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Active prevention and treatment of maternal sepsis in health care facilities in Malawi and Uganda

Submission date
19/08/2022

Recruitment status
No longer recruiting

Registration date
10/10/2022

Overall study status
Ongoing

Last Edited
22/05/2025

Condition category
Infections and Infestations

[X] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[X] Record updated in last year

Plain English summary of protocol

Background and study aims
Every 4 minutes, a mother dies from a sepsis-related cause somewhere in the world, with the greatest burden borne by women in Low-Middle Income Countries (LMICs). The Active Prevention and Treatment of Maternal Sepsis (APT-Sepsis) is a carefully developed programme designed specifically to be used in countries and facilities where there are limited resources available. It aims to change health care workers' behaviours to ensure mothers get the best care possible to better prevent and manage infections. APT-Sepsis involves 60 hospital facilities (30 in Malawi and 30 in Uganda). Each facility will be a cluster from which baseline (starting) data will be collected before the start of the APT-sepsis intervention. Then 30 clusters (15 in each country) will be randomised for the APT-sepsis intervention, the remaining sites will continue with their usual practices. The study will evaluate if running the APT-sepsis programme is effective at reducing infection-related maternal death and disease burden. Process evaluation will also be conducted to understand how the programme works in practice and its cost-effectiveness.

Who can participate?
Health care facilities offering maternity care will be included as a cluster following completion of a successful feasibility report requiring the minimum prerequisites of a minimum of 1500 births per year and they provide comprehensive emergency obstetric care. Staff who are invited to complete the interviews and surveys will be healthcare workers who are responsible for the care of pregnant or postnatal women and who are willing to participate.

What does the study involve?
Clusters will be randomised to the study intervention or the control group. The intervention is a training programme that brings together evidence-based practice for the prevention of maternal sepsis. The study will evaluate the effectiveness of the intervention by measuring the incidents of severe infection, maternal deaths and near misses before and after randomisation. The study will also evaluate the staff experience, measuring their acceptability and compliance

with the intervention through interviews, surveys and observations. Sites in the control group will also be evaluated to see if their practice changes. Following the completion of the project, all participating sites will be offered the opportunity to receive the training.

What are the possible benefits and risks of participating?
In this study, the Clusters (hospital facilities) are the participants. Providing the APT-Sepsis programme training to staff will improve their knowledge and understanding of the prevention, identification and treatment of maternal sepsis and consequently reduce cases of maternal sepsis in their cluster. These are evidence-based practices (treatments which have been previously researched) to reduce maternal sepsis, therefore the risks are low.

Where is the study run from?
Liverpool Clinical Trials Centre, the University of Liverpool (United Kingdom)

When is the study starting and how long is it expected to run for?
February 2021 to October 2025

Who is funding the study?
This project is supported by the Joint Global Health Scheme (United Kingdom)

Who is the main contact?
Sonia Whyte (United Kingdom)
apt-sepsis@liverpool.ac.uk

Contact information

Type(s)
Public

Contact name
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Type(s)
Principal Investigator

Contact name
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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
UoL001663

Study information

Scientific Title
The Active Prevention and Treatment of Maternal Sepsis: A cluster randomised, hybrid implementation effectiveness trial, to improve prevention and management of maternal sepsis in health care facilities in Malawi and Uganda

Acronym
APT-Sepsis

Study objectives
To examine the implementation of the APT-Sepsis programme and understand if it is effective at reducing infection related maternal mortality and severe morbidity in resource limited settings.

Ethics approval required
Old ethics approval format

Ethics approval(s)
1. Approved 13/07/2022, College of Medicine Research and Ethics Malawi (Private Bag 360,, Chichiri Blantyre 3 , 3, Malawi; 265 187 4377 ; mandal@medcol.mw), ref: 3635
2. Approved 24/02/2023, Uganda National Council for Science and Technology (Plot 6, PO Box 6884, Kampala, x, Uganda; 256 414 707700; info@uncst.go.ug), ref: HS2613ES
3. Approved 07/09/2022, University of Liverpool, Central University Research Ethics Committee D (University of Liverpool, Liverpool, L69 7ZX , United Kingdom; 0151; ethics@liv.ac.uk), ref:

