



NIHR Global Health Research Unit

# GLOBAL SURGERY UNIT

Annual meeting  
Lagos, 2023



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# EXECUTIVE SUMMARY



## NIHR GLOBAL SURGERY UNIT NETWORK



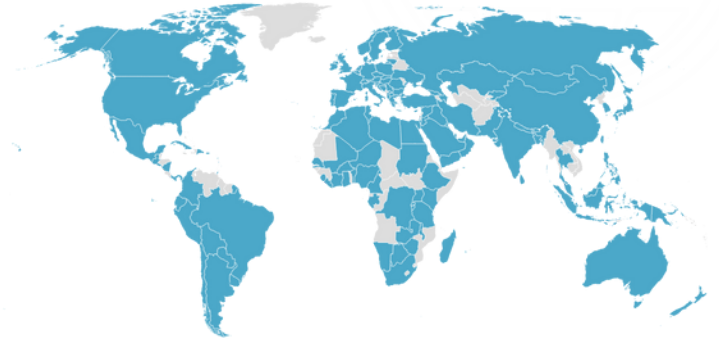
**Professor Dion  
Morton**

Unit Co-Director



**Professor Stephen  
Tabiri**

Unit Co-Director



The Global Surgery Unit (GSU) coordinates a global network of surgeons and leads international surgical research to improve surgical outcomes for their patients. It includes over 20,000 clinicians from over 100 countries. In 2017, the National Institute for Health Research (NIHR) Unit on Global Surgery was formed with a £7M grant.

The Unit's overarching aim is to improve the quality of life for billions of people around the world, by creating the world's most sustainable surgical unit. The Unit's ethos is inclusive and collaborative: our international cohort studies are open to all collaborators, including medical students, clinical officers, doctors, nurses and researchers. We develop solutions involving advocacy, education, research and clinical interventions. We work across clinical disciplines with surgeons, anaesthetists, nurses, other healthcare professionals, and non-clinicians including policy makers, epidemiologists and economists, as well as patients and community members. Therefore our approach is both grass-roots bottom-up as well as top-down.

We intend to shift ownership of Global Surgery to in-country surgeons, with UK collaborators rather than UK leaders, establishing a sustainable multi-sector platform. Our focus is on capacity building and strengthening infrastructure within our partner LMICs so that long-term effective surgical options and care are available without reliance on outside intervention. Therefore GSU has four pillars of work:

1. Research and Innovation
2. Education and Training
3. Patient and Community Engagement
4. Advocacy and Impact

This yearbook is designed to give an overview of the Unit's teams and work it delivers. To explore further, please visit our website: [globalsurgeryunit.org](http://globalsurgeryunit.org)



# MEET THE TEAM



**RWANDA, 2018**



**GHANA, 2019**



**INDIA, 2022**



# OUR HUBS



The unit is built upon equitable partnerships between all members. Through an evolving shared leadership with the Hub Directors, structured transfer of leadership to the Hub Directors provides sustainability for the Hubs, the network and thereby the Unit.

Our research is undertaken through a network of >80 Hub-Spoke hospitals, located across three continents.



Over the last 4.5 years, we have set up seven surgical research Hubs in Benin, Ghana, India, Mexico, Nigeria, Rwanda and South Africa with an extensive network of urban and rural 'Spoke' hospitals. This network prioritised the surgical topics that needed research and has performed multiple surgical studies. Through bespoke training we are building capacity across this network to undertake surgical and other clinical research.



# MEET THE TEAM



## Benin Hub

The primary aim of the Benin Hub is to improve healthcare practice in hospitals by involving health workers in collaborative research in order to make surgery safer for the patients.

Clinical trials help to improve daily practice across the network. This hub has trained more than 200 local clinicians in clinical trial good practice, helping to build national research capacity. Over 150 clinicians have obtained Good Clinical Practice certification and have been involved in clinical trials. The hub is seeking to involve more rural hospitals in clinical trials for the benefit of patients with limited access to healthcare.

The NIHR GSU Hub in Bénin is based at Cotonou city, in the School of health sciences, under the University of Abomey Calavi.



**Dr Ismail Lawani**  
Hub Director



**Professor Nazaire Padonou**  
Chair Deputy Hub Director



**Professor Eugène Zoumenou**  
Chair Deputy Hub Director



**Professor Jean-Leon Olory-Togbe**  
Chair Deputy Hub Director



**Mr Covalic Bokossa**  
Hub Manager



**Dr Souliath Lawani**  
Hub Research Assistant



# MEET THE TEAM



## Benin Hub



**Ms Josette Gnele**  
Project Manager/  
CEI Lead



**Mr Vivien Tenonto**  
Translator Interpreter/  
Communication Lead



**Ms Marina Ehoumi**  
Data Manager



**Mr Oscar Toudonou**  
Finance Officer



**Ms Ahouéfa Toï**  
Research Assistant  
(LEAP Laparoscopy  
Simulation)



**Dr Sandrine Zola**  
Research Assistant (LEAP  
Perioperative Care)





# MEET THE TEAM



## Ghana Hub

Establishing the NIHR-Global Surgery Unit, Ghana Hub in Tamale comes to add up to strengthening the healthcare infrastructure in northern Ghana. In a unique way, the north which is seen as deprived in many ways is a lead in networking the entire nation in surgical research.

The Ghana Hub is currently taking part in the FALCON Trial, CHEETAh Trial, CRANE feasibility study, ACCESS study, TALON study, KIWI study, PROTECT-Surg, and COVIDSurg Cohort Studies.



**Professor Stephen  
Tabiri**  
Hub Director



**Dr Anita Eseenam  
Agbeko**  
Hub Deputy Director



**Dr Fareeda Agyei**  
Hub Deputy  
Director



**Dr Napoleon Bellua Sam**  
Deputy hub director and  
data centre lead



**Daniel Kwasi  
Acquah**  
Finance Officer



**Ebenezer Amofa**  
CEI Lead



# MEET THE TEAM



## India Hub

The India hub is situated in Christian Medical College Ludhiana, Punjab. The hub has been involved in diverse areas of surgical research including health economics, rural surgery, tuberculosis, Community Engagement and Involvement, Policy and Advocacy.

The hub has been developing India-centric research projects for possible collaboration with other hub countries and beyond within the GlobalSurg India Data Centre in CMC Ludhiana. The India network spans over 100 hospitals and has also established two Sub Hubs at CMC Vellore and TMC Kolkata which are collaboratively managing the GSU network in India. The GSU India Hub has recently collaborated with the State Government in training 2000 community health workers in Ludhiana and adjoining districts on Cancer Care (ASHA) employed by the Ministry of Health and Family Welfare (MoHFW) as a part of India's National Rural Health Mission.



**Dr Dhruva Ghosh**  
Hub Director



**Dr Parvez Haque**  
Hub Lead



**Dr Kavita Bhatti**  
Deputy Hub Lead



**Mr Atul Suroy**  
Hub Manager



**Ms Jyoti Dhiman**  
Dep Hub Manager



**Ms Harsharan Kaur**  
Jr Project Manager



**Mr Prateek Shukla**  
Biostatistician



**Ms Amandeep Kaur**  
Clinical Research Nurse



# MEET THE TEAM



## India Hub



**Dr Christina George**  
Perioperative Lead



**Dr Ritu Mahajan**  
Hub CEI Lead



**Dr Gagandeep**  
Hub T&E - Lead



**Dr Sonia Mathai**  
Lead - Sub Hub  
TMC Kolkata



**Dr Rohin Mittal**  
Lead - Sub Hub  
CMC Vellore



**Dr Philip Alexander**  
Rural Surgery Lead



**Sister Sangeetha Samuel**  
Lead - Nurses Research



**Dr Amit Mahajan**  
Sr Researcher (Trials)



**Dr Deepak Jain**  
Sr Researcher  
(Cohort Studies)



**Dr Sreejith**  
Sr Researcher (Trials)



# MEET THE TEAM



## Mexico Hub

The NIHR GSU centre in Mexico is located at Hospital Español de Veracruz in Veracruz, a Mexican port city on the coast of the Gulf of Mexico.

The centre is conducting and coordinating research projects focused on improving access and quality of surgical care. One such study that the hub is leading is the still ongoing GECKO Study.



**Dr Antonio  
Ramos-De la Medina**  
Hub Director



**Dr Laura Martinez  
Pérez Maldonado**  
Hub Manager



**Dr Irani Durán  
Sánchez**  
Research Doctor



**Mrs Diana Samantha  
Gonzalez Vazquez**  
Data Manager



**Dr Melissa Fragoso  
Ortega**  
Research Doctor



**Ms Nallely Ortiz Borrel**  
CEI Lead Mexico Hub



**Ms Adda Pavlova  
Guzmán Durán**  
Finance Officer



# MEET THE TEAM



## Nigeria Hub

The NIHR hub in Nigeria is located at College of Medicine University of Lagos and Lagos University Teaching Hospital (CMUL/LUTH)

The Nigeria Hub is currently supporting 30 spoke hospitals from Colleges of Medicine, Teaching Hospitals, District Hospitals, and Federal Medical Centres across Nigeria.

The Hub is also committed to the healthy living of the populace through involvement in various health researches such as that of GlobalSurg in improving the surgical outcomes of patients. With the high number of deaths due to very limited access to quality health care in Nigeria, and the common knowledge of post-surgery complications responsible for a large proportion of morbidity and mortality; the importance of the GlobalSurg research in Nigeria cannot be over-emphasized.



**Professor Adesoji Ademuyiwa**  
Hub Director



**Professor Adewale Adisa**  
Deputy Hub Director



**Mr Emmanuel Williams**  
Hub Manager



**Ms Adeola Orowale**  
National Finance Officer



**Ms Christianah Oyegbola**  
National Data Manager



**Ms Moyosoluwa Ojo**  
Research Nurse/ CEI Officer



# MEET THE TEAM



## Nigeria Hub



**Dr Omolara Williams**  
National CEI lead



**David Akinboyewa**  
Data Strategist for  
Nigeria Data Centre



**Ayobami Adeagbo**  
Senior Research Nurse  
and Project Officer



# MEET THE TEAM



## Rwanda Hub

The Global Surgery Unit began its relationship with Rwanda through the creation of the National Hub at the University of Rwanda, Kigali. The development of the national programme has resulted in the orchestration of several surgical trials carried out between 12 spokes across Rwanda, in addition to the primary Hub location in Kigali.

