

ANNUAL REPORT 2019





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This page: Community health workers on their way to a community meeting in Zambia.

Cover: Young girl in Dar es Salaam, Tanzania.

FROM CISMALC MANAGEMENT

CISMALC was established as a consortium in 2013 to undertake intervention research to support equitable improvement of maternal, neonatal and child health (MNCH) in low- and middle-income countries (LMICs) in Africa and South Asia.

Despite major achievements in reducing child mortality since 1990, much remains to be done. In 2018, at the start of the fifth year into the Sustainable Development Goals, 5.3 million children still died, mostly due to causes that could have been prevented or treated. There are new concerns about the United Nations leadership moving its focus away from health and that WHO may have weakened the attention given to MNCH. Reflecting these concerns, The Lancet has just launched a campaign on child and adolescent health for 2020¹.

CISMALC's commitment to MNCH continues to motivate our research. It goes beyond conducting research to include active engagement with global and national stakeholders to address top priorities and facilitate the translation of evidence from research into health policy and action at the national level. We are committed to continue to carry out relevant, high quality research that leads to informed action and impact.

CISMALC GUIDING PRACTICES

CISMALC guiding practices for overcoming global challenges and promoting knowledge-based policy-making. Addressing global priorities based on:

- High disease burden
- High likelihood of arriving at interventions which are scalable, i.e. can be rolled out:
 - cost-effectively
 - equitably
- Understanding users' needs and motivations
- Facilitating engagement, participation and communication with communities and decision-makers
- Producing high quality data for policy decisions

2019 proved to be a very rewarding year for CISMALC. It marked the publication of the findings from the first intervention trial initiated by CISMALC. The trial addressed a priority question identified by the WHO: whether Kangaroo Mother Care (KMC) could be safely and effectively initiated at home and would lead to reduced newborn and early infant mortality. The results, showing major health benefits, were published by The Lancet² and widely disseminated. Although publication in such a highly ranked journal is important to facilitate dissemination, we go beyond that. So, we shared the formative research on the acceptability of the intervention³ with WHO and national bodies. This assists efforts in India to improve KMC support in health facilities and the development of strategies to increase KMC population coverage. The implementing team in India as well as our partners in WHO are also centrally placed in a study to accelerate adoption of KMC in India and Ethiopia⁴.

Two other CISMALC-supported randomized controlled trials were completed in 2019. The first, eRegistry support, aimed to examine the effect of a clinical decision support tool on improving health behaviour and quality of care for pregnant women in Palestine⁵.

The second, NEOSUPRA, was conducted in Uganda. It aimed to evaluate the efficacy of i-gel[®] supraglottic airway used in neonatal resuscitation in reducing early neonatal mortality and morbidity in low income countries. The results from both trials will be published and disseminated in 2020.

CISMALC's current research includes seven ongoing trials with additional sub-studies. They focus on interventions that primarily affect the critical period from conception to when children are two years of age. It goes beyond survival and includes studies on interventions to give babies the best opportunities for optimal growth and development. The agenda includes delaying pregnancy among adolescent girls, improving antenatal care and care around delivery, addressing major causes of young child death and disability and promoting maternal and child nutrition.

As we have done after completing the KMC study, CISMALC will engage with both LMIC and Norwegian governments as well as with the WHO to translate relevant research findings into policy and health action.



Halvor Sommerfelt
Halvor Sommerfelt,
Director



Ingvild F. Sandøy
Ingvild F. Sandøy
Deputy Director



Jose Martinez
Jose Martinez
Scientific Coordinator



Ane Straume
Ane Straume
Head of Administration

IN MEMORY OF MAHARAJ KISHAN BHAN

Dr Maharaj Kishan Bhan (9 November 1947 – 26 January 2020) was an Indian paediatrician and clinical scientist, a National Science Professor at the Indian Institute of Technology, Delhi, Government of India, President of Jawaharlal Nehru Institute of Postgraduate Medical Education & Research (JIPMER) and an Advisor to the World Health Organization. He served for almost a decade as Secretary to the Government of India, Department of Biotechnology, Ministry of Science & Technology, when he established many new Institutes, clusters and innovation-support agencies to promote a transformation of the biotechnology sector in the country. A fellow of the National Academy of Medical Sciences, he was in 1990 awarded the Shanti Swarup Bhatnagar Prize for Science and Technology, the highest science award in India. His research contributions include the development of a Rotavirus vaccine, zinc as treatment of diarrhoea, and low osmolarity Oral Rehydration Solution for children with diarrhoea.

Dr. Bhan, or to his friends “Raj” (King), was the mentor for so many of us, and a vital inspiration for CISMAC. I met him for the first time in the late eighties when he was in his early forties and at the start of building up a world-leading research group focusing on child health. His brilliant mind was obvious to anyone who got to know him but that is not what first comes to my mind. He stated the essence of his focus simply and unsentimentally when I met him in January in Delhi: “What saddens me is that I will no longer be able to be with all the children”. I think he, in his fatigue, wanted to communicate that he was not sad for leaving this world but for no longer being able to be with and give more of himself to his own children and young grandson as well as to the marginalized children in India and other low and middle-income countries. Through all his relentless efforts, he has helped so many of them live healthier lives. In fact, spending more and more of his time supporting a number of scientists younger than himself, also within CISMAC, I believe his statement referred also to us.



For those who did not know him so well, Raj may primarily have been admired for his intellect, oratory skills and positive persuasiveness. However, for those of us who were fortunate to have him as a friend over decades, these important features are dwarfed by his care, genuine love and concern for his family, indeed for all those of us he considered as his kids.

The melodies which come to my mind when I think of him are not only Rachmaninov’s Vocalise and Lacrimosa in Mozart’s Requiem but, because he was always so full of optimism, also those based on Raag Bhairavi, the early morning Raag.

Bergen 30th of March, 2020.
Halvor Sommerfelt

IMPACT THROUGH COMMUNICATION EXCELLENCE

Opinion piece by Svein Bæra, Policy Director for Research, Norwegian Ministry of Foreign Affairs.

SVEIN BÆRA

Svein Bæra is Policy Advisor Research in the Ministry of Foreign Affairs, Oslo, Norway.

His area of responsibility includes creating good relations between the research community and the Foreign Service, to ensure that policy-making, processes and actions are informed by research-based knowledge. He has worked for the Norwegian Foreign Service for more than 20 years, including 8 years as a diplomat posted in Washington D.C., Pretoria and Dar es Salaam.



What is the ultimate goal or ambition for any health scientist working on any issue in any country – summarized in one word? I hope it is: Impact. That high quality research eventually leads to better policies and better practices and thereby improves lives and living conditions. To reach this ambitious goal, the research communication will have to be as excellent as the research itself.