11309
4. Approved 08/12/2022, Infectious Diseases Institute Research Ethics Committee (IDI-REC office, Mulago, 12345, Uganda; +256 39 319 3144; rec@idi.co.ug), ref: IDIREC REF 022/2022
5. Approved 26/01/2023, WHO/HQ/FWC/RHR (20, Avenue Appia, Geneva, CH-1211, Switzerland; 41 22 791 4171; reproductivehealth@who.int), ref: A66039

Study design
Cluster-randomized hybrid-implementation effectiveness study

Primary study design
Interventional

Secondary study design
Cluster randomised trial

Study setting(s)
Hospital

Study type(s)
Prevention

Participant information sheet
Not available in web format, please use the contact details to request a participant information sheet

Health condition(s) or problem(s) studied
Maternal Sepsis

Interventions
The APT-Sepsis intervention brings together evidence-based practice to address maternal sepsis prevention and treatment via an integrated programme with three interventional domains and an implementation strategy.

1.The first interventional domain is ‘hand hygiene’, ensuring compliance with the WHO 5 movements of hand hygiene.
2. The second interventional domain is infection prevention and management and ensures adoption of evidence-based practices for infection prevention in maternity, including appropriate antibiotic prophylaxis for high-risk women and improved surgical practices.
3. The third interventional domain is better sepsis management and consists of ensuring consistent measurement of patient vital signs and when there is suspected sepsis the triggering of the FAST-M maternal sepsis bundle. This bundle includes Fluids, Antibiotics, Source control, Transfer and Monitoring.

Intervention Type
Behavioural

Primary outcome measure
Composite outcome of infection-related maternal mortality, infection-related maternal near-miss and severe infection-related morbidity (deep surgical site infection or body cavity infection)

measured by the collection of daily observations from routine health facility records from all women who are admitted to the healthcare facility, during pregnancy or within 42 days of delivery with a severe infection from the baseline phase to the end of cluster participation

Secondary outcome measures
1. Effectiveness of the APT-Sepsis programme to reduce the secondary clinical outcomes of stillbirth, early neonatal death (infection-related and total), maternal mortality (any cause), and a maternal near miss (any cause) measured using daily observations of the routine health facility records from the baseline phase to the end of cluster participation
2. Differential or subgroup effects of the APT-Sepsis programme defined by country, facility size, and high versus low performing facilities at the end of the study
3. Fidelity, sustainability, acceptability and context of the APT-sepsis programme in Malawi and Uganda, to facilitate interpretation of trial outcomes and development of a longer-term implementation strategy, measured using observations, interviews, and surveys conducted from randomisation to the end of cluster participation
4. Health economic analysis to determine if the APT-Sepsis programme was cost effective measured using data collected during the study, and will be based on the principal outcome of the trial and be reported in terms of disaggregated costs and consequences and cost per major outcome averted where the major outcome is defined as maternal infection-related mortality and severe morbidity.

Overall study start date
01/02/2021

Completion date
31/10/2025

Eligibility

Key inclusion criteria
Cluster: Health care facilities offering maternity care, will be included as a cluster following the completion of a successful feasibility report requiring the minimum prerequisites of:
1. A minimum of 1500 births per year
2. Providers of comprehensive emergency obstetric care (e.g., able to perform caesarean sections and blood transfusions)
3. Completed the site readiness assessment process

Research participant:
Healthcare workers and managers responsible for the care of women during or after pregnancy in the study facility

Participant type(s)
Other

Age group
Adult

Sex
Both

Target number of participants

Clusters: 60 (Minimum 172,500 women) Facility Staff: Interviews 60

Total final enrolment
514394

Key exclusion criteria
Cluster exclusion criteria:
Facilities not willing to participate in the study

Research participant exclusion criteria:
Healthcare workers not willing to consent to participation

Date of first enrolment
13/11/2022

Date of final enrolment
30/04/2025

Locations

Countries of recruitment
Malawi

Uganda

Study participating centre
Balaka district hospital
Private Bag 138,
Balaka
Malawi
302100

Study participating centre
Chikwawa district hospital
P.O.Box 32
Chikwawa
Malawi
315100

Study participating centre
Chiradzulu district hospital
Private Bag 21
Chiradzulu
Malawi
306100

Study participating centre
Dedza district hospital
P.O.Box 136
Dedza
Malawi
209100