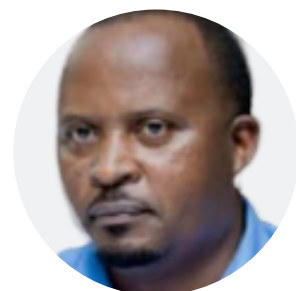
The Rwanda Hub resides over the recruiting, training, and management of the spoke hospitals. Furthermore, the Hub encourages and involves local surgeons, medical students, public bodies and community, in the promotion of quality surgical care and access in Rwanda.



**Professor Faustin  
Ntirenganya**  
Hub Director



**Dr. Allen J.C Ingabire**  
Deputy Hub Director



**Dr Isaie Ncogoza**  
Deputy Hub Director



**Mr Jean Pierre  
Nganabashaka**  
Hub Manager



**Mr Emmanuel  
Munyaneza**  
National CEI lead

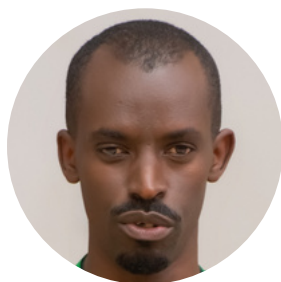


**Mr Jean de Dieu  
Haragirimana**  
Logistics and Finance  
Co-ordinator



# MEET THE TEAM

## Rwanda Hub



**Mr Espoir  
Mwangura Ngabo**  
Data Manager



**Mrs Alphonsine  
Imanishimwe**  
Research Nurse



**Mr Joel Nshumuyiki**  
Research Nurse





# MEET THE TEAM



## South Africa Hub

The South Africa Hub is responsible for executing clinical trials – in collaboration with the sponsors we ensure systems are in place for a successful trial.

The South Africa Hub is based in Gauteng province, Johannesburg City, in a suburb called Parktown. The Hub office is based at the University of Witwatersrand, Medical School Campus and is operating from the Chris Hani Baragwanath Hospital (the 3rd largest hospital in the world) for the FALCON trial.

The Hub's main activities are:

- Centrally co-ordinating country specific activities
- Management and training of the Spoke hospitals
- Providing administrative services for the country network
- Maintaining regular communication with the University of Birmingham



**Dr Richard Crawford**  
Hub Director



**Professor Bruce Biccard**  
Professor and Consultant  
Anaesthetist (Cape Town)



**Professor  
Deirdre Kruger**  
Statistician



**Professor Martin Smith**  
Chairman & Academic Head  
of the Department of Surgery



# MEET THE TEAM



## University of Birmingham

The University of Birmingham has been working with the University of Edinburgh team and the global research Hubs to deliver global cohort studies, multi-centre randomised controlled trials and snapshot audits to assess the various aspects of surgical care. The team provides clinical and research management oversight and training for the development and implementation of the studies across all hubs. It also leads the Unit's work in the key focus areas of Health Economics, Community Engagement and Involvement, and Health Service Delivery, and in the development of global clinical guidelines.



**Professor Dion Morton**  
Unit Co-Director



**Professor Aneel Bhangu**  
Professor of Global Surgery



**Professor Thomas Pinkney**  
George Drexler & Royal College  
of Surgeons Chair of Surgical  
Trials



**Dr Laura Magill**  
Senior Lecturer in  
Clinical Trials



**Professor Richard Lilford**  
Professor of Public  
Health



**Professor Tracy Roberts**  
Professor of Health  
Economics



# MEET THE TEAM



## University of Birmingham



**Dr Dimitri Nepogodiev**  
Academic Clinical  
Lecturer



**Dr Elizabeth Li**  
Academic Clinical  
Lecturer



**Dr James Glaseby**  
Academic Clinical  
Lecturer



**Dr Joana Simoes**  
Clinical Research Fellow



**Dr Maria Picciochi**  
Clinical PhD Fellow



**Dr Virginia Ledda**  
Clinical PhD Fellow



**Dr Sivesh Kathir  
Kamarajah**  
Clinical PhD Fellow



**Mr Omar Omar**  
Senior Statistician &  
Epidemiologist



**Mr Bryar Kadir**  
Senior Statistician



**Mr Mwayi Kachapila**  
Research Associate  
in Health Economics



**Dr Raymond Oppong**  
Senior Lecturer in  
Health Economics



# MEET THE TEAM



## University of Birmingham



**Ms Lucy Caton**  
Programme Manager



**Dr Audrey Nganwa**  
Programme Manager



**Mr Alex Bell**  
Finance Officer



**Mr James Keatley**  
Project Manager



**Mr Michael Bahrami-Hessari**  
PPI & CEI Manager



**Mr Brett Dawson**  
Data Manager



**Ms Belinda San**  
Senior Administrator



**Mr Edward Bywater**  
Project Officer /  
Communications Lead



**Ms Rachel Lillywhite**  
Team Leader – Global  
Surgery Trials



**Mrs Divya Kapoor**  
Senior Trial Manager



**Ms Donna Smith**  
Senior Trial Manager



**Ms Felicity Brant**  
Senior Data Manager



# MEET THE TEAM



## University of Edinburgh

Edinburgh University is a principle partner along with the University of Birmingham in the NIHR Global Health Research Unit on Global Surgery. They provide leadership and infrastructure for the unit's data-driven projects and educational activities. They led the **GlobalSurg 3** international cohort study and the **CRANE trial**, as well as supporting various smaller pump priming studies in partner hub countries. The team are currently leading **Leap SAVE**.



**Professor Ewen Harrison**  
Professor of Surgery and  
Data Science



**Dr Katie Shaw**  
Senior Lecturer &  
Programme Manager



**Dr Riinu Pius**  
Senior Data Manager



**Dr Kathrin Cresswell**  
Senior Lecturer



**Dr Stephen Knight**  
Clinical Research Fellow



**Dr Kenneth McLean**  
Clinical Research Fellow



**Dr Theresa Ikegwuonu**  
Research Fellow



**Dr Tom Drake**  
Clinical Research  
Fellow



**Dr Luciana D'Adderio**  
Chancellor's Fellow in Data Driven  
Innovation and Turing Fellow



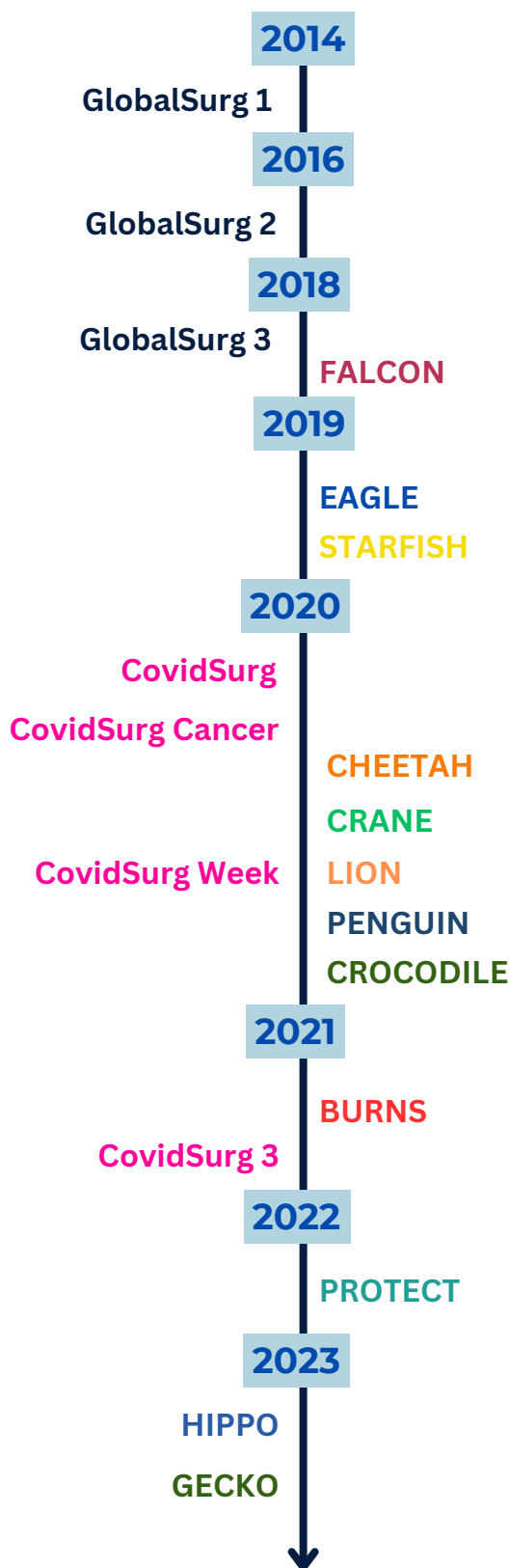
**Dr Neil Clark**  
Analyst



**Mr Malcolm Cameron**  
Research Assistant



# RESEARCH OVERVIEW



Our research **covered** different topics that are relevant for **Global Surgery**:

- **Wound infection**
- **Peri-operative care**
- **Safe and timely surgery**
- **Surgical workforce development**
- **Surgery and COVID-19**
- **Cancer**
- **Access to surgical care**
- **Surgical technology**