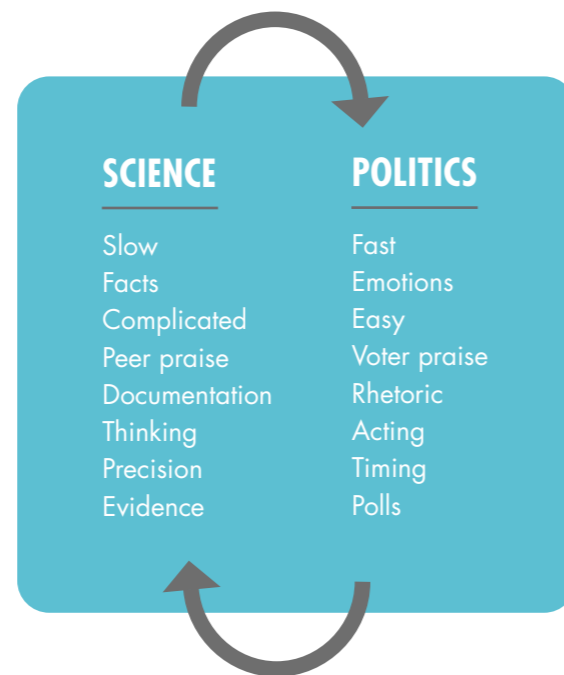
The Norwegian Ministry of Foreign Affairs invests in research in order to overcome global challenges and to promote knowledge-based policy-making. CISMAC’s vision of improvements in maternal, newborn and child health, including development in low- and middle-income countries, corresponds well with some of the most prominent priorities of our development policy. Although great progress has been made within the area of global health, far more is needed to reach SDG 3 and meet the ambition of Agenda 2030 of leaving no one behind.

For a researcher to influence policy-makers and shape policies, communication is key. A brilliant article published in The Lancet or Nature is important to display high quality and gain praise in the science community. However, you cannot expect policy-makers to find time to read scientific journals. Most importantly, to be able to influence,

a scientist needs to understand the culture in which policies are developed. There are also distinct and important differences between countries when it comes to research uptake in policy-making. Affecting policy with good research is challenging anywhere, but in particular in developing countries. In his book *Knowledge to Policy: Making the Most of Development Research*, Fred Carden, Director of Evaluation at the International Development Research Centre in Ottawa, Canada, points out how constraints such as lack of capacity, hard data, intermediary institutions, policy makers' autonomy and confidence in researchers from their own country, create obstacles for research-based policies. Carden explains how development researchers seeking influence should see their own work as one part of the policy process:

«One way or another, if research is to influence policy, the people who make and execute policy need to know about the research. This takes communication between researchers and policymakers. At its best, communication starts early in the research, designed into the research plan, and carried out as the project unfolds. Sometimes policymakers are personally engaged in planning and conducting the research, perhaps as participants in an informal partnership, or formally organized network. In Tanzania's research on health service delivery, government officials were involved from the beginning. More often, researchers report to policymakers, and others, as research yields results.»

My own experience in bridging research and policy-making indicates that the cultural gap between the science community and policy-makers is substantial. While a policy-maker often needs to conclude and decide rapidly, a research project usually may last several years. Policy-making requires a



Author's non-scientific and informal summary of some important differences in the science community and the policy-making community.

language understood and appreciated by most people – the voters. Research articles are often at a high level of abstraction and complexity, recognized only by fellow scientists. In policy-making, timing is key. A scientist however, will be reluctant to reveal anything of importance until all documentation is in place and a project is completed, thereby allowing for statements with the highest degree of accuracy. Not to forget that a policy-maker sometimes will have to pay attention to people's emotions in a way that may put scientific evidence and facts in the back seat.

In 2016, Oxford Dictionaries chose 'post-truth' as its Word of the Year. The term describes a state of affairs in which

objective facts have become less influential in shaping public opinion than appeals to emotion and personal belief. This tendency has already had consequences for the democratic system and political decision-making in many countries – and if anything, the trend is becoming more profound. Supporting excellent science and the adequate communication of the facts it generates can be an effective response to this worrying development.

Finally, researchers should be aware that public policy-making differs significantly from business policy-making. As Alice Hill and Leonardo Martinez-Diaz point out in a *Foreign Affairs Magazine* article (January/February 2020):

«If the effects of climate change are increasingly obvious, then why are the public and private sectors so unprepared for its consequences? One reason is that academic disciplines and government agencies often remain isolated from each other, and neither is particularly good at working with the private sector.»

How then should the CISMACH science community obtain even greater impact through excellent communication? Identifying and understanding the different cultures of the target groups is important. The high quality research which is produced needs to be communicated at the right time, and framed in manners understandable to non-scientists. In addition to public government, health practitioners and business policy-makers; the mothers, families and local communities are obviously key groups to reach to make lasting impact.

RELEVANT LITERATURE

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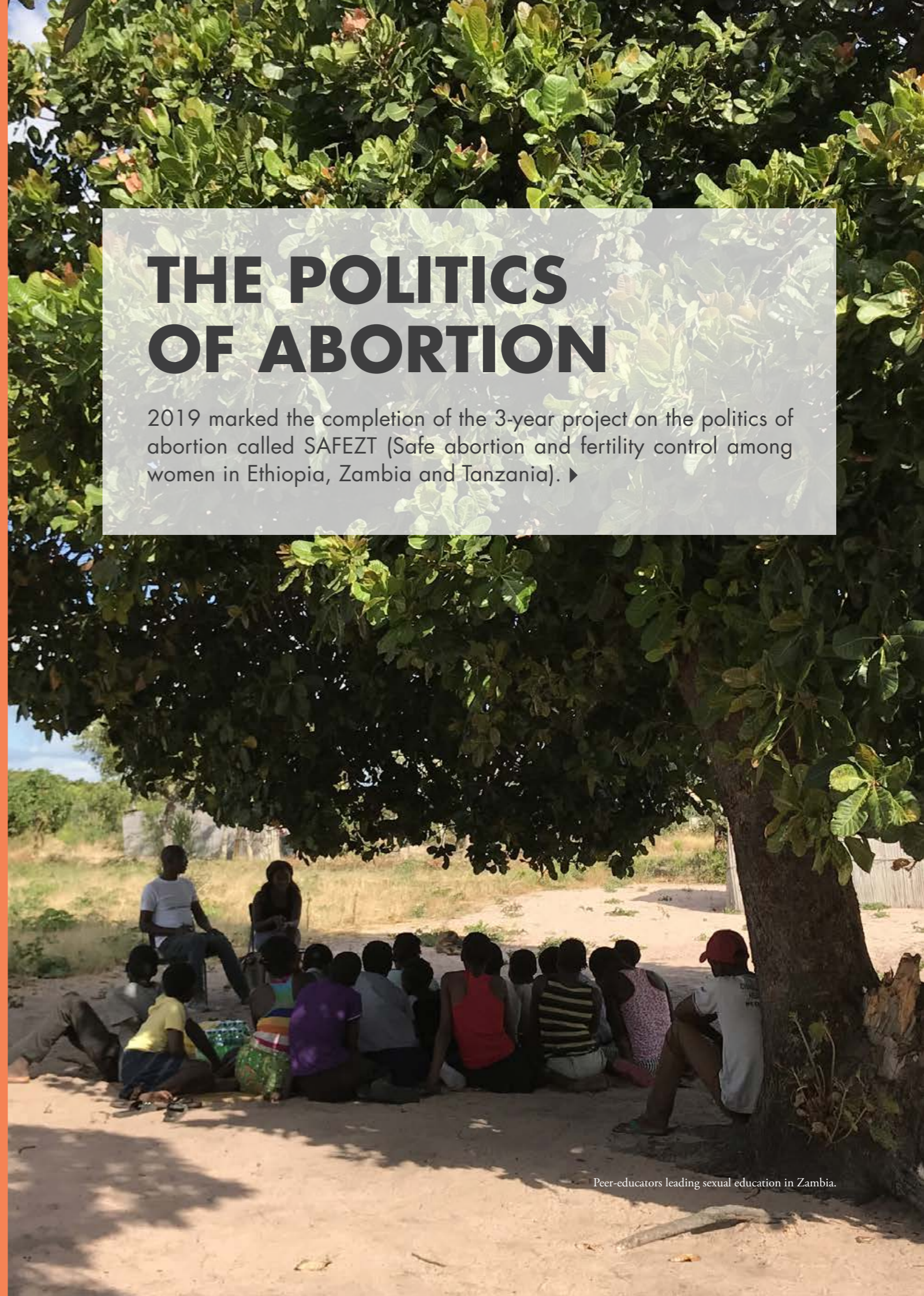
Wester G, Bærøe K, Norheim OF. Towards theoretically robust evidence on health equity: a systematic approach to contextualising equity-relevant randomised controlled trials. *J Med Ethics* 2018. doi: 10.1136/medethics-2017-104610

