendance in 75% of the course	5
Assessment (incl. weighting) and examination language	100% oral exam English	

7. Frequency	**8. Workload**	**9. Duration**
☐ Winter semester ☒ Summer semester ☐ Winter and summer semester	Full-time & part-time students: 50h on-site teaching (incl. study achievement) 75h self-study time	Full-time & part-time students: 12 weeks

Module coordination	
Teacher	Christoph Höser, PD Dr. Timo Falkenberg et al.
Module coordinator	Dr. Andrea Rechenburg
Institute/Department	GeoHealth Center, Institute for Hygiene and Public Health, University Hospital Bonn

Further information	
(Reading lists, information links etc.)	• Garg, P. K., Tripathi, N. K., Kappas, M. & Gaur, L. (eds). (2022) *Geospatial data science in healthcare for society 5.0*. Singapore, Springer Singapore. • Khashoggi, B. F. & Murad, A. (2020) Issues of Healthcare Planning and GIS: A Review. *ISPRS International Journal of Geo-Information.* 9 (6), 352. • Kimerling, A. J., Buckley, A. R., Muehrcke, P. & Muehrcke, J. O. (2016) *Map use: reading list, analysis, interpretation* (8th ed.). Redlands, California, Esri Press Academic. Available from: https://www.esri.com/en-us/esri-press/browse/map-use-reading-analysis-interpretation [Accessed 6th June 2023]. • Solís, P. & Zeballos, M. (eds.) (2023) *Open Mapping towards Sustainable Development Goals: Voices of YouthMappers on Community Engaged Scholarship.* Cham, Springer International Publishing. Available from: https://link.springer.com/10.1007/978-3-031-05182-1 [Accessed 6th June 2023]. • Uzoma, I. (2020) Medical Geography - Concepts, Techniques and Approaches. In Olorunfemi, J. F. & Tilakasiri, S. L. (eds.) *Human Geography - Concepts, Approaches and Trends.* Sri Lanka, Stamford Lake Publication, pp. 139-162 • Wang, F. (2020) Why public health needs GIS: a methodological overview. *Annals of GIS*. 26 (1), 1-12. • Wells, J., Grant ,R., Chang, J. & Kayyali, R. (2021) Evaluating the usability and acceptability of a geographical information system (GIS) prototype to visualise socio-economic and public health data. *BMC Public Health.* 21 (1), 2151.

Module:
Sustainable Development as Guiding Principle for Health

Module ID/Code: WPM5

UNIVERSITÄT BONN

1. Content and intended learning outcomes

Content	**Health as cross-cutting theme for development**
	• Health as contributor and beneficiary of sustainable development
	• Sustainability challenges of healthcare and health interventions
	• Integrated health approaches, highlighting complex interactions between health, social, economic and environmental systems
	  ○ Climate change
	  ○ Zoonotic diseases
	• Bilateral and multilateral cooperation for sustainable development
	• Globalization & challenges of translating universal sustainability targets into effective local actions for health
	
	Measurement, evaluation and implementation of sustainable development in Public Health
	• 2030 Agenda principles, their usefulness in evaluation and their links to health (benefits)
	• Different evaluation types and tools for sustainable development
	
	Sustainability interactions using case studies
	• Critical assessment of health and sustainability interactions
	• Extracting best-practices and developing recommendations for action
	• Examples of local and regional actions

Learning outcomes	The students are able to … • associate health benefits with health-related and non-health-related goals for sustainable development. • illustrate and critically assess the sustainability implications of healthcare and health-related development interventions. • distinguish and categorize the environmental interactions of public health systems globally. • apply evaluation principles and methodologies to specific case studies on sustainability and health.

2. Teaching and learning methods

	Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
	S/oS, T/oT	Health as cross-cutting theme for development	English	<35	20	20
	S/oS, T/oT	Measurement, evaluation and implementation of sustainable development in public health	English	<35	18	20
	T/oT / W	Sustainability interactions using case studies	English	<35	4	65

	S/oS, W	Systematic literature review	English	<35	8	20

3. Prerequisites for the module	
compulsory	None
recommended	None

4. Degree program allocation			
	Study program	compulsory/ elective	Semester
	Global Health	elective	2
	Humanmedizin	elective	all

5. Requirements for the award of credits (ECTS)		**6. Credits**
Required achievements	Presentation, active participation in seminars and workshop	5
Assessment (incl. weighting) and examination language	100% written assignment English	

7. Frequency	**8. Workload**	**9. Duration**
☐ Winter semester ☒ Summer semester ☐ Winter and summer semester	Full-time & part-time students: 50h on-site teaching (incl. study achievement) 75h self-study time	Full-time & part-time students: 5 weeks

Module coordination	
Teacher	Dr. Falkenberg; Dr. Perez Arredondo; Prof. Borgemeister, et al.
Module coordinator	Dr. Betancur Corredor
Institute/Department	Ecology and Natural Ressources Managament (ECOL), Center for Development Research (ZEF), University of Bonn

Further information

(Reading lists, information links etc.)