# RESEARCH OVERVIEW



	Number of patients	Number of centres	Number of countries
<b>Cohort studies:</b>			
GlobalSurg 1	10,745	357	58
GlobalSurg 2	12,539	343	66
GlobalSurg 3	15,958	428	82
CovidSurg Cohort	10,029	807	73
CovidSurg Cancer	40,025	776	78
GlobalSurg-CovidSurg Week	141,582	1,667	116
CovidSurg-3	19,702	941	89
LION	105	3	1
CROCODILE	226	5	1
BURNS	488	6	1
HIPPO	18,119	639	83
GECKO (ongoing)	4,090	453	76
<b>Randomised Trials:</b>			
FALCON	5,788	54	7
EAGLE	3,268	332	64
CHEETAH	13,301	81	7
CRANE (feasibility)	101	4	1
PENGUIN (ongoing)	4307	27	4
PROTECT	245	11	2



# WOUND INFECTION

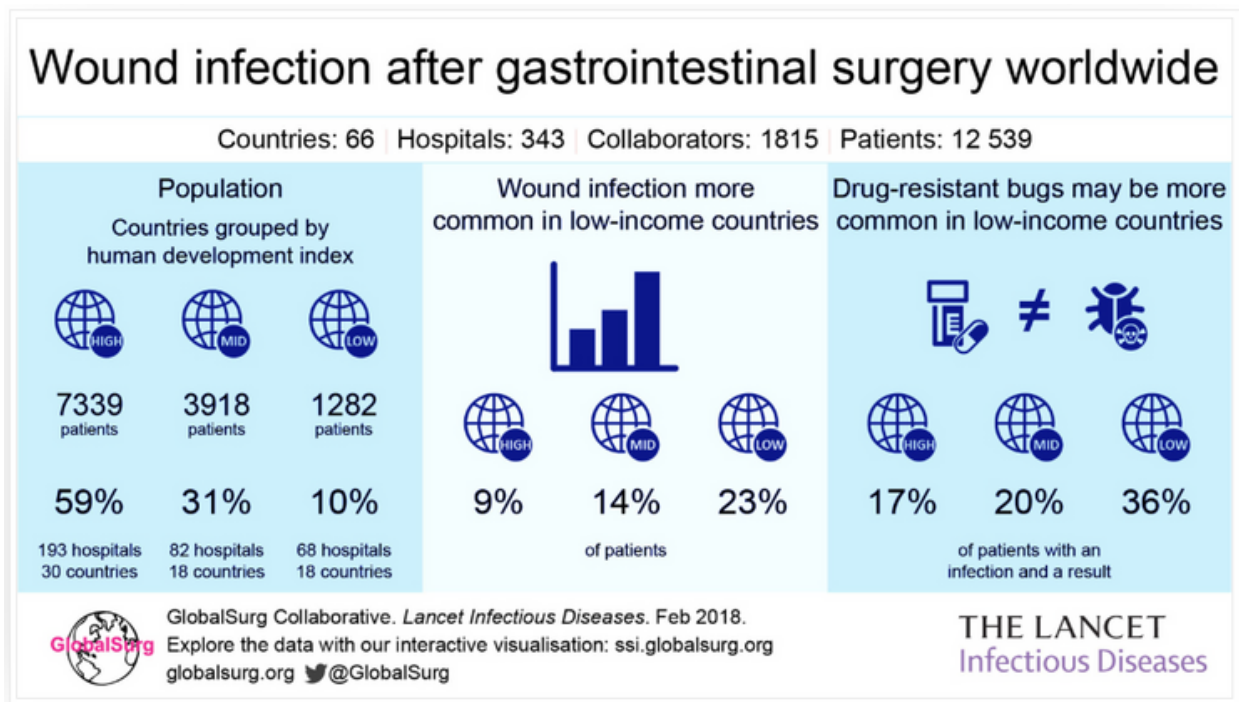


**Surgical site infection (SSI)**, both during and following clinical operations is one of the **leading causes of mortality** in patients undergoing a clinical procedure. This is particularly an issue in settings in which access to sterile operating facilities is limited by limited medical infrastructures.



GlobalSurg 2 aimed to determine worldwide **surgical site infection (SSI) rates following gastrointestinal surgery**. The primary outcome measure for the study was 30 day surgical site infection rate.

The main results were published in The Lancet - Infectious Diseases and a summary is available below:





# WOUND INFECTION



## FALCON Trial

The FALCON trial assessed 2 interventions to reduce SSI in clean-contaminated or contaminated/dirty abdominal surgery:

- (1) **2% alcoholic chlorhexidine vs** 10% povidone-iodine for skin preparation;
- (2) **triclosan-coated suture vs** non-coated suture for fascial closure, can reduce surgical site infection at 30-days post-surgery for each of:

There were **5788 patients from 54 hospitals from 7 countries** enrolled in this 2x2 factorial, randomised controlled trial, with main results published in The Lancet. This trial **does not support the routine use of these 2 interventions.**

### Graphical abstract

#### Reducing surgical site infections in low-income and middle income countries (FALCON): a pragmatic, multicentre, stratified, randomised controlled trial

NIHR Global Research Health Unit on Global Surgery



#### 1 The study



**Participants:** 5788 adult and paediatric patients undergoing clean-contaminated or contaminated or dirty abdominal surgery



**Intervention and comparator:** 2x2 factorial trial of skin preparation solutions (2% alcoholic chlorhexidine or 10% aqueous povidone-iodine) and abdominal closing sutures (triclosan-coated or non-coated)



**Primary outcome:** Surgical site infection 30 days after surgery

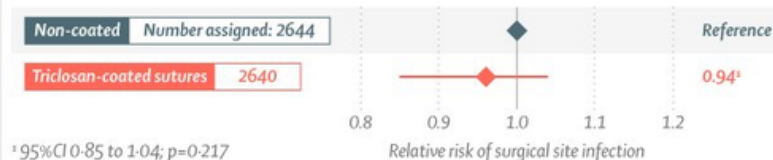


**Key limitation:** The trial included a heterogeneous mix of operation types, these represented real world surgical case mix

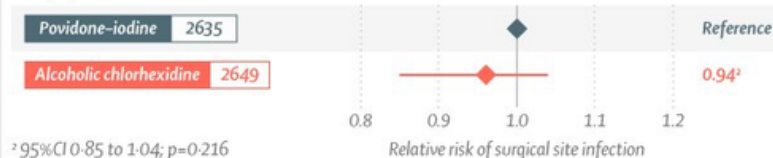
#### 2 Findings

There was no evidence of a difference in the risk of surgical site infection with alcoholic chlorhexidine compared to povidone-iodine, or with triclosan-coated sutures compared to non-coated sutures

##### Fascial closures



##### Skin preparations



#### 3 Research in context

##### Before this study

WHO recommended alcoholic chlorhexidine and triclosan sutures based on low to moderate quality of evidence.

##### Added value

FALCON is a high quality trial showing no superiority of either alcoholic chlorhexidine nor triclosan sutures for surgical patients in low-income and middle-income countries.

##### Implications

The guidance on alcoholic chlorhexidine and triclosan sutures for low-income and middle-income countries should be reviewed.

THE LANCET

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# WOUND INFECTION



## CHEETAH Trial

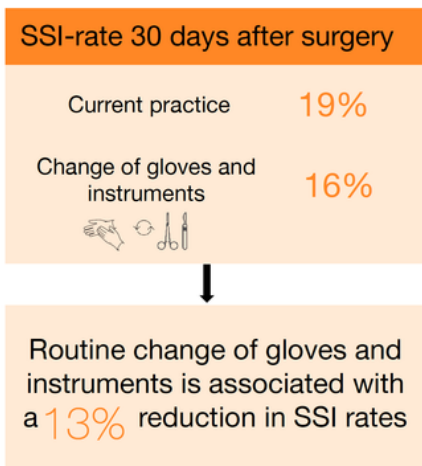
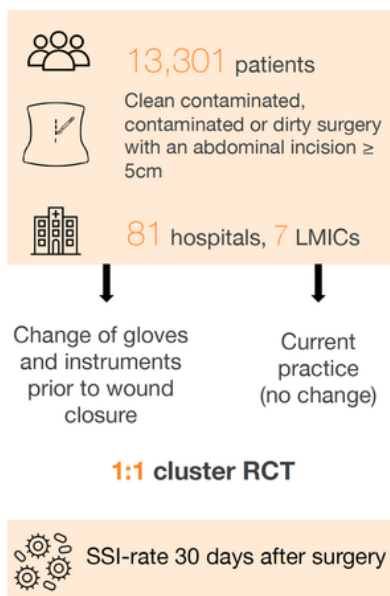
The CHEETAH trial was a cluster randomised controlled trial that evaluated whether the practice of **using separate, sterile gloves and instruments to close wounds** at the end of surgery can reduce **surgical site infection** at 30-days post-surgery for patients undergoing clean-contaminated, contaminated or dirty abdominal surgery, compared to current routine hospital practice.

There were 81 clusters from 7 LMICs and 13301 patients were enrolled and the full paper is published in The Lancet.

The main finding of this study was **changing gloves and instruments ahead of abdominal closure reduced SSI in clean-contaminated and contaminated surgery.**

Routine Sterile Glove and Instrument Change at the Time of Abdominal Wound Closure to Prevent Surgical Site Infection: Pragmatic, Cluster Randomised Trial in Seven Low and Middle Income Countries (ChEETAH)

THE LANCET



Routine change of gloves and instruments prior to wound closure should now be adopted in global practice

@NIHR\_GSU

CHEETAH CLUSTER RCT | NIHR Global Health Research Unit on Global Surgery

# WOUND INFECTION



## KIWI Substudy

The KIWI study was a substudy of FALCON that **assessed the resource use and costs for patients** with and without SSI across selected participant countries. KIWI included resource use collection up to the 30-day follow-up assessment for patients without SSI and extended follow-up for any patients with an ongoing wound infection up to 60 days post-surgery.

## TALON Substudy

TALON was a substudy conducted during FALCON and CHEETAH trials. It evaluated the **feasibility and diagnostic accuracy** of **Telephone Administration of an adapted patient-reported Wound Health Questionnaire for assessment of Surgical Site Infection (SSI)** following abdominal surgery in low and middle-income countries. The protocol is published in *Trials*.