World Health Organization. Making fair choices on the path to universal health coverage. Final report of the WHO Consultative Group on Equity and Universal Health Coverage. Geneva: World Health Organization 2014. https://www.who.int/choice/documents/making_fair_choices/en

RESEARCH INSIGHTS

THE POLITICS OF ABORTION

2019 marked the completion of the 3-year project on the politics of abortion called SAFEZT (Safe abortion and fertility control among women in Ethiopia, Zambia and Tanzania). ▶



Peer-educators leading sexual education in Zambia.

The SAFEZT project addressed the problem of unsafe abortion which is responsible for almost one fifth of all maternal deaths in sub-Saharan Africa. Abortion related deaths have been closely associated with restrictive laws prohibiting access to safe abortion services as well as negative sanctions on contraceptive use among adolescents. The project had a prime focus on Ethiopia, Zambia and Tanzania.

The project has been led by professor Astrid Blystad (Centre for International Health, Department of Global Public Health and Primary Care) and professor Getnet Taldele (Addis Abeba University, Ethiopia) with substantial support from professor Karen Marie Moland (Centre for International Health, Department of Global Public Health and Primary Care).

Collaborative success

SAFEZT has provided unique opportunities for collaboration between the partner countries. The project has explored the dynamics between national laws and policies, and women's actual access to safe abortion services. The comparative perspective of the research has yielded important results revealing that on the one hand, relatively liberal abortion laws, like the one in Zambia, do not imply that

services are accessible even when legal conditions are met. On the other hand, a highly restrictive abortion law, like the one in found in Tanzania, does not necessarily imply that relatively safe abortion procedures are unavailable.

The project's findings demonstrate that abortion laws in and of themselves have limited power to explain women's actual access to safe abortion services.

A complexity of factors, not the least public opinion and national moral and political discourses strongly intervenes in the relationship between law and access, and produce unpredictable outcomes. Ethiopia has an abortion law which in the legal spectrum is placed between the restrictive Tanzanian- and the liberal Zambian law, but with its strong political commitment to reduce maternal mortality, the government has rolled out services and improved women's access to safe abortion. Hence, the project's findings demonstrate that abortion laws in and of themselves have limited power to explain women's actual access to safe abortion services.



Advertisement for contraceptive pills on a brick wall in Zambia.

Important work by students

A number of Norwegian, Ethiopian, Zambian and Tanzanian senior researchers, post docs, PhD candidates, Master students and research track students in medicine have been affiliated with the project. Based on long-term ethnographic and archival studies in Zambia, PhD candidate Marte E. S. Haaland explores how legal, social and political factors affect women's access to safe abortion and birth control in Zambia. To gain a greater understanding of abortion access scenarios, she questions the usefulness of established binary concepts and positions such as restrictive/permissive legal abortion contexts and pro- versus anti-abortion stands. Through in depth studies of the 'everyday politics of abortion' at community-, provincial- and national levels, she documents a series of paradoxical limitations to abortion access encountered within the seeming permissive legal context of Zambia.

Sharing results

The team has published their results in a variety of journals, and together they have issued an article collection entitled 'Reproductive health and the politics of abortion in Ethiopia, Zambia and Tanzania' published in a designated issue of the International Journal for Equity in Health. The collection was published in connection with the Safe Abor-



tion Day 28 September, and was launched at a panel at the European Congress on Tropical Medicine and International Health in Liverpool 16–20 September 2019.

The project had a dissemination conference in Dar es Salaam in March 2019 where researchers and policy makers from the partner countries met and engaged in discussions about key project results as well as productive ways ahead within the field of abortion policy and research.

FACTS

Study: Safe abortion and fertility control among women in Ethiopia, Zambia and Tanzania.

Purpose: Understanding the complex relationship between abortion laws, policies and access to safe abortion services in Ethiopia, Zambia and Tanzania.

The SAFEZT project uses qualitative methodologies and social science perspectives to examine legal, political and social factors that condition access to sexual and reproductive health services. The project has been a collaboration between the partner countries, it has taken three years and was completed in 2019.

KANGAROO MOTHER CARE

About 20 million babies are born with low birth weight (LBW) every year, 97% of them in low-and-middle income countries (LMICs). These babies are particularly vulnerable to falling ill and even to die. Researchers are focusing on ways to improve these babies' outcomes. Kangaroo Mother Care (KMC) has been shown to be an effective intervention when initiated in hospitals. These vulnerable babies are then less likely to fall sick and are more likely to survive. ▶



Mother giving KMC to her baby in her house, India.

Since 2003, WHO has recommended that KMC be used in health facilities for all stable babies with low birthweight. However, because most of these babies are born at home or discharged early from health facilities, less than 5% of these babies actually receive this type of care.

Working together with WHO, CISMAC has undertaken a study in India, where 40% of the world's low birthweight babies are born, to learn more about possibly implementing KMC at home in the communities. The Centre for Health Research and Development, Society for Applied Studies (CHRD SAS), Delhi, a CISMAC partner, was selected to conduct the community-initiated KMC (cKMC) trial.

The cKMC trial was an individually randomised controlled trial that aimed to determine the impact of cKMC on survival, growth and development of babies up to 6 months of age. The study took place in Haryana, a state in northern India. A total of 8402 babies were involved in the study, all weighing between 1500 to 2250 gms. These babies had been born at home or in a health facility but had been discharged early without receiving KMC. The babies were followed-up by our team until they were 6 months old.

The importance of formative research

The study began with a period of formative research to explore how feasible and acceptable it would be to promote KMC initiation at home in this area. Working with the families and communities helped us understand how to better promote the practice. We identified several potential challenges to cKMC – such as the intense heat and cold of this region, taboos on skin-to-skin contact (SSC) with the baby, limits on time and energy demands on the mother, and lack of cooperation of family members, in particular from males in the household.

