Epidemiological and Statistical Methods and Musculoskeletal Research Training Workshop

Introduction & Aims

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#SAMSON19

www.theSAMSON.org

Day 1; Monday 11th

University of BRISTOL

SAMSON
Sub-Saharan African
MuSculOskeletal Network

Sub-Saharan African MuSculOskeletal Network (SAMSON)

The Sub-Saharan African MuSculOskeletal Network - SAMSON

SAMSON is a research network across West, East and Southern Africa.

SAMSON aims to:

1. **Build** sustainable capacity in Musculoskeletal Health Research by creating a collaborative research platform
2. **Share** learning in Musculoskeletal Health Research through the life course to reduce the burden of Musculoskeletal disease
3. **Inform** health policy, promote training, research capacity development, knowledge transfer and public engagement through the life course for Musculoskeletal disease
4. **Provide** guidance to standardise methods for Musculoskeletal assessment across Sub-Saharan Africa

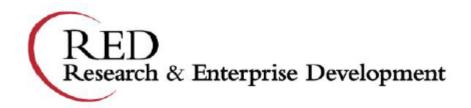Photo: Ian Farrell, © MRC Unit The Gambia at London School of Hygiene and Tropical Medicine
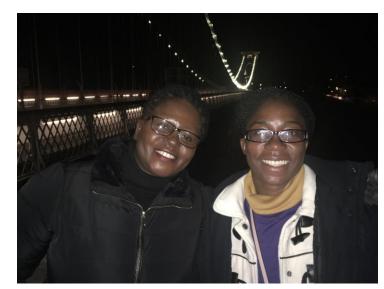
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Musculoskeletal Knowledge Exchange between Zimbabwe and Bristol; a SAMSON initiative

- Global Impact Acceleration Grant

- Following last year's feedback - this workshop is designed for researchers who wish to improve their epidemiology and statistical skills

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Workshop Objectives

1. Select the appropriate epidemiological study designs to investigate research questions

2. List the strengths and weaknesses of randomised controlled trials (RCT) and case-control, cohort, ecological and cross-sectional studies

3. Calculate incidence and prevalence and state which measure is most useful in different circumstances

4. Explain confounding, use of stratification and statistical interaction (effect modification)

5. Assess whether an exposure-disease association is likely to be due to chance, bias, reverse causality or confounding

6. Explain the principles underlying sample size/power calculations

7. Select and use appropriate statistical methods in the analysis of simple datasets

8. Understand and interpret outputs from statistical analyses

9. Critically appraise a published RCT, case-control, cohort, ecological or cross-sectional study

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The Workshop Programme: Monday 11th - Tuesday 12 March 2019

Monday 11th March Epidemiological and Statistical Methods Day 1		Tuesday 12th March Epidemiological and Statistical Methods Day 2	
08.45	Arrival & Registration	08.45	Arrival & Registration
09.00	Introduction & Aims for the workshop [CG]		
09.10	Measuring Health and Disease (incidence, prevalence, risks, rates, and odds) [EM] [35+5]	09.00	Linear regression and correlation [TB] [30+10]
09.45	Data types and distributions [MT] [25+5]	09.40	Logistic Regression [TB] [30+10]
10.20	Coffee and biscuits	10.20	Coffee and biscuits
10.35	Study Design: cross-sectional, case-control, cohort and ecological studies [KK] [30+5]	10.35	Statistical Interaction [CG] [30+5]
11.10	Clinical Trials [FF] [30+5]	11.10	Measurement error [CDC] [30+5]
11.45	Bias [JC] [30+5]	11.45	'Lessons in Epidemiology' [CK & RS] [30+5]
12.20	Lunch	12.20	Lunch
13.10	Confounding and stratification [MBD] [30+5]	13.15	Sample Size calculations [CDC] [30+5]
13.45	*Practical Workshop (small groups)* How to critically appraise a paper *(please read papers in advance)* [CG, KW, KK, FF]	13.50	*Practical Workshop (participants to present questions for discussion in small groups)* 'Stats and Study design clinic' Including what stats are needed to support a successful grant proposal [CG, KW]
15.00	Tea and biscuits	15.00	Tea and biscuits
15.15	Balancing a research budget Q & A – how to make your money go as far as possible! [RF & CG]	15.15	How to get your paper published – top tips! [AP] [30+10]
15.50	Data: how to keep your data clean and well managed [TB] [30+5]	15.55	Sensitivity & Specificity [KK] [30+5]
		16.20	Summary and closing remarks [CG]
16.25	Close	16.25	Close

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The Workshop Programme: Wednesday 13th March

	Wednesday 13th March pQCT & Bone Age Training Day
08.45	Arrival & Registration
09.00	Introduction & Aims for the day [CG]
09.10	Overview of pQCT [KW] [20+5]
09.35	Improving the quality of your pQCT scan [KW] [20+5]
10.00	How to perform forearm pQCT [MO'B] [30+5]
10.35	**Coffee and biscuits**
10.55	*Practical Workshop* *Performing a forearm pQCT scan* [KW & MO'B]
12.30	**Lunch**
13.20	How to process your pQCT data – part 1 [MO'B/ KW] [30+5]
13.55	How to process your pQCT data – part 2 [MO'B/ KW] [30+5]
14.30	Review of Bone Age [CG] [30+5]
15.05	**Tea and biscuits**
15.20	Bone Age in practice [KW] [30+5]
14.55	Bone Age – Learning from Sheffield [FK] [20+5]
15.20	Bone Age in practice [KW] [30+10]
16.05	Close

Speakers

- **Dr Tsitsi Bandason** BRTI
- **Mr Mícheál O'Beasail,** MRC Nutrition & Bone Health Research Group, Cambridge
- **Dr Mutsa Bwakura-Dangarembizi,** UZ
- **Dr James Church,** Zvitambo Institute & Queen Mary University of London
- **Ms Chido Dziva Chikwari** LSHTM & BRTI
- **Prof Rashida Ferrand** LSHTM & BRTI
- **Dr Felicity Fitzgerald**, UCL Great Ormond Street Institute of Child Health & BRTI
- **Dr Celia Gregson**, University of Bristol
- **A/Prof Katharina Kranzer**, LSHTM
- **Dr Edith Majonga** BRTI & UZ
- **Dr Andrew Prendergast** Zvitambo Institute / Queen Mary University of London
- **Ms Mandikudza Tembo**, BRTI
- **A/Prof Kate Ward**, University of Southampton & MRC The Gambia

Bristol (population ~500,000)

Workshop Organisers – thank you!

Dr Ruramayi Rukini

Biomedical Research and Training Institute & LSHTM

Ms Rudo Siwela

University of Zimbabwe

Daily feedback

Please complete your feedback forms each day!