It included 1850 patients and the adapted questionnaire process is published in *BJS*. The findings used to inform future research and SSI surveillance

## FEATHER Substudy

FEATHER was a **qualitative** substudy conducted during FALCON, CHEETAH and PENGUIN trials. It **investigated trial retention in low-resource settings** by exploring the **reasons why participants are lost to follow-up** in trials across LMICs, and the **potential impact of interventions to improve retention** of participants in future research.

The results of this study are being analysed and the full protocol can be found in our website.



# PERIOPERATIVE CARE



Perioperative care is an umbrella term that includes every stage of a patient's journey from the time they are identified for an operation, to the time they are discharged from hospital.

## PENGUIN Trial

PENGUIN aims to identify if 2 interventions **reduce SSI and postoperative pneumonia:**

- (1) **80-100% fraction inspired oxygen (FiO<sub>2</sub>)** used during surgery vs 21-30% FiO<sub>2</sub> to reduce SSI
- (2) **preoperative chlorhexidine mouthwash** vs no mouthwash to reduce postoperative pneumonia

It is a 2 x 2 factorial, international pragmatic randomised trial and is currently being conducted in India, Nigeria, Mexico and South Africa, with 4307 patients recruited so far.

## PROTECT Trial

PROTECT-Surg is an adaptive platform design to test interventions aiming to **reduce postoperative pulmonary complications** in patients undergoing thoracic or abdominal surgery.

The **intervention** tested so far was **RESP301** which is a formulation consisting of three agents delivered by a vibrating mesh nebuliser three times per day , for 7 days.

**245 patients were recruited from Rwanda and Nigeria.** The pilot trial results are being analysed.



# SAFE AND TIMELY SURGERY

Access to safe surgical care is the most important barrier to improve surgical outcomes. **Access to both elective and emergency care** are crucial to provide the best healthcare to any population. Understanding the surgical pathways and identifying strategies to improve safe surgery have been a priority in our research.



GlobalSurg I aimed to identify **variation in outcomes of emergency intra-abdominal surgery across international settings**.

The study ran from July to November 2014 and data was collected from 10 745 patients from 58 countries, with main results published in BJS.

The main finding was that **mortality was three times higher in low-compared with high-HDI countries** even when adjusted for prognostic factors.

## GECKO Study



The GECKO Study (GlobalSurg-4) is an international observational cohort study collecting contemporaneous data on the **performance and outcomes of cholecystectomy** (Global Evaluation of Cholecystectomy Knowledge and Outcomes).

The study **started at 31st July 2023** and data is already collected from XX patients from XX countries. The findings from this study will inform future quality improvement studies in **expanding safe laparoscopic cholecystectomy**.



# SAFE AND TIMELY SURGERY

## HIPPO Study

HIPPO (Hernias, Pathway and Planetary Outcomes for Inguinal Hernia Surgery) was a global, prospective cohort study that collected data on inguinal hernia repairs. It had 3 main aims:

1. **Characterise the global backlog for elective surgery**
2. **Technique, training and operating surgeon variation**
3. **Explore environmentally sustainable practices in operating theatres**

Data was collected from **18,162 patients**, from **83 countries** between 31st January and 21st May 2023. The results are being analysed to be published.

## The ACCESS Study

This encompasses work on access to **diagnosis of cancer and on emergency transport**.

Regarding **emergency transport**, we have done work on a **health economic decision model**. We published a basic model based on mortality gains contingent of a unit reduction in time from seeking care to receiving treatment. We subsequently developed this model to take account of a population distributed over space where population density and transport times vary. We have elaborated this model over Northern Ghana. These models were **based on obstetric emergencies**, and we now propose to extend the model to other types of emergency, such as trauma.

Regarding the access to **diagnosis of cancer**, we are conducting a study in two centres in **Nigeria**. Such work has resulted in **targeted interventions and reduced delay in England and other European countries**, led by our collaborator, Prof Willie Hamilton. We are now starting on a journey with similar aims in Nigeria and other countries in Sub Saharan Africa (SSA). The headroom for improvement is large in SSA as currently only about a quarter of people with common curable cancer present in early stage where the tumour is still confined to its organ of origin.



# SAFE AND TIMELY SURGERY

## BURNS Study

Burns study was a prospective cohort study aimed to compare the outcomes of burns treatment between a specialised burn centre and five non-specialised centres.

The study was conducted in 2021 in South Africa, and included 488 patients that were admitted to specialised burn centre or to a non-specialised burn centre. The **main finding from this study was that survival of burn patients is comparable between specialised and non-specialised centres in LMICs.**

## LION Study

LION was a **cost evaluation of laparoscopic versus open appendectomy** for acute, uncomplicated, appendicitis in a low resource setting. This evaluation has been performed in HIC but not in LMICs.

This was a prospective cohort study conducted between 2020-2022 and included **~100 patients in Nigeria**. The main finding was that **laparoscopic** appendectomy was associated with a **slightly higher overall cost**, but a **lower societal cost**, a **lower infection rate**, and a **faster return to work**, compared to open appendectomy.

This finding supports the expansion of laparoscopic appendectomy in Nigeria.



# SURGICAL WORKFORCE DEVELOPMENT



Workforce in surgery has been one of the main challenges in Global Surgery. Our studies try to **expand workforce in order to reduce the waiting time for key procedures**. The design of sufficiently powered multi-national, multi-centred studies is enabling the GSU to gather evidence representative of the population, providing rapid guidance and recommendations.

## TIGER Study

TIGER (Task shifting Inguinal hernia Repair between surgeons and non-surgeon physicians): development of a randomised trial in low and middle income countries. This trial will provide relevant information on **safety and feasibility of expansion of workforce to non-surgeons physicians**.

This pilot trial aims to investigate delivery of a standardised, measurable training programme for non-surgeon physicians to perform a mesh inguinal hernia repair.





# SURGERY AND COVID-19



COVID-19 pandemic was a challenge for all surgical services globally and our network led the most important studies to evaluate the impact of COVID-19 in surgical patients. Different areas were addressed and there was a significant impact in guidelines and recommendations.

The **first studies** established **global guidance for surgical care during the pandemic** and estimated the **impact of the pandemic in elective surgery**. It was estimated that at least **28M of operations would be cancelled** or postponed during the pandemic, which highlighted the need for improvement and expansion of surgery as soon as it was safe.

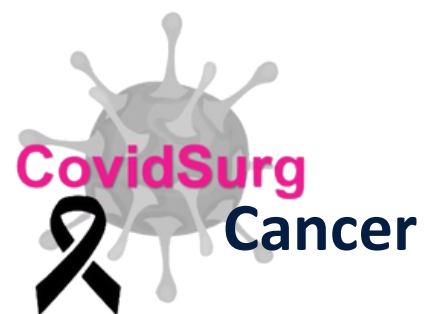
**CovidSurg cohort study** was conducted in the beginning of the COVID-19 pandemic. It aimed to **evaluate the postoperative outcomes of patients infected with SARS-CoV-2 undergoing surgery**.



The main finding was that **patients with SARS-CoV-2 in the peri-operative period had higher mortality and pulmonary complications rates 30 days after surgery**. The factors associated with worse postoperative outcomes included: male, age > 70y, ASA III-V, cancer diagnosis, emergency and major surgery. The main findings were published in The Lancet.

**CovidSurg Cancer** was a cohort study that assessed the **safety of surgery for all types of cancer during the COVID-19 pandemic** and the impact of the pandemic in cancer delay and treatment pathways.

The main findings from this study supported the **creation of free surgical pathways for cancer patients that needed surgery and swab pre-operative testing in patients undergoing major surgery** in high-risk areas. The full papers are published in JCO and BJS, respectively.



# SURGERY AND COVID-19



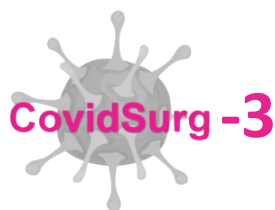
## **SURG-WEEK** PROSPECTIVE INTERNATIONAL COHORT STUDY

GlobalSurg-CovidSurg Week was a global, cohort study, run in October 2020 to **identify the best timing for surgery following SARS-CoV-2 infection.**

It was the largest surgical study and GlobalSurg-CovidSurg Week was the **largest scientific collaboration as it was recognised in Guinness World Record in 2021.**

The main finding supported **delaying surgery for at least 7 weeks following SARS-CoV-2 infection where possible.** Patients with ongoing symptoms  $\geq 7$  weeks from diagnosis may benefit from further delay. The full paper is published in Anaesthesia.

A second analysis of this dataset allowed to estimate the **benefit in prioritising vaccination for patients who were waiting for surgery,** during a time where vaccines were not readily available to the whole population.



This study had a **patient-level and a hospital-level component.** The patient-level component aimed to **update CovidSurg cohort study by evaluating the postoperative outcomes of patients being operated with SARS-CoV-2 infection** in the peri-operative period. It also aimed to evaluate the **protective effect of vaccination** in surgical patients.

The **hospital-level component** aimed to collect **case-mix data to be able to estimate the global case-mix of surgery.** This is currently unknown and it is essential information to calculate the unmet need in surgical care.

The results of this study are being analysed and will be published soon.



# CANCER



**Surgery often offers the best chance of cure for cancer patients, particularly in early-stage disease.** Death rates from cancer are falling in high income countries, but continue to rise in LMICs. The scarcity of data available from LMICs poses a challenge when trying to advocate for improvement of cancer care in LMICs.



GlobalSurg 3 was a global, cohort study, **determining quality and outcomes in global cancer surgery for breast, gastric and colorectal cancer.** Any hospital providing cancer surgery for these 4 types of cancer could take part and data was collected between April and October 2018.

This was the **largest study evaluating surgical cancer outcomes,** with 15 958 patients from 428 hospitals in 82 countries taking part.

The main finding is that the **higher levels of mortality after cancer surgery in LMICs was not fully explained by later presentation of disease.** The capacity to rescue patients from surgical complications is a tangible opportunity for meaningful intervention. **Early death after cancer surgery might be reduced by policies focusing on strengthening perioperative care systems** to detect and intervene in common complications.