Study participating centre
Ekwendeni mission hospital
P.O. Box 19
Mzimba
Malawi
104104

Study participating centre
Holy Family Mission Hospital
P.O. Box 144
Phalombe
Malawi
307100

Study participating centre
Karonga district hospital
Private Bag 1
Karonga
Malawi
102100

Study participating centre
Kasungu district hospital
P.O.Box 19
Kasungu
Malawi
201300

Study participating centre
Machinga district hospital
P.O.Box 44

Liwonde
Malawi
303100

Study participating centre
Malamulo mission hospital
Private Bag 2
Thyolo
Malawi
310111

Study participating centre
Mangochi district hospital
P.O.Box 42
Mangochi
Malawi
301400

Study participating centre
Mchinji district hospital
P.O.Box 36
Mchinji
Malawi
205100

Study participating centre
Monkeybay Community Hospital
P.O. Box 42
Mangochi
Malawi
301109

Study participating centre
Mua Mission hospital
P O Box 45
Dedza
Malawi
209104

Study participating centre
Mulanje district hospital
P.O.Box 227
Mulanje
Malawi
308100

Study participating centre
Mulanje Mission hospital
P.O. Box 45
Mulanje
Malawi
308104

Study participating centre
Mwanza district hospital
P.O.Box 80
Mwanza
Malawi
314100

Study participating centre
Mzimba South district hospital
P.O.Box 131
Mzimba
Malawi
104100

Study participating centre
Nkhata Bay district hospital
P.O.Box 4
Nkhatabay
Malawi
106100

Study participating centre
Nkhoma Mission Hospital
P.O. Box 48
Lilongwe
Malawi
206111

Study participating centre
Nkhotakota district hospital
P.O.Box 50
Nkhotakota
Malawi
202100

Study participating centre
Nsanje district hospital
P.O.Box 30
Nsanje
Malawi
316100

Study participating centre
Ntcheu district hospital
Private Bag 5
Ntcheu
Malawi
210100

Study participating centre
Ntchisi district hospital
P.O.Box 44
Ntchisi
Malawi
203100

Study participating centre
Rumphi district hospital
P.O.Box 225
Rumphi
Malawi
103100

Study participating centre
Salima district hospital
P.O.Box 53

Salima
Malawi
208100

Study participating centre
St Gabriel mission hospital
Private Bag 1
Namitete Lilongwe
Malawi
206115

Study participating centre
St Lukes mission hospital
P.O. Box 21
Chilema
Malawi
304102

Study participating centre
Thyolo district hospital
P.O.Box 21
Thyolo
Malawi
310100

Study participating centre
Arua RRH
P.O BOX 3
Arua
Uganda
-

Study participating centre
Koboko Hospital
P.O BOX 1
Koboko
Uganda
-

Study participating centre
Adjumani Hospital
P.O BOX 20
Adjumani
Uganda
-

Study participating centre
Nebbi Hospital
P.O BOX 3
Nebbi
Uganda
-

Study participating centre
Yumbe HC4
P.O BOX 27
Arua City
Uganda
-

Study participating centre
Moyo Hospital
P.O BOX 1
Moyo
Uganda
-

Study participating centre
Mukono General Hospital
P.O BOX 472
Mukono
Uganda
-

Study participating centre
Kawolo Hospital
PO BOX 210
Lugazi
Uganda
-

Study participating centre
Jinja RRH
P.O BOX 43
Jinja
Uganda
-

Study participating centre
Bugiri Hospital
P.O BOX 97
Bugiri
Uganda
-

Study participating centre
Kamuli Hospital
P.O BOX 88
Kamuli
Uganda
-

Study participating centre
Iganga Hospital
P.O BOX 745
Iganga
Uganda
-

Study participating centre
Mbale RRH
P.O BOX 921
Mbale
Uganda
-

Study participating centre
Luwero Hospital
P.O BOX 34

Luwero
Uganda
-

Study participating centre
Nakaseke Hospital
P.O BOX 1022
Nakaseke
Uganda
-

Study participating centre
Kiboga Hospital
P.O BOX 17
Kiboga
Uganda
-

Study participating centre
Masindi Hospital
P.O BOX 29
Masindi
Uganda
-

Study participating centre
Kiryandogo Hospital
P.O BOX 128
Kigumba
Uganda
-

Study participating centre
Lira RRH
P.O BOX 2
Lira
Uganda
-

Study participating centre
Soroti RRH
P.O BOX 289
Soroti
Uganda
-

Study participating centre
Gulu RRH
P.O BOX 160
Gulu
Uganda
-

Study participating centre
Fortportal RRH
P.O BOX 10
Fortportal
Uganda
-

Study participating centre
Kyejonjo General Hospital
PO Box 188
Kyejonjo
Uganda
-