In our experience, KMC proved to be a family affair, and not just an intervention restricted to mother and baby.

Early interviews suggested a strong belief that caring for babies is women's responsibility; male members are too tired after outdoor work; men cannot deal with the smell of urine and stool; father's hairy chest will interfere with SSC;

men cannot handle delicate, fragile babies. Our counselling was designed carefully, taking into consideration the limited resources within households, these cultural beliefs, religious taboos and social norms. Barriers were dropped by families when feasible, effective solutions, many generated from within the community and by the community, were discussed.

Family participation

Once the main trial began we found that the family response was overwhelmingly positive. KMC by its nature clearly facilitated the baby's bonding with the mother as well as with other family members – and once the families could see its tangible benefits for the baby, they became its most committed promoters. Already early on, the response from mothers and families was positive – and responses improved further as we adjusted the delivery design to incorporate feedback from the families. Almost all the mothers in our trial accepted giving KMC. Many other family members, and in particular fathers, happily shared giving SSC to the newborn with the mothers.

After placing the baby on my chest, I actually realized that I have become a father. I never had such a feeling with my previous child. –Father

In a predominantly patriarchal setting, it was unexpected to have so many fathers happily participating. Fathers did SSC while mothers bathed, cooked, completed their household chores; when mothers fell ill, were tired or in pain because of episiotomy or cesarean section. Fathers also took care of older siblings, did household chores, washed clothes of mother and baby, helped mothers fasten binders for placing babies in SSC, changed baby's diapers, etc. One of the mothers was blind and deaf, the father, who owned a small shop, did SSC even in the shop using a binder so that the baby could have someone giving SSC day and night. Grandmothers were surprisingly more supportive, surpassing our expectations, they did not want to lose out on the emotional bonding with the grandchild, a potential benefit of KMC. They not only did SSC, but also assisted with household chores. In our experience, KMC proved to be a family affair, and not just an intervention restricted to mother and baby.



Mother in the cKMC study giving KMC to her baby.



Father giving KMC to the newborn, India.

THIS IS KMC

- Kangaroo Mother Care = Early and prolonged skin-to-skin contact (SSC) and exclusive breastfeeding.
- KMC initiated in hospital improves Low Birthweight Babies survival during the neonatal period by 40% and reduces hospital-acquired infections.
- KMC also improves exclusive breastfeeding, promotes early growth and development, increases mother-child bonding, reduces stress in both mothers and babies and increases mothers' self efficacy.
- cKMC means Community Initiated KMC and refers to the starting of the practice of KMC outside health facilities.



Baby kept close to mum in KMC carrier, India.

Impressive results

The cKMC trial promoted KMC to the 4,480 mothers and babies who were randomized to the intervention group. Intervention workers and supervisors counselled mothers and families and encouraged them to engage in SSC as long as possible during the day and night, preferably for 24 h a day, with the assistance of other family members. During follow-up home visits, the worker observed the mother practising KMC, and supported the mother and family to solve any problems or overcome barriers to effective KMC.

The trial results were published by the Lancet in November 2019⁶. High intervention adherence was achieved, with an average of 11 hours of SSC over 24 hours. Mothers reported giving SSC until the babies were 27 days old. The intervention resulted in an impressive 25% improved survival during the first ½ year and a 30% survival increase in the first month of life. It also increased exclusive breastfeeding, reduced the risk of severe infection, pneumonia and severe diarrhoea.

The intervention resulted in an impressive 25% improved survival during the first ½ year.

The study not only showed us the benefits of cKMC. It also enabled us in promoting the practice to mothers and families in ways that could be carried out sustainably by local and national health programmes. The tools, materials and training manuals developed have already been put into use as the Indian Government works to scale up the coverage of KMC for babies born in health facilities.

Translating what we have learned to a scaling up of KMC

Before the trial was over, the overwhelmingly positive preliminary results led to the study team being asked by the Indian Ministry of Health and Family Welfare as well as the state government to participate in an Implementation research project in collaboration with WHO. This initiative will develop an integrated, sustainable and scalable KMC model, implementable across the facility-community continuum. The scheme aims to achieve more than 80% coverage providing effective KMC, referring to more than 8 hours of SSC per day and exclusive breastfeeding, to babies weighing less than 2kg at birth.

The materials developed for the cKMC trial were utilised in the KMC Scale Up study for facility-born low birth-weight babies in an entire study district with a population of more than 1.5 million. Thanks to the committed district government leadership and its deep engagement right from the outset, more than 80% population based coverage of KMC could be achieved. Simultaneously, as a partnership of CHRDSAS and state governments, KMC coverage was scaled up in 16 further districts of Haryana and in the neighbouring state of Himachal Pradesh over a period of 2 years.

Sharing the knowledge

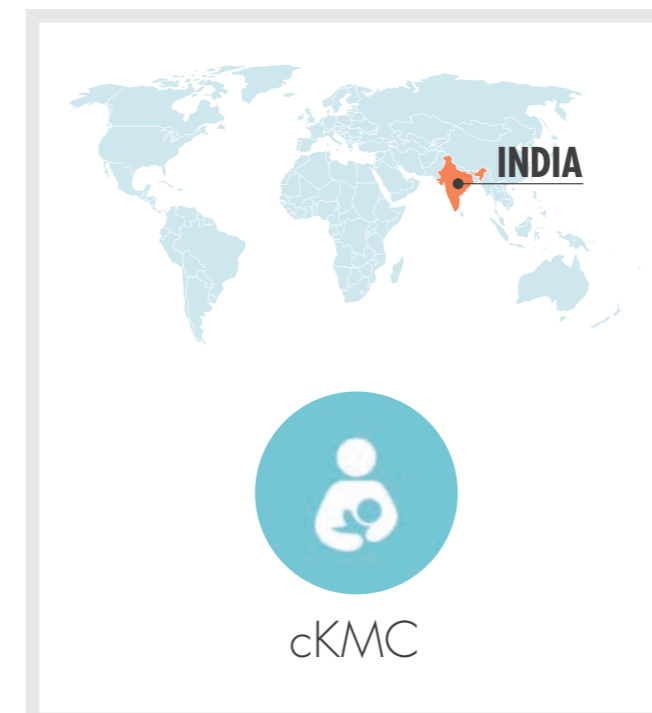
The cKMC study methods, outcomes and key implementation lessons have been widely shared in international and national consultation meetings. The audiences included global and regional experts, WHO, UNICEF and bilateral agencies in Asia and Africa, government policy-makers and program officers, paediatricians, obstetricians, public health experts and researchers. Beyond their publication in a high impact journal, the findings of the trial were presented in several fora in India, such as The Kangaroo Mother Care Foundation, and in health training institutions across various Indian states. The Indian government has shown keen interest in an active response to the research evidence. Discussions at the meetings suggest that KMC, initiated in facilities or in the community and with the addition of other key elements of essential newborn care,

could serve as a platform for programmes to be delivered with high coverage to improve care for preterm and low birth weight babies.