- UN (2015) *Transforming our World: The 2030 Agenda for Sustainable Development*. Geneva, United Nations. Available from: https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981 [Accessed 23rd August 2023].
- Geoghegan, T., D´Errico, S., Garcia Acuña, M., El-Saddik, K., Lucks, D., Ocampo, A. & Piergallini, I. (2019) *Evaluating sustainable development: how the 2030 Agenda can help*. IIED, London. Available from: ISBN: 9781784317034.
- Sachs, J., Lafortune, G., Kroll, C., Fuller, G. & Woelm, F. (2022) *Sustainable Development Report 2022*. Cambridge, Cambridge University Press. Available from: https://doi.org/10.1017/9781009210058.
- ICSU, ISSC (2015) *Review of the Sustainable Development Goals:The Science Perspective*. Paris, International Council for Science (ICSU). Available from: http://www.icsu.org/publications/reports-and-reviews/review-of-targets-for-the-sustainable-development-goals-the-science-perspective-2015/SDG-Report.pdf [Accessed 23rd August 2023].
- Romanello, M., Di Napoli, C., Drummond, P., et al. (2022) The 2022 report of the Lancet Countdown on health and climate change: health at the mercy of fossil fuels. *The Lancet*. 400(10363):1619-1654. Available from: https://doi.org/10.1016/S0140-6736(22)01540-9.
- Mortimer, F. & Pencheon, D. (2022) Do no harm: addressing the environmental impact of health care. *Nat Rev Dis Primers* 8, 38. Available from: https://doi.org/10.1038/s41572-022-00372-8.
- Griggs, D. J., Nilsson, M., Stevance, A. & McCollum, D. (eds.) (2017) *A guide to SDG interactions: From science to implementation*. Paris, International Council for Science (ICSU). Available from: https://hdl.handle.net/10568/80993 [Accessed 23rd August 2023].
- Lenzen, M., Malik, A., Li, M., Fry, J., Weisz, H., Pichler, P., et al. (2020) The environmental footprint of health care: a global assessment. *The Lancet Planetary*

	Health. 4(7), e271-e279. Available from: https://doi.org/10.1016/S2542-5196(20)30121-2. • Karliner, J., Slotterback, S., Boyd, R., Ashby, B. & Steele, K. (2019) *Health care's climate footprint: how the health sector contributes to the global climate crisis and opportunities for action.* Health Care Without Harm Climate-smart health care series. Available from: https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf. [Accessed 23rd August 2023]. • WHO (2020) *Guidance for climate resilient and environmentally sustainable health care facilities*. Geneva, WHO. Available from: https://www.who.int/publications/i/item/9789240012226. [Accessed 23rd August 2023].

Module:
Global Oncology

Module ID/Code: WPM6

UNIVERSITÄT BONN

1. Content and intended learning outcomes

Content	**CLINICAL** · Basic oncology: cancer entities, diagnostics, staging and treatment modalities · Differences between tropical and non-tropical malignancies · Infections and cancer · Cancer prevention, treatment and palliative care in low-resource settings · Radiotherapy, surgery and haematology in low- and middle-income countries · Cytostatic medicines and other essential components of cancer treatment in LMICs **SOCIETAL** · Global cancer burden and epidemiology in low-resource settings · Health, societal and economic impact of cancer · Barriers to access to cancer care in LMICs · Women's health and cervical cancer · Implementation research, eHealth and ethical implications in resource-constrained settings · Medication access and donation programmes **POLITICAL** · Cancer and Universal Health Coverage · National Cancer Control Plans · Health-policy strategies to address the growing global cancer burden · Public-sector, governmental and non-governmental responses to cancer · Prerequisites for establishing and strengthening cancer care systems in low-resource settings · Strategies to improve cancer control and care and barriers to implementation
Learning outcomes	**The students are able to …** · propose a strategy for a country or region of choice to improve the response to the growing burden of cancer diseases · debate health policy strategies to meet the challenges of the growing cancer burden at a global level and for selected countries · describe necessary prerequisites for the establishment of cancer care in low-resource settings · describe the basic concepts of oncology treatments, prevention and palliative care, considering differences in clinical oncology in low-, middle- and high-income countries · analyse epidemiological data of cancer diseases in low-resource settings and discuss the broader health, societal and economic impact of cancer globally and in different countries and regions