Study participating centre
Mubende RRH
PO Box 4
Mubende
Uganda
-

Study participating centre
Kalisizo General Hospital
PO Box 40
Kyotera
Uganda
-

Study participating centre
Gombe General Hospital
PO Box 145
Mpigi
Uganda
-

Study participating centre
Tororo General Hospital
PO Box 1
Tororo
Uganda
-

Study participating centre
Pallisa General Hospital
PO Box 14
Pallisa
Uganda
-

Study participating centre
Atutur General Hospital
PO Box 22
Kumi
Uganda
-

Study participating centre
Katakwi General Hospital
PO Box private bag
Katawi
Uganda
-

Study participating centre
Phalombe district hospital
P.O. Box 79

Phalombe
Malawi
307100

Sponsor information

Organisation
University of Liverpool

Sponsor details
Clinical Directorate
4th Floor Thompson Yates Building
Faculty of Health and Life Sciences
University of Liverpool
Liverpool
England
United Kingdom
L69 3GB
+44 (0) 7717 863747, +44 (0)151 794 2000
sponsor@liverpool.ac.uk

Sponsor type
University/education

Website
https://www.liv.ac.uk/

ROR
https://ror.org/04xs57h96

Funder(s)

Funder type
Government

Funder Name
UK Research and Innovation Joint Global Health Trials Grant ref: MRV005782/1

Alternative Name(s)
UKRI

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Publication and dissemination plan
The results from different participating sites will be analysed together and published as soon as possible, always maintaining participant confidentiality. Individual clinicians must undertake not to submit any part of their individual data for publication without the prior consent of the Study Trial Management Group (TMG).

We expect that at least the primary publication, implementation evaluation and health economic evaluation will be attributed to the “APT-Sepsis Collaborative Group”. The TMG will advise on the basis of the writing committee, authorship details and the nature of publications. The Uniform Requirements for Manuscripts Submitted to Biomedical Journals (http://www.icmje.org/) will be respected. The study registration number allocated will be attached to any publications resulting and members of the TOC will be acknowledged. Any publications arising from this research will be reviewed internally by the TMG and peer reviewed by journals prior to publication.

Following the primary publications each participating site will be encouraged to conduct appropriate further analyses on their country data. The TMG should be informed of any planned additional analysis and publications that result. The APT-Sepsis collaborative group as well as the funder must be appropriately acknowledged. Study specific documents will be developed to ensure equitable and transparent plans for additional analysis that ensure inclusion of interested parties from the study team, with a special focus on leadership by junior researchers or PhD students supported through this study.

The PPI steering groups in each country will provide advice not only on trial design and materials but also, on how best to engage the public and on our messaging. In both countries we will establishing peer support groups for women who have survived maternal sepsis. These will be facilitated by an experienced midwife and not only provide support for these women but also enable the trial team to maintain engagement with users at the sites and receive feedback on any concerns or issues. We have previously found Facebook to be an effective platform for engagement across the public and care providers in these settings and will again promote social media use to create a community who will act as advocates around maternal sepsis and an audience for the study findings.

We will give the sepsis survivors engaged through our PPI programme the opportunity to participate in sharing their sepsis. story in a video format, which with their explicit consent, will form part of a social media campaign to highlight the impact of maternal sepsis on mothers and their families

Intention to publish date
31/10/2026

Individual participant data (IPD) sharing plan

At the end of the trial, after the primary results have been published, the anonymised individual participant data (IPD) and associated documentation (e.g., protocol, statistical analysis plan, annotated blank CRF) will be prepared to be shared with external researchers. All requests for access to the IPD will be reviewed by an internal committee at the CTU and discussed with the Chief Investigator in accordance with the CTU policy on data sharing.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol file	Malawi version 6.0	07/11/2024	09/04/2025	No	No
Protocol file	Uganda version 3.0	07/11/2024	09/04/2025	No	No