Changing global recommendations to include cKMC

WHO was a close collaborator of CISMALC in the planning and follow-up of the implementation of the cKMC trial and it led the above-mentioned KMC Scale-Up study. Increasing KMC coverage is a priority for WHO as it will make a major contribution to the achievement of SDG Target 3.2 of ending preventable newborn deaths, with all countries aiming to reduce NMR to at least as low as 12 per 1000 live births by 2030.

KMC has surprised me, I have never known something like this before. Whenever the baby would feel cold and I placed baby on my chest, within a very short time, baby became warm. I will tell everyone to do KMC.
– Grandmother



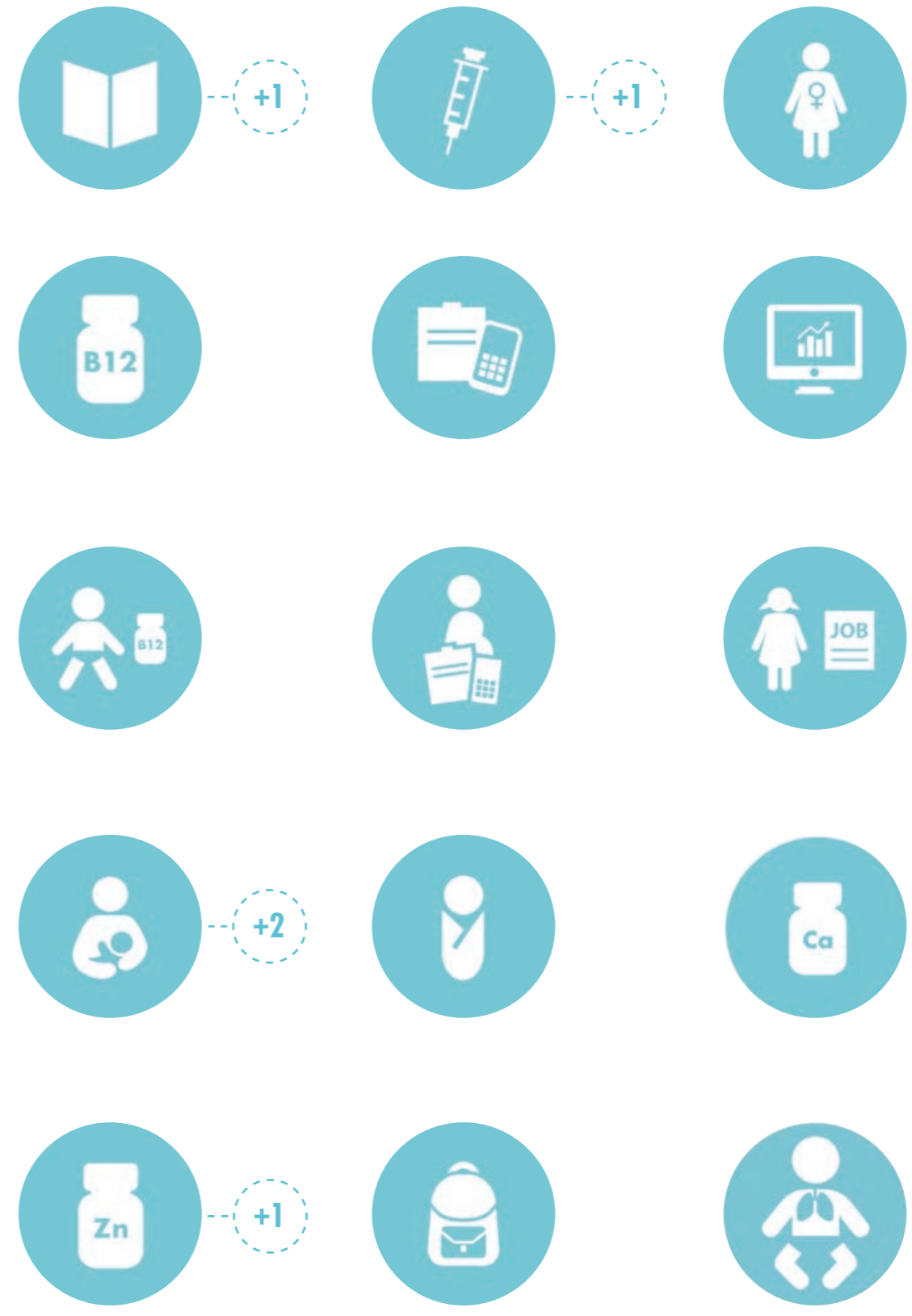
FACTS

Study: Community-initiated Kangaroo Mother Care

Purpose: To examine whether community-initiated Kangaroo Mother Care (cKMC) may improve the survival and health of babies that are born with a low birth weight.

Before this study, Kangaroo Mother Care started in health facilities was known to be an effective intervention to protect low birth weight newborns. This study has shown that KMC when started at home is equally effective in improving survival and health of low birth weight newborns.

RESEARCH PROJECTS



RISE

In Zambia, approximately one third of young girls in rural areas have given birth by the age of 18. Adolescent pregnancies pose significant risks to both mothers and their babies. The Research Initiative to Support the Empowerment of girls (RISE) aims to measure the effect of interventions that include economic support, education and reproductive health programs on early childbearing rates in rural Zambia. Nearly 5 000 7th grade girls from 157 rural schools are enrolled in the 5-year study.



Principal Investigator: Ingvild Fossgard Sandøy / Co-Principal Investigator: Patrick Musonda

Cost-Benefit RISE

Adolescent pregnancy is one of the greatest development challenges facing low- and middle-income countries, not only because it represents a danger to mother and child, but also because of its profound social and economic consequences. It is a particular challenge in rural Zambia. This study investigates the short- and long-term benefits of providing cash support to adolescent girls and their guardians / parents, as well as community dialogue in CISMAC's RISE trial to delay pregnancy and childbearing to an appropriate age.



Principal Investigator: Ingvild Sandøy / Co-Principal Investigator: Patrick Musonda / Study Lead: Amani Thomas Mori

B₁₂ in Pregnancy

Worldwide, vitamin B₁₂ deficiency is common, affecting people of all ages. It can lead to a wide variety of health problems and can, without prompt treatment, result in permanent damage. In this study, we measure the effect of giving daily oral vitamin B₁₂ supplements to pregnant women and during a 6-month period after they have given birth on the neurodevelopment and growth of their children. The results may help revise dietary guidelines for South Asian women, and could lead to improved pregnancy outcomes as well as improved child neurodevelopment.



Principal Investigators: Ram Krishna Chandyo, Laxman Prasad Shrestha, Tor A Strand

Child B₁₂ Follow-up

Vitamin B₁₂ deficiency is common and can occur at all ages. This study is a follow-up of children who participated in a placebo-controlled randomized trial in Nepal, assessing effects on child growth and neurodevelopment, one and two years beyond supplementation with vitamin B₁₂ to infants. If persistent improvements in growth and development are found, results can guide international nutrition recommendations and potentially improve the well-being of many children.