2. Teaching and learning methods

	Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
	L/o/W	Clinical Global Oncology	English	<35	10	21
	L/o/W	Societal Global Oncology	English	<35	4	9
	L/o/W	Political Global Oncology	English	<35	16	34

3. Prerequisites for the module			
compulsory	None		
recommended	None		
4. Degree program allocation			
	Study program	compulsory/ elective	Semester
	Global Health	elective	2
	Humanmedizin	elective	all
5. Requirements for the award of credits (ECTS)			**6. Credits**
Required achievements	Presentation, active participation in seminars and workshop		2,5
Assessment (incl. weighting) and examination language	100% assignment/examination English		

7. Frequency	**8. Workload**	**9. Duration**
☐ Winter semester ☒ Summer semester ☐ Winter and summer semester	Full-time & part-time students: 25h on-site teaching (incl. study achievement) 37,5h self-study time	Full-time & part-time students: 2 weeks

Module coordination	
Lecturer	PD Dr. Oliver Henke Dr. Maximilian Rost Dr. Jakob von Herder PD Dr. Gustavo Sarria Additional online guest lectures
Module coordinator	PD Dr. Oliver Henke
Institute/Department	Section Global Health, University Hospital Bonn
Further information	
(Reading lists, information links etc.)	· Course language: English · No preparatory reading required · The written assignment asks students to select an LMIC country or region and analyse cancer epidemiology, health and societal impact, current medical and political responses, opportunities for improvement and potential implementation barriers.

Module:
Global Surgery

Module ID/Code: WPM7

UNIVERSITÄT BONN

1. Content and intended learning outcomes

Content	**Introduction to Global Surgery** ● The global burden of surgical conditions ● Recent development of Global Surgery: from the 2015 Lancet commission to today ● Global Surgery in action: National Surgical/Obstetrics/Anesthesia Plans **Development of surgical programs** ● Context analysis of surgical needs ● Type of surgical projects ● Project management of surgical programs: Logframe and indicators **Challenges in Global Surgery** ● Evaluating quality of surgical care ● Sustainability of surgery in low-resources settings ● Task shifting and task sharing in surgery ● Elements of surgical training ● Ethical issues in Global Surgery
Learning outcomes	The students are able to … ● Analyze a surgical project or service, contextualizing it in the wider healthcare context, identifying strengths and weaknesses, and proposing implementable improvement strategies. ● Evaluate the quality of surgical care provided in a project or service, analyze the potential causative and contributing factors, and formulate solutions that are coherent with the available resources.

2. Teaching and learning methods

	Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
	S/oS, T/oT	Introduction to Global Surgery	English	<25	5	12,5
	S/oS, W/oW	Development of surgical programs	English	<25	10	27,5
	S/oS, W/oW	Challenges in Global Surgery	English	<25	10	27,5

3. Prerequisites for the module

compulsory	None
recommended	Previous experience in humanitarian aid and/or development/cooperation

4. Degree program allocation

	Study program	compulsory/ elective	Semester
	Global Health	elective	2
	Humanmedizin	elective	5-10

5. Requirements for the award of credits (ECTS)		6. Credits
Required achievements	Presentation, active participation in seminars and workshop	2,5
Assessment (incl. weighting) and examination language	100% assignment/examination (English)	