# CANCER



## The **EAGLE** Study

The ESCP Safe-anastomosis Programme in Colorectal Surgery (EAGLE) was an international, cluster randomised-sequence study of a Safe-anastomosis Quality Improvement Intervention to **reduce anastomotic leak following right colectomy and ileocaecal resection.**

The study consisted of **interactive, online training modules** for surgeons and theatre teams and assessed **whether implementation of the ESCP Safe-anastomosis intervention reduces risk of anastomotic leak rate.** There were 355 hospitals taking part from 64 countries.

The results and main findings of this study are awaiting publication to be disseminated across our network.

## The **CRANE** Study

CRANE: Feasibility of a cluster randomised study of a nutritional intervention to improve outcomes after cancer surgery in low-income countries.

This study had 3 main aims:

- 1: to identify and validate a nutritional screening tool relevant to patients in LMICs**
- 2: to identify a low cost sustainable nutritional intervention for cancer surgery patients in LMICs**
- 3: to test the feasibility of patient recruitment, retention & nutritional supplement acceptability**

The pilot trial to test feasibility is running in 5 hospitals in India and will include 250 patients.



# CANCER



## The **CROCODILE** Study

Catastrophic expenditure among Colorectal cancer patients in India and barriers for treatment compliance is the first cohort study characterising catastrophic expenditure in cancer care.

The study was conducted in **India** and included **~250 patients** with a treatment plan for colorectal cancer. The main finding was that **catastrophic expenditure affected 90%** of the patients who need **colorectal cancer treatment**. Treatment drop-out rates at tertiary centres was 9%, suggesting greater drop-outs at previous stages of care. **Better financial protection may allow more patients to receive comprehensive cancer treatment** while avoiding household financial catastrophe.



# CANCER



## The PANDA Study

PANDA used **qualitative methods** to understand **what matters to patients in their receipt of surgical care**, to prioritise these themes, and explore differences across countries and contexts.

15 interviews were conducted and are currently being analysed. These will allow **deep conceptual understanding of patient's priorities** during their surgical care journeys. Whilst each patient will have their own unique care story, there are likely to be commonalities to patient experience which could underpin patient-centred design for large, multi-country research studies.

## STARFISH Case Study

SToma cARe For Improvement reSearch (STARFISH): Epidemiologic study of stoma cases in Lower- and Middle-Income Countries and qualitative research on the challenges of stoma care.

The STARFISH study was led by Dr Carmela (Mela) Lapitan, and aimed to **assess the surgical outcomes and experience of care for patients with stomas in LMICs, using a mixed methods approach**. 6 hospitals from The Philippines, Malawi, Nigeria and India took part.

The research program presented the **diversity in the types of cases resulting in a stoma, its outcomes, and the variability of stoma care delivery even among the LMICs**. Patients, carers and healthcare providers raised issues in the delivery of stoma care, foremost being the lack of knowledge about stoma care and poor access to and affordability of stoma care supplies.



# SURGICAL TECHNOLOGY



## Leap **SAVE**

The creation and deployment of complex interventions in surgery is challenging – not only are technological innovations frequently complex in themselves, but they necessitate expertise and backing from a broad group of stakeholders and must be sufficiently flexible to meet needs across a diverse range of healthcare settings.

The successful delivery of health technology programs necessitates the strong and early engagement of patients, practitioners, and policy makers, shifting the focus from a binary question of effectiveness, to whether interventions can be acceptable, implementable, cost-effective, scalable, and transportable across settings.

Leap SAVE is a **standalone programme funded by the Wellcome Trust** that looks to provide an **agile global platform for end-to-end demonstration and evaluation of solutions developed by other programme performers, utilising the Unit's multi-country partnership model with stakeholder co-design and in-country leadership.**

Leap SAVE will look to **address laparoscopic surgery simulation and postoperative deterioration alert systems** across a diverse range of low-, middle-, and high-income countries.



# EDUCATION AND TRAINING



## Research Management

Research Management covers every aspect of delivering international research studies. Chaired by Dr Laura Martinez from the Mexico Hub, this working groups covers aspects such as financial planning and managing the grant lifestyle.

## Statistics and Data Analysis

Statistics and data analysis are two essential skills when developing a research study. Chaired by Prof Deidre Kruger from the South Africa hub, this group has been providing training to help surgical researchers plan, execute and analyse their research projects from beginning to end.

## Data Management

High quality data collection, curation and management is central to all our research projects. Chaired by Dr Napoleon Bellua Sam from Ghana hub, this group creates teaching materials to help and disseminate data management plans.

## Health Economics

Health Economics deals with the cost effectiveness of healthcare treatments and the distribution of healthcare resources. Led by Dr Risikat Dauder from Nigeria hub, this group is developing training materials to help surgeons understand the health economic implications of the research we conduct.

## Community Engagement & Involvement

Improving surgical care for patients is the fundamental aim of all of our research. Our Community Engagement and Involvement (CEI) group is led by Dr Michael Bahrami-Hessari and has a network of CEIs from each hub to ensure patient are at the heart of our projects, from planning to disseminating results.

## Qualitative Research

Qualitative research allows us to better understand the results behind the numbers generated in quantitative research. This group is led by Dr Gagendeeep Kaur and works to ensure surgeons understand the importance of investigating patients' views on our research studies.





# CEI PROGRAMME



Community engagement and involvement (CEI) is a top priority at GSU. We are committed to **working collaboratively with stakeholders who are most likely to be impacted by our research outcomes**. To achieve this goal, we forge strong partnerships with patients, caregivers, and communities to ensure the relevance of our work to them. **Highlighting the significance of CEI in our daily operations, each of our Hubs is led by a designated CEI lead**. This individual plays a crucial role in establishing a community advisory group and ensuring that the community's perspective is integrated when disseminating tasks to spokes.

In the last year, all the Hubs have worked with communities to achieve the following:

- The development of **localised patient education resources focused on surgical site infection** (SSI) prevention and self-management, stoma care and the patient's surgical journey from admission to discharge;
- A patient survey that aims to **compare the differences in the quality of life (QoL) of patients who develop an SSI versus those who do not**. This survey will be embedded in DRAGON- an upcoming GSU trial and is GSU's first foray into collecting patient-reported QoL data alongside clinical data in a trial.

In addition, we also have a few Hub-initiated CEI activities such as:

- The Rwanda Hub has begun the first phase of data collection for PIGEON- a study that aims to investigate the **role of community health workers in post-surgical care**.
- The Rwanda and Benin Hubs have convened **community representatives from their spokes to form national CEI steering committees**.
- The India Hub has been actively engaging with various communities to emphasize the **significance of preventing SSIs and promoting cancer screening**. As a result of this, the **Punjab District Health Ministry requested their assistance in training 2,000 community health workers**. This training initiative is aligned with the goals of the National Health Mission under the Ministry of Health and Family Welfare.
- The Ghana Hub has sought **community input in the translation of patient survey tools to be used for TIGER** (the task-shifting inguinal hernia trial).
- The Nigeria Hub has formed CEI teams in 13 spokes spread across all zones of the country. These are engaging with the surgical community to **incorporate ChEETAh** outcomes in surgical practice.



# HEALTH ECONOMICS



The Health Economics Unit at the University of Birmingham has been conducting health economic research and teaching for almost 40 years. The unit provides internationally competitive health economic research in both methodological and applied research to inform policy and resource allocation. Within the NIHR Global Surgery Unit (GSU), the Health Economics Unit recognises that **applying Health Economics principles is particularly important to low-and middle-income countries (LMICs)** as resource are highly constrained compared to other settings.

This highlights the need for evidence-based resource allocation decisions. To this end, we conduct wide range of health economic research to support decision making on GUS projects. These include **systematic reviews, cost-of-illness studies, and economic evaluations**. Recently we have also **completed a cost-effectiveness analysis for ChEETAh interventions** which shows that **routine changing of gloves and instruments is cost-effective at reducing surgical site infections in LMICs**.



# ADVISORY BOARD



In order to improve outcomes for patients, it's crucial that innovations identified by research are implemented globally. The Board includes representation from the Royal College of Surgeons (England), WHO, The Lancet Commission and the UK Government as well as International Surgical Societies and NGOs.

## Policy Implementation

The GSU Advisory Board has been established to work with national governments, professional associations and international organisations (NGOs), to develop evidenced-based recommendations for policy change.

Recommendations are based on cost effectiveness as well as clinical outcomes and will result in changes to surgical practice.

## Policy Roundtables

Our policy roundtables provide the opportunity for professionals to take part in our information dissemination outputs in which recommendations for policy makers are discussed. These discussions address various critical issues within global surgery with a focus on LMIC's.