Principal Investigators: Tor A Strand, Laxman Shrestha, Manjeswori Ulak

cKMC

Nearly 80% of infant deaths occur in babies born with low birth weight (LBW). According to hospital-studies, up to 40% of these deaths could be prevented with Kangaroo Mother Care (KMC), where the baby is kept for several hours every day on the mother's chest, giving them warmth and access to life-saving breast milk. Almost all evaluations of KMC have been carried out in health facilities. This study evaluates KMC initiated in the home, also called community-initiated KMC (cKMC). The study takes place in India, where over one quarter of babies are born with LBW, and includes over 8 000 LBW babies to evaluate its impact on survival in newborns.



Principal Investigators: Sarmila Mazumder, Sunita Taneja / Co-Principal Investigator: Halvor Sommerfelt

Biological effects of cKMC

Training mothers in community initiated Kangaroo Mother Care (cKMC) may be an effective way to reduce mortality and morbidity of low birth weight babies (LBW). The current study is a sub-study of CISMAC's main cKMC trial and seeks to investigate some of the biological pathways with which cKMC can improve infant health and survival.



Principal Investigator: Bireswar Sinha / Co-Principal Investigators: Nita Bandahari, Halvor Sommerfelt

Poverty and Equity cKMC

As an extension of the ongoing trial on the survival benefits of promoting Kangaroo Mother Care at home to low birth weight babies (cKMC), this equity study evaluates the impact on fairness outcomes such as survival benefits for the poorest vs. the richest and the prevention of catastrophic health care expenditures among the poor in two districts in North India.



Principal Investigators: Sarmila Mazumder, Kjell Arne Johansson

Zinc-Sepsis

Severe infections, including sepsis and severe pneumonia, contribute to almost one quarter of the deaths in infants up to two months of age. Widely accessible and very cheap, a daily dose of zinc given to young infants under antibiotic treatment for probable serious bacterial infection was shown to increase the success of treatment by 43%. These encouraging results have prompted us to do a much larger study in over 4 000 infants under two months of age to estimate the efficacy of the treatment to prevent death. The study involves a hospital in Nepal and four hospitals in New Delhi, India.



Principal Investigators: Sudha Basnet, Nitya Wadhwa / Co-Principal Investigators: Shinjini Bhatnagar, Tor A Strand

Zinc Equity

Low-cost health care interventions that prevent impoverishment and catastrophic health expenditures can be valuable national health initiatives. Zinc Equity is a sub-study of the ongoing zinc-sepsis trial. It will evaluate the health and economic consequences for families of a zinc adjunct to standard treatment given to infants (age 3–59 days) hospitalized with a “clinical severe infection”. Zinc may shorten the length of stay and the demand for expensive intensive care for these infants. Comparing the two-arms of the study will therefore provide information about socio-economic inequalities in infant deaths, cost-effectiveness and financial risk protection of the adjuncts.



Principal Investigators: Nitya Wadhwa, Kjell Arne Johansson / Co-Principal Investigator: Debjani Ram Purakayastha

BCG

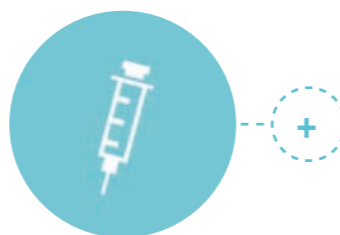
The Bacillus Calmette-Guérin (BCG) vaccine may have non-specific effects in infants, with protection beyond its ability to prevent tuberculosis (TB). In addition, some evidence suggests that giving BCG later in infancy may enhance its effects. This may be particularly important for HIV-1 exposed children who have an increased risk of severe infections. This study randomizes 2 200 HIV-1 exposed Ugandan infants to either receive BCG either within 24 hours of being born or at 14 weeks of age. The results may impact policies concerning timing of BCG administration.



Principal Investigator: Victoria Nankabirwa / Co-Principal Investigator: Halvor Sommerfelt

EcoTime BCG

There is still uncertainty pertaining to when it is best to give the BCG vaccine to babies born to mothers infected with HIV. This study will evaluate and compare the cost-effectiveness of giving the BCG vaccine to Ugandan HIV-exposed babies at birth or at 14 weeks of age. Combined with possible treatment benefits assessed in the main study, the cost implications of the two vaccination strategies will generate information important for vaccine program development and implementation.



Principal Investigator: Victoria Nankabirwa / Co-Principal Investigator: Bjarne Robbestad / Master student: Steve Kabanda

eRegistry and care

The Norwegian Institute of Public Health and the World Health Organization have developed a framework and series of tool kits to make it easier for low- and middle-income countries to improve their collection and use of health information to the benefit of women's and children's health. This study is the first of its kind to assess the benefits of this type of program in improving the quality of care in rural Bangladesh where major gaps remain, despite the progress made in reducing maternal and child mortality over the last decade.



Principal Investigator: J. Frederik Frøen / Co-Principal Investigator: Anisur Rahman

eRegistry support

eRegistries are designed to increase the availability and timely use of routine maternal and child health (MCH) data. The Palestinian National Institute of Public Health, in close collaboration with the Ministry of Health in Palestine, is currently rolling out a nationwide MCH eRegistry. With support from CISMAC, the Norwegian Institute of Public Health is carrying out randomized controlled trials with 120 health center clusters in Palestine to assess if the eRegistry and its interactive checklists and clinical decision support can improve the quality of antenatal care.



Principal Investigator: J. Frederik Frøen / Co-Principal Investigator: Buthaina Ghanem

Chlorhexidine

Infection of the umbilical cord stump (omphalitis) can lead to life threatening illness in the first 28 days of life. The risk of omphalitis is high in low- and middle-income countries. This trial takes place in Uganda and involves nearly 5 000 babies of mothers who are not infected with HIV-1. It assesses the effect of a single washing of the umbilical cord stump with an antiseptic solution of 4% chlorhexidine in birth facilities on the risk of omphalitis and severe newborn infections.



Principal Investigator: Victoria Nankabirwa / Co-Principal Investigator: Halvor Sommerfelt

SCALE-8

More than 250 million children living in low- and middle-income countries do not achieve their full development potential. This study follows a previous project assessing the effectiveness, feasibility and cost of integrated early stimulation and nutrition interventions delivered by a government community-based health service in Pakistan. It has re-enrolled children at 8 years of age from 80 population clusters to determine which beneficial effects may have endured to school age. The study will identify risks and protective factors that influence outcomes and will inform the development of improved interventions for child development.



Principal Investigator: Muneera A Rasheed / Co-Principal Investigator: Aisha K Yousafzai

SAFEZT

This three-year project examines global and national policy discourses surrounding fertility control and abortion, as well as local practices and moralities related to these issues among adolescents in Ethiopia, Zambia and Tanzania. The dynamics between the law, policies and access to fertility control and safe abortion services differ between these countries. The project aims to generate comparative knowledge of the interplay between policy, legislation and socio-cultural conditions framing girls' and women's reproductive choices.



Principal Investigator: Astrid Blystad / Co-Principal Investigator: Getnet Tadele

CCF instead of RCT?