7. Frequency	8. Workload	9. Duration
☐ Winter semester ☒ Summer semester ☐ Winter and summer semester	Full-time & part-time students: 25h on-site teaching (incl. study achievement) 37,5h self-study time	Full-time: 2 weeks Part-time students: 6 weeks
Module coordination		
Lecturers	Dr. Jan Wynands (UKB, CRSAC), Dr. Judith Hillner (UKB), Dr. Deirdre Nunan, Giacomo Fiorio (MSF), Dr. Geoff Ibotson (Global Surgery Foundation, UNSurgHub), Prof. Emilie Joss (UBC), Prof. Jenny Loefgren (Karolinska Institute), Prof. Salome Maswime (UWitwatersrand, JB, SA) Raoul Koti (ICRC), Tom Potokar (Interburns), Swiss TPH institute, Dr. André Borsche (Interplast), Dr. Henning Mothes, et al.	
Module coordinator	Dr. Jan Wynands	
Institute/Department	Section Global Health, University Hospital Bonn	
Further information		
(Reading lists, information links etc.)	● Alkire, Blake C et al. "Global access to surgical care: a modelling study." The Lancet. Global health vol. 3,6 (2015): e316-23. doi: 10.1016/S2214-109X(15)70115-4 ● Anyomih et al. Systematic review of the Lancet Commission on Global Surgery indicators with quality assessment of modelled estimates, BJS, Volume 113, Issue 3, March 2026, znaf289, https://doi.org/10.1093/bjs/znaf289 ● Meara JG, Leather AJM, Hagander L, Alkire BC, Alonso N, Ameh EA, et al. Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development. International Journal of Obstetric Anesthesia. 2016 Feb;25:75–8. doi: 10.1016/j.ijoa.2015.09.006 ● Meara, John G et al. "Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development." International journal of obstetric anesthesia vol. 25 (2016): 75-8. doi: 10.1016/j.ijoa.2015.09.006 ● Mock, Charles N et al. "Essential surgery: key messages from Disease Control Priorities, 3rd edition." Lancet (London, England) vol. 385,9983 (2015): 2209-19. doi: 10.1016/S0140-6736(15)60091-5 ● National Surgical Planning | pgssc [Internet]. pgssc. 2024. Available from: https://www.pgssc.org/national-surgical-planning ● Nepogodiev, Dmitri et al. "Surgical health policy 2025-35: strengthening essential services for tomorrow's needs." Lancet (London, England) vol. 406,10505 (2025): 860-880. doi: 10.1016/S0140-6736(25)00985-7 ● O'Neill KM, Greenberg SLM, Cherian M, Gillies RD, Daniels KM, Roy N, et al. Bellwether Procedures for Monitoring and Planning Essential Surgical Care in Low- and Middle-Income Countries: Caesarean Delivery, Laparotomy, and Treatment of Open Fractures. World Journal of Surgery. 2016 Jun 28;40(11):2611–9. doi: 10.1007/s00268-016-3614-y ● Price R, Makasa E, Hollands M. World Health Assembly Resolution WHA68.15: "Strengthening Emergency and Essential Surgical Care and Anesthesia as a Component of Universal Health Coverage"—Addressing the Public Health Gaps Arising from Lack of Safe, Affordable and Accessible Surgical and Anesthetic Services. World Journal of Surgery. 2015 Aug 4;39(9):2115–25. doi: 10.1007/s00268-015-3153-y ● Shawar YR, Shiffman J, Spiegel DA. Generation of political priority for global surgery: a qualitative policy analysis. The Lancet Global Health. 2015 Aug;3(8):e487–95. doi: 10.1016/S2214-109X(15)00098-4 ● Thind A, Mock C, Gosselin R, McQueen K. Surgical epidemiology: a call for action. Bulletin of the World Health Organization. 2012 Mar 1;90(3):239–40. doi: 10.2471/BLT.11.093732 ● Wimmer S, Sarabu S, Calvello Hynes E, Plummer ML, Bognini MS, Kebede MA, et al. Global burden of emergency and operative conditions: an analysis of Global Burden of Disease data, 2011–2019. Bulletin of the World Health Organization [Internet]. 2025 Mar 1;103(3):194–203. doi: 10.2471/BLT.24.292412 ● World Health Organization (2017). Surgical care systems strengthening:	

	developing national surgical, obstetric and anaesthesia plans. World Health Organization. https://iris.who.int/handle/10665/255566. License: CC BY-NC-SA 3.0 IGO ● Zambeli-Ljepović A, Nathani P, Bsisu I, Makasa EM, Hyman GY, Sheneman N, et al. Development of National Surgical Plans: Benchmarking Progress and Disparities Across 194 Countries. 2024. doi: 10.2139/ssrn.4908773 ● Global Acute Care Advocacy Authors. The World Health Assembly resolution on integrated emergency, critical, and operative care for universal health coverage and protection from health emergencies: a golden opportunity to attenuate the global burden of acute and critical illness. Intensive care medicine [Internet]. 2023 Oct;49(10):1223–5. Available from: https://pubmed.ncbi.nlm.nih.gov/37578521/. doi: 10.1007/s00134-023-07176-8