# PUBLICATIONS



**Exploring the cost-effectiveness of high versus low perioperative fraction of inspired oxygen in the prevention of surgical site infections among abdominal surgery patients in three low- and middle-income countries** *BJA Open* (June 2023)

**The costs of surgical site infection after abdominal surgery in middle-income countries: Key resource use In Wound Infection (KIWI) study** *Healthcare Infection Society* (May 2023)

**Adaptation of the Wound Healing Questionnaire universal – reporter outcome measure for use in global surgery trials (TALON-1 study): mixed-methods study and Rasch analysis** *BJS Society* (April 2023)

**A comparative study of outcomes of burns across multiple levels of care** *Journal of the International Society for Burn Injuries* (March 2023)

**Impact of malnutrition on early outcomes after cancer surgery: an international, multicentre, prospective cohort study** *The Lancet Global Health* (March 2023)

**Routine sterile glove and instrument change at the time of abdominal wound closure to prevent surgical site infection (ChEETAh): a pragmatic, cluster-randomised trial in seven low-income and middle-income countries** *The Lancet* (October 2022)

**Elective surgery system strengthening: development, measurement, and validation of the surgical preparedness index across 1632 hospitals in 119 countries** *The Lancet* (October 2022)

**Catastrophic expenditure and treatment attrition in patients seeking comprehensive colorectal cancer treatment in India: A prospective multicentre study** *The Lancet Regional Health (Southeast Asia)* (September 2022)

**Global economic burden of unmet surgical need for appendicitis** *BJS* (July 2022)

**Outcomes of gynecologic cancer surgery during the COVID-19 pandemic: an international, multicenter, prospective CovidSurg-Gynecologic Oncology Cancer study** *Science Direct* (June 2022)

**Effects of hospital facilities on patient outcomes after cancer surgery: an international, prospective, observational study** *The Lancet Global Health* (May 2022)



# PUBLICATIONS



**Alcoholic chlorhexidine skin preparation or triclosan-coated sutures to reduce surgical site infection: a systematic review and meta-analysis of high-quality randomised controlled trials.** The Lancet (May 2022)

**Outcomes of patients undergoing elective liver and pancreas cancer during the SARS-CoV-2 pandemic: an international, multicentre, prospective cohort study.** HPB (March 2022)

**The impact of surgical delay on resectability of colorectal cancer: An international prospective cohort study.** Colorectal Disease (March 2022)

**Study protocol for a cluster randomised trial of sterile glove and instrument change at the time of wound closure to reduce surgical site infection in low- and middle-income countries (ChEETAh).** BMC (March 2022)

**Global guidelines for emergency general surgery: systematic review and Delphi prioritisation process.** BJS Open (February 2022)

**Outcomes and their State-level Variation in Patients Undergoing Surgery with Perioperative SARS-CoV-2 Infection in the USA: A Prospective Multicenter Study** Annals of Surgery (February 2022)

**Impact of Bacillus Calmette-Gu  r  n (BCG) vaccination on postoperative mortality in patients with perioperative SARS-CoV-2 infection** BJS Open (January 2022)

**Timing of surgery following SARS-CoV-2 infection: country income analysis.** Anaesthesia (January 2022)

**Projecting COVID-19 disruption to elective surgery** The Lancet (December 2021)

**Head and neck cancer surgery during the COVID-19 pandemic: An international, multicenter, observational cohort study** Cancer (December 2021)

**Impact of COVID-19 on vascular patients worldwide: analysis of the COVIDSurg data** Cardiovasc Surg (December 2021)

**Outcomes from elective colorectal cancer surgery during the SARS-CoV-2 pandemic** Colorectal Disease (November 2021)



# PUBLICATIONS



**Death following pulmonary complications of surgery before and during the SARS-CoV-2 pandemic** BJS (November 2021)

**Resilience of elective cancer surgery systems during COVID-19 lockdowns: an international, multicentre, prospective cohort study** The Lancet (November 2021)

**Global wealth disparities drive adherence to COVID-safe pathways in head and neck cancer surgery** BJS Open (November 2021)

**Informed decision-making on pre-operative isolation: a reply** Anaesthesia (November 2021)

**Machine learning risk prediction of mortality for patients undergoing surgery with perioperative SARS-CoV-2 infection: the COVIDSurg mortality score** BJS (November 2021)

**Elective Cancer Surgery in COVID-19-Free Surgical Pathways During the SARS-CoV-2 Pandemic: An International, Multicenter, Comparative Cohort Study** Journal of Clinical Oncology (October 2021)

**Effect of COVID-19 pandemic lockdowns on planned cancer surgery for 15 tumour types in 61 countries: an international, prospective, cohort study** The Lancet Oncology (October 2021)

**Challenges and solutions: surveying researchers on what type of community engagement and involvement activities are feasible in low and middle income countries during the COVID-19 pandemic** BMJ Open (October 2021)

**Reducing surgical site infections in low-income and middle-income countries (FALCON): a pragmatic, multicentre, stratified, randomised controlled trial** The Lancet (October 2021)

**SARS-CoV-2 vaccination modelling for safe surgery to save lives: data from an international prospective cohort study** British Journal of Surgery (September 2021)

**Early outcomes and complications following cardiac surgery in patients testing positive for coronavirus disease 2019: An international cohort study** BMJ Open (August 2021)



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**Outcomes after perioperative SARS-CoV-2 infection in patients with proximal femoral fractures: an international cohort study** BMJ Open (August 2021)

**SARS-CoV-2 infection and venous thromboembolism after surgery: an international prospective cohort study** Anaesthesia (August 2021)

**Preliminary model assessing the cost-effectiveness of preoperative chlorhexidine mouthwash in reducing postoperative pneumonia among abdominal surgery patients in South Africa** Plos One (August 2021)

**Effects of pre-operative isolation on postoperative pulmonary complications after elective surgery: an international prospective cohort study** Anaesthesia (August 2021)

**Feasibility and diagnostic accuracy of Telephone Administration of an adapted wound healing QuestiONaire for assessment of surgical site infection following abdominal surgery in low and middle – income countries (TALON): protocol for a study within a trial (SWAT)** NIH National Library of Medicine (July 2021)

**Community engagement and involvement in Ghana: Conversations with community stakeholders to inform surgical research** BMC Research Involvement and Engagement (July 2021)

**Stoma care research in Low and Middle-income Countries: An update from the NIHR Global Health Research Unit on Global Surgery** BJS Open (May 2021)

**CROCODILE study group. CatastROphiC expenditure rates and barriers for treatment aDherence In patients with colorectal cancer in India: CROCODILE study protocol** Colorectal Disease (April 2021)

**UK Head and neck cancer surgical capacity during the second wave of the COVID-19 pandemic: Have we learned the lessons?** Clin Otolaryngol (March 2021)

**Methodological issues in economic evaluations of emergency transport systems in low-income and middle-income countries** BMJ Global Health (March 2021)

**SARS-CoV-2 vaccination to support safe surgery during the pandemic: a modeling study using data from an international prospective cohort study** BJS Society (March 2021)



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**Timing of surgery following SARS-CoV-2 infection: an international prospective cohort study** Association of Anesthetists (March 2021)

**Global variation in postoperative mortality and complications after cancer surgery: a multicentre, prospective cohort study in 82 countries** The Lancet (January 2021)

**Head and neck cancer surgery during the COVID-19 pandemic: An international, multicenter, observational cohort study** Cancer (December 2020)

**COVID-19 related absence among surgeons: development of an international surgical workforce prediction model** BMJ Open (December 2020)

**Surgical Site Infection in Children after Surgery: A global prospective cohort study** BMJ Global Health (December 2020)

**Preoperative nasopharyngeal swab testing and postoperative pulmonary complications in patients undergoing elective surgery during the SARS-CoV-2 pandemic** BJS (November 2020)

**Should we be re-starting elective surgery?** Association of Anaesthetists (November 2020)

**Preoperative nasopharyngeal swab testing and postoperative pulmonary complications in patients undergoing elective surgery during the SARS-CoV-2 pandemic** BJS (November 2020)

**Identifying a Basket of Surgical Procedures to Standardize Global Surgical Metrics: An International Delphi Study** Ann Surg. (November 2020)

**Favourable perioperative outcomes for children with SARS-CoV-2** BJS (October 2020)

**Elective Cancer Surgery in COVID-19-Free Surgical Pathways During the SARS-CoV-2 Pandemic: An International, Multicenter, Comparative Cohort Study** Journal of Clinical Oncology (October 2020)

**Preoperative mortality as a meaningful indicator: Challenges and solutions for measurement, interpretation, and health system improvement** Anaesth Crit Care Pain Med. (October 2020)





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**Favourable perioperative outcomes for children with SARS-CoV-2** BJS Society  
(October 2020)

**Delaying surgery for patients with a previous SARS CoV-2 infection** BJS Society  
(September 2020)

**Pragmatic multicentre factorial randomised controlled trial testing measures to reduce surgical site infection in low- and middle-income countries: study protocol of the FALCON trial** BJS (September 2020)

**Surgical site infection and costs in low- and middle-income countries: A systematic review of the economic burden** PLoS One (June 2020)

**Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study** The Lancet (May 2020)

**Global guidance for surgical care during the COVID-19 pandemic** BJS (April 2020)

**Delphi prioritization and development of global surgery guidelines for the prevention of surgical-site infection** BJS (March 2020)

**Variation in global uptake of the Surgical Safety Checklist** BJS (January 2020)

**Surgical Outcomes Study Groups and GlobalSurg Collaborative. Variation in global uptake of the Surgical Safety Checklist** BJS (January 2020)

**Global variation in anastomosis and end colostomy formation following left-sided colorectal resection** BJS Open (June 2019)

**Mesh versus suture repair of primary inguinal hernia in Ghana: Prospective, outcome assessor blinded, before and after study** BJS Open (June 2019)

**Reducing postoperative mortality rates in England** BJS Open (June 2019)

**Quality and outcomes in global cancer surgery: protocol for a multicentre, international, prospective cohort study (GlobalSurg 3)** BMJ Open (May 2019)



# PUBLICATIONS



**Feasibility study for a randomised controlled trial of bupivacaine, lignocaine with adrenaline, or placebo wound infiltration to reduce postoperative pain after laparoscopic cholecystectomy in West Africa** BJS Open (March 2019)

**Global burden of postoperative death** The Lancet (February 2019)

**Prioritizing research for patients requiring surgery in low and middle income countries** British Journal of Surgery (January 2019)

**Pooled analysis of WHO Surgical Safety Checklist use and mortality after emergency laparotomy** British Journal of Surgery (January 2019)

**Management and Outcomes Following Surgery for Gastrointestinal Typhoid: An International, Prospective, Multicentre Cohort Study** World Journal of Surgery (May 2018)

**Laparoscopy in management of appendicitis in high-, middle-, and low-income countries: a multicenter, prospective, cohort study** Surgical Endoscopy (April 2018)

**Surgical site infection after gastrointestinal surgery in high-income, middle-income, and low-income countries: a prospective, international, multicentre cohort study** Lancet Infectious Diseases (February 2018)

**Determining the worldwide epidemiology of surgical site infections after gastrointestinal resection surgery: protocol for a multicentre, international, prospective cohort study (GlobalSurg 2)** BMJ Open (July 2017)

**Determinants of morbidity and mortality following emergency abdominal surgery in children in low-income and middle-income countries** BMJ Global Health (December 2016)

**Mortality of emergency abdominal surgery in high-, middle- and low-income countries** British Journal of Surgery (May 2016)

**A multicentre evaluation of emergency abdominal surgery in South Africa: Results from the GlobalSurg-1 South Africa study** S Afr Med J. (January 2016)

**Determining universal processes related to best outcome in emergency abdominal surgery: a multicentre, international, prospective cohort study** BMJ Open (October 2014)

# GUIDELINES AND POLICY



This report provides data-driven messages to **tackle backlog while maintaining safe surgery**, aiming to support surgeons and policy makers during the re-start of elective surgery. The contents are evidence based, taking outputs from the COVIDSurg global research collaborative,

This report aims to deliver 3 keys aims:

1. To **summarise the published COVIDSurg data** as a guide to future safe surgical practice
2. To **guide effective surgical recovery plans**
3. To provide a **5-year vision of safe and effective surgery** that addresses global challenges

This report is aimed at a range of **key stakeholders** who are needed for **post-pandemic surgical planning**, including providers, healthcare leaders, patients, governments, financiers, and industry.