This study evaluates whether a novel observational epidemiological study design, the case-control with follow-up (CCF), could be an efficient alternative to randomized controlled trials (RCTs), case-control (CC) studies and cohort studies for investigating the association between exposures and rare outcomes. To find out, we will perform a CCF and a CC study in parallel with an ongoing RCT in Uganda that measures the association between cleaning the umbilical cord stump with chlorhexidine on the day of birth and the risk of subsequent severe illness in the newborns.



Principal Investigator: Victoria Nankabirwa / Co-Principal Investigator: Hans Steinsland

Girl Power

Lack of reproductive health information and lack of economic opportunities may contribute to a high proportion of girls in low- and middle-income countries becoming pregnant at a young age. This study investigates how reproductive health information and entrepreneurship training affect the decision making of girls when it comes to postponing pregnancy and engaging in economic activities. More than 3 400 Tanzanian school girls drawn from 80 schools across four regions of Tanzania are involved in this cluster randomized controlled trial.



Principal Investigator: Bertil Tungodden

The CAP trial

Low dietary intake of calcium increases the risk of pre-eclampsia and eclampsia, which are serious hypertensive disorders in pregnancy that are dangerous for mother and baby. Although calcium supplementation is recommended by WHO from 20 weeks of pregnancy, no research has tested whether starting it before pregnancy can reduce the risk among women with previous pre-eclampsia. This multi-center randomized trial in South Africa, Argentina and Zimbabwe estimated the effect of calcium supplementation before and in the first half of pregnancy on the risk of re-current pre-eclampsia. The main findings of this important trial is due for publication in the Lancet in 2019.



Principal Investigator: Justus Hofmeyr

NeoSupra

Globally, many babies are born too exhausted to breathe spontaneously after birth. Such babies need immediate assistance – otherwise they die. At Mulago Hospital, Kampala, Uganda, we are conducting a randomized controlled trial to see if the use of a supraglottic airway device instead of a facemask, which is commonly used for ventilation, can reduce the risk of dying and of brain damage in newborns who do not breathe after birth. These results are important for low- and middle-resourced settings where many such deaths occur.



Principal Investigators: Thorkild Tylleskär, Josaphat Byamugisha



Little girl sitting outside house, South Africa.

BUILDING FOR THE FUTURE

CISMAC BEYOND 2023

In June 2019, nearly 60 CISMAC, and CISMAC-associated researchers gathered in Bergen to celebrate the success of the Centre's first 5-year period, to review some of the Centre's achievements and highlights, and, more importantly, to reflect on the way forward in the next 5-year period and beyond, establishing the CISMAC partnerships and networks as a sustainable, long-term, international consortium. ▶



Group photo of participants at CISMAC's big meeting in June 2019. Sotra, Norway.

The meeting was organized to maximize opportunities for face-to-face interactions among the participants, so that they could learn more about each other, identify common interests and explore ideas for future collaboration. In addition to including opportunities to present updates from some of the projects, there were greetings from university leadership, input and ideas concerning future funding directions, and invited speakers with expertise in topics of interest.

Future directions

CISMAC's focus is on large, high-quality randomized controlled trials (RCTs) of Maternal, Newborn and Child Health (MNCH) interventions to estimate the effect and evaluate the delivery of interventions. Updates on the progress of the projects and sharing of early results are combined with the identification of priority directions for future research. In addition to conducting new trials, our activities include:

- Conducting systematic reviews
- Using existing large data sets generated by the RCTs and the collaborators' data from previous studies to address new research questions
- Undertaking studies to follow-up cohorts created by the RCTs
- Engaging in activities to assist translating research findings to making guidelines and policy, and, ultimately to program implementation.

Passing the torch

The intensity of the 3-days of discussions and meetings attested to the strong engagement this diverse group has for MNCH research. The CISMAC consortium started from a network of international partnerships with the Centre for International Health at the University of Bergen developed over many years. At this meeting, CISMAC senior researchers interacted with younger researchers, some established, others just starting out on their research careers aiming to expand collaborations across partners and their institutions. This cross-generational and cross-institutional collaboration will strengthen existing partnership bonds and enable these partnerships to be broader and more sustainable. CISMAC is also working to encourage the strengthening of its partners' new generation of researchers by establishing a CISMAC Research Training Track, with a focus on early career researchers.

Anchored at UiB

CISMAC Director, Halvor Sommerfelt's introductory remarks were supported by welcomes from University of Bergen Pro-Rector, Margareth Hagen and Per Bakke, the dean of the Faculty of Medicine at UiB. Hagen spoke of going beyond the need for more science, to the need for making science more accessible. She congratulated CISMAC on its contributions to knowledge and capacity-strengthening to making a better world. According to Bakke, CISMAC is helping the Faculty of Medicine – and, indeed, the government of Norway – achieve the goals of the Granavolden platform⁷ contributing to the achievement of the Sustainable Development Goals (SDGs), particularly in the area of MNCH, adolescent girls, capacity-strengthening and knowledge transfer.

Funding the way forward

The funding of global health research in Norway undergoing fundamental changes, CISMAC invited several speakers who had helpful ideas about how to search for funding for future projects. Among them, Svein Bæra from the Norwegian Ministry of Foreign Affairs who underlined the recently adopted strategy policy for NORAD⁸. This policy states that Norwegian development activities should be informed by evidence. He spoke of science diplomacy that results in building bonds. By working together, he said, we can solve global problems together. However, he underlined the need for better communication between the different players - scientists, decision-makers, the civil service and the general public. He highlighted, the need to strengthen the bonds between research institutions and civil society actors, such as NGOs, Red Cross, etc. Bæra also pointed out that researchers are well placed to inform society beyond knowledge that is relevant today, to knowledge that is likely to be important in the future, while understanding the differences and interphase between science and politics. For more information, please see Svein Bæra's opinion piece on page 7 of this report.



Glimpse from CISMAC's 5-year anniversary gathering 13.–15. June 2019, at Panorama Hotel & Resort, outside Bergen.





Rector at UiB, Dag Rune Olsen along with Prof Thorkild Tylleskär and students at the BSRS course "The unfinished agenda of maternal and child health", Bergen, Norway.

INVESTING IN THE RESEARCHERS OF THE FUTURE

CISMAC strongly supports investing in the future of mother and child health research by helping to build the next generation of researchers in this field. We are taking steps to build this international cadre of trained researchers by offering important relevant courses and seminars.

Course in systematic reviews and meta-analyses

In 2019, CISMAC offered a course on systematic reviews and meta-analyses in Bergen.

Systematic reviews are becoming increasingly important tools for summarising the effect of interventions to improve health and development. It is important that health care professionals understand what systematic reviews are, and know enough about how to use them, not only to trans-

late research findings into policy and practice but also to identify new areas of research. CISMAC brought in highly experienced experts from the Cochrane EPOC group at the Norwegian Institute of Public Health and organized this course also in collaboration with the Norwegian Research School of Global Health.

The course was a kind of "real-life" experience. Students would work to develop a protocol for a systematic review relevant to their own research work. Through lectures, group and independent work, students would develop this pro-

ocol, learn how to conduct effective literature searches, learn how to critically appraise both primary studies and systematic reviews, and learn techniques for data extraction, synthesis and meta-analyses.