Module:
Global Child Health

Module ID/Code: WPM8

UNIVERSITÄT BONN

1. Content and intended learning outcomes

Content (vorläufige Themen)

Global Child Health across the life course - overarching framing:

- Global burden of child and adolescent disease and health inequalities
- Life-course perspective and developmental origins of health and disease
- Social and environmental determinants of child and adolescent health
- Connections between individual/clinical care, population health, Public Health, health systems and policy

A healthy start: maternal, perinatal and newborn health:

- Maternal health, perinatology and neonatology
- Prevention and continuum of care
- Life-course perspective
- Social and environmental determinants of child health
- Global burden and inequalities

Acute illness in infancy and childhood:

- Acute childhood illness
- Infectious and respiratory diseases
- Undernutrition
- Immunisation and other preventive approaches
- Community approaches
- IMNCI/WHO guidance
- Diagnostics and clinical decision-making under resource constraints
- Point-of-care ultrasound (POCUS)
- Referral pathways and levels of care

Growing up: adolescent health:

- Sexual and reproductive health
- Mental health
- Injuries
- Nutrition and emerging NCD risks
- Access to services
- Social determinants
- Participation, gender and human rights

Living with chronic conditions:

- NCDs and chronic conditions in childhood and adolescence
- Double burden of disease
- Diagnosis and long-term care
- Continuity of care and transition across life stages
- Role of families and communities
- Access, referral and health-system responses

Making it work: implementation, evidence, policy and system change

- Context and implementation
- Adaptation of interventions to different settings
- Why interventions may work differently across contexts
- Actors and governance
- Evidence and research-to-policy processes
- Advocacy

	• Health-system change Cross cutting perspectives: • Equity and health inequalities • Gender • Human rights • Participation • Community perspectives • Resource availability and constraints • Context-sensitive and equity-oriented responses These perspectives are integrated throughout the module rather than treated as separate stand-alone topics. Research and analytical skills: • Critical use and interpretation of evidence • Analysis of Global Child Health challenges across different levels • Application of evidence to context-specific problems • Case- and problem-based analysis • Development and justification of context-adapted responses • Consideration of relevant stakeholder perspectives
Learning outcomes	The students are able to … • Explain key Global Child Health challenges across the life course and how they relate to patterns of health inequity and major social and environmental determinants; • Analyse selected child and adolescent health challenges across different levels, from individual and clinical care to population health, contextual determinants, health-system factors and policy; • Appraise clinical, preventive and Public Health approaches to improving child and adolescent health, taking into account available resources, context and health-system opportunities and constraints; • Apply equity, gender, human rights and participation perspectives to the analysis of selected Global Child Health challenges; • Develop and justify a context-adapted, equity-oriented response to a Global Child Health challenge, drawing on evidence and considering implementation context and relevant stakeholder perspectives.

2. Teaching and learning methods

Type of instruction	Topic	Language of instruction	Group size	Overall contact time	Workload [h]
L/oL, S/oS, group work/case-based learning	**A healthy start?** Maternal → perinatal → newborn	English	TBD	5	12.5
L/oL, S/oS, practical/case-based learning	**What if a child becomes sick?** Infancy / under-5 and childhood	English	TBD	5	12.5
L/oL, S/oS, group work / case-based learning	**Growing up** – Adolescence	English	TBD	5	12.5

	L/oL, S/oS, case-based learning	Living with chronic conditions	English	TBD	5	12.5
	L/oL, S/oS, group work / integrated case	**Making it work** – implementation, evidence, policy and system change	English	TBD	5	12.5

3. Prerequisites for the module	
compulsory	Completion of the compulsory Global Health curriculum of Semester 1.
recommended	None

4. Degree program allocation			
	Study program	compulsory/ elective	Semester
	Global Health	elective	2

5. Requirements for the award of credits (ECTS)		**6. Credits**
Required achievements	TBD	2.5
Assessment (incl. weighting) and examination language	TBD. English	

7. Frequency	**8. Workload**	**9. Duration**
☐ Winter semester ☒ Summer semester ☐ Winter and summer semester	62.5 hours: 25 hours contact time 37.5 hours self-study time	1 week