In this report, we have **modelled the total need for elective procedures in England**, including both the known and hidden waiting lists. We have used our novel methodology to develop procedure-level and regional estimates, and to **project waiting list trends through to 2030**.

# GUIDELINES AND POLICY

## Preventing Surgical Site Infections

BJS

DOI: 10.1002/bjs.11530

### Pre-Operative



Full body wash

Prepare surgical site immediately before incision



Decontaminate hands

Remove hair on table  
*(with electric clippers if available)*



### Peri-Operative

Maintain saturation >95%

Monitor & correct blood glucose\*

Maintain normothermia\*

### Antibiotics

Use prophylactically for clean-contaminated, contaminated or dirty surgery



Select according to guidelines based on operation and local resistance patterns

Administer IV within 60 minutes before incision

Repeat dose if operation longer than half life of antibiotic

Do not routinely continue beyond 24 hours



Essential  
 Desirable

<https://NIHRGlobalSurgery.org/guidelines>

 NIHR Global Health Research Unit on Global Surgery



NIHR Global Health Research Unit on Global Surgery

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# GUIDELINES AND POLICY

## Global Guidance for Surgical Care During the COVID-19 Pandemic

BJS



### Preparation

- ◊ Prepare a clear pandemic response plan
- ◊ Practice protocols and drills
- ◊ Train staff in the correct use of PPE
- ◊ Establish clear communication channels between hospital networks

### Team Structure

- ◊ Maintain social distancing
- ◊ Consider establishing dedicated COVID-19 teams
- ◊ Plan for high rates of staff sickness and consider creative cross-cover solutions

### Elective Work



#### Outpatients

- ◊ Reduce outpatient services
- ◊ Use telephone appointments where possible
- ◊ Patients with symptoms of COVID-19 should not attend outpatient clinics

#### Elective Surgery

- ◊ Postpone non-urgent cases
- ◊ Establish protocol to prioritise urgent cases



#### Cancer Surgery

- ◊ Consider triage of suspected cancer patients directly to investigation (no outpatient review)
- ◊ Plan how to deliver urgent investigations
- ◊ Consider whether it is possible to delay surgery – including the use of neo-adjuvant therapies
- ◊ Pair senior surgeons and reduce training

### Emergency Work



#### Admissions

- ◊ Recognise and respond to COVID-19 symptoms
- ◊ Where infected patients develop surgical pathology, care decisions should be informed by formal risk stratification and MDT discussion

#### Emergency Surgery

- ◊ Allocate dedicated operating theatres
- ◊ Ensure use of correct PPE as per local guidelines
- ◊ Establish clear guidelines for laparoscopy
- ◊ Develop a clear theatre decontamination procedure
- ◊ Limit number of staff in theatre



# MEDIA COVERAGE



During the COVID-19 pandemic, CovidSurg research was extensively covered by print and broadcast media across six continents. In total, over 1,000 media outlets across 56 countries reported on this research. Prestigious titles covering CovidSurg research included Al Jazeera, BBC, CNN, El Pais, Estadao, Forbes, La Tercera, Le Monde, Süddeutsche Zeitung, Sky, The Australian, The Economist, The Guardian, Times of India, and Vanguard.

CovidSurg also attracted heavy social media attention, with four publications achieving Altmetric scores greater than 1,000; higher than any previous surgical study!



# LAGOS SUMMARY

NIHR GSU ANNUAL  
PRIORITIZATION MEETING  
NIGERIA 2023

## Day 1

### Setting the scene for Lagos 2023

#### Transforming lives through better surgical care

The Unit is undergoing a considerable expansion in 2023-24. This is both an opportunity and a challenge for our teams. **In addition to our clinical research agenda**, we have been funded to support the **Wellcome leap programme**, develop a programme to **reduce the carbon footprint of surgery and** are looking to **increase our engagement with the WHO and policy change**. This conference will address these challenges, set out our goals for the Unit and make sure that we maximise the opportunities for surgical patients.

Your contribution to this meeting is essential for our further development.

**Welcome to Lagos 2023!**

### Global Surgery Hubs

Our collective challenge will be met by the hub directors and their teams. The strength of the unit is built around our multidisciplinary, international collaborations, but our future will be delivered through our hubs. In this session the hubs will **outline their key goals and challenges for the next year**. In the panel discussion we will seek to identify how we can best support these goals. Importantly we should identify efficiencies of scale and cross site shared experience.

### Cheetah implementation

There are perhaps 4 key areas that need to be changed in order to **transform surgical care across the world**. These are:

- **behavioural change amongst clinical staff**
- **capacity building to deliver care**
- **quality improvement to reduce adverse events around surgical care**
- **improved access to surgery**

**Surgical practice**, perhaps more than any other, requires an **engaged and functional team to deliver care**. Behaviour change is therefore fundamental to this process. **Cheetah is an excellent example** of how this can work, requiring engagement of the surgeon, assistant and theatre scrub team to implement the change in practice.



# LAGOS SUMMARY

NIHR GSU ANNUAL  
PRIORITIZATION MEETING

NIGERIA 2023

## Translating research into policy

The **shortage of surgical services** has been widely documented in recent years and hugely amplified by the COVID pandemic. In **HIPPO** we have detailed for the first time what the **waiting times** for inguinal hernia repair are and how they vary across the world. This highlights the capacity issues in surgery that are a major challenge in sub-saharan Africa and in central/south America.

In **EAGLE**, we have sought for surgical teams to **implement complex practice change to improve outcomes** across the world. In this **QI study virtual training** has been used to improve theatre procedures and decision making in bowel surgery. This emphasises the point that as we drive for expansion of surgical services, we must be wary of reduced quality, which will almost inevitably be harmful to patients.

We have completed 3 key studies (CHEETAH, HIPPO, EAGLE) to improve surgical care across the world. In this symposium we will explore how these findings should be disseminated and used to influence policy change around the world.

## Planning research for impact: workforce

In this session we will discuss our **emerging studies** to enhance surgical care across the world.

- to improve **surgical practice (GECKO)**. In this cohort study of 2,000 hospital we will look at **surgical practice and outcomes from gallbladder surgery** across the world and use this to develop a quality improvement study of cholecystectomy surgery.
- to improve **surgical delivery (TIGER)**. This **task sharing study of inguinal hernia** repair follows on from HIPPO and will launch in West Africa Q1 2024.
- to improve **perioperative care (EMU)**. This study within a Trial (SWAT) will be launched within DRAGON and will look at the **impact of electronic monitoring on post operative recovery**.





# LAGOS SUMMARY

NIHR GSU ANNUAL  
PRIORITIZATION MEETING

NIGERIA 2023

## Planning research for impact: emergency care

It has been recognised that Surgery needs greater profile in the Global Health arena. This requires that **surgery is better integrated into acute and chronic disease pathways.**

The recent WHA resolution can help this process. We will hear **from the WHO** on the **new emergency care resolution** and discuss **how the NIHR unit might start to evaluate the uptake to WHO initiatives.** We will also hear about the evaluation of a new model for developing emergency transfer to hospital.

## Capacity Building

The area of greatest development over the last year has been in capacity building. The team have established **6 new working groups** and a diverse and multidisciplinary faculty. In Lagos we will **launch the new GSU educational centre.** We will also hear of the **SSI tool kit** developed for professionals, carers and patients. We will hear from the **newly formed Nursing and Allied Health Professional group.**

In the next year this team will have a major role in developing the Wellcome leap programme in laparoscopic training.

On **day 2** we have a series of **6 breakout sessions led by the capacity building team** and addressing key topics in research training (Wednesday 13th – 10.45-14.45).

## Building effective partnerships with regulators and funders

Over 6,000 patients in Nigeria have consented for and taken part in interventional clinical trials. Good research requires close working with regulators and professional partners in hospitals, community services and universities. In this session we will explore with the professional bodies in Nigeria **how we can continue our collaboration and work closely together for the benefit of our patients.** The NIHR unit understands better than most the essential nature of this collaboration.



# LAGOS SUMMARY

NIHR GSU ANNUAL  
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NIGERIA 2023

## Day 2

### Planning research for impact: complex trials

Here we will describe 3 new trials:

- One (**DRAGON**) is a cluster randomised study of **reusable drapes and gowns**;
- The second is a **multi arm multistage platform** trial to prevent SSI's (**MARLIN**);
- The third (**PUMA**) is a new peri-operative care trial of **IV iron and tranexamic acid** to improve recovery after major surgery.

### Planning research for impact: drug trials

We will update from the **PENGUIN team** which has recruited over 4,000 patients from 3 continents. A new trial **LIONess** – a **pilot study of preoperative chemotherapy or immunotherapy** for patients with **locally advanced colon cancer**. This trial is due to launch in Nigeria Q1 2024.

### Planning research for Impact : Future research themes

In this final research session **we will look to the future**. We will hear from the **chair of the Lancet commission for surgery (John Meara)** on the priority areas and from our team on Pandemic preparedness, climate disaster and new technologies.

This will set the scene for forthcoming years.



# 2023 MEETING AGENDA

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## Pre-Conference: Monday 11 September 2023

### Pre-conference workshops

The pre-conference workshops are optional, you can pick & mix. Everyone is welcome!

Workshop hosts: Aneel Bhangu, Dmitri Nepogodiev, Joana Simões

12:30-14:00	<b>DRAGON afternoon drop-in</b> Meet informally with the DRAGON trial team to chat through the trial design and to plan DRAGON opening in your country!
15:00-15:30	<b>Cheetah carbon model</b> An opportunity help design completely new methodology! We'll be developing a model evaluating the carbon impact of routine change of gloves and instruments. This will also inform design of the DRAGON carbon model. Note: this workshop is repeated in the special interest sessions on Wednesday morning
15:45-16:30	<b>Mapping global surgery</b> Contribute to designing a new snapshot study to capture global surgical case-mix and discussing how we can use these data to model the global burden of postoperative mortality, global unmet need for surgery, etc.
17:00-17:45	<b>New trials forum</b> An informal forum to discuss potential future trial topics on anything from antimicrobial resistance through to anastomotic leak prevention! These discussions will feed into the main conference.
<b>Management meetings:</b> by invitation	
14:00-14:45	<b>DRAGON trial management group</b>
15:00-16:30	<b>Executive committee meeting</b>
<b>Social activities</b>	
09:00-14:00	<b>Trip to Lagos</b>
18:30	<b>Drinks reception and dinner</b> at the Marriot Hotel



# 2023 MEETING AGENDA

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<b>Day 1: Tuesday 12 September 2023</b>	
07:30-08:00	<b>Breakfast</b>
08:00-08:30	<b>Registration and networking event</b>
08:30-08:50	<b>Setting the scene for Lagos 2023</b> Chairs: Adesoji Ademuyiwa, Dion Morton <ul style="list-style-type: none"> <li>• Current research themes</li> <li>• Gaps and future research topics</li> </ul>
08:50-09:40	<b>Global Surgery Hubs</b> Chairs: Adewale Adisa, Lucy Caton, Audrey Nganwa Panel: Adesoji Ademuyiwa, Richard Crawford, Dhruva Ghosh, Ismail Lawani, Faustin Ntirenganya, Antonio Ramos-De la Medina, Stephen Tabiri <ul style="list-style-type: none"> <li>• Hub's context and strengths</li> <li>• Hub's main challenge</li> <li>• Hub's target for next 12 months</li> </ul>
09:40-10:05	<b>CHEETAH implementation</b> Chairs: Sohini Chakrabortee, Abdul Ghaffar, Stephen Tabiri Panel: Speakers <i>plus</i> , Ismail Lawani, Joana Simoes, Stephen Tabiri <ul style="list-style-type: none"> <li>• Cheetah (J.C. Allen Ingabire)</li> <li>• Health economics analysis (Mwayi Kachapila)</li> </ul>
10:05-10:30	<b>Translating research into policy</b> Chairs: Aneel Bhangu, Janet Martin Panel: Speakers <i>plus</i> Philip Alexander, Sohini Chakrabortee, Abdul Ghaffar <ul style="list-style-type: none"> <li>• HIPPO (Maria Picciochi)</li> <li>• EAGLE (Elizabeth Li-Yan)</li> <li>• BMJ Global Health Special Issue</li> </ul>
10:30-11:00	<b>Break</b>
11:00-11:45	<b>Planning research for impact: workforce</b> Chairs: Antonio Ramos-De la Medina, Joana Simões Panel: Speakers <i>plus</i> Rachel Lillywhite, Stephen Tabiri, Thomas Weiser <ul style="list-style-type: none"> <li>• GECKO (Antonio Ramos-De la Medina)</li> <li>• TIGER (Anita Eseenam Agbeko)</li> <li>• EMU (Ewen Harrison)</li> </ul>
11:45-12:30	<b>Planning research for impact: emergency care</b> Chairs: Maria Lorena Aguilera, Dion Morton Panel: Speakers <i>plus</i> Justine Davies, Abdul Ghaffar, Parvez Haque, Richard Lilford <ul style="list-style-type: none"> <li>• Trauma checklist (Emilie Calvello Hynes)</li> <li>• Ambulances (Katie Scandrett)</li> <li>• WHA Satellite meeting 2024</li> </ul>
12:30-13:30	<b>Lunch</b>
12:50-13:30	<b>Statistics drop-in clinic</b> with Omar Omar



# 2023 MEETING AGENDA

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Day 1: Tuesday 12 September 2023	
13:30-15:00	<b>Capacity Building I</b> Chairs: Katie Shaw, Laura Magill <ul style="list-style-type: none"><li>Launch of the GSU Education Centre</li></ul> Panel: Napoleon Bellua Sam, Risikat Dauda, Deidre Kruger, Gagandeep Kwatra, Ismail Lawani, Laura Martinez <ul style="list-style-type: none"><li>Launch of the CEI SSI tool kit (Michael Bahrami-Hessari)</li></ul> Panel: Hub CEI leads <ul style="list-style-type: none"><li>Nursing &amp; Allied Health Professional Group Research Prioritisation exercise (Sangeetha Samuel)</li><li>Strategic / future directions discussion</li></ul> Panel: Adesoji Ademuyiwa, Dhruva Ghosh, Ismail Lawani, Dion Morton, Isaie Ncogoza, Stephen Tabiri
15:00-15:30	<b>Break</b>
15:00-15:30	<b>Demonstration of Education Centre</b>
15:30-16:30	<b>Building effective partnerships with regulators and funders</b> Chairs: Adesoji Ademuyiwa, Dion Morton, Lukman Abdul-Rahman Panel: Aneel Bhangu, Chris Bode, Sohini Chakrabortee, Dhruva Ghosh, Faustin Ntirenganya, Stephen Tabiri Guests: Representatives from NAFDAC, NHREC, NIHR, TETFUND <ul style="list-style-type: none"><li>Researchers &amp; regulators: becoming partners and working towards the same goal</li><li>Funding surgical research: options and pathways</li></ul>
16:30-17:30	<b>Opening Ceremony</b> Chairs: Rufus Ojewola, Omolara Williams
18:00-19:00	<b>Drinks Reception</b> at the Marriot hotel
19:00-22:00	<b>Gala Dinner</b> at the Marriot hotel



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<b>Day 2: Wednesday 13 September 2023</b>	
07:30-08:15	<b>Breakfast</b>
08:15-08:30	<b>Recap of day 1</b> Chair: Faustin Ntirenganya, Antonio Ramos-De la Medina
08:30-09:15	<b>Planning research for impact: complex trials</b> Chairs: Dhruva Ghosh, Marie Dione Sacdalan Panel: Speakers <i>plus</i> Christina George, Rachel Lillywhite, Tom Pinkney <ul style="list-style-type: none"> <li>• DRAGON (Dmitri Nepogodiev)</li> <li>• MARLIN (Ismail Lawani)</li> <li>• PUMA (James Glasbey)</li> </ul>
09:15-09:45	<b>Special interest sessions I</b> Breakout 1: Trials (Divya Kapoor, Rachel Lillywhite) Breakout 2: New technologies – EMU (Ewen Harrison) Breakout 3: Carbon literacy (Virginia Ledda, Elizabeth Li-Yan)
09:45-10:15	<b>Special interest sessions II</b> Breakout 1: SSI toolkit CEI (Michael Bahrami-Hessari) Breakout 2: New technologies – CAMEL (Ewen Harrison) Breakout 3: Cheetah carbon model (Virginia Ledda, Dmitri Nepogodiev)
10:15-10:45	<b>Break</b>
10:45-12:15	<b>Capacity Building II</b> Breakout 1: How to do quantitative research (Deidre Kruger; Omar Omar) Breakout 2: How to do implementation research (Gagandeep Kwatra) Breakout 3: Hub Manager training (Rachel Lillywhite, Audrey Nganwa)
12:15-13:15	<b>Lunch</b>
13:15-14:45	<b>Capacity Building III</b> Breakout 1: Health economics (Risikat Dauda, Mwayi Kachapila) Breakout 2: Community Engagement & Involvement (Michael Bahrami-Hessari,) Breakout 3: Hub Director training (Sohini Chakrabortee, Dion Morton)
14:45 -15:00	<b>Break</b>
15:00-15:45	<b>Planning research for impact: drug trials</b> Chairs: Laura Magill, Sonia Mathai Panel: Speakers <i>plus</i> Christina George, Chinenye Iwuji, Divya Kapoor <ul style="list-style-type: none"> <li>• PENGUIN (Bruce Biccard)</li> <li>• Foxtrot LIONESS (Adewale Adisa)</li> <li>• Foxtrot Global (Parvez Haque)</li> </ul>
15:45-16:40	<b>Planning research for impact: future research themes</b> Chairs: Aneel Bhangu, Parvez Haque Panel: Speakers <i>plus</i> Fareeda Galley, Virginia Ledda <ul style="list-style-type: none"> <li>• Rural surgery (Philip Alexander)</li> <li>• Response to climate disaster (John Meara)</li> <li>• New technologies (Ewen Harrison)</li> <li>• New trials (Aneel Bhangu)</li> </ul>
16:40-17:20	<b>Goal setting</b> Chairs: Adesoji Ademuyiwa, Lucy Caton, Dion Morton Panel: Richard Crawford, Dhruva Ghosh, Ismail Lawani, Faustin Ntirenganya, Antonio Ramos-De la Medina, Stephen Tabiri
17:30-18:30	<b>LIONESS investigator meeting</b>
19:00-22:00	<b>Gala Dinner</b>



# NOTES