The course was fully booked. There were 25 participants from 10 different countries. They included PhD candidates, post-docs, senior researchers, Professors and a master student. While course organisers acknowledge the challenges inherent in hosting a course with a diversity of international participants, they felt that the benefits of sharing a wide cross-section of varied experiences represented an excellent investment of time and efforts.

The aim of this course is to introduce systematic review methodology and critical appraisal skills to enable participants to write and implement systematic reviews.

The students themselves found the experience intense and very relevant to their own research work. They greatly appreciated the 1:1 follow-up that was included after the course in Bergen ended to discuss the protocols they had developed.

BSRS course: The unfinished agenda of maternal and child health

In the 2019 Bergen Summer Research School (BSRS), CISMAC contributed with one of the 6 courses, entitled, "The unfinished agenda of maternal and child health".

Led by Professor Thorkild Tylleskär, and PhD Fellow, Andrea Melberg, the course united a team of 12 lecturers from the international networks of CISMAC and the Centre of International Health along with UNICEF. The course particularly addressed the "know-do" gap – how to bridge the gap between the growing evidence base of information about what works to improve maternal and newborn health, and how to implement / integrate this knowledge into routine practice.

Check out our website for more information:
www.uib.no/en/cismac/117088/education-cismac



Debra Jackson from UNICEF lecturing at BSRS course "the unfinished agenda of maternal and child health". Bergen, Norway.

SYSTEMATIC REVIEWS

What is a systematic review?

"A systematic review summarises the results of available carefully designed healthcare studies (controlled trials) and provides a high level of evidence on the effectiveness of healthcare interventions. Judgments may be made about the evidence and inform recommendations for healthcare."

*Cochrane Consumer Network – using trusted evidence to make informed decisions, resulting in better health.

Why do we need systematic reviews?

The achievement of health and others goals is more likely to be realized through well-informed health policies.

FACTS & FIGURES

CISMAC MANAGEMENT AND ADMINISTRATION



Halvor Sommerfelt
Director



Ingvild F Sandøy
Deputy Director



Jose Martines
Scientific Coordinator



Ane Straume
Administrative Leader



Filiz Ipek
Economy



Anne Berit Kolmanskog
Project administration



Catherine Schwinger
Project administration



Marte E. S. Haaland
Project administration



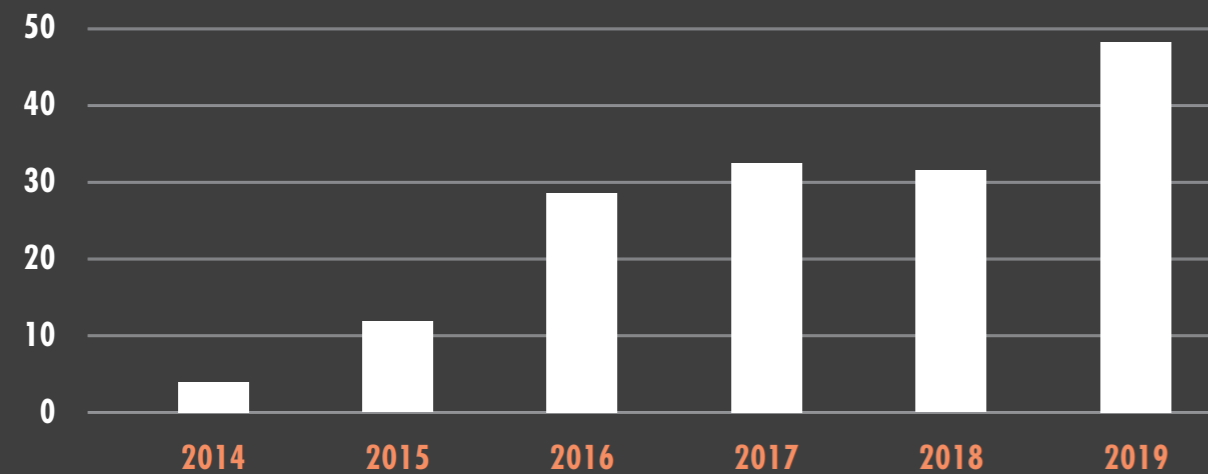
Elinor Bartle
Web & communication



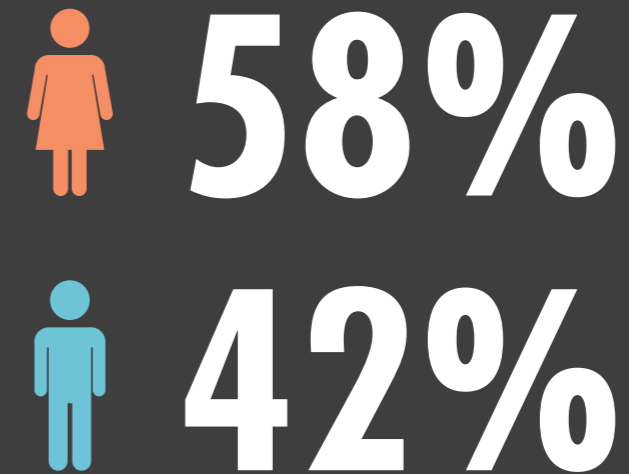
Gunhild Koldal
Web & communication

CISMAC IN NUMBERS

PUBLICATIONS



GENDER DISTRIBUTION PHD CANDIDATES



ADDITIONAL FUNDING GENERATED BY CISMAC STUDIES



COUNTRIES WHERE CISMAC STUDIES ARE TAKING PLACE



LIST OF SCIENTIFIC PUBLICATIONS

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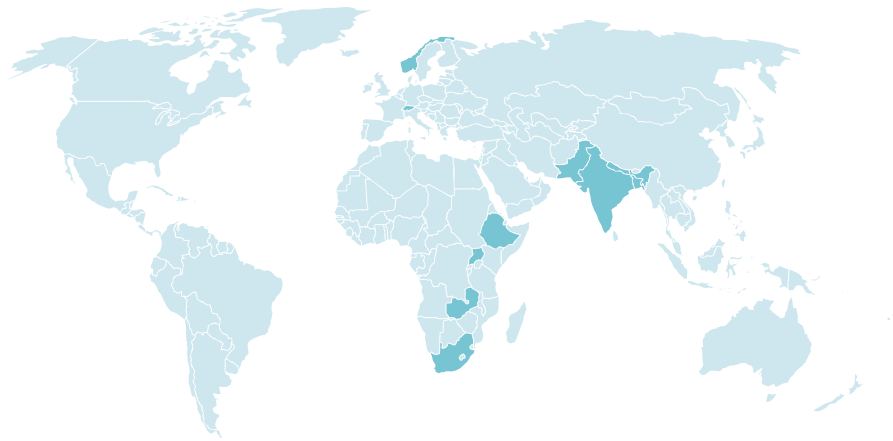
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A very dusty road around the Sipi falls in the Mount Elgon national park in Uganda.



TOWARDS A BRIGHTER FUTURE FOR MOTHERS AND CHILDREN

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