Module coordination	
Teacher	Interdisciplinary team
Module coordinator	Prof. Dr. Andreas Schultz
Institute/Department	Section Global Health & Global Child Health, University Hospital Bonn

Further information	
(Reading lists, information links etc.)	• World Health Organization. **Maternal mortality.** Geneva: WHO; 2025. https://www.who.int/news-room/fact-sheets/detail/maternal-mortality?utm_source=chatgpt.com • World Health Organization. **Newborn mortality.** Geneva: WHO; 2024. https://www.who.int/news-room/fact-sheets/detail/newborn-mortality?utm_source=chatgpt.com • Day LT, Vaz LME, Semrau KEA, Moxon S, Niermeyer S, Khadka N, et al. **Global prioritised indicators for measuring WHO's quality-of-care standards for small and/or sick newborns in health facilities: development, global consultation and expert consensus.** *BMJ Open.* 2025;15(10):e100338. doi:10.1136/bmjopen-2025-100338. PubMed • Perin J, Mulick A, Yeung D, Villavicencio F, Lopez G, Strong KL, et al. **Global, regional, and national causes of under-5 mortality in 2000–19: an updated systematic analysis with implications for the Sustainable Development Goals.** *Lancet Child Adolesc Health.* 2022;6(2):106–115. • Gera T, Shah D, Garner P, Richardson M, Sachdev HS. **Integrated management of childhood illness (IMCI) strategy for children under five.** *Cochrane Database Syst Rev.* 2016;(6):CD010123. doi:10.1002/14651858.CD010123.pub2. • Kerber KJ, de Graft-Johnson JE, Bhutta ZA, Okong P, Starrs A, Lawn JE. **Continuum of care for maternal, newborn, and child health: from slogan to service delivery.** *Lancet.* 2007;370(9595):1358–1369. doi:10.1016/S0140-

6736(07)61578-5. https://pubmed.ncbi.nlm.nih.gov/17933651/?utm_source=chatgpt.com

- Patton GC, Sawyer SM, Santelli JS, Ross DA, Afifi R, Allen NB, et al. **Our future: a Lancet Commission on adolescent health and wellbeing.** *Lancet.* 2016;387(10036):2423–2478. doi:10.1016/S0140-6736(16)00579-1.
- World Health Organization, UNAIDS, UNESCO, UNFPA, UNICEF, UN Women, World Food Programme, PMNCH. **Global Accelerated Action for the Health of Adolescents (AA-HA!): guidance to support country implementation. 2nd ed.** Geneva: WHO; 2023. https://www.who.int/publications/i/item/9789240081765/?utm_source=chatgpt.com
- World Health Organization. **Global standards for quality health care services for adolescents.** Geneva: WHO; 2025. ISBN 978-92-4-011401-2. https://www.who.int/publications/i/item/9789240114012?utm_source=chatgpt.com
- World Health Organization. **Investing in our future: a comprehensive agenda for the health and well-being of children and adolescents.** Geneva: WHO; 2021. ISBN 978-92-4-003779-3. https://www.who.int/publications/i/item/9789240037793?utm_source=chatgpt.com
- Lerch MF, Thrane SE. **Adolescents with chronic illness and the transition to self-management: a systematic review.** *J Adolesc.* 2019;72:152–161. doi:10.1016/j.adolescence.2019.02.010.
- Nguyen GT, Gauvreau C, Mansuri N, Wight L, et al. **Implementation factors of non-communicable disease policies and programmes for children and youth in low-income and middle-income countries: a systematic review.** *BMJ Paediatr Open.* 2024;8(1):e002556. doi:10.1136/bmjpo-2024-002556. https://pmc.ncbi.nlm.nih.gov/articles/PMC11149138/?utm_source=chatgpt.com
- Walt G, Gilson L. **Reforming the health sector in developing countries: the central role of policy analysis.** *Health Policy Plan.* 1994;9(4):353–370. doi:10.1093/heapol/9.4.353.
- Oliver K, Innvar S, Lorenc T, Woodman J, Thomas J. **A systematic review of barriers to and facilitators of the use of evidence by policymakers.** *BMC Health Serv Res.* 2014;14:2. doi:10.1186/1472-6963-14-2.
- Shiffman J, Smith S. **Generation of political priority for global health initiatives: a framework and case study of maternal mortality.** *Lancet.* 2007;370(9595):1370–1379. doi:10.1016/S0140-6736(07)61579